

Report of the

INDEPENDENT OBSERVERS

XXIV Olympic Winter Games
Beijing 2022

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2022

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Table of contents

1.0	Acknowledgments	4
2.0	Acronyms and Abbreviation.....	5
3.0	Executive Summary.....	7
3.1	The Key Players and the Game Plan	7
3.2	Challenging Times.....	7
3.3	Education First and Intelligence-Led Anti-Doping Program.....	8
3.4	Innovation and Commitment to Improvement.....	9
3.5	Sample Collection Team and Sample Collection Procedures	10
3.6	Laboratory Operations.....	10
3.7	Results Management	11
3.8	Conclusion	11
4.0	Mandate, Role, Functions of the IO Team	11
4.1.	IO Team Composition	13
5.0	Beijing Games Overview and Operational Environment.....	13
5.1.	IOC Jurisdiction.....	13
5.2.	Key Players and Operational Approach	14
5.3.	Technological Tools	16
6.0	Education.....	17
7.0	Therapeutic Use Exemptions (TUEs)	19
8.0	Intelligence and Investigations.....	20
9.0	Sport Specific Protocols (SSPs)	22
10.0	Test Distribution Plan (TDP).....	23
10.1	Pre-Games Testing and Sample Storage.....	23
10.2	Games-Time Test Planning and Implementation	25
10.3	Athlete Biological Passport and Athlete Passport Management Units	26
10.4	Location and Whereabouts Information.....	26
11.0	Doping Control Team	28
11.1	Recruitment.....	28
11.2	Training	29

11.3 Management	29
12.0 Doping Control Stations.....	31
13.0 Sample Collection Procedures	32
13.1 Athlete Notification and Chaperoning.....	32
13.2 Urine, Blood, and Dry Blood Spot Sample Collection.....	33
14.0 Storage, Security, Transport and Chain of Custody of Samples.....	35
15.0 Beijing Laboratory Activities.....	37
15.1 General	37
15.2 Enhanced Security Measures	37
15.3 Staffing Arrangements.....	38
15.4 COVID-19 Pandemic Impact.....	39
15.5 Sample Reception.....	39
15.6 Sample Storage	40
15.7 Sample Analysis.....	40
15.8 Reporting Results of Analyses	44
15.9 Atypical Findings and Adverse Analytical Findings	45
15.10 B Sample Confirmation Procedures	46
15.11 Double-Blind External Quality Assessment Scheme Samples	47
16.0 Results Management.....	47
17.0 Appendices.....	50
17.1 TUE Statistics.....	50
17.2 Sample Collection Statistics	51
17.3 Summary of IO Team Commendations and Recommendations	52

1.0 Acknowledgments

The success of the Independent Observer (IO) Team's mission is due in large part to the extremely collaborative approach employed by the International Olympic Committee (IOC), the International Testing Agency (ITA) and the Beijing Organizing Committee for the 2022 Olympic and Paralympic Winter Games (Beijing 2022). Our work was greatly facilitated, and the IO Team could not have gained all the insight into the anti-doping program and the operations implemented at the Games without the support of these three organizations.

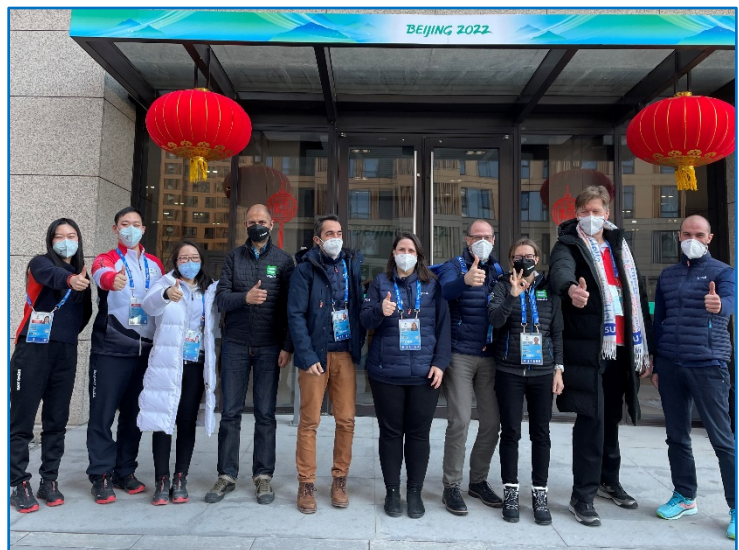
While the IO Team would like to acknowledge and thank all Beijing 2022 anti-doping staff, many which were seconded from the China Anti-Doping Agency (CHINADA), all the ITA staff on-site in Beijing (as well as those working from Lausanne) and all our IOC colleagues, we would like to extend our gratitude to a few individuals in particular. From Beijing 2022, Ms. Ling Lin, Head of Doping Control; Mr. Liu Xueqi, Venue Operations Manager; and Ms. Chen Yang, External Relations Coordinator; from the ITA, Mr. Gianluca Siracusano, Head of Regulatory Compliance; Mr. Matteo Vallini, Head of Testing; Ms. Vanessa Webb, Major Events Project Manager; Dr. Neil Robinson, Head of Science and Medical; and Ms. Dominique Leroux-Lacroix, Head of Legal Affairs; and from the IOC, Dr. Richard Budgett, Medical and Scientific Director; and Ms. Hannah Grossenbacher, Senior Anti-Doping Manager.

The IO Team would like to acknowledge the warm welcome that we received from all the sample collection personnel whenever members visited a doping control station. The IO Team also wants to thank all the Games volunteers and, in particular the volunteers who were assigned to the IO Team, whose enthusiasm and patience not only ensured that we were provided with the best experience possible but made our job so much easier.

The IO Team would also like to thank the National Anti-Doping Laboratory, Beijing Sports University staff, in particular the laboratory Director, Dr. Yinong Zhang and the laboratory Deputy Director, Dr. Lisi Zhang, for their dedication to preparing the laboratory for these Games, as well as their assistance and cooperation during the World Anti-Doping Agency (WADA) assessments and the IO mission.

Last, but not least, the IO Team would like to thank the athletes that competed in Beijing. They demonstrated that, despite the challenging circumstances presented by the COVID-19 pandemic, they could still perform at the highest level of competition.

To everyone, thank you!



2.0 Acronyms and Abbreviation

Full Name	Acronym/Abbreviation
Adverse Analytical Finding	AAF
Anti-Doping Administration & Management System	ADAMS
Anti-Doping Organization	ADO
Anti-Doping Rule Violation	ADRV
Athlete Biological Passport	ABP
Athlete Passport Management Unit	APMU
Atypical Finding	ATF
Beijing Organizing Committee for the 2022 Olympic and Paralympic Winter Games	Beijing 2022
Blood Collection Officer	BCO
Chain of Custody	CoC
Chief Medical Officer	CMO
China Anti-Doping Agency	CHINADA
Court of Arbitration for Sport's Ad Hoc Division	CAS Ad Hoc Division
Court of Arbitration for Sport's Anti-Doping Division	CAS ADD
Doping Control Command Center	DCCC
Doping Control Form	DCF
Doping Control Officer	DCO
Doping Control Station	DCS
Doping Control Station Manager	DCSM
Dried Blood Spot	DBS
Erythropoietin receptor agonists	EPOs
External Quality Assessment Scheme	EQAS
Gonadotrophin Releasing Hormone	GnRH
Growth Hormone Releasing Hormone	GHRH
Growth Hormone Releasing Peptides	GHRP
Growth Hormone Secretagogues	GHS
Haemoglobin-based Oxygen Carriers	HBOCs
Hypoxia-inducible factors	HIFs
Independent Observer Team	IO Team
Insulin-like Growth Factor-I	IGF-I
Intelligence and Investigations	I&I
Intelligence Collection Plan	ICP
Intelligence Task Force	ITF
International Doping Control Officer	IDCO
International Federation	IF
International Olympic Committee	IOC
International Standard for Education	ISE
International Standard for Laboratories	ISL
International Standard for Results Management	ISRM
International Standard for Testing and Investigations	ISTI
International Standard of TUEs	ISTUE
International Testing Agency	ITA
International Testing Agency's data management system	PASS
International Testing Agency's reporting platform	REVEAL
International Testing Agency's anti-doping communication platform	ADCOM
IOC Anti-Doping Rules applicable to the XXIV Olympic Winter Games	IOC ADR
Isotope Ratio Mass Spectrometry	ISRM
Laboratory Information Management System	LIMS
Local Organizing Committee	LOC
Major Events Organization	MEO
National Anti-Doping Laboratory, Beijing Sports University	Beijing Laboratory or Laboratory
National Anti-Doping Organization	NADO
National Olympic Committee	NOC
Olympic Broadcasting Services	OBS

Olympic Winter Games Beijing 2022	Beijing Games
Personal Protection Equipment	PPE
Professional Worldwide Controls	PWC
Professional Worldwide Controls' paperless system	MODOC
Registered Testing Pool	RTP
Results Management Authority	RMA
Russian Anti-Doping Agency	RUSADA
Sport Specific Protocol	SSP
Test Distribution Plan	TDP
Testing Pool	TP
Therapeutic Use Exemption	TUE
Therapeutic Use Exemption Committee	TUEC
World Anti-Doping Code	Code
World Anti-Doping Agency	WADA

3.0 Executive Summary

At the invitation of the International Olympic Committee (IOC), WADA appointed an IO Team to attend the Olympic Winter Games Beijing 2022 (the Beijing Games). The Games period for doping control ran from 27 January 2022 to the final day of competition on 20 February 2022. While a small number of IO Team members were on-site from the start of the Games period, active observations of the doping control procedures commenced on 3 February 2022 while laboratory monitoring began on 27 January 2022. During that time, in addition to being present at the laboratory on almost a daily basis, the IO Team visited all 12 competition venues as well as the doping control stations located at the three Olympic Villages and observed one results management hearing process.

3.1 The Key Players and the Game Plan

The IOC is the governing body of the Olympic Games and, as a signatory to the World Anti-Doping Code (the Code), adopted the Rules that were in force during the Beijing Games. While the IOC, as the signatory to the Code, remained responsible from a Code compliance perspective for all aspects of doping control conducted at the Games, the IOC had agreed to delegate the management of its anti-doping program to the ITA. In Beijing, the ITA had overall responsibility for the development, implementation, and management of the anti-doping program. In turn, the ITA, as was permitted in the IOC Anti-Doping Rules (ADR), sub-delegated some aspects of doping control to the Beijing Organizing Committee for the 2022 Olympic and Paralympic Winter Games (Beijing 2022). Beijing 2022 was tasked with organizing and delivering on several operational aspects of the doping control program, such as the recruitment and training of sample collection personnel, the sample collection procedures, as well as the transport of samples collected during the Games period to the WADA-accredited laboratory, the National Anti-Doping Laboratory, Beijing Sports University (the Beijing Laboratory or Laboratory).

When reporting on the operational approach implemented at major events, previous IO reports have often raised concerns related to the lack of independence when sporting organizations are responsible for the development and implementation of anti-doping programs, as well as the lack of clarity when different organizations are involved in the delivery of anti-doping programs at major games. None of these concerns are raised in relation to these Games. On the contrary, what the IO Team observed was a team of experienced individuals from the IOC, the ITA and Beijing 2022, who came together and collectively developed and delivered an impressive anti-doping program.

3.2 Challenging Times

Like most Olympic Games, the Beijing Games presented some unique challenges. The COVID-19 pandemic and the restrictions implemented to mitigate its impact created an unusually demanding environment for the Beijing 2022 anti-doping team and the Beijing Laboratory to prepare for, and operate, during the Games. The testing program and the Laboratory operated within a strict “Closed Loop”, which meant that movements were extremely limited and that any anti-doping staff or volunteers from China had to arrive approximately one week before the opening of the villages (i.e., enter the “Closed Loop”) and had to quarantine for approximately 21 days once their work was completed at the end of the Games. For these individuals, it meant being away from home, their families and loved ones for more than 50 days. Without the commitment and dedication of all these individuals, the anti-doping program, and the Games in general, would not have been possible. The IO Team cannot express its gratitude enough to all of them.

In addition to the “Closed Loop” system, the strict sanitary conditions also challenged every aspect of the doping control and Laboratory operations. Beijing 2022, sample collection personnel and Laboratory staff had to contend with numerous COVID-19 countermeasures (e.g., sanitization procedures, personal protective equipment, etc.) as well as restrictions when developing and implementing certain procedures, such as sample transport. The IO Team highlights these circumstances, the extent of which are outlined in the Playbooks¹ developed for the Beijing Games, to note that these Games operated within a unique and specific set of circumstances that posed challenges for all involved and limited some of the IO Team’s observations. Despite all this, we are thankful that these measures were in place, which ensured that participants and the people of China stayed safe and healthy during the Games.

Another challenge encountered was the case of a figure skating athlete embroiled in a doping controversy. While this story garnered a significant amount of attention during the Beijing Games, the sample at the center of the controversy was not collected during the Games, nor was it a sample that was part of the Beijing Games anti-doping program. As such, it was *not* collected under the authority of the IOC, *nor* was it analyzed at the Beijing Laboratory. Rather, this sample was collected several weeks before the start of the Games under the testing authority of the athlete’s National Anti-Doping Organization and for several reasons, the results had not been reported before the Beijing Games started. The IO Team mentions this unfortunate circumstance to clarify that while some results management procedures took place during the period of the Games and while the IO Team was kept informed, these procedures were outside the scope of the IO Team’s mandate and observations under the applicable rules in place for the Beijing Games.

3.3 Education First and Intelligence-Led Anti-Doping Program

The IO Team is of the view that the IOC, the ITA and Beijing 2022 developed and delivered several excellent initiatives to protect every athlete’s right to compete on a level playing field and to preserve the integrity of the Games.

In its International Standard for Education (ISE), WADA highlights that an athlete’s first experience with anti-doping should be through education rather than through the doping control process. The ITA and the IOC took this principle to heart. Several initiatives were developed and implemented ahead of the Games as well as during the Games to ensure that everyone was well informed. While several educational initiatives were implemented ahead of the Games, the level of education displayed by athletes and athlete support personnel was no doubt also a result of the education programs implemented by the seven winter International Federations (IFs) and National Anti-Doping Organizations (NADOs) of the 91 nations that competed.

From a Therapeutic Use Exemptions (TUEs) perspective, the focus on ensuring the ease of the process for athletes and their physicians as well as the availability of information regarding this aspect, was seen as an example for future Games to follow. It was also clear that the ITA and the IOC had reflected on their experience from previous Games and had adjusted their operations based on those learnings and the specific requirements of a Winter Games.

In the area of intelligence and investigations, the IO Team would like to commend the ITA for the resources invested and for fostering the exchange and receipt of information via several initiatives, such as the establishment of a multi-stakeholder Intelligence Task Force (ITF) ahead of the Games to promote

¹ For additional information regarding the [Playbooks](#).

the exchange of intelligence on athletes, athlete support personnel, delegations, sports, etc., that may require specific focus in the lead up to, or during, the Beijing Games; the signing of a [collaboration agreement](#) with governmental agencies in China to facilitate the exchange of information connected to potential doping in the lead up to, and during, the Beijing Games; and the implementation of several channels, such as the ITA's confidential reporting platform '[REVEAL](#)' and its internal communication system 'ADCOM', for the secure sharing of information. Additional information is provided in section 8 of this report ('Intelligence'), but the work done in the area of intelligence and investigations should serve as an example for future Games.

This intelligence-led approach was also evident in the testing program implemented for the Games. The ITA established a Pre-Games Expert Group ahead of the Beijing Games and this group conducted an extensive risk assessment which led to over 5,000 testing recommendations issued to winter IFs and relevant NADOs. The recommendations' implementation rate of 80 percent certainly highlighted the winter IFs' and NADOs' joint commitment to ensuring that their athletes were subject to a robust and intelligent testing program ahead of the Games. To further support the work of IFs and NADOs in the lead up to the Games, it should be noted that, in addition to leading the Pre-Games Expert Group, the ITA, on behalf of the IOC, coordinated testing on 79 athletes (representing 110 samples) between 27 November 2021 and 26 January 2022 (i.e., the IOC's extended testing jurisdiction period prior to the Games). These tests focused on prospective Games athletes that had limited or no testing conducted on them.

The Games-time Test Distribution Plan (TDP) was designed following a thorough and well-considered risk assessment, which was developed in collaboration with several external experts. The decisions on how and why to allocate tests by sport, by discipline, by country and by athlete were informed and underpinned by a strong rationale. The TDP called for 2,200 tests to be conducted (with an additional 100 tests as a contingency). What is most impressive, especially for the Beijing Games, is that almost 50 percent of those tests were allocated to out-of-competition testing, and almost all of the tests implemented during these Games, whether in-competition or out-of-competition, were target tests. These target tests were possible due to: a) the seamless transition between the work of Pre-Games Expert Group and the Games-time group; b) the close collaboration between the ITA and the several Athlete Passport Management Units (APMUs), who were providing timely recommendations; c) the feedback received from NADOs and IFs which were reviewed by the ITA; and d) the ability of the ITA to review all this information and provide daily targeted athlete selections.

3.4 Innovation and Commitment to Improvement

The ITA's ability to process a large amount of information to implement a high level of target tests for these Games was by and large due to the experience and dedication of the staff on-site but also due to the technological tools implemented. To ensure that information was shared in a secure and confidential manner and to continue to optimize the ITA's operations, several innovative technological tools were utilized during the Beijing Games, most of which the ITA developed and others, like the paperless system, made possible with its partnership with Professional Worldwide Controls GmbH (PWC). The level of interconnectedness between the different systems was impressive, as were the improvements implemented between the Tokyo and Beijing Games. The IO Team commends the ITA for the investment made in these tools and its commitment to continual improvement, which meant that information was shared safely and securely contributing to extremely efficient operations.

For the first time, Dried Blood Spot (DBS) samples were collected as capillary blood via finger-prick. The collection of DBS samples was included as part of the TDP for the Games, sample collection personnel

were trained on the sample collection procedures and the analysis was applied as a routine method at the Games for the analysis of testosterone esters in blood, which gives unequivocal proof of the administration of exogenous testosterone. The implementation of DBS testing during the Games was the result of a successful collaboration between the IOC, ITA, CHINADA, Beijing 2022, the Beijing Laboratory and WADA, with the support of the [DBS Steering Committee](#). This test has the potential to become an increasingly important tool in the fight against doping and, as such, its expanded implementation in future Games as well as in routine testing programs is encouraged.

3.5 Sample Collection Team and Sample Collection Procedures

The success of any operation cannot rely solely on technology. The people often make it or break it. The doping control team in place at the Beijing 2022 Games was excellent, and the IO Team was impressed by the recruitment and training plan developed and implemented by Beijing 2022, with the support of the ITA and PWC. While previous IO reports have raised several concerns in the area of sample collection personnel, none are raised here, which is no small feat and a testament to all involved.

Given that previous IO reports have noted, on several occasions, how the importance of the Chaperone's role is often underestimated, and that language skills in particular are somewhat overlooked, the IO Team would like to commend Beijing 2022 for the emphasis placed on communications skills. In particular, we would like to highlight everyone's proficiency in English, in particular the Chaperones, which was made possible due to a partnership with several Chinese universities.

Regarding the Doping Control Stations (DCSs), while the IO Team noted that they were appropriately staffed, very well managed and that most were fit for purpose, some could have benefited from larger waiting rooms and additional processing rooms as outlined later in this report.

Overall, and in large part due to the sample collection personnel recruited and trained by Beijing 2022, the sample collection process implemented during the Games was excellent. Any minor issues that were identified by the IO Team and raised during daily meetings with the IOC, ITA and Beijing 2022 were promptly addressed and corrected. The IO Team is of the view that urine, blood, and DBS sample collection procedures were implemented in accordance with the International Standard for Testing and Investigations (ISTI).

3.6 Laboratory Operations

Laboratory operations were conducted in accordance with the International Standard for Laboratories (ISL), by the Beijing Laboratory, located in Beijing. The Laboratory operated 24 hours a day, 7 days a week, to analyze athlete samples and safeguard the integrity of the Games.

Despite the COVID-19 pandemic challenges faced, from the Pre-Games preparation stages to the end of Games testing, the Beijing Laboratory made an outstanding effort to ensure it was properly equipped and staffed to analyze all samples in a timely manner. National volunteers from local universities and international experts from other WADA-accredited laboratories were recruited and trained to increase the laboratory capabilities for the rigors of the Olympic Games testing regiment.

WADA conducted three laboratory assessments, including one remote and two on-site, in the lead up to the Games to ensure that the preparations of the laboratory were fit-for-purpose even in the challenging environment of the COVID-19 restrictions. Just before the Games, satisfactory implementation of all WADA major event requirements was achieved, including quickly adjusting procedures to incorporate

the new DBS devices which were updated in the weeks before the Games by CHINADA. Scrutiny of the Beijing Laboratory procedures indicated a professional and efficient approach which was compliant with the technical requirements.

While the IO Team does offer some recommendations regarding laboratory operations such as ensuring that international experts are placed in all shifts and that the “small peptides method” be applied to all samples, it is commendable that the Beijing Laboratory successfully prepared for and achieved its high-quality operations under the very challenging conditions imposed by the COVID-19 pandemic and the very strict COVID-19 restrictions in place to mitigate its impact during the Games.

3.7 Results Management

The ITA handled results management for potential Anti-Doping Rule Violations (ADRVs) on behalf of the IOC in a prompt and efficient manner. The process implemented during the Games was guided by a clear internal policy and respected the requirements of the International Standard for Results Management (ISRM). The ITA kept the IO Team informed of all relevant results management matters. The Court of Arbitration for Sport’s Anti-Doping Division (CAS ADD) was appointed to hear all potential ADRV cases for the Games. The provisional suspension in the case of the figure skating athlete was heard by the Court of Arbitration for Sport’s (CAS) Ad Hoc Division ([CAS Ad Hoc Award OG 22 08-09-10](#)) since the positive test related to a test conducted outside of the Games period (and not under the IOC’s jurisdiction) and was based on an appeal from a decision by the Russian Anti-Doping Agency’s (RUSADA) Disciplinary Anti-Doping Committee on her provisional suspension. The IO Team is of the view that cases were handled promptly and effectively and that the parties to each case were provided with reasonable deadlines to make submissions and with the opportunity to be heard promptly.

3.8 Conclusion

In conclusion, while the IO report offers some recommendations throughout for consideration by different stakeholders and for future editions of the Games, the IO Team was impressed by the anti-doping program implemented for the Beijing Games and congratulates the IOC, the ITA, Beijing 2022, the Beijing Laboratory, the CAS and all other stakeholders who contributed to the success of the anti-doping program and to protecting the integrity of the Games.

4.0 Mandate, Role, Functions of the IO Team

At the invitation of the IOC, WADA appointed an IO Team to attend the Beijing Games.

Originally launched at the 2000 Olympic Games in Sydney, the IO program was established to enhance athlete and public confidence at major sporting events by monitoring and reporting on all phases of the doping control and results management processes in an objective manner. Over time, the IO program has evolved to meet the needs and demands of organizations responsible for delivering major events. For this edition of the Games, an audit-style approach was adopted. The IO Team, through its observations, assessed whether procedures were in line with the Code and relevant International Standards and provided onsite advice and recommendations to the relevant organizations involved in the delivery of the doping control program.

For these Games, the IOC and WADA agreed that the IO Team would observe all aspects of doping control including, in particular:

- Test Distribution Planning (TDP);
- Implementation of the out-of-competition and in-competition testing programs;
- Provision of whereabouts information;
- Training of sample collection personnel;
- Athlete selection;
- Athlete notification and sample collection procedures;
- Transport and chain of custody of samples;
- Sample analysis at the laboratory;
- Therapeutic Use Exemption (TUE) procedures;
- Results management process (including hearings held during the period of the Games); and
- Any other relevant areas under the 2021 Code, International Standards or Technical Documents.

The Games period for doping control ran from 27 January to the final day of competition on 20 February 2022. While a small number of IO Team members were on-site from the start of the Games period, active observations of the doping control procedures commenced on 3 February 2022 while laboratory monitoring began on 27 January 2022. During that time, in addition to being present at the laboratory on an almost daily basis, the IO Team visited all 12 competition venues as well as the doping control stations located at the three Olympic Villages. The doping controls of all sports and disciplines as listed below were the subject of 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)

In addition, the IO Team attended the daily meetings between the IOC, ITA and Beijing 2022 to report on the team's observations and to provide ongoing feedback. In addition to verbal feedback, the IO Team submitted written reports of its observations and recommendations via the ITA's secure online platform, ADCOM. The ITA responded in writing to all feedback provided, and all the recommendations that could be implemented during the Games were promptly implemented. Examples are provided throughout this report. In addition to the daily meetings, the ITA also organized some 'in-focus' meetings where the ITA, IOC, Beijing 2022 and the IO Team explored in more detailed several aspects of the anti-doping program implemented at the Games. For example, sessions on risk assessment, test distribution planning, Athlete Biological Passport (ABP), education, TUEs, Intelligence and Investigations (I&I), etc. were organized.

The IO Team attended the Chief Medical Officer (CMO) introductory meeting (3 February) as well as its concluding meeting (17 February) and the Medical Commission introductory meeting (4 February) as well as its concluding meeting (18 February). The IO Team also observed one results management hearing process while onsite during the Games and was provided the relevant information related to other results management processes.

4.1. IO Team Composition

The IO Team consisted of:

- **Hitesh Patel** (UK), Rapporteur to the UNESCO International Convention against Doping in Sport (Chair)
- **Karine Henrie** (CDN), Deputy Director, WADA (Vice-Chair)
- **Stephen Bock** (USA), Head of Legal and General Counsel, International Volleyball Federation (FIVB)
- **Thierry Boghosian** (USA), Senior Manager, Laboratory Accreditation, WADA*
- **Ying Cui** (CDN), Manager, NADO/RADO Relations, WADA
- **Chika Hirai** (JPN), General Manager, International Relations, Japan Anti-Doping Agency (JADA)
- **Dr. Vinicius Sardela** (BRA), Manager, Laboratory Operations, WADA**
- **Dr. Yuhan Tan** (BEL), Medical Doctor, Member of WADA's Athlete Committee, Former international badminton player
- **Alexis Weber** (SUI), Head of Anti-Doping, International Football Federation (FIFA)



* First part of the Games

** Second part of the Games

Recommendation:

- **WADA:** While the IO program is an important element of WADA's compliance monitoring of Major Events Organizations (MEOs), given the other compliance tools developed by WADA such as the MEO Code Compliance Questionnaire and the involvement of the ITA at several Major Games, the IO Team recommends that WADA takes this opportunity to reflect on the future of the IO program to determine whether a readjustment is warranted.

5.0 Beijing Games Overview and Operational Environment

Close to 3,000 athletes took part in the Beijing Games, which represented the most gender-balanced edition of the Olympic Winter Games to date with 55% male / 45% female. Taking place from 4 – 20 February 2022, the Games featured 109 events in seven Olympic winter sports. The event program for 2022 featured the addition of monobob and freestyle ski big air events, as well as several mixed team formats, including short track mixed relay, ski jumping mixed team event, mixed gender team aerials and a snowboard cross mixed team event. The Games were organized around three competition zones, Beijing, Yanqing, and Zhangjiakou and included 12 competition venues.

5.1. IOC Jurisdiction

As was the case for the first time during the Olympic Summer Games Tokyo 2020 (the Tokyo Games), the IOC extended its testing jurisdiction. As per the [IOC Anti-Doping Rules applicable to the XXIV Olympic](#)

[Winter Games](#) (the IOC ADR), the IOC had jurisdiction to conduct out-of-competition testing on any athlete entered to, or who may be entered to, participate in the Games starting from 27 November 2021. These additional two months of testing jurisdiction allowed the ITA, on behalf of the IOC, to coordinate tests on athletes who may not have been sufficiently tested in the lead up to the Games, prior to their arrival in Beijing.

As the months leading up to major events are considered of higher risk for doping, this extended jurisdiction is a testament to the IOC's commitment to protecting the integrity of the Olympic Games.

5.2. Key Players and Operational Approach

*“The **International Olympic Committee** is the guardian of the Olympic Games and the leader of the Olympic Movement.²”*

The IOC, as the governing body of the Olympic Games, drafted and adopted the rules that were in force during the Beijing Games. While the IOC, as the Signatory to the Code, remained responsible from a Code compliance perspective for all aspects of doping control conducted at the Games, the IOC had agreed to delegate the management of its anti-doping program to the ITA, particularly related to test distribution planning, TUEs and results management. Even though the ITA was responsible for leading the anti-doping program at the Games, the IOC, via Dr Richard Budgett, participated in most of the daily meetings and offered valuable guidance on several matters.

*“The **International Testing Agency** – We are a fair, transparent and intelligence-led organization that has the welfare of athletes, the integrity of events and the reputation of sporting bodies at its heart. We gather together subject experts with significant experience in the field to help support the best sporting experience.³”*

The ITA is an international organization constituted as a not-for-profit foundation. The ITA was established in 2018 as an organization that would manage, independently from any sporting or political influence, anti-doping programs for IFs, MEOs, and NADOs in need of support. In Beijing, the ITA had overall responsibility for the development, implementation, and management of the anti-doping program. In this respect, the ITA led the development of the risk assessment and TDP for the Games. In addition, it coordinated other aspects such as athlete selections, athlete location information (e.g., rooming information), ABP and the recommendations provided by various APMUs, other information and intelligence received, etc.

The ITA had 19 staff on-site, in addition to staff which operated from their headquarters in Lausanne. This offered round-the-clock coverage regarding Games-time matters. The ITA was the main point of contact for the IO Team. All staff the IO Team interacted with were very professional, open, and collaborative in their approach.

² Reproduced from the [IOC's website](#).

³ Reproduced from the [ITA's website](#).

*“The **Beijing Organizing Committee for the 2022 Olympic and Paralympic Games** – Together for a Shared Future. The motto represents the power of the Games to overcome global challenges as a community, with a shared future for humankind. The words reflect the necessity for the world to work together towards a better tomorrow, especially given the difficulties faced throughout the COVID-19 pandemic.”⁴*

In turn, the ITA, as was permitted in the IOC ADR, sub-delegated some aspects of doping control to Beijing 2022. Beijing 2022 was tasked with organizing and delivering on a number of operational aspects of the doping control program, such as the recruitment and training of sample collection personnel, the sample collection procedures, as well as the transport of samples collected during the Games to the WADA-accredited laboratory. In that respect, Beijing 2022 contracted the Beijing Laboratory, to analyze all samples collected during the Games and to report its findings in accordance with WADA’s ISL. It is worth noting that many of the staff that worked in the anti-doping operations for Beijing 2022 were recruited from CHINADA, which highlighted the benefits of working with the local NADO to ensure strong operational expertise.

When reporting on the operational approach implemented at major events, previous IO reports have often raised concerns such as: a) the lack of independence when sporting organizations are responsible for the development and implementation of anti-doping programs, b) the lack of clarity when different organizations are involved in the delivery of anti-doping programs at major events, and c) the lack of legacy when the local NADO and/or some of its staff are not involved.

None of these concerns are raised in relation to these Games. On the contrary, what the IO Team observed was a team of experienced individuals, who came together to collectively develop and deliver a strong game plan. While still ultimately responsible, the IOC entrusted the ITA and Beijing 2022 to plan and deliver their anti-doping program. By doing so, the IOC ensured their anti-doping program was independent and benefited from the vast amount of experience and expertise that a specialized organization like the ITA brought to the Games, as well as the benefit of having a local organizing committee with staff seconded from the local NADO.

Commendation:

- *IOC, ITA, Beijing 2022:* The IO Team was impressed with the collegial and collaborative approach that it observed between the IOC, ITA and Beijing 2022. Every organization’s role and responsibilities were clear, and everyone executed them with professionalism and enthusiasm. The IO Team encourages future major games organizers to replicate and implement a similar model and benefit from the expertise of an organization like the ITA and the operational experience that the staff from the local NADO can offer.

Recommendation:

- *MEOs:* While testing of athletes prior to their participation at major events is the responsibility of all ADOs, the IO Team encourages other MEOs to consider extending their testing jurisdiction and to

⁴ Reproduced from the [IOC’s website](#).

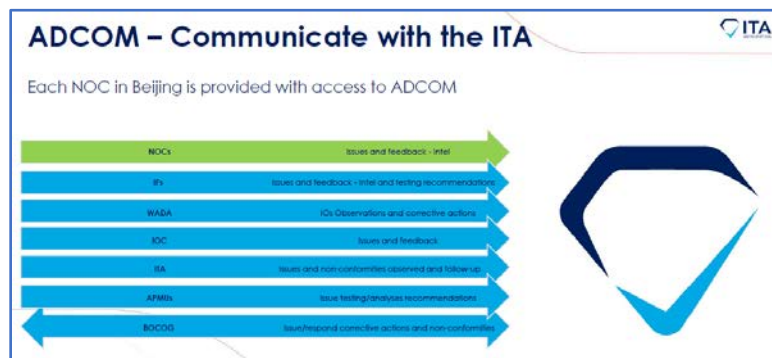
contribute directly to the testing of athletes ahead of their own major events, as was done successfully for these Games.

5.3. Technological Tools

Several innovative technological tools were implemented by the ITA to ensure that information was shared in a secure and confidential manner during the Beijing Games. While these tools were used successfully for the first time at the Tokyo Games, the ITA made the most of the short period of time between the Tokyo and Beijing Games to continue to build on that success as several improvements were noted by the IO Team. While a brief overview of these tools is provided below, they will be referenced throughout the report, with additional context.

- **PASS:** The ITA has developed its own data management system, PASS. This system was used for the Tokyo Games and was updated with increased functionalities for the Beijing Games. For example, every Games athlete had a profile on PASS which included, but was not limited to, general information about the athlete, testing history, rooming information, available intelligence, planned tests, accreditation activation, etc. PASS also featured an integrated secure messaging system. While tests were planned within this system, as new information arrived, either from APMUs or in relation to COVID-19 (e.g., athletes in isolation protocols), tests could easily be re-scheduled or put on hold and kept in a holding queue. This was particularly helpful in the sense that ITA and Beijing 2022 sample collection personnel with access to the system knew that a test was planned on a particular athlete and this test could be conducted as soon as new information came to light, thus ensuring a flexible and efficient TDP. Several processes were automated, and the fact that this system was connected to MODOC (described below) meant that information was shared very efficiently.
- **MODOC:** The paperless administration system from PWC was used for the first time (in an edition of the Olympic Games) at the Tokyo Games and again at the Beijing Games. Paper forms were only used by Chaperones during the notification stage. This significantly reduced the amount of paper used during the Games and ensured that data protection safeguards were in place (i.e., that athlete information was kept and exchanged only to authorized persons in a safe and secure manner). Specifically, as tests were planned using PASS, the information was securely uploaded into MODOC via an application programming interface. The IO Team noted several improvements between Tokyo and Beijing that increased the effectiveness of the doping control process, such as:
 - In Tokyo, only the Doping Control Command Center (DCCC) could assign Doping Control Officers (DCOs) to tests. In Beijing, the Doping Control Station Manager (DCSM) was able to perform that function, which offered greater autonomy to assign tasks to their DCO staff.
 - In Tokyo, once a DCO started a test, they needed to see it through to conclusion without any other DCOs being assigned. In Beijing, DCOs could be added/replaced throughout the cycle of the test process, which offered greater flexibility and allowed for a more efficient process.
 - In Tokyo, if for some reason, a DCSM on a morning shift could not complete the Chain of Custody (CoC) for samples collected during their shift, the samples could not, from a technological point of view, be easily transferred to the DCSM on the afternoon or evening shift. This was improved for the Beijing Games as the DCSM on a later shift had access to the athlete/sample data from a previous shift and was able to ensure a seamless CoC more easily.

- ADCOM:** The ITA’s online anti-doping communication platform offered a simple and efficient way to communicate with stakeholders during the Games. This tool was utilized by the IO Team to share observations and to receive the ITA and/or Beijing 2022’s response, eliminating the need for email exchanges. This platform was also available to National Olympic Committees (NOCs), NADOs and IFs to ask questions, share concerns and/or request target testing on specific athletes. ADCOM was also utilized by APMUs to share their assessment of ABP data.



In addition to these tools, as required by the World Anti-Doping Code and International Standard for Testing and Investigations (ISTI), WADA’s Anti-Doping Administration & Management System (ADAMS) was used to verify athlete whereabouts information, to review TUEs, to enter all Doping Control Forms (DCFs) and to upload Laboratory sample analysis results.

Commendation:

- ITA:** The IO Team commends the ITA, and their commercial technology partners, for its use of improved technology during the Games and the investment made in various technological tools. This contributed to very efficient operations, especially as it relates to the exchange of information between the ITA and Beijing 2022 as well as the relevant doping control teams. In addition, the IO Team was provided with up-to-date information on several aspects of the doping control program, in real time and at every meeting. We encourage any ADO to initiate discussions with the ITA about these systems in order to learn how they also may benefit from these innovative tools.

6.0 Education

In its International Standard for Education (ISE), WADA highlights that an athlete’s first experience with anti-doping should be through education rather than through the doping control process. The ITA and the IOC took this principle to heart. In addition to the information available to athletes, athlete support personnel and NOCs during the Games, several important initiatives were implemented ahead of the Games to ensure everyone was well informed prior to the Beijing Games. Through it all, the ITA was led by its education plan as well as the results of a survey of NOCs/NADOs conducted ahead of the Games. The ITA is also committed to monitoring, evaluating, and reporting on the education strategy implemented for these Games.



A brief summary of the Beijing 2022 specific initiatives is provided below:

- Athlete 365 website:** This is the IOC’s main portal where athletes can find important information related to the Olympic movement and/or Olympic Games. This website features a dedicated page on anti-doping where athletes can access information related to the rules, a variety of resources, report doping information, etc.

- **ITA website:** The ITA had a dedicated section for the Beijing Games where a variety of up-to-date anti-doping information could be found.
- **E-learning courses:** The ITA and the IOC worked in collaboration with WADA to develop an interactive education course – “ADEL for Olympic Winter Games Beijing 2022 (athletes and coaches)”. This course provided important information regarding the Beijing 2022 anti-doping rules, procedures, and requirements. It was available in 18 languages, and 3,900 athletes and coaches successfully completed the course. An additional course – “ADEL for Medical Professionals at Major Games” – was also offered. This course was available in eight languages and was completed by 1,670 medical professionals. This course was a requirement for all physicians registered for the Games.
- **Guides:** To further support athletes, the ITA, in collaboration with the IOC and WADA, developed a guidebook for NOCs (the “NOC Anti-Doping Education Guidebook”). The guidebook was designed specifically to help NOCs prepare their athletes and athlete support personnel to compete cleanly at the Games. Anti-doping information was also included in the IOC’s “Pocket Guide Beijing 2022”, which was distributed to all athletes who participated at the Games. Specifically, this brief reference guide highlighted the anti-doping rules in place, courses available on ADEL, and how to report information on doping. QR codes were provided, making it easy for athletes to access ADEL as well the ITA’s confidential reporting platform [REVEAL](#).
- **Webinar:** In December 2021, the ITA delivered a webinar for any interested stakeholder that covered key areas of the anti-doping program for the Beijing Games, namely education, rules and results management, TUEs and testing. This 90-minute webinar was attended by over 200 individuals from 56 different countries. The webinar was delivered in English, with simultaneous translation available in four other languages (i.e., Arabic, French, Russian and Spanish).
- **PinQuest App:** This online quiz game challenged athletes and their entourage on their Olympic knowledge. It included several questions on anti-doping and, for these Games, focused on raising awareness of the changes to the prohibited list and the possibility for athletes to report doping. PinQuest was launched by the IOC on 21 January 2022, and, by the end of the Games, 3,464 athletes and their entourage had played, representing all 91 NOCs and all seven winter IFs. A total of 20,405 questions were answered on anti-doping by athletes and athletes’ entourage. The athletes and entourage answered 83% of the time correctly.
- **Posters and banners:** Beijing 2022 ensured that information was available to athletes and athlete support personnel during the Games. From notification steps to urine, blood, and DBS procedures, to reporting doping, posters with information in several languages adorned the walls of each doping control station. In addition, television monitors were broadcasting live events as well as doping control process videos. While the usual outreach activities were not possible given the COVID-19 restrictions (as was the case with the Tokyo Games), the ITA and WADA had installed banners in all three athlete villages. These visually appealing banners promoted a variety of topics, which were quickly and easily available via QR codes.
- **Social media:** The ITA used social media ahead of and during the Games to highlight available resources and to share news with relevant stakeholders.



Commendation:

- *IOC, ITA, Beijing 2022*: The IO Team congratulates the IOC, the ITA and Beijing 2022 for its education commitment and for working in close collaboration with several partners to develop new resources with the goal of ensuring the integrity of the Games.
- *NADOs, IFs*: Athletes and athlete support personnel who participated at the Beijing Games were very familiar with several anti-doping procedures (e.g., sample collection procedures, TUE process, etc.). While the ITA (and the IOC) implemented several educational initiatives ahead of the Games, the level of education displayed by athletes and athlete support personnel was no doubt also a result of the education programs implemented by winter IFs and NADOs. The IO Team commends them for ensuring their athletes were well informed prior to their participation at the Beijing Games.

7.0 Therapeutic Use Exemptions (TUEs)

If athletes have an illness or medical condition that require them to take medication or use a method that is prohibited as per WADA's Prohibited List, a TUE may be approved to give that athlete an exemption to take the necessary prescribed medication or use the method, while competing in sport without resulting in an Anti-Doping Rule Violation (ADRV) and applicable sanction. TUEs are granted if it is in accordance with the International Standard for TUEs (ISTUE). The purpose of the ISTUE is to ensure that the process of granting TUEs is harmonized across sports and countries.

The IO Team reviewed the procedures and processes in place for the handling of TUEs in Beijing, which were in line with the ISTUE. The IO Team did not however review the content of the medical files or the rationale for the decisions made by the Games' Therapeutic Use Exemption Committee (TUEC) to recognize, grant, or refuse a TUE. This is the role of WADA's Science and Medicine Department, which has a right of review in these matters.

Ahead of the Games, the ITA had created a specific [TUE section](#) on their website. The information was detailed, clear and easy to find. During the Games, the ITA had a dedicated person on-site who could answer questions in person, by telephone and via email. The ITA also had staff based in Lausanne that could answer TUE-related inquiries. While this might be difficult to replicate at most Games, this meant that athletes had 24-hour access to help. The ITA also reminded NOCs and physicians of the process in place at the Games during on-site physicians' and NOCs' meetings.

It was also clear that the IOC and ITA had reviewed the recommendations made by previous IO Teams regarding TUE operations and implemented relevant ones. The ITA and IOC also reflected on their experience from previous Games and adjusted their operations based on those learnings and the specific requirements of a Winter Games. For example, the IOC revised their rules for Beijing to allow for automatic recognition of TUEs, and the ITA selected TUEC members based on the substance and number of TUE applications submitted by winter sport athletes.

As such, the TUEC for the Games consisted of four experts selected by the ITA among the general pool of ITA TUE Experts. In selecting the experts, the ITA considered their medical specialty and nationality. This ensured that, for each TUE review, the members selected had specific expertise with the medical condition and could be chosen to review a TUE without concerns of any potential link to the athlete or having the same nationality as the athlete. TUEs submitted during the Games were reviewed almost immediately and a decision was made within a few hours.

Under the IOC ADR, athletes were not required to submit existing TUEs granted by their IF or their NADO for recognition ahead of the Games (i.e., before 2 January 2022). Rather, if the athlete's TUE was available in ADAMS, the TUE was automatically recognized. While the TUEC still had the right to review the TUE, this alleviated the need for the athlete to submit additional requests for recognition. Between 2 January and 20 February 2022, all athletes participating in the Olympic Games were required to apply directly to the ITA for their TUE.

With a focus on ensuring that athletes and athletes' physicians had access to easy and efficient ways of submitting TUE applications during the Games, several options were available to them:

- They could submit a TUE application directly into ADAMS;
- They could visit the ITA TUE office located next to the polyclinic of the Beijing Olympic Village and apply in person (while no individual was on-site in the other two villages, information was available at the other two polyclinics and QR codes could also be scanned for easy access to information); or
- They could contact the ITA by telephone to discuss other secure and confidential ways to submit their TUE applications.

In total, 26 athletes held TUEs during the Beijing Games. There were nine TUEs from seven athletes granted during the Games and 20 TUEs from 19 athletes recognized before the Games started. Two TUEs were not recognized. In one case, the substance was no longer needed/used and for the other, the substance was prohibited in-competition only, so a TUE was not needed for out-of-competition use. One TUE was rejected by the TUEC. Given that a total of 2,897 athletes participated in the Games, the percentage of athletes who held a TUE during the Games was 0.86%. Please see the appendices section for additional information on the TUE substances and classes.

Commendation:

- *IOC, ITA:* The IO Team would like to commend the ITA and the IOC for ensuring that clear information regarding the TUE process was provided to athletes and athlete support personnel and that the TUEC as well as the TUE operations were determined based on previous learnings and the Winter Games specific environment.

8.0 Intelligence and Investigations

While this is true of most areas of the anti-doping program implemented in Beijing, the ITA's approach to continual improvement is highlighted in the area of intelligence.

Recognizing that the development of trusted working partnerships are important elements of an intelligence gathering strategy, the ITA established a multi-stakeholder [Intelligence Task Force \(ITF\)](#) to promote the exchange of intelligence on athletes, athlete support personnel, delegations, sports, etc., that may require specific focus in the lead up to, or during, the Beijing Games. The goal of the ITF was to bring a variety of stakeholders together, such as interested ADOs with investigative capabilities, law enforcement and public authorities, as well as anti-doping experts from the seven winter Olympic IFs in order to establish a network through which information could be shared. WADA was also part of the ITF. To that end, an initial meeting was held in January 2022 to introduce the secured modes and methods that would be used to exchange information as well as the frameworks for confidential information handling, storing and retention in order to launch the ITF activities. In addition to the ITF, the ITA has,

since its creation, signed collaboration agreements with over 20 NADOs (including CHINADA) to enable information sharing.

The ITA also signed a [collaboration agreement](#) with governmental agencies in China to facilitate the exchange of information connected to potential doping in the lead up to, and during, the Beijing Games. This collaboration agreement was meant to ensure that measures could be taken promptly should the use, or trafficking, of banned substances or methods be discovered in the context of the Beijing Games. The ITA confirmed that no information connected to potential doping was shared.

While several channels had been established for the sharing of information, the two main tools for the ITA to receive information regarding doping were REVEAL and ADCOM. While information regarding REVEAL was provided during meetings with stakeholders and included in several educational material as detailed earlier, REVEAL was also widely promoted on-site during the Games, addressing a recommendation from the Tokyo IO report (i.e., to increase awareness of the ITA's whistleblower platform). While anyone can share information using REVEAL, ADCOM, in contrast, is an internal communication tool used for a variety of purposes, most of which are outlined throughout this report. From an information/intelligence perspective, online access was provided to several partners, including all winter Olympic IFs. Through ADCOM, IFs could share, for instance, any available intelligence relevant to athletes competing at the Beijing Games. The availability of these two mechanisms, as well as their intended use, were specifically highlighted in each Sport Specific Protocol (SSP) signed by the ITA with every winter Olympic IF.

Another initiative aimed at encouraging the sharing of information was the 'Beijing 2022 Clean & Waste ITA - Beijing 2022 Suspicious Materials Policy'. This internal policy offered guidance to Beijing 2022 cleaning personnel on what objects to look out for during the Games, and how to report any suspicious paraphernalia or behavior. The IO Team found particularly useful the inclusion of specific examples (including photos) of potential suspicious paraphernalia, where it might be found etc., as well as the inclusion of concrete actions to take.

Guiding all these initiatives was the ITA's Intelligence Collection Plan (ICP). The ICP outlined intelligence collection priorities, processes for maximizing resources and robust assessment of information received to ensure appropriate actions were taken. SharePoint was used to log, collate, and process most of the information received in relation to the Beijing Games and a customized software from a specialized service provider was used to receive, assess, and implement any information received from partners involved in the ITF. While SharePoint offered a simple, secure, and efficient way to deal with information received, the ITA is working on the implementation of a platform as its regular intelligence database and case management system.

For the Games, the ITA had suitably experienced staff off-site which were overseen by the ITA's Head of Intelligence and Investigations (I&I) in Lausanne. This ensured that the ITA had the capability to gather, assess and process intelligence and to conduct investigations promptly if necessary.

Given the sensitive nature of the information received and the actions that were taken, the IO Team will only provide high-level comments regarding outcomes. However, the IO Team can confirm that the ITA did receive information, assessed it appropriately, and implemented actionable information in a prompt and efficient manner during the Games. The following points are offered as a general overview:



- Information received and assessed ahead of the Games led to 53 “I&I driven” tests;
- Information received and assessed during the Games led to 12 “I&I driven” tests; and
- From the above tests, three cases were being followed closely and the ITA was, at the time of the Games, working closely with the relevant IFs and NADOs to ensure appropriate follow-up continued (e.g., as per APMU recommendations and post-Games).

Commendation:

- *IOC, ITA:* The IO Team would like to commend the ITA for the resources invested in the area of intelligence and investigations and for fostering the secure exchange and receipt of information via several initiatives. The work done in the area of intelligence and investigations should serve as an example for future Games.

Recommendation:

- *Local Organizing Committees (LOCs), Governments, ITA:* To build on the initiatives implemented thus far, the IO Team recommends that the cooperation agreements be entered into well in advance of the Games to allow for an optimal amount of time for all parties to implement the cooperation agreement.
- *ITA, IOC, IFs:* The ITA I&I team highlighted a difference in the ITA’s investigative capacity between IFs from which ITA has a delegation outside the Games and those IFs that it only works with for the Games as it is gathering year-round intelligence for those IFs that it has a delegation outside of the Games whereas it only starts the intelligence gathering process once the pre-Games testing program begins in the case of IFs that it only works with during the Games. The IOC and ITA should consider whether a longer extension of jurisdiction for I&I Pre-Games should be granted for I&I to improve its ability to gather workable intelligence and act on said intelligence both pre-Games and during the Games.

9.0 Sport Specific Protocols (SSPs)

Several previous IO reports have highlighted the importance and usefulness of developing SSPs for major Games. For these Games and in consultation with Beijing 2022, the ITA collaborated with all winter Olympic IFs to develop SSPs. While the information included in the SSPs was tailored to address the realities of each sport and sport discipline, it included information such as:

- agreements on how out-of-competition and in-competition testing would be implemented, including guidance on athlete selection, notification and chaperoning process, examples of sport specific permitted delays in reporting to the doping control station, etc.;
- sport overview, including the history of the sport, the rules, the competition format, the venues, etc.;
- how Whereabouts Failures would be dealt with as well as the results management process;
- the preferred method of communication between the ITA and the winter Olympic IFs (i.e., ADCOM);
- how intelligence and APMU recommendations received would be dealt with;
- prompts regarding actions to take on samples collected by the IFs on any athletes potentially taking part in the Games (i.e., requesting quick turnaround analysis, ensuring that any Adverse Analytical Findings (AAFs) received were promptly reported and dealt with, etc.);
- reminders regarding the IOC’s long term storage policy; and
- confirmation of IF representatives and contact information.

While the IO Team thought the SSPs were a great example of cooperation, leveraging the expertise and experience of all winter Olympic IFs to ensure robust anti-doping procedures were developed and implemented for the Games, they also served to ensure that all sample collection personnel had a sound knowledge of the sports and disciplines. In particular, several DCSMs reported to the IO Team that many Chaperones and DCOs were not familiar with winter sports and that the SSPs were extremely useful in bringing them up to speed. In addition, many IF representatives on-site during the Games commented on the usefulness of the SSPs and their appreciation for having been consulted.

Commendation:

- *ITA, winter Olympic IFs, Beijing 2022:* The IO Team would like to commend the ITA for developing, in collaboration with winter Olympic IFs and Beijing 2022, comprehensive SSPs. The IO Team encourages the ITA to continue to develop such protocols and to share them with future organizing committees as soon as possible before the event to foster training of sample collection personnel that is as sport specific as possible.

10.0 Test Distribution Plan (TDP)

10.1. Pre-Games Testing and Sample Storage

Building on the work of taskforces established prior to previous Olympic Games (i.e., Rio 2016, PyeongChang 2018, and Tokyo 2020), and recognizing that a Games-time anti-doping program has limitations with respect to its ability to detect doping given that athletes may have engaged in doping behaviors well in advance of Games-time, the ITA established a Pre-Games Expert Group ahead of the Beijing Games.

This Pre-Games Expert Group, which took up its work in April 2021, included ITA staff and six experts from winter Olympic IFs and NADOs. For the first time, the group invited an athlete representative (who was also coincidentally part of the IO Team) to join the Pre-Games Expert Group as an observer. This group conducted an extensive risk assessment which took into consideration not only the risk of the sports and sports disciplines included in the Beijing Games program but also the specific risks associated with prospective athletes (e.g., changes in performances, testing history, etc.). The outcome of this evaluation led to over 5,000 testing recommendations issued to winter Olympic IFs and relevant NADOs. To ensure the confidentiality of the information shared, and to promote greater collaboration, testing recommendations were issued via the ITA's online SharePoint platform. This meant that the ITA, the IFs and/or the NADOs could update athlete information (e.g., advise that an athlete originally set to participate in the Games had, in the end, not qualified) as well as testing information (e.g., to track tests conducted). This ensured a collaborative, dynamic and flexible approach to pre-Games testing. While additional information can be found on the ITA's website⁵, the recommendations' implementation rate of 80 percent⁶ shows a commitment from winter Olympic IFs and NADOs to ensuring that their athletes were subject to a robust testing program ahead of the Games. The IO Team would also like to note that, based on information provided by WADA, most medalists (97%) were tested at least once in-competition or out-of-competition in the year leading up to the Games and many were tested several times.

⁵ For additional [pre-Games testing information](#).

⁶ Some of the remaining 20% reflect recommendations that, for example were provided for athletes who did not, in the end qualify for the Games.

In December 2021, the ITA invited all winter Olympic IFs and NADOs to store samples collected during the time leading up to the Beijing Games and utilize their pre-Games sample long-term storage program⁷. This program, set up with a dedicated IOC fund and with the support of WADA, offers ADOs the infrastructure to store their samples at no further cost. ADOs retain ownership and authority over their respective samples and can request further analysis at any time.

In the lead up to the Games, in addition to leading the Pre-Games Expert Group, the ITA, on behalf of the IOC, coordinated testing on 79 athletes (110 samples) between 27 November 2021 and 26 January 2022 (i.e., the IOC's extended jurisdiction period). These tests, which were funded by the IOC, were conducted on athletes that had received little or no testing.

As the Pre-Games Expert Group concluded its work, any remaining testing gaps were shared with the ITA and integrated into the Games-time out-of-competition TDP. Given the ITA's involvement with the Pre-Games Expert Group and their role during the Games as the organization responsible for developing and implementing the TDP, the transition between pre-Games and Games-time was seamless.

While testing athletes in the lead up to a major event is important, so is ensuring that the laboratory has reported results. As the ITA reminded all winter Olympic IFs in their SSPs, the IO Team would also like to remind all ADOs of the importance of ensuring that laboratories are well informed of the sample priority so that results, particularly AAFs, are reported with sufficient notice prior to an event in which the athlete is due to compete. A case in point is the extremely unfortunate situation of a figure skating athlete whose urine sample collected several weeks before the beginning of the Olympic Games returned an AAF⁸. The result was reported after she participated in her first event. This is not the first time that a positive pre-Games test was reported during the Olympic Games as at least one athlete from the Tokyo Olympic Games received notification of a positive test during the Tokyo Olympic Games based on a pre-Games test.⁹ All athletes coming to the Games should be able to enjoy their experience and know that they are competing on a level playing field. This situation was not only challenging for the IF, NADO, IOC and ITA to manage but also, from an IO Team perspective, extremely sad to witness.

Commendation:

- *ITA, IOC:* The IO Team commends the ITA for establishing a Pre-Games Expert Group ahead of the Beijing Games, which included a diverse range of expertise and offered test recommendations to be implemented in a collaborative manner between the winter IFs and NADOs. The IO Team encourages the ITA to reflect on how early any future Pre-Games Expert Group should begin its work. The IO Team also commends the IOC for funding additional tests that were conducted on prospective athletes in the two months prior to the start of the Games. This important work further highlights the ITA's and the IOC's commitment to protecting the integrity of the Olympic Games.
- *IOC, ITA:* The IO Team commends the ITA and the IOC for continuing to offer to all ADOs the long-term storage of samples collected during the pre-Games period, and for actively inviting winter IFs and respective NADOs to make use of this program at no cost.

⁷ For additional information on the [long-term storage program](#).

⁸ For additional information on this situation: [WADA Press Release](#).

⁹ For additional information: [Tokyo statement](#).

Recommendation:

- *ITA*: While the IO Team commends the ITA for including a former athlete in the Pre-Games Expert Group, we encourage the ITA to review whether the athlete representative's role should be as a substantive member, rather than observer, from the outset.
- *ADOs*: While Pre-Games testing is crucial to protect the integrity of a major event, so is ensuring that all analytical results for those tests have been received. The IO Team calls on all ADOs to ensure that measures be put in place to avoid, as much as possible, a similar situation occurring in the future. For example, samples from athletes attending the Games should be prioritized by ADOs and quick-turnaround times should be requested by ADOs from laboratories. A review of ADAMS data should also be conducted by relevant Testing Authorities to ensure all analytical results have been received in a timely manner. The IO Team calls on WADA to review this situation and determine, as the global regulator, what measures can be put in place to minimize, if not eliminate, such unfortunate situations for future events. A similar recommendation to all ADOs was issued in the Tokyo 2020 Olympic Games' IO report.

10.2. Games-Time Test Planning and Implementation

The Games-time TDP was designed following a thorough and well-considered risk assessment, which was developed in collaboration with several external experts. The risk assessment featured a three-step approach involving, as a first step, the in-depth analysis of the physiological risk of the sports and disciplines included in the Olympic program. The second step focused on a risk assessment of the countries participating in each sport and/or discipline (i.e., evaluating the prevalence of political or economic corruption, the history of anti-doping rule violations, the number of samples collected, etc.). The third and final step focused on an athlete-specific risk assessment in order to identify the athletes that were deemed at a higher risk of doping based on performance, testing history, other intelligence, etc. and, therefore, should be prioritized from a testing perspective. This meant that the tests planned for these Games were distributed and allocated in a well-thought-out manner. The decisions on how and why to allocate tests by sport, by discipline, by country and by athlete were informed and underpinned by a strong rationale.

The TDP called for 2,200 tests to be conducted (with an additional 100 tests as a contingency). Almost 50% of those tests were allocated to out-of-competition testing, and almost all of the tests implemented during these Games, whether in-competition or out-of-competition, were target tests, which is a significant undertaking achievement.

Given the ITA's involvement in the pre-Games testing efforts, the transition to Games-time was extremely smooth and efficient. When the pre-Games team tagged the Games-time team, a list of priority athletes was provided which served as the starting point for out-of-competition target testing. In addition, during the Games, the ITA was constantly reviewing athlete information, outcomes of testing missions, APMU recommendations, feedback received from NADOs and IFs, etc. to inform athlete selection.

While the IOC's 'clean podium' policy meant that a certain number of top finishers were typically selected for testing, additional tests conducted in-competition were almost all target tests. Specifically, while the DCSM had an idea of the total number of tests to be conducted, for the athletes that were outside of the pre-determined top five or six, this information was often 'pushed' to the DSCM tablet device very close to the end of a race or revised during the race based on new information the ITA had received (e.g., APMU recommendations). On the rare occasion that random selections were conducted, a digitalized

randomizer was used (i.e., the ITA's random number generator software). This ensured that random selections were truly random and consistent across the sports.

Commendation:

- *ITA*: The IO Team commends the ITA for its comprehensive approach to the high level of target testing given the significant amount of work involved.

10.3. Athlete Biological Passport and Athlete Passport Management Units

In addition to the priority list athletes mentioned above, the ITA received and reviewed information from NADOs, IFs and APMUs to further inform their testing plans.

As it relates to the work of APMUs, the system in place was similar to the Tokyo Games. The ITA worked with the 16 existing APMUs and, before the Games, reached out to all to outline the processes that would be in place for Beijing. In addition to providing feedback in ADAMS, all APMUs were provided with access to ADCOM where APMU recommendations of target testing or additional analysis could be provided, promptly reviewed by ITA staff, and feedback provided to the APMU. This allowed for a swift and efficient exchange of ideas between the ITA and relevant APMUs. Given the positive feedback received from APMUs after Tokyo, this was replicated for Beijing. APMUs were conducting reviews in most cases within 24 hours, and the ITA had staff in Beijing and Lausanne reviewing their recommendations, offering round-the-clock coverage. While 16 APMUs operate worldwide, for winter sports and the Winter Games, some are relied upon more closely since they conduct the blood ABP reviews for the International Skating Union (ISU), the Fédération Internationale de Ski (FIS) and the International Biathlon Union (IBU), in particular. Recognizing that the involvement of those APMUs would be vital for a successful Games-time program, the ITA met the costs for weekend work conducted by some APMU staff in order to minimize any delays.

In contrast to some concerns in terms of responsiveness of APMUs, which was raised during the Tokyo Olympic Games and further highlighted in the IO report from Tokyo, the ITA shared with the IO Team that they were fairly satisfied with the level of engagement and responsiveness from APMUs. During the Games, 163 recommendations were issued by twelve APMUs. These recommendations, whether for target testing or additional analysis, were reviewed by the responsible ITA staff and promptly uploaded within the athlete's PASS profile for the ITA's testing team to action or shared with the laboratory via the SharePoint platform.

Recommendation:

- *IOC, ITA, WADA*: While the IO Team observed efficient operations, and the ITA was satisfied with the engagement of APMUs, the ITA (and IOC) expressed its willingness to continue discussions with WADA regarding any further improvements that could be made to the management and review of ABP data in the context of major games (e.g., ensuring engagement from all relevant APMUs, prompt response times, etc.). The IO Team encourages WADA, the ITA and the IOC to discuss any improvements that can be considered in the context of a major Games.

10.4. Location and Whereabouts Information

While knowing which athletes to test is important, almost equally as important is knowing where an athlete is located to ensure that tests can be implemented as quickly and as efficiently as possible. The issue of

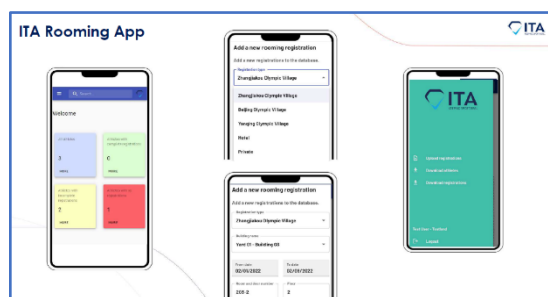
location information and/or whereabouts information is one that continues to be a challenge (and reported in almost all previous IO Team reports).

Ahead of the Games, the ITA collaborated with the seven winter sport IFs involved in the Beijing Games to request a list of athletes included in the respective IFs' Registered Testing Pool (RTP) or Testing Pool (TP) and recommended that IFs send a letter to each Olympic athlete prior to the commencement of the Olympic Games to remind them of their obligation to continue to submit whereabouts information during the period of the Games.

Recognizing that many athletes are not included in a RTP, and therefore, not required to provide whereabouts information in ADAMS, the ITA once again used its rooming application (rooming app) for the purpose of gathering rooming information during the period of the Games. While this requirement can be seen as an additional burden for RTP athletes, who are already required to provide detailed information daily, it should be noted that the requirement to provide rooming information is a NOC requirement under the IOC Anti-Doping Rules.

Close monitoring of the information in the rooming app was conducted by the ITA which provided the IO Team with regular updates on the quality of information and level of compliance. By the time that all of the athletes had arrived in Beijing, the level of compliance was at an impressive 100%.

While the ITA and Beijing 2022 reviewed ADAMS information when planning tests and issued at least one apparent Filing Failure during the period of the Games, the information provided in the rooming app often proved more detailed. The ITA also developed and implemented (in collaboration with Beijing 2022) guidelines for locating athletes included in a RTP as well as the procedures to follow when testing within the athlete's one-hour timeframe. This was a specific recommendation from the Tokyo Olympic Games' IO report, which the ITA onboarded.



Commendation:

- *ITA, NOCs*: The IO Team congratulates the ITA, and all NOCs, for the level of full compliance obtained regarding location information provided via the rooming app.
- *ITA*: The IO Team would also like to commend the ITA for reviewing whereabouts information provided in ADAMS, issuing Filing Failures as necessary, and for the development and implementation of its one-hour timeframe testing protocol.

Recommendation:

- *WADA*: Recognizing that the provision of whereabouts information is a means to an end, the IO Team recommends that WADA explores whether its rules regarding the provision of whereabouts information could be revised for RTP athletes in the context of a major Games. For example, as it relates to ISTI Article 4.8.8.4, could WADA explore extending the provision whereby RTP athletes do not have to specify a 60-minute time slot when participating in a major Games and sufficient information is available from the athlete and from other sources to find the athlete for testing, as is possible for international events governed by IFs? While the IO Team recognizes that WADA alone

cannot impose this change and that the anti-doping community would need to be consulted, the IO Team believes it is, at a minimum, worth consideration. As a further suggestion and while not every MEO will have a developed rooming app like the ITA did, WADA could explore whether a similar function/app could be added to ADAMS and/or Athlete Central.

11.0 Doping Control Team

For athletes, the Olympic Games are the culmination of years of training and competing in order to earn one of the very few coveted spots on an Olympic team. When putting together an Olympic team, the best athletes are selected. The same should apply when trying to put together a doping control team. While previous IO reports have raised several concerns in the area of sample collection personnel, from lack of experience by some DCOs, to insufficient training and language skills of Chaperones, to improperly staffed Doping Control Command Centers (DCCCs), none of those concerns were raised in Beijing.

The doping control team in place at the Games was excellent, and the IO Team was impressed by the recruitment and training plan developed and implemented by Beijing 2022, with the support of the ITA and PWC. While the pre-Games doping control team included 11 Beijing 2022 staff and four interns, to manage sample collection personnel and operations during the Games, 31 Beijing 2022 staff and 11 volunteers were on-site and allocated to the three DCCCs (for further details section 11.3 'Management' below).

The Beijing 2022 team managed 591 individuals, consisting of:

- 24 Doping Control Station Managers
- 103 Doping Control Officers, including 29 International Doping Control Officers (IDCOs)
- 50 Blood Collection Officers (BCOs)
- 19 Doping Control Venue Coordinators
- 23 Chaperone Coordinators
- 372 Chaperones

11.1. Recruitment

Recruitment for local DCOs began in the summer of 2020 and included interviews, practical sample collection procedure evaluations, and extensive English oral skills assessments. The recruitment strategy implemented ensured that only the best applicants were recruited for the Games¹⁰ and matched to a position that best fit their skill set (i.e., DCSM, Chaperone Coordinator, DCO, etc.). With a strong local NADO in place, 70 DCOs came from CHINA and 40 new DCOs were recruited.

Readers of previous IO reports will know that the importance of the Chaperone's role is often underestimated. As an example, the IO report from the 2018 PyeongChang Olympic Games noted that the language and communication skills of the Chaperones appeared not to have been evaluated or tested, which resulted in many Chaperones' inability to communicate with athletes and fulfill their duties properly. Emphasis was put on the fact that language proficiency and knowledge of the anti-doping procedures must be included in the training and final selection of those individuals.

¹⁰ In the recruitment phase, potential Games-time DCOs had to pass a written and oral English test. Over a dozen did not and as such, were not selected for the Games.

Acknowledging the importance of communication skills, Beijing 2022 established a partnership with seven Chinese universities. This partnership meant that Beijing 2022 worked with an English teacher from the universities to conduct interviews with interested candidates as a first step. These interviews were conducted online between December 2020 and March 2021, included a DCO, and assessed each potential candidate using a pre-determined scoring matrix.



IDCOs were recruited via their respective anti-doping organization and, in recruiting those DCOs, Beijing 2022 had established specific criteria. In particular, Beijing 2022 outlined the knowledge and experience required (e.g., minimum of four years of experience as a DCO, major event experience, etc.), the communication skills needed, and also focused on DCOs with particular experience in certain winter sports, namely those with which local DCOs had less experience.

11.2. Training

Whether a local DCO, an IDCO or a Chaperone, all were subject to extensive theoretical and practical training on all aspects of sample collection. Training sessions were developed and delivered by Beijing 2022 in partnership with different experienced organizations such as CHINADA, the ITA and PWC. For example, CHINADA ensured that Games-time DCOs participated in at least six sample collection missions in 2021, including attending national and international test events. All DCOs, whether local or international, were required to complete the ITA's IDCO training program, and all Chaperones completed the newly created ITA Chaperone training. PWC delivered several online training sessions on its MODOC system ahead of the Games. In addition to the missions organized by CHINADA, Beijing 2022 also ensured that all personnel were provided with practical opportunities. These practical opportunities, whether virtual or in-person, were evaluated via a pre-determined scoring matrix. Care was taken to also provide Beijing 2022 specific information in addition to COVID-19 countermeasures.

Individuals selected for the Games were then organized into 17 venue doping control teams spread across the competition venues and the village doping control stations. As such, between January 2022 and early February 2022, onsite training was provided to DCOs and Chaperones, by venue team. This training was developed and delivered by the DCSMs and focused on Games specific information, rules, and procedures. Again, practical exercises were included and focused on venue flow, notification areas, case scenarios, mock sample collection sessions, etc. This training was aimed at reinforcing and ensuring consistency in practices while allowing for venue specific adjustments. After each training session, an online test was administered.



11.3. Management

To manage the venue doping control teams and their operations, a DCCC was set up in each of the three athlete villages located in Beijing, Yanqing, and Zhangjiakou. The main DCCC was in Beijing, and it was staffed by 21 experienced individuals and supported by six volunteers. The Beijing DCCC and its staff had oversight for the management and coordination of the doping control personnel and doping control operations at the venues in the three zones. The DCCC in the other two villages were responsible for the

management of the doping control venues and sample transportation in their own zones. The DCCC in Yanqing included four staff while the one in Zhangjiakou included six staff and six volunteers.

The DCCC in Beijing, as the main DCCC, was truly the ‘nerve center’ that received and reviewed any issues regarding sample collection procedures, sample transportation, as well as sample collection personnel, and provided instructions on any remedial actions that needed to be implemented. This ensured consistency when responding to issues arising at one or more of the doping control stations. The DCCC was also extremely effective in ensuring appropriate information was disseminated to the various doping control stations. If an issue was raised by the ITA and/or the IO Team during the daily meetings, resolution of that issue was usually noticed the next day. Examples include issues raised in relation to DCOs omitting to inform the athlete to fully empty their bladder when providing a urine sample and/or reminding athletes of the benefit, from a specific gravity perspective, of providing at least 150 mL of urine. These matters were shared with all DCSMs swiftly, and a printed note was prepared and posted in the bathroom area to serve as a further reminder.

A typical management structure usually sees a DCSM in charge of the operations of the stations, a Chaperone coordinator that manages Chaperones, including conducting daily briefings, communicating with Chaperones via walkie-talkies, ensuring the right athletes have been notified, and supporting Chaperones with any issues encountered during notification and chaperoning. The team, of course, also includes DCOs and BCOs responsible for guiding athletes through the sample collection procedures and to implement said sample collection procedures in accordance with the ISTI. All of this was in place in Beijing. Of note, though, was the addition of a new position; that of the Doping Control Venue Coordinator. The Doping Control Venue Coordinator was responsible, in particular, for ensuring proper coordination with other functional areas during the Games, organizing sample transportation and ensuring transportation for athletes was available post-sample collection. Both the DCSM and the Venue Coordinator were on-site approximately three months prior to the start of the Games and were remunerated for their time. The IO Team felt that the addition of this role, and the fact that they were in their venue early, was a true asset and an example of an innovative approach implemented during these Games.

Commendation:

- *Beijing 2022:* The IO Team congratulates Beijing 2022 for the recruitment and training strategy developed and implemented for these Games. The sample collection personnel performed their roles to a very high level.
- *Beijing 2022:* The IO Team would like to commend Beijing 2022 for the emphasis placed on communications skills. In particular, we would like to highlight everyone’s proficiency in English, in particular the Chaperones, which was made possible due to a partnership with several Chinese universities.
- *Beijing 2022:* The IO Team would like to highlight the robust evaluations that were implemented throughout the recruitment and training phases. The IO Team understands that, for IDCs, feedback on their performance during the Games will be shared with the relevant NADO, service provider and/or ITA.
- *Beijing 2022:* The IO Team also commends Beijing 2022 for the inclusion of a Doping Control Venue Coordinator in their doping control team and for having them and the DCSM performing their role on-site, as remunerated staff, several weeks before the Games began. While the IO Team recognizes that this might not be possible to implement for all Games, especially larger events like the Summer

Olympic Games, we encourage future local organizing committees to consider whether this model could be implemented, at a minimum for larger venues.

12.0 Doping Control Stations

Doping Control Stations (DCS) were located at each competition venue, as well as the three athlete villages and the Beijing Olympic Medal Plaza. There were also three mobile doping control stations (i.e., camping RVs) available for transferring athletes from venues to the medal plaza if necessary. For the last day of competition, Beijing 2022 had also secured a specific 'rail car' on the high-speed train that would serve as a doping control station should this be needed. This was meant to ensure that any athlete from Zhangjiakou, who had been selected for doping control, could return to Beijing in time to participate in the closing ceremonies. The IO Team was impressed with Beijing 2022's focus on ensuring athletes did not miss out on any Games experience while ensuring that doping control was completed in a safe and secure environment.



In general, the IO Team found that the DCSs were very well managed and very well organized. For most, the number of processing rooms was proportionate to the amount of testing taking place, the size of the waiting room adequate for the particular requirements of the sport (e.g., athletes who arrive with a lot of equipment, etc.), and each had at least two additional rooms, one which served as an office for the DCSM and where equipment, as well as samples, were securely stored, and the other which was a dedicated room for the Chaperones. The dedicated Chaperone room ensured they had a place to leave their belongings and offered a place where they could eat and relax while not overcrowding the waiting room. While the DCSs were generally very good, the IO Team noted that a few waiting rooms could have been bigger (e.g., the Aerial venue and the Alpine venue given athletes were often arriving with big bags, ski boots, helmets, etc.) and one venue, the sliding venue, could have had more processing rooms, given it included events with four person teams (bobsleigh). This did not impact doping control and Beijing 2022 had already made notes of those improvements to share with future organizing committees.

Control of DCS access was extremely robust. A security guard was stationed at the entrance of every doping control station and verified that any individual seeking access had the proper doping control station pass. Immediately inside the doping control station was a registration desk which tracked entry and exit to the doping control station.

The Tokyo Olympic Games' IO report raised two issues for the local organizing committee to consider in this area for future Games: 1) to ensure that directional signage to the doping control station was included in the venues to ensure athlete support personnel could find the doping control stations and 2) to ensure that athletes were informed not to hydrate excessively upon arrival at the doping control station.

Beijing 2022 took good care to address those two matters. The IO Team found that directional signage in the venues was appropriate. While the ability to find the doping control stations by athlete support personnel wishing to join an athlete as a representative is important, the location of the doping control station should also afford some privacy. As such, most doping control stations were located away from the 'action' and when a member of the IO Team raised that for one doping control station in particular a camera near a door to the field of play might be able to capture an athlete entering into the doping control station, the doping control team at the venue, in collaboration with the Beijing 2022 DCCC, promptly added a temporary screen to block the sign identifying the doping control station.

As it relates to the second point, the IO Team observed that a selection of beverages was offered and available to the athletes upon their arrival at the doping control station and that a reminder to not hydrate excessively was posted on the walls of each DCS waiting room.

Recommendation:

- *LOCs:* While most DCSs were fit for purpose, a few could have benefited from larger waiting rooms and at least one from additional processing rooms. The IO Team recommends that Beijing 2022 shares the configurations of its DCSs, along with any lessons learned, with the ITA and future organizing committees to ensure that for future Games, DCSs can be further adapted to meet the specific requirements of the TDP and of the sports and disciplines in question.

13.0 Sample Collection Procedures

Overall, and in large part due to the quality of the sample collection personnel recruited and trained by Beijing 2022, the sample collection process implemented during the Games was excellent. Any minor issues that were identified by the IO Team during daily meetings were promptly addressed and corrected. Few, if any, issues were identified by athletes directly or by way of comment on the Doping Control Form related to sample processing.

The IO Team would also like to note that, in addition to implementing sample collection procedures in line with the requirements of the ISTI, sample collection personnel had to contend with numerous COVID-19 countermeasures. These measures were challenging and required DCOs and BCOs in particular to wear a full protective suit on top of their clothing, including shoe covers, a mask, a shield, and gloves. In addition, they were required to sanitize the processing room between every athlete sample collection, which meant wiping all surfaces, chairs, tablets, pens, etc. Despite the extra work that this created, for every sample collection process observed, the IO Team noted that this was done with the attention and care that it deserved to protect the health and safety of athletes and athlete support personnel.



13.1 Athlete Notification and Chaperoning

While it is often said that Chaperones are so important since they are the athlete's first encounter with doping control, it is critical to ensure that Chaperones recruited and trained are of the highest quality. As noted above, Beijing 2022 recognized that Chaperones are key to providing a positive experience for athletes selected for doping control, and the IO Team observed this first-hand. Chaperones took their responsibilities seriously and took good care to keep the athlete selections confidential, often stood outside in sub-zero temperatures for extended periods of time to ensure they were ready when the competition ended, verbally notified athletes of their selection of doping control as well as their rights and responsibilities, and diligently observed the athletes from the time of notification to their arrival at the doping control station. The IO Team observed very few issues in this area and the two that are raised, occurred early on during the Games due to a lack of understanding by individuals not involved in the doping control program, which were immediately addressed by Beijing 2022 and the ITA:

- One situation involved Chaperones being refused access to a changing room, which meant that they did not observe athletes for a short period. This was raised by the IO Team but also by the doping

control team on-site to the ITA and Beijing 2022 who immediately informed the relevant IF representative, met with relevant individuals on-site and resolved the issue promptly. While this issue was not related to a lack of proper accreditation but rather due to a misunderstanding, the IO Team does offer a recommendation regarding accreditation access below.

- The other situation involved Olympic Broadcasting Services (OBS) individuals who were less familiar with the role of the Chaperone and their need to have access to the mixed zone to follow the athlete, albeit discreetly and away from the cameras. While this had been raised with the individuals responsible for the mixed zone ahead of the Games, a reminder was provided to explain the doping control requirements and to find a suitable solution promptly.

The Sport Specific Protocols (SSPs) developed by the ITA in collaboration with each winter Olympic IF also contributed to the success of the notification and chaperoning. These protocols were clear on the selection criteria (which were for the most part all target tests), how and where notification should take place, etc. As was the case for the Tokyo Olympic Games, these protocols were very helpful, as were the IF representatives on-site who often ensured that the Chaperones had time and space to properly notify athletes before they were whisked away through the mixed zone.

Recommendation:

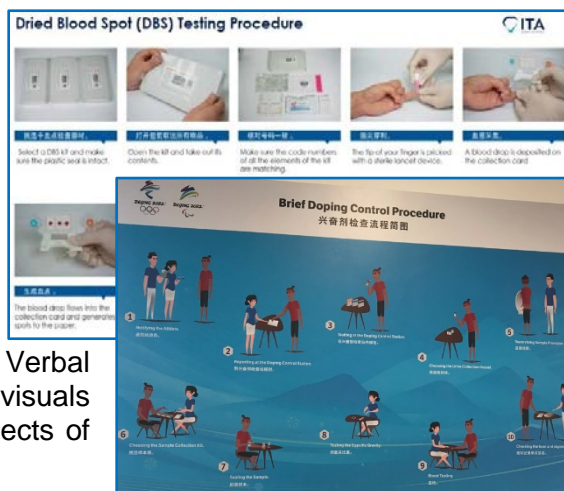
- *LOCs*: While the IO Team acknowledges that OBS staff generally understand the need for Chaperones to follow athletes everywhere, including in the mixed zone, we encourage LOCs to continue to reinforce this message ahead of the Games to the relevant individuals and, at the outset of the Games by meeting with relevant OBS colleagues on-site to review operations, discuss any issues and identify solutions.
- *IOC, LOCs*: While sample collection personnel had appropriate accreditation allowing them to fulfil their roles and responsibilities (e.g., properly chaperone athletes), the IO Team heard that it is challenging for the doping control team to negotiate with the relevant functional areas: specifically, access to field of play, press area, mixed zone, athlete residences. Given access to these areas is needed for each Game, the IO Team encourages the IOC (and LOCs) to consider whether it could specify the accreditation requirements needed for sample collection personnel, thus alleviating the need to negotiate this aspect for each Games.

13.2. Urine, Blood, and Dry Blood Spot Sample Collection

To ensure consistency of sample collection procedures, in addition to the training provided to all DCOs and BCOs, technical procedures were also documented by Beijing 2022. A Beijing 2022 Doping Control Technical Procedure supported by additional procedures developed by the ITA was diligently followed by the sample collection personnel. Notably, procedures related to testing athletes who are minors were conscientiously followed, as were the procedures related to partial and dilute samples. All athletes who initially provided a sample that did not meet the requirement for suitable specific gravity for analysis (i.e., 'dilute sample') were required to provide samples until the requirement for suitable specific gravity for analysis was met, unless exceptional circumstances made it impossible to continue with sample collection. All athletes ultimately provided a sample that met the requirement for suitable specific gravity although one athlete had a difficult experience of providing four samples over a nine-hour period while traveling to five different locations (competition venue, Olympic Village doping control station, the athlete's room, medal ceremony and back to the Olympic Village doping control station). This experience prompted the IO Team to recommend Beijing 2022 and ITA to ensure that the DCOs inform athletes to completely empty their bladders and remind the athletes of the benefit of providing a sample of at least

150 mL, on which Beijing 2022 and ITA immediately reacted as mentioned above (see section 11.3 ‘Management’ above).

Every processing room included a team of two DCOs/BCOs. While the IO Team recognizes that this is likely not possible for most Games, this duo ensured that, if any issues arose, with the tablet device, for instance, they could support each other or, while one was dealing with the technical issue, the other could witness the passing of the sample - this meant that the athlete did not have to wait too long. The IO Team noted that DCOs did a good job of explaining the process to athletes who had questions and were able to explain how the DBS process would unfold as this was new for most athletes. Verbal explanations were supported by many posters with vibrant visuals that the DCOs could point to when explaining certain aspects of the procedure to athletes.



While notification was conducted using a paper notification form, the rest of the doping control process was conducted using a tablet device. While the notification information needed to be transferred to the tablet, whenever possible, the information was transferred to the tablet while the athlete was in the waiting room and/or if the athlete was not ready to provide a sample. This maximized the efficiency of the process. While using a tablet did not necessarily reduce the processing time, especially at the outset of the Games as DCOs were conducting numerous reviews with the athletes to ensure the information was accurate, the use of tablets certainly minimized errors and/or omissions of any information. With regards to the use of tablets, the IO Team raises two observations for future Games to consider:

- **Scanning function:** the bar code scanning function did not seem to work as well as it should. Given this function further minimizes the possibility of errors, especially with something as important as the sample code number, further investigation as to the cause and remedial actions should be considered.
- **Pushing athlete information to the tablet:** while athlete information was ‘pushed’ to the tablet for out-of-competition testing, this was not done for in-competition testing. The ITA did explain the concerns it had in terms of data privacy (e.g., potentially a large amount of data locally available on a tablet for in-competition testing), which the IO Team can appreciate. Given that having the athlete’s information pre-filled saves a significant amount of time, the IO Team encourages the ITA and its partners to consider what may be possible. The IO Team also raises this point as this was one of the few improvements shared by athletes during sample collection, i.e., “Why can’t my information be pre-filled?” or “I’ve already been tested here in Beijing, why do I need to enter all this information again?”

The IO Team is of the view that urine, blood, and DBS sample collection procedures were implemented in accordance with the ISTI, and that DCOs and BCOs provided a good level of guidance and explanations to athletes who required it. While most of us will agree that having to provide a urine and/or a blood sample is not necessarily at the top of our list, in addition to providing good technical information, the DCOs and BCOs were very friendly in their approach to make this experience pleasant and comfortable for the athletes.

Recommendation:

- *ITA*: As the IO Team noted, the use of the tablet worked very well during the Beijing Games. While athlete information was ‘pushed’ to the tablet for out-of-competition testing, this was not done for in-competition testing. While the IO Team appreciates some of the challenges associated to this, given that having the athlete’s information pre-filled saves time and minimizes errors, the IO Team encourages the ITA and its partners to consider what may be possible in the future.

14.0 Storage, Security, Transport and Chain of Custody of Samples

Once the sample collection was completed and the athlete had left the processing room, with a special Games-related gift in hand (i.e., New Year’s ornament, pins, and stickers) offered by Beijing 2022, the DCO would bring the urine and/or blood samples immediately to the DCSM who would store them securely in the refrigerator for urine or in the dedicated transport bag for blood or DBS. It should be noted that the IO Team also saw that the required temperature data logger was in the blood transport bags. All samples were kept under lock, and the DCSM was the only person with a key. At the end of the sample collection session, DCSMs were responsible for preparing the samples for transfer to the authorized courier company. This included creating the Chain of Custody (CoC) form in MODOC, reviewing that the sample code numbers from the boxes matched (i.e., all samples are included on the CoC form), adding any information meant for the laboratory, including the courier waybill number as well as the transport bag seal numbers and signing off once completed.

The samples were delivered to the Beijing Laboratory throughout the day and night, and particularly between the afternoon and very early hours of each night. A unique and complex sample delivery system was devised in order to transfer samples from the DCSs to the Laboratory in respect of the Olympic “Closed Loop” system which was implemented to mitigate the impact of the COVID-19 pandemic.

As briefly described above, the first step involved DCSMs transferring the samples, packaged in sealed transport boxes, to dedicated couriers just outside the venue (i.e., outside the “Closed Loop”). The couriers then transported the samples in their fleet vehicles to the Laboratory. Upon arrival, the fleet vehicles stopped just outside the “Closed Loop” of the Laboratory, and the samples were brought into the Laboratory by one of six designated courier sample delivery personnel. The sample delivery personnel (the only personnel from outside the “Closed Loop” that were authorized to enter the Laboratory’s control zone) were required to fully dress “head-to-toe” in sanitary Personal Protection Equipment (PPE) in order to enter the Laboratory control zone. The sample boxes were then brought by the courier sample delivery personnel into the Laboratory’s security building entrance. The guards checked the delivery and allowed the delivery to proceed. The samples were taken through a dedicated and secure sample delivery entrance to enter the Laboratory.



Once in the Laboratory, the sample packages were transferred to the Laboratory reception staff through a pass-through window. The Laboratory sample reception staff were ready to receive the samples and immediately opened the transport boxes and processed the samples. At each transfer stage (DCO to Courier and Courier to Laboratory), the sample transport boxes were sprayed with disinfectant as part of sanitary measures in place.

On several occasions, an IO Team member was able to observe the transfer of samples from a DCS to the secured zone in the Beijing

Laboratory. However, due to the strict conditions in place, this was not possible without advanced planning and the assistance of Beijing 2022. The couriers and their vehicles were considered outside the “Closed Loop”; therefore, the IO Team was not able to accompany the samples in the courier vehicle during the delivery process. However, the courier and their vehicles were outfitted with cameras that took video footage of the samples when in the custody of the courier. Upon the IO Team’s request, the video footage was made available to the IO Team for several deliveries. We are thankful for the assistance provided although the IO Team recognizes that the element of witnessing the sample delivery without prior notice was missing. The IO Team was not in the position to witness any sample shipment, at any venue, at any time as is customary to ensure that the system is working properly and to expectations. However, the steps taken do give a measure of confidence that the integrity of the sample transportation procedure was intact (to the level that was possible under the circumstances of the “Closed Loop”).

On one occasion, the delivery of samples from the Capitol Indoor Stadium to the Laboratory was witnessed. Two IO Team members were required in order to follow the sample delivery from the venue to the Laboratory. However, even with two IO Team members following the samples at various stages, it was not possible to maintain line of sight of the sample packages during the entire shipment due to the COVID-19 restrictions. As mentioned, the IO Team was not permitted to be present in the courier van with the samples (which was considered outside the “Closed Loop”). In order to witness the transfer process of the sample packages from the “Closed Loop” and the “Opened Loop” (DCO to Courier), the two IO members had to position themselves inside and outside the Capitol Indoor Stadium to maintain line of sight of the samples. One IO member witnessed the packaging of the samples in the DCS and followed the samples from the DCS to the point of transfer to the courier who took custody of the box, sprayed disinfectant and placed the sample box into the courier vehicle. The second IO member then entered a Beijing 2022 vehicle (arranged specifically for this exercise), which followed the courier vehicle from the venue to the Laboratory. The second IO member then witnessed the sample delivery procedure as described above.

Other missions were conducted to witness the sample delivery procedure, with various degrees of completion considering the restrictions in place:

- Sample delivery from DCSs (Beijing Athlete Village and National Speed Skating Oval) to courier. Many attempts to witness the sample delivery procedure were limited (due to the restrictions) and completed up to when the courier took possession of the sample transport boxes just outside the venues.
- Sample delivery from DCS (The National Biathlon Centre – Zhangjiakou) to courier. The samples were followed from their sample collection procedure to the final refrigerator where they were stored at 4 °C until they were transferred to the courier at a specific pre-scheduled time. However, the delivery parcel previously scheduled for 22h00 was cancelled and moved to 00h00. Due to the logistics with transportation (i.e., “Closed Loop” and the distance from Beijing), it was not possible to follow the delivery of the samples to the Laboratory.
- Chain of custody of samples from collection to the refrigerator storage at the DCSs was observed on a regular basis.
- Chain of custody of samples from two different DCS located at the Yanqing Zone (National Alpine Ski Centre and National Sliding Centre) to the Yanqing Olympic village and the transfer of the samples from the Yanqing Olympic village to the Courier were also observed.

A few issues were identified during the Games which were promptly addressed by Beijing 2022. For example, there was adjustment needed at the outset of the Games regarding the tracking information of

the sample transport boxes. The boxes were sealed with a blue numbered/barcoded tag (i.e., seal code). However, the electronic DCF file sent to the laboratory contained a waybill number but not the seal code. Therefore, Beijing 2022 quickly adjusted their procedures and included the waybill code on each urine and blood sample transportation box to ensure traceability with the electronic sample collection information sent to the laboratory.

Recommendation:

- *LOCs*: The sample transport and transfer system in place for the Beijing Games was unique and specific to the Beijing Games. There is one recommendation the IO Team offers that could benefit future LOCs, which is that sample boxes/bags have identification (seal number, box number, waybill, etc.) that allows the DCS and laboratory staff to readily scan a barcode ID into their respective systems. In addition, this barcode ID should be included in the doping control .csv file which is sent to the laboratory. This would further improve the traceability in the CoC.

15.0 Beijing Laboratory Activities

15.1. General

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. For the Beijing Games, the existing WADA-accredited laboratory facilities, located in Beijing, were utilized for the Games analytical testing services. The Beijing Laboratory is located on the National Olympic Sports Center campus and in close proximity to many of the Games venues in Beijing.

The Beijing Laboratory operated 24 hours a day, 7 days a week, to analyze athlete samples and safeguard the integrity of the Games. It is commendable that the Laboratory successfully prepared for and achieved high-quality operations under the very challenging conditions imposed by the COVID-19 pandemic and the very strict COVID-19 restrictions in place to mitigate its impact during the Games.

WADA assessment teams (composed of WADA Science staff and external laboratory experts, including members of the WADA Laboratory Expert Advisory Group and/or technical working groups) made several visits to the Laboratory in the lead-up to the Games. In total, three WADA technical assessments of the Laboratory's Games preparations were conducted, including a remote assessment in September 2021 and two on-site assessments, in October and December 2021, to ensure that the Laboratory was operating in compliance with the 2021 ISL and its related Technical Documents and Technical Letters.

Two IO Team members with laboratory expertise were assigned to witness the Beijing Laboratory operations from the opening of the Athlete Villages until the end of the Games. One IO member was on-site as of 27 January 2022 until the fourth day of the Olympic Games, after which the second IO member took over until the end of the Games (with a two-day overlap). In addition, the IO Team was present and able to witness, at least once, each laboratory shift to cover the full 24 hours of the Laboratory's operations.

15.2. Enhanced Security Measures

The Beijing Laboratory's security was based on a multi-level approach:

- The first level was the security of the National Olympic Sports Center campus (where the Laboratory resides). The entrance gates were manned by security guards and vehicles entering the campus were checked.
 - At the second level, the Laboratory implemented a security gate along its outer perimeter and several guards were posted along that perimeter. The only entrance into the Laboratory premises was through a security building with three security guards, who were on duty at all times. The accreditations/identification of all persons (Laboratory staff, delivery personnel, IO members) were verified before being allowed to enter the Laboratory premises.
 - The third level involved the Laboratory's internal control zones, which started with the restricted main entrance with two secure doors (one entry for personnel, the other dedicated to sample deliveries) based on authorized keycard access. Within the Laboratory, the control zones were further restricted to authorized staff, including restricted Laboratory analytical areas (sample handling, instrumentation) and sample reception and sample storage areas, all of which were based on keycard/biometric access.
 - In addition, a comprehensive CCTV system was implemented which covered the outside perimeter of the Laboratory (including all entrance/exits) as well as the internal laboratory areas including the analytical rooms, hallways, elevator and sample storage area. On-site security kept watch over the CCTV cameras in a dedicated room and were available to react if needed.
 - The sample reception room was restricted to only authorized Laboratory staff. Within the sample reception room, the sample storage walk-in freezer also was restricted to only authorized staff by keycard access. All entrances and exits were monitored, and the amount of time spent in the sample storage was supervised by on-site security staff and recorded via dedicated CCTV cameras.
- No issues were observed by the IO Team or communicated to it.

Commendation:

- *Beijing Laboratory.* The IO Team commends the Laboratory for establishing such a comprehensive security and monitoring system.

15.3. Staffing Arrangements

During Games-time, the 34 permanent Laboratory staff was complemented with approximately 61 trained national volunteers (local university science student volunteers trained for sample reception, aliquoting and initial sample preparation procedures) and 12 instrument manufacturer engineers (for instrument maintenance). Importantly, the Laboratory was supported by 20 international scientific experts from other WADA-accredited Laboratories around the globe, who had extensive anti-doping science experience and previous Games experience, to meet the unique analytical and operational challenges for a Games Laboratory. The international experts were chosen to complement the existing staff and allow high-level scientific expertise to be distributed in two of the three shifts required for the 24-hour operations. The international experts were scheduled in the two shifts during which most of the test methods were applied. The presence and commitment of the international experts at the Beijing Laboratory, in consideration of the personal and professional challenges imposed by the restrictive sanitary measures in place to counteract the COVID-19 pandemic (e.g., living/working in a “bubble” restricted to only the hotel and the laboratory) demonstrated once again the strong commitment of the anti-doping Laboratory community.

Recommendation:

- *Laboratories:* The IO Team recommends having international experts placed in all shifts to complement the Laboratory staff expertise during the entire 24 hours of operation.

15.4. COVID-19 Pandemic Impact

The COVID-19 pandemic and the restrictions implemented to mitigate its impact created an unusually demanding environment for the Laboratory to prepare for the Games and to operate during the Games.

During the two on-site WADA laboratory assessments, not only were the laboratory staff working within a similar “Closed Loop” system in which they were also housed in a quarantine hotel for several weeks after each assessment. In addition, the Laboratory staff (including the external experts and national volunteers) were required to be housed in designated hotels during the Games as part of the “Closed Loop”. This resulted in the permanent Laboratory staff being away from home for more than 50 days, in total (pre-Olympic Games to post-Paralympic Games), due to the sanitary requirements in place.

The strict sanitary conditions also challenged every aspect of the Laboratory preparations, including the effort required to select and complete the training of the national volunteers before the Games. Working within the “Closed Loop” required designated hotels, dedicated scheduled transportation, daily COVID-19 testing and adherence to the sanitary conditions by the entire Laboratory staff, including national volunteers and external experts. Everyone involved in the Laboratory activities was limited to only their hotels and the Laboratory (a “Closed Loop” within a “Closed loop”).

Commendation:

- *Beijing Laboratory:* The IO Team would like to highlight the Laboratory’s outstanding efforts to prepare and execute the Games testing services under such challenging conditions.

15.5. Sample Reception

After sample delivery on the first floor of the Laboratory building, samples were verified against the electronic DCF information and CoC paperwork. Details were recorded into the Laboratory Information Management System (LIMS) and then the samples were aliquoted. Only limited staff members had access to the sample reception and aliquoting rooms; the other staff members involved in the sample analysis were allowed to approach the door of the aliquoting rooms only to retrieve their aliquots for sample processing, and under the supervision of the staff responsible for distributing the sample aliquots.

The process of opening the sample boxes started by cutting the blue security seals and organizing the bottles on the Laboratory bench. Each step required that the Laboratory staff spray disinfectant on the delivery boxes, the sample boxes and sample bottles. This was well coordinated by the staff, and it required a considerable number of the national volunteers to perform each task. In addition, the sample bottles were packaged in leak-proof bags, which were also sprayed with disinfectant. The bags were cut open with scissors, and the bottles were then sprayed with disinfectant once more.

All sample bottles were aligned in the main sample reception bench. Next, the integrity of the bottles was visually inspected, and the bottles’ bar codes were scanned. Non-conformities, when noted, were recorded in the LIMS and, whenever relevant, communicated to ITA using ITA’s SharePoint Platform.

The non-conformities were readily addressed by ITA, and there was no significant delay in sample processing noted.

Approximately six Laboratory volunteers were necessary for the processing of a batch of samples at one time, including one that registered the bottles with a barcode scanner into the LIMS. 'B' samples were stored in the freezer, and 'A' samples were opened and then aliquoted. Depending on the number of samples being processed, one or several staff members performed the pouring process of the sample aliquots, and the other witnessed the actions and verified the procedure, including double-checking the codes between samples and aliquoted subsamples.

Commendation:

- *ITA, PWC:* The IO Team would like to commend the ITA for its effective use of technology. In particular, the Laboratory mentioned that the sample registration process using MODOC (i.e., PWC's paperless system) was more efficient than the approach used in its routine operations. It was also noted that MODOC helped improve the turnaround time of the sample registration process and reduced the possibility of errors related to the registration of the samples in the Laboratory's LIMS.

15.6. Sample Storage

The 'B' samples were stored immediately into the restricted sample storage walk-in freezer through a secured door operated with an electronic keycard access system. Laboratory's policy allowed only two people to enter the sample storage space at any one time. The entrance to the walk-in freezer was also monitored by security via a dedicated CCTV camera (see section 15.2: 'Enhanced security measures'). All persons entering the sample storage area used their security keycard badges to register themselves as well as their time of entry and time of exit. The 'A' bottles were stored in the walk-in freezer after completing the aliquoting procedure. CCTV cameras on both sides of the locked sample storage entrance allowed security to monitor the entry and exit of staff in order to react if anything unusual was detected. No security incidents were registered during the Games as far as the IO Team is aware.

In the final days of the Games, the IO Team verified the storage capacity of the walk-in freezer at a time when most of the Games samples had already been analyzed. The Laboratory planned to continue to restrict access in and out of the large, dedicated cold room to a limited number of staff members until the Games samples were transferred to the ITA's long-term storage facility located in Switzerland. There was ample space for all sample bottles, and the Olympic samples were stored in a dedicated area on shelves that were well-identified and organized.

As with prior Games, as part of the IOC's long-term storage and further analysis strategy, the ITA has arranged for the samples to be transported to their long-term storage facility where all samples collected during the Games period will be stored for the duration of the statute of limitations period i.e., 10 years.

15.7. Sample Analysis

The Beijing Laboratory analyzed all urine samples (2,273 samples) for all substances on the standard sample analysis menu. Approximately 17% of these samples (397 samples) were, as requested by ITA, analyzed for small peptides, e.g., Growth Hormone Releasing Peptides (GHRP), Growth Hormone Secretagogues (GHS), and Gonadotrophin Releasing Hormone (GnRH) and its synthetic analogues.

- It is noted that, in previous Olympics Games, laboratories applied the “small peptides method” systematically to all urine samples as requested by the organizing committee. However, this was not the case for the Beijing Games as the TDP identified a specific amount of analysis for the “small peptides method”, i.e., 321. As such, while the Beijing Laboratory did not allocate resources to apply this method to all samples, it did have the capacity to apply this method to close to 400 samples. Therefore, at the suggestion of the IO Team and with the agreement of the LOC to exceptionally cover the additional costs, the number of samples requested for small peptides analysis was increased during the Games in order to maximize the instrumental and expert staff capacity which was available in the Laboratory. Additional samples were therefore identified and requested by the ITA, bringing the total number of samples analyzed for sample peptides to 397.
- The Laboratory also performed the analysis of “large peptides” i.e., Growth Hormone Releasing Hormone (GHRH) and its analogues, Insulin-like Growth Factor-I (IGF-I) analogues, Insulins and Erythropoietin Receptor Agonists (ERAs), and/or conducted Gas Chromatography / Combustion / Isotope Ratio Mass Spectrometry (GC/C/IRMS) analysis to confirm the origin of steroids found in the urine samples, when requested by the ITA.
- The Laboratory had the capacity to analyze for Growth Hormone (GH) in serum (isoform test and biomarker test) and for EPOs in serum and plasma, as well as for the ABP markers, and Haemoglobin-based Oxygen Carriers (HBOCs), when requested by the ITA.
- In addition, the Laboratory applied a procedure for the detection of gene doping to the samples that were identified by the ITA.
- DBS samples collected as capillary blood were analyzed for the presence of exogenous steroid esters.

At the beginning of the Games, the Laboratory received and analyzed a large number of urine samples (more than 30 samples), which included multiple samples collected from the same athlete in a single sample collection session. However, the Laboratory was not able to determine which samples belonged to the same athlete in order to prioritize the analysis of the first sample collected and the subsequent sample with the highest specific gravity (as per the ISL). Following the IO member observation that the Laboratory was not provided information linking the multiple samples to a single athlete, Beijing 2022 quickly managed to improve the communication with the Laboratory and established a way to inform the laboratory of which samples should be prioritized when multiple samples were collected due to low specific gravity values (dilutes).

The dried blood spot (DBS) analysis was applied as a routine method at the Games for the analysis of presence of testosterone esters in blood, which gives unequivocal proof of the administration of exogenous testosterone. The implementation of DBS testing during the Games was the result of a successful collaboration between the IOC, ITA, CHINADA, Beijing 2022, the Beijing Laboratory and WADA, with the support of the [DBS Steering Committee](#).

For the first time, the DBS samples were collected as capillary blood via finger-prick. A DBS device recently developed by CHINADA (CoreShell), in collaboration with the Laboratory, was used. This device automatically transferred the capillary blood as three (3) blood spots (two spots as the “A” sample and one spot as the “B” sample) onto a Drug Metabolism and Pharmacokinetics (DMPK) card (as the absorbent sample support). The device also included a tamper-evident case to allow secured delivery of the DBS samples to the Laboratory. The device was an innovation that was developed in its final format

to incorporate the DMPK card, which was validated by the Laboratory, just a few weeks before the beginning of the Games. Therefore, the Laboratory needed to adjust its internal procedures under time pressure to accommodate the collection kit in their standard operating procedure. The DBS device also incorporated a tamper-evident shell that ensured a secure and efficient method to deliver the dried blood spots from collection to the Laboratory for analysis.

The Laboratory performed a liquid-liquid extraction to analyze the dried blood spots for testosterone esters (as oxime derivatives) using an instrument incorporating liquid chromatography coupled to high resolution mass spectrometry (LC-HRMS). The Laboratory was able to validate this DBS procedure through a method validation according to ISL and TD2021DBS requirements before the beginning of the Games. It was clear that the one LC-HRMS instrument that was installed for the analysis of DBS samples was being underutilized and as soon as the final DBS samples, based on the TDP, were delivered, and analyzed by the Laboratory, the instrument was adapted for other analytical procedures.

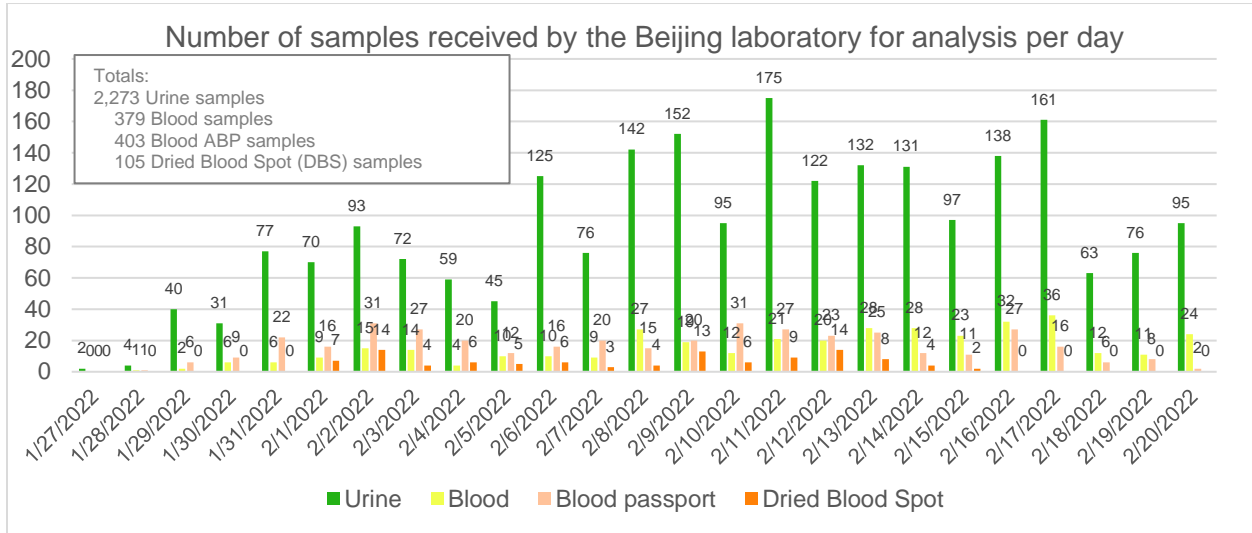
Commendation:

- *Beijing Laboratory:* The commitment and support of the Laboratory to implement the DBS analysis, after being informed of the essential details just weeks before the Games, is to be commended. The staff was able to adjust their procedures to accommodate last-minute changes made to improve the DBS collection kit.

Recommendation:

- *IOC, ITA:* For future Games, the IO Team recommends that the IOC (and/or the ITA) makes arrangements with the Olympic Laboratory to implement the small peptide method to all urine samples as in prior Games, and otherwise ensures the maximum testing capacity is applied. The Laboratory must be informed sufficiently ahead of the Games to implement the necessary resources and develop its analytical procedures to test all urine samples for small peptides.
- *IOC, ITA:* The IO Team recommends that the IOC (and/or the ITA) provides a draft TDP with as much detail as possible (i.e., in-competition and out-of-competition distribution, type and number of sample(s) per type of analysis, etc.) to the Laboratory at least six months prior to the opening of the Olympic Village to allow the Laboratory to verify that proper resources (i.e., human and equipment) and scheduling of those resources are implemented well ahead of Games-time testing. The IO Team acknowledges and recognizes the need for flexibility as the testing plans continue to be refined leading up to the Games and therefore, updated TDPs with further detail should also be provided to the Laboratory in the months leading up to the start of the Games.
- *IOC, ITA:* It has been recommended in previous reports, namely the PyeongChang Olympic Games IO report, that 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, EPOs, IRMS, small peptides or DBS analysis) well in advance (at least six months) before the start of the Games' testing. For the Beijing Games, the impact of the request to perform DBS analysis should not be underestimated. The information related to introducing this test into the TDP requires advanced preparations, from choosing the type of sample collection device and sample support card to informing the laboratory in order to implement the necessary equipment to perform the analysis as well as determine if further method validation is necessary.

Graph 1: Number of Daily Tests conducted in Urine, Serum, ABP Blood Passport and DBS Samples¹¹



The number of urine and blood (EDTA/ABP, DBS or serum) samples received for analysis per day are represented in the graph above (**Graph 1**).

The analyses performed were recorded in ADAMS as follows:

Urine Samples:

- 658 samples analyzed for EPOs (9 were based on further analysis requests according to ADAMS);
- 47 IRMS analyses performed (5 initial requests were made and the remaining analyses were follow-up requests); and
- 24 samples analyzed for large peptides (GHRH, IGF-I analogs, insulins).

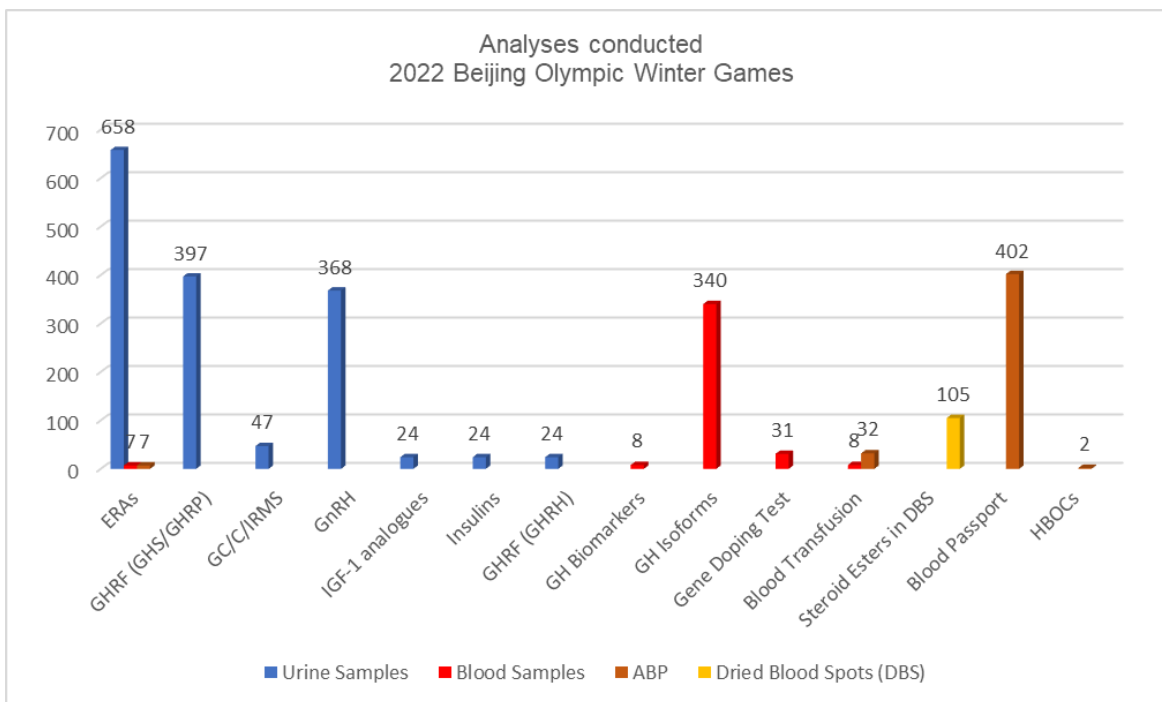
Blood samples:

- 348 serum samples analyzed for GH (340 GH isoforms, 8 biomarkers tests);
- 31 blood samples analyzed for gene doping;
- 105 analyses for steroid esters from DBS samples;
- 14 blood samples analyzed for EPOs (7 were blood passport samples analyzed for EPOs based on further analysis requests); and
- 40 analyses for HBT (32 in blood passport samples based on further analysis requests).

Below is a graph (**Graph 2**) outlining the number of samples that underwent additional analysis by the Beijing Laboratory for the various prohibited substances that are not normally screened in a standard urine analysis.

¹¹ As reported into ADAMS by the Beijing Laboratory with the IOC as the Testing Authority.

Graph 2: Number of Samples with Additional Analysis¹²



15.8. Reporting Results of Analyses

The agreed turnaround time for reporting negative analytical results was 24 hours (standard analytical menu) and up to 48 hours for EPOs/IRMS analysis results. The Laboratory noted that the agreed turnaround time of 48 hours to report negative results for the EPOs test was challenging; however, the Laboratory was able to accomplish reporting in time in approximately 90% of the EPO analyses during the Games.

The agreed turnaround time for reporting Adverse Analytical Findings (AAFs) was 48 hours (standard analytical menu) and up to 72 hours (EPOs/IRMS). All the AAF cases were reported between two-three days, except for one case which required additional time due to the detection of multiple substances in a single sample (the combination of different stimulant agents and an anabolic steroid in this sample made the analysis process more complex than usual, with the additional demand to be compliant with the recent requirements introduced in the WADA TD 2022 MRPL for the Minimum Reporting Level for stimulants). This also extended to the production of the Laboratory documentation package for this sample. The Laboratory managed the complexity of this case appropriately.

In total, 13 AAFs were reported by the Beijing laboratory, including six samples from the WADA double blind External Quality Assessment Scheme (EQAS) program. For further details, please see section 15.9 'Atypical Findings and Adverse Analytical Findings' of this report. All results were reported into ADAMS as expected.

¹² As reported into ADAMS by the Beijing Laboratory with the IOC as the Testing Authority.

In accordance with ISL Article 5.2.4.3.1.1, when a beta-2 agonist, a glucocorticoid or a stimulant (e.g., amphetamine) was identified in the initial testing procedure of a sample, the Laboratory did not proceed immediately to the confirmation procedure, but instead issued a TUE enquiry form to ask the ITA whether the athlete in question, had an approved TUE on file for the substance identified. Using this standardized request form allowed the ITA to respond to whether the Laboratory should confirm the presence of the substance based on the existence of an appropriate TUE. The ITA responses were received promptly, and the Laboratory was able to report the results with minimal impact on its routine operations.

As in previous Games, the ITA-Lab SharePoint platform was utilized to communicate securely on any sample irregularities or provide recommendations for follow-up actions (e.g., follow up samples if needed for targeting purposes, additional analyses on samples, etc.). This platform worked very well.

Commendation:

- *ITA*: As it relates to communication mechanisms, the IO Team wants to highlight that the chat functionality in the ITA-Lab SharePoint platform offered a secure way for the Laboratory staff to communicate issues to, and to receive feedback from, the ITA. Specifically, a Laboratory staff member provided feedback to the IO Team that the chat functionality was a very useful, efficient and secure way of communicating with the ITA.

15.9. Atypical Findings and Adverse Analytical Findings

The Laboratory reported 7 AAFs (see **Table 1** below) for different substances, from samples collected during the Games period. The Laboratory did not report any Atypical Finding (ATF) into ADAMS.

Table 1: Adverse Analytical Findings

Reported	Substance Reported (WADA prohibited List Class)
1*	dehydrochloromethyltestosterone (S1.1)
2	brinzolamide (S5)
3	triamcinolone acetonide (S9)
4	brinzolamide (S5)
5*	mesterolone (S1.1); 5-methylhexan-2-amine (S6); heptaminol (S6)
6	dehydrochloromethyltestosterone (S1.1)
7*	clostebol (S1.1)

* Samples for which a “B” confirmation procedure was requested and conducted by the Laboratory during the Games period.

The laboratory put in place an internal review procedure of the analytical data by the international experts to ensure the accuracy of the reported AAFs.

In addition, TUE enquiries for two samples were reported into ADAMS, for which the ITA confirmed that a valid TUE was on file (for terbutaline and amphetamine) and authorized the reporting of the sample’s test result as a Negative Finding.

Commendation:

- *Beijing Laboratory*: The process implemented by the Laboratory to document the internal review of the analytical data by the international experts was comprehensive and ensured the accuracy of reported results. This process is to be commended and the IO Team encourages future Games laboratories to contact the Beijing Laboratory to implement a similar procedure.

15.10. B Sample Confirmation Procedures

The Laboratory conducted three 'B' confirmation procedures, including one in which the athlete and their representatives were present for the opening of the 'B' sample. On the other two occasions, the 'B' confirmation procedures were conducted remotely by using two video cameras placed on the table used for the 'B' sample procedure and one laptop camera. In addition, an independent expert witnessed the two virtual 'B' confirmation procedures.

The IO Team was present at the first 'B' confirmation procedure performed during the Games. The athlete and their representatives were transported to the Laboratory by a vehicle that entered a dedicated secure zone which provided a measure of anonymity for the athlete before entering the security building of the Laboratory. The athlete and their representatives were then escorted into the dedicated 'B' confirmation room to witness the opening of the 'B' sample.

The 'B' sample was brought into the 'B' confirmation opening room from the sample storage area by a Laboratory analyst. The Laboratory deputy director and a Laboratory analyst conducted the 'B' sample opening. The Laboratory prepared a dedicated room for the opening of the 'B' bottle, which included a bench used for the support of all of the materials and equipment relevant to conduct the process, while the athlete and their representatives waited for the sample to thaw. 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 their representatives, including the opening of the 'B' bottle and pouring 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 resealed sample's integrity. The green cap number was recorded, and signatures were recorded on the 'B' confirmation form.

Since the 'B' sample was frozen and needed to thaw in the presence of the athlete, about 30 minutes were spent in the waiting room. During this time, the athlete and their representatives raised several questions on how such a substance would be present in the sample. As expected, the Laboratory did not engage into a discussion about the presence of the substance in the athlete's urine. Rather the Laboratory advised the athlete that such questions should be addressed to the Results Management Authority (RMA). The athlete also brought with them bottles of medicines and supplements and asked whether the Laboratory would perform the analysis to verify possible contamination of the material with the substance found in their urine. The Laboratory informed the athlete that, in compliance with the ISL, such requests shall be made to the responsible RMA.

The athlete was provided the opportunity to witness the entire procedure and stayed until the end of the analysis. During the eight hours of the procedure, the athlete followed the procedure or waited in the

Laboratory's restricted areas. The athlete's representatives left the Laboratory after the beginning of the Analytical Procedure.

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

Recommendation:

- *ADOs:* Given athletes are not often exposed to the 'B' sample confirmation process, the IO Team recommends that ADOs consider developing educational material to inform athletes of the 'B' sample confirmation process. This might be particularly helpful during a major Games as it is often when an athlete might elect to attend the 'B' sample confirmation procedure.

15.11. Double-Blind External Quality Assessment Scheme Samples

As part of the monitoring of the Laboratory performance, and as an essential part of the quality control of Laboratory processes during the Games, WADA, in agreement with the ITA, sent six double-blind EQAS samples to Beijing. Double-blind EQAS samples were introduced into the doping control procedure by Beijing 2022 and delivered to the Laboratory, just like any other sample collected during the Games. Therefore, the Laboratory did not know the content of the EQAS samples nor that such samples were from the double-blind EQAS and therefore these samples were handled as any other doping control sample.

The process of delivering the EQAS samples to the ITA (within the "Closed Loop" in Beijing) was particularly complex due to the COVID-19 restrictions in place and required collaboration between WADA, CHINADA, Beijing 2022 and the ITA. The ITA introduced these EQAS samples into the routine doping control procedure during the Games with support from relevant DCOs. The Laboratory did not know that these were WADA EQAS samples and assumed that these samples were normal doping control samples collected either out-of-competition (four samples) or in-competition (two samples). Nevertheless, during the introduction of one EQAS sample, a sample was incorrectly introduced as out-of-competition instead of in-competition as instructed. Therefore, the ITA (after the initial reporting of a negative result of this specific EQAS Sample based on an out-of-competition test menu) readily requested the Laboratory to reanalyze the sample with the in-competition test menu. The IO Team observed the introduction of four samples at the DCS in the Olympic Village (Beijing), one sample at the DCS of Genting Snow Park Arena (Zhangjiakou) during the Freestyle Skiing competition and one sample at the DCS of the National Biathlon Centre (Zhangjiakou), all of which were carried out without any issue. The double-blind EQAS samples contained representative substances from different classes of prohibited substances, including steroids, hypoxia-inducible factors (HIFs), diuretics, stimulants, and aromatase inhibitors, and required the application of different analytical methods, including a challenging IRMS analysis to confirm the external administration of testosterone. The Laboratory correctly reported all the results of the EQAS samples, providing strong assurance that the Laboratory was conducting its analyses in line with the mandatory requirements of the ISL.

16.0 Results Management

The ITA handled results management for potential ADRVs on behalf of the IOC in a prompt and efficient manner. The process implemented during the Games was guided by a clear internal policy, "Anti-Doping Rule Violation during Games-time Beijing 2022", drafted by the IOC in collaboration with the ITA. This

policy outlined, in particular, all of the required actions to be implemented by relevant parties as well as the relevant communications protocols.

Once the Beijing Laboratory reported an AAF, the ITA promptly conducted an initial review and shortly thereafter, notified the athlete, their NOC and NADO, WADA, and the IOC Legal Team as well as the IO Team. The notification included all of the required information, and the ITA routinely requested confirmation of receipt from the Chef de Mission of the athlete's NOC. The ITA made sure that the IO Team was provided with all of the information that it required.

The CAS ADD was appointed to hear all potential ADRV cases deriving from samples collected at the Games and selected a number of arbitrators who were present in Beijing. While the arbitrators were present in Beijing, due to COVID-19 restrictions, all hearings took place virtually. Additionally, pro bono legal services were provided by the Beijing Bar Association and Beijing Arbitration Commission (Beijing International Arbitration Center). While these pro bono services were mentioned in the initial CAS public communication regarding the arbitrators selected by CAS for Beijing 2022¹³, it was not mentioned in the ITA's notification letter to the athletes as it is not mandatory to do so. In the one hearing before CAS that the IO Team witnessed, the athlete used the pro bono services; however, the athlete only became aware of and used these services shortly before the hearing, therefore giving their pro bono counsel limited time to prepare. The CAS ADD arbitrator was very flexible and handled this situation well by allowing the pro bono counsel time to confer with their client during the hearing. It was clear from this experience that it would improve the efficiency of proceedings for additional measures to make athletes aware of these services at an earlier stage. The IO Team suggested that this information could also be added to the ITA notification letter as an additional means to ensure athletes were aware of this possibility. The ITA confirmed that they will consider this for future Games.

The ITA was also responsible for representing the IOC in front of the appointed CAS ADD panel. All of the potential ADRVs that occurred during the Games were Code Article 2.1 presence cases (i.e., AAFs). For cases where a non-specified substance was involved, the athlete was notified via the notification of the AAF that they were provisionally suspended, and the ITA quickly filed an application to the CAS ADD in accordance with the IOC ADR. The ITA published all decisions on its website¹⁴.

Regarding the case of the figure skating athlete, as mentioned earlier in the report, this case involved a pre-Games test conducted by a different RMA than the IOC, i.e., RUSADA, outside of the Games testing program. Consequently, when the test result came back positive, any decision related to both provisional measures and the merits were initially to be conducted by RUSADA as the RMA for this test. RUSADA initially imposed a provisional suspension on the athlete, which was implemented by the ITA for the Games. Thereafter, the athlete requested a hearing on the provisional suspension before RUSADA's Disciplinary Anti-Doping Committee, and RUSADA's Disciplinary Anti-Doping Committee decided to lift the provisional suspension of the athlete. Subsequently, WADA, ITA and ISU appealed the decision of the RUSADA Disciplinary Panel to lift the provisional suspension. Given that this case was an appeal of a decision from a pre-Games test, the CAS Ad Hoc Division, not the CAS ADD, had jurisdiction over this case. The IO Team made a request to the CAS Ad Hoc Division to observe the hearing in the athlete's case. This request was denied by the CAS Ad Hoc Division because the case in question did not arise on the occasion of the Games and not all parties consented to IO Team's presence at the hearing.

¹³ For information on the [pro bono services](#).

¹⁴ For additional information, please visit the ITA's website ([News and Results Management](#)).

The IO Team fully respected this decision, especially understanding that the case involved a minor, and also notes that there is no specific provision similar to Article 15(c) of the Arbitration Rules applicable to the CAS Anti-Doping Division Olympic Games Beijing 2022 in the Arbitration Rules applicable to the CAS Ad Hoc Division for the Olympic Games that allows for the presence of an IO Team member at a hearing. That being said, consideration should be made as to whether this should be the case for future Games as the IO Team plays an important role in providing an independent review of all aspects of the anti-doping program of the Olympic Games, specifically anti-doping cases before the CAS Ad Hoc Division that have such a profound impact on the Olympic Games.

Commendation:

- *IOC, ITA*: The IO Team would like to commend the IOC and the ITA for establishing clear procedures to follow in case of an ADRV. The IO Team also wishes to highlight the prompt and efficient way in which the ITA dealt with ADRVs reported during the Games.
- *CAS*: The IO Team would like to commend CAS for its cooperation and collaborative manner in communicating with the IO Team.

Recommendation:

- *IOC, ITA*: The IO Team would recommend providing information related to pro bono legal services in the notification letter of potential ADRVs to athletes in order to ensure that the athletes are aware of these services at the first possible instance that they may need them.
- *IOC, WADA, CAS*: The IO Team would recommend that these entities consider whether the remit of the IO Team should be limited to results management for tests occurring on the occasion of the Olympic Games or whether it should also apply to results management that impacts the Games. If so, it should consider the necessary rule changes to allow for such observation.

17.0 Appendices

17.1. TUE Statistics

The 29 TUEs recognized or granted for the Beijing Games covered the following substances classes or methods:

The 9 TUEs granted were:

- 2 from S7: Narcotics
- 6 from S9: Glucocorticoids
- 1 from M2: Chemical and physical manipulation

The 20 TUEs recognized were:

- 4 from S3: Beta-2 agonists
- 6 from S4: Hormone and metabolic modulators
- 7 from S6: Stimulants
- 3 from S9: Glucocorticoids

17.2. Sample Collection Statistics

Number of Athletes Tested

Number of Athletes Tested (as reported in ADAMS)	Number*	% out of the 2,897 Olympic Athletes Participating
Athletes Tested (once)	1194	41%
Athletes Tested (more than once)	426	15%
Total Number Athletes Tested	1620	56%

* This includes athletes tested in China outside the Closed Loop as well as athletes tested outside of China during the Games.

Type of Samples by Sport¹⁵

Sport – Discipline	Urine			Blood			ABP Blood Passport			Dried Blood Spot (DBS)			Grand Total
	IC	OOC	Urine Total	IC	OOC	Blood Total	IC	OOC	ABP Total	IC	OOC	DBS Total	
Skiing	457	429	886	39	82	121	3	199	202		26	26	1235
Cross-Country	131	191	322	16	34	50	3	172	175		5	5	552
Alpine	109	125	234	16	28	44					17	17	295
Freestyle	86	41	127	2	5	7							134
Snowboard	73	28	101	2	3	5							106
Nordic Combined	28	33	61	2	11	13		27	27		4	4	105
Ski Jumping	30	11	41	1	1	2							43
Skating	261	230	491	34	58	92	2	80	82		29	29	694
Short Track	82	74	156	11	19	30		21	21		12	12	219
Speed Skating greater than 1500m	69	56	125	9	12	21	1	40	41		3	3	190
Speed Skating 1500m or less	59	51	110	7	14	21	1	19	20		7	7	158
Figure Skating	51	49	100	7	13	20					7	7	127
Biathlon	124	135	259	15	23	38	1	118	119				416
Biathlon	124	135	259	15	23	38	1	118	119				416
Ice Hockey	104	181	285	21	39	60				1	22	23	368
Ice Hockey	104	181	285	21	39	60				1	22	23	368
Bobsleigh	81	131	212	15	33	48					19	19	279
Bobsleigh	61	107	168	11	26	37					15	15	220
Skeleton	20	24	44	4	7	11					4	4	59
Luge	40	56	96	7	13	20					8	8	124
Luge	40	56	96	7	13	20					8	8	124
Curling	38	12	50										50
Curling	38	12	50										50
Grand Total	1105	1174	2279	131	248	379	6	397	403	1	104	105	3166

¹⁵ This includes six urine samples collected in Europe and analyzed by the WADA-accredited laboratory in Lausanne.

17.3. Summary of IO Team Commendations and Recommendations

The list of commendations and recommendations is outlined below in the order they appear in the report.

Summary of commendations:

- **IOC, ITA, Beijing 2022:** The IO Team was impressed with the collegial and collaborative approach that it observed between the IOC, ITA and Beijing 2022. Every organization's role and responsibilities were clear, and everyone executed them with professionalism and enthusiasm. The IO Team encourages future major games organizers to replicate and implement a similar model and benefit from the expertise of an organization like the ITA and the operational experience that the staff from the local NADO can offer.
- **ITA:** The IO Team commends the ITA, and their commercial technology partners, for its use of improved technology during the Games and the investment made in various technological tools. This contributed to very efficient operations, especially as it relates to the exchange of information between the ITA and Beijing 2022 as well as the relevant doping control teams. In addition, the IO Team was provided with up-to-date information on several aspects of the doping control program, in real time and at every meeting. We encourage any ADO to initiate discussions with the ITA about these systems in order to learn how they also may benefit from these innovative tools.
- **IOC, ITA, Beijing 2022:** The IO Team congratulates the IOC, the ITA and Beijing 2022 for its education commitment and for working in close collaboration with several partners to develop new resources with the goal of ensuring the integrity of the Games.
- **NADOs, IFs:** Athletes and athlete support personnel who participated at the Beijing Games were very familiar with several anti-doping procedures (e.g., sample collection procedures, TUE process, etc.). While the ITA (and the IOC) implemented several educational initiatives ahead of the Games, the level of education displayed by athletes and athlete support personnel was no doubt also a result of the education programs implemented by winter IFs and NADOs. The IO Team commends them for ensuring their athletes were well informed prior to their participation at the Beijing Games.
- **IOC, ITA:** The IO Team would like to commend the ITA and the IOC for ensuring that clear information regarding the TUE process was provided to athletes and athlete support personnel and that the TUEC as well as the TUE operations were determined based on previous learnings and the Winter Games specific environment.
- **IOC, ITA:** The IO Team would like to commend the ITA for the resources invested in the area of intelligence and investigations and for fostering the secure exchange and receipt of information via several initiatives. The work done in the area of intelligence and investigations should serve as an example for future Games.
- **ITA, winter Olympic IFs, Beijing 2022:** The IO Team would like to commend the ITA for developing, in collaboration with winter Olympic IFs and Beijing 2022, comprehensive SSPs. The IO Team encourages the ITA to continue to develop such protocols and to share them with future organizing committees as soon as possible before the event to foster training of sample collection personnel that is as sport specific as possible.

- **ITA, IOC:** The IO Team commends the ITA for establishing a Pre-Games Expert Group ahead of the Beijing Games, which included a diverse range of expertise and offered test recommendations to be implemented in a collaborative manner between the winter IFs and NADOs. The IO Team encourages the ITA to reflect on how early any future Pre-Games Expert Group should begin its work. The IO Team also commends the IOC for funding additional tests that were conducted on prospective athletes in the two months prior to the start of the Games. This important work further highlights the ITA's and the IOC's commitment to protecting the integrity of the Olympic Games.
- **IOC, ITA:** The IO Team commends the ITA and the IOC for continuing to offer to all ADOs the long-term storage of samples collected during the pre-Games period, and for actively inviting winter IFs and respective NADOs to make use of this program at no cost.
- **ITA:** The IO Team commends the ITA for its comprehensive approach to the high level of target testing given the significant amount of work involved.
- **ITA, NOCs:** The IO Team congratulates the ITA, and all NOCs, for the level of full compliance obtained regarding location information provided via the rooming app.
- **ITA:** The IO Team would also like to commend the ITA for reviewing whereabouts information provided in ADAMS, issuing Filing Failures as necessary, and for the development and implementation of its one-hour timeframe testing protocol.
- **Beijing 2022:** The IO Team congratulates Beijing 2022 for the recruitment and training strategy developed and implemented for these Games. The sample collection personnel performed their roles to a very high level.
- **Beijing 2022:** The IO Team would like to commend Beijing 2022 for the emphasis placed on communications skills. In particular, we would like to highlight everyone's proficiency in English, in particular the Chaperones, which was made possible due to a partnership with several Chinese universities.
- **Beijing 2022:** The IO Team would like to highlight the robust evaluations that were implemented throughout the recruitment and training phases. The IO Team understands that, for IDCOs, feedback on their performance during the Games will be shared with the relevant NADO, service provider and/or ITA.
- **Beijing 2022:** The IO Team also commends Beijing 2022 for the inclusion of a Doping Control Venue Coordinator in their doping control team and for having them and the DCSM performing their role on-site, as remunerated staff, several weeks before the Games began. While the IO Team recognizes that this might not be possible to implement for all Games, especially larger events like the Summer Olympic Games, we encourage future local organizing committees to consider whether this model could be implemented, at a minimum for larger venues.
- **Beijing Laboratory:** The IO Team commends the Laboratory for establishing such a comprehensive security and monitoring system.
- **Beijing Laboratory:** The IO Team would like to highlight the Laboratory's outstanding efforts to prepare and execute the Games testing services under such challenging conditions.

- **ITA, PWC:** The IO Team would like to commend the ITA for its effective use of technology. In particular, the Laboratory mentioned that the sample registration process using MODOC (i.e., PWC's paperless system) was more efficient than the approach used in its routine operations. It was also noted that MODOC helped improve the turnaround time of the sample registration process and reduced the possibility of errors related to the registration of the samples in the Laboratory's LIMS.
- **Beijing Laboratory:** The commitment and support of the Laboratory to implement the DBS analysis, after being informed of the essential details just weeks before the Games, is to be commended. The staff was able to adjust their procedures to accommodate last-minute changes made to improve the DBS collection kit.
- **ITA:** As it relates to communication mechanisms, the IO Team wants to highlight that the chat functionality in the ITA-Lab SharePoint platform offered a secure way for the Laboratory staff to communicate issues to, and to receive feedback from, the ITA. Specifically, a Laboratory staff member provided feedback to the IO Team that the chat functionality was a very useful, efficient and secure way of communicating with the ITA.
- **Beijing Laboratory:** The process implemented by the Laboratory to document the internal review of the analytical data by the international experts was comprehensive and ensured the accuracy of reported results. This process is to be commended and the IO Team encourages future Games laboratories to contact the Beijing Laboratory to implement a similar procedure.
- **IOC, ITA:** The IO Team would like to commend the IOC and the ITA for establishing clear procedures to follow in case of an ADRV. The IO Team also wishes to highlight the prompt and efficient way in which the ITA dealt with ADRVs reported during the Games.
- **CAS:** The IO Team would like to commend CAS for its cooperation and collaborative manner in communicating with the IO Team.

Summary of recommendations:

- **WADA:** While the IO program is an important element of WADA's compliance monitoring of Major Events Organizations (MEOs), given the other compliance tools developed by WADA such as the MEO Code Compliance Questionnaire and the involvement of the ITA at several Major Games, the IO Team recommends that WADA takes this opportunity to reflect on the future of the IO program to determine whether a readjustment is warranted.
- **MEOs:** While testing of athletes prior to their participation at major events is the responsibility of all ADOs, the IO Team encourages other MEOs to consider extending their testing jurisdiction and to contribute directly to the testing of athletes ahead of their own major events, as was done successfully for these Games.
- **Local Organizing Committees (LOCs), Governments, ITA:** To build on the initiatives implemented thus far, the IO Team recommends that the cooperation agreements be entered into well in advance of the Games to allow for an optimal amount of time for all parties to implement the cooperation agreement.
- **ITA, IOC, IFs:** The ITA I&I team highlighted a difference in the ITA's investigative capacity between IFs from which ITA has a delegation outside the Games and those IFs that it only works with for the

Games as it is gathering year-round intelligence for those IFs that it has a delegation outside of the Games whereas it only starts the intelligence gathering process once the pre-Games testing program begins in the case of IFs that it only works with during the Games. The IOC and ITA should consider whether a longer extension of jurisdiction for I&I Pre-Games should be granted for I&I to improve its ability to gather workable intelligence and act on said intelligence both pre-Games and during the Games.

- **ITA:** While the IO Team commends the ITA for including a former athlete in the Pre-Games Expert Group, we encourage the ITA to review whether the athlete representative's role should be as a substantive member, rather than observer, from the outset.
- **ADOs:** While Pre-Games testing is crucial to protect the integrity of a major event, so is ensuring that all analytical results for those tests have been received. The IO Team calls on all ADOs to ensure that measures be put in place to avoid, as much as possible, a similar situation occurring in the future. For example, samples from athletes attending the Games should be prioritized by ADOs and quick-turnaround times should be requested by ADOs from laboratories. A review of ADAMS data should also be conducted by relevant Testing Authorities to ensure all analytical results have been received in a timely manner. The IO Team calls on WADA to review this situation and determine, as the global regulator, what measures can be put in place to minimize, if not eliminate, such unfortunate situations for future events. A similar recommendation to all ADOs was issued in the Tokyo 2020 Olympic Games' IO report.
- **IOC, ITA, WADA:** While the IO Team observed efficient operations, and the ITA was satisfied with the engagement of APMUs, the ITA (and IOC) expressed its willingness to continue discussions with WADA regarding any further improvements that could be made to the management and review of ABP data in the context of major games (e.g., ensuring engagement from all relevant APMUs, prompt response times, etc.). The IO Team encourages WADA, the ITA and the IOC to discuss any improvements that can be considered in the context of a major Games.
- **WADA:** Recognizing that the provision of whereabouts information is a means to an end, the IO Team recommends that WADA explores whether its rules regarding the provision of whereabouts information could be revised for RTP athletes in the context of a major Games. For example, as it relates to ISTI Article 4.8.8.4, could WADA explore extending the provision whereby RTP athletes do not have to specify a 60-minute time slot when participating in a major Games and sufficient information is available from the athlete and from other sources to find the athlete for testing, as is possible for international events governed by IFs? While the IO Team recognizes that WADA alone cannot impose this change and that the anti-doping community would need to be consulted, the IO Team believes it is, at a minimum, worth consideration. As a further suggestion and while not every MEO will have a developed rooming app like the ITA did, WADA could explore whether a similar function/app could be added to ADAMS and/or Athlete Central.
- **LOCs:** While most DCSs were fit for purpose, a few could have benefited from larger waiting rooms and at least one from additional processing rooms. The IO Team recommends that Beijing 2022 shares the configurations of its DCSs, along with any lessons learned, with the ITA and future organizing committees to ensure that for future Games, DCSs can be further adapted to meet the specific requirements of the TDP and of the sports and disciplines in question.
- **LOCs:** While the IO Team acknowledges that OBS staff generally understand the need for Chaperones to follow athletes everywhere, including in the mixed zone, we encourage LOCs to

continue to reinforce this message ahead of the Games to the relevant individuals and, at the outset of the Games by meeting with relevant OBS colleagues on-site to review operations, discuss any issues and identify solutions.

- **IOC, LOCs:** While sample collection personnel had appropriate accreditation allowing them to fulfil their roles and responsibilities (e.g., properly chaperone athletes), the IO Team heard that it is challenging for the doping control team to negotiate with the relevant functional areas: specifically, access to field of play, press area, mixed zone, athlete residences. Given access to these areas is needed for each Game, the IO Team encourages the IOC (and LOCs) to consider whether it could specify the accreditation requirements needed for sample collection personnel, thus alleviating the need to negotiate this aspect for each Games.
- **ITA:** As the IO Team noted, the use of the tablet worked very well during the Beijing Games. While athlete information was 'pushed' to the tablet for out-of-competition testing, this was not done for in-competition testing. While the IO Team appreciates some of the challenges associated to this, given that having the athlete's information pre-filled saves time and minimizes errors, the IO Team encourages the ITA and its partners to consider what may be possible in the future.
- **LOCs:** The sample transport and transfer system in place for the Beijing Games was unique and specific to the Beijing Games. There is one recommendation the IO Team offers that could benefit future LOCs, which is that sample boxes/bags have identification (seal number, box number, waybill, etc.) that allows the DCS and laboratory staff to readily scan a barcode ID into their respective systems. In addition, this barcode ID should be included in the doping control .csv file which is sent to the laboratory. This would further improve the traceability in the CoC.
- **Laboratories:** The IO Team recommends having international experts placed in all shifts to complement the Laboratory staff expertise during the entire 24 hours of operation.
- **IOC, ITA:** For future Games, the IO Team recommends that the IOC (and/or the ITA) makes arrangements with the Olympic Laboratory to implement the small peptide method to all urine samples as in prior Games, and otherwise ensures the maximum testing capacity is applied. The Laboratory must be informed sufficiently ahead of the Games to implement the necessary resources and develop its analytical procedures to test all urine samples for small peptides.
- **IOC, ITA:** The IO Team recommends that the IOC (and/or the ITA) provides a draft TDP with as much detail as possible (i.e., in-competition and out-of-competition distribution, type and number of sample(s) per type of analysis, etc.) to the Laboratory at least six months prior to the opening of the Olympic Village to allow the Laboratory to verify that proper resources (i.e., human and equipment) and scheduling of those resources are implemented well ahead of Games-time testing. The IO Team acknowledges and recognizes the need for flexibility as the testing plans continue to be refined leading up to the Games and therefore, updated TDPs with further detail should also be provided to the Laboratory in the months leading up to the start of the Games.
- **IOC, ITA:** It has been recommended in previous reports, namely the PyeongChang Olympic Games IO report, that 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, EPOs, IRMS, small peptides or DBS analysis) well in advance (at least six months) before the start of the Games' testing. For the Beijing Games,

the impact of the request to perform DBS analysis should not be underestimated. The information related to introducing this test into the TDP requires advanced preparations, from choosing the type of sample collection device and sample support card to informing the laboratory in order to implement the necessary equipment to perform the analysis as well as determine if further method validation is necessary.

- **ADOs:** Given athletes are not often exposed to the 'B' sample confirmation process, the IO Team recommends that ADOs consider developing educational material to inform athletes of the 'B' sample confirmation process. This might be particularly helpful during a major Games as it is often when an athlete might elect to attend the 'B' sample confirmation procedure.
- **IOC, ITA:** The IO Team would recommend providing information related to pro bono legal services in the notification letter of potential ADRVs to athletes in order to ensure that the athletes are aware of these services at the first possible instance that they may need them.
- **IOC, WADA, CAS:** The IO Team would recommend that these entities consider whether the remit of the IO Team should be limited to results management for tests occurring on the occasion of the Olympic Games or whether it should also apply to results management that impacts the Games. If so, it should consider the necessary rule changes to allow for such observation.