

Feature Article

Application

HORIBA Contribution to Athletes' Healthcare at London 2012 Olympic Games

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The last Olympic and Paralympic Games took place in London in 2012. Spire Healthcare, Laboratory Network in charge of the healthcare during this event, built a state-of-the-art facility within the Olympic Village to give over 10,000 Olympic and 6,200 Paralympic athletes, as well as associated team officials, access to 24-hour healthcare services. Since the London 2012 Olympics were heralded as one of the most sustainable, Spire was required to reflect this ethos and approached HORIBA Medical to secure a loan and service support for a Pentra 80 analyzer. About 250 samples were tested during this event. Finally, the NHS Trust concluded that the use of the pathology services of the Olympic Village Polyclinic were able to satisfy demands and that a similar structure of facilities and expertise in one clinic was recommended when planning future mass participation sporting events.^[1]

Introduction

The London 2012 Summer Olympic Games involved 10,568 elite athletes competing for 204 separate National Olympic Committees (NOC's). Since even the most minor ailment can have serious implications on an elite athlete's performance, access to immediate and effective healthcare treatment was essential at London 2012. Consequently, a state-of-the-art Polyclinic facility was built within the Olympic Village to give Olympic and Paralympic athletes, as well as associated team officials, access to 24-hour healthcare services. (Figure 1)

The London Olympic Games Organising Committee (LOCOG) aimed to provide a dedicated on-site medical facility to be staffed by volunteer experts across multiple sports related specialties similar to that of previous Games. Their aim was to manage the majority of Games-related healthcare issues internally. This was meant to provide an optimal level of care and avoid pressure on local hospitals and other healthcare providers, as well as to reduce movements of people, packages and equipment on and off site that would have been subject to a lot of security checks.

The Polyclinic effectively supported a very large temporary community, which in itself was a particularly un-



Figure 1 Views of the Olympic Villages and the pathology laboratory where the Pentra 80 analyser was in use to perform all haematology tests during the London 2012 Olympic Games.

usual and diverse one, given the fact that the population originated from 204 competing nations and included elite athletes, as well as their support teams. Indeed one of the priorities of International Olympic Committee (IOC) was to provide freely available healthcare and safeguarding measures to all athletes.^[1]

Methods

The Polyclinic was situated within the Athletes' village in Stratford, East London and was in proximity to the main

Olympic Park. It functioned as a small hospital and was arranged over five fully integrated floors.

The London 2012 healthcare team managed a wide variety of both sports-related and non-sports related injuries and illnesses. Within the clinic this team, which encompassed a broad spectrum of specialists, had direct access to the best possible on-site facilities, including radiology, dentistry, optometry, pharmacy and a pathology laboratory. Comprehensive blood analysis services were provided at the Polyclinic throughout the Games period. This testing was separate from the doping blood analysis, which was performed independently by the World Anti-Doping Agency in a separate facility.

Olympic pathology

Following the award of the tender by LOCOG to deliver on-site pathology services within the Olympic Village Polyclinic, as well as other Olympic venues, Spire Healthcare's UK pathology network of 18 laboratories increased in size during summer 2012.

Spire Healthcare had just one month to set-up and be ready to manage a temporary on-site pathology laboratory within the Polyclinic to deliver Haematology, Biochemistry, as well as pregnancy testing, and provide wider access to the full scope of pathology services. Since the London 2012 Olympics were heralded as one of the most sustainable, Spire Healthcare was required to reflect this ethos when setting-up their laboratory and to not purchase new equipment with which to kit it out. Therefore, when it came to sourcing a haematology analyser that met these needs, Spire Healthcare approached HORIBA Medical to secure a loan and service support for a Pentra 80 analyzer. Spire Healthcare's biomedical scientists were already highly competent with this analyser, since it is used routinely to provide full blood counts with 5-part differential in all 18 of Spire's UK laboratories. This particular hematology analyser is compact and fits the Polyclinic requirements but also has auto-loading which gives staff flexibility in task planning and dealing with an unpredictable workload. The staff also trusted the responsiveness of the HORIBA UK customer support services, crucial in such a special type of setting.

Other selection criteria for the analyser included reliability and rapid result delivery. Furthermore, due to the speed with which the laboratory had to be set-up, it was essential that the analyser was robust enough to work 'off the shelf'.

Testing times

In addition to the requirements for a quick laboratory set-up and validation two months in advance of the Olympics, the Spire Healthcare team faced several other logistical challenges, including that of site access due to security. All staff had to be fully accredited, and even then they and equipment had to pass through airport style security with sniffer dogs every time they entered the Olympic site. For example, installation of analysers into the Polyclinic laboratory involved the availability of the correct paperwork for all cars and personnel (including HORIBA engineers) and a two hour wait at the security check point!

Additional operational challenges arose during Games themselves where reagents, consumables and other supplies had to also be security checked, so it was essential that stock was closely monitored to ensure that shortages did not occur. Furthermore, since Spire Healthcare provided ready access to more specialist tests within their laboratories local to Olympic sites, such as Elstree, Gatwick Park and Brentwood, it was necessary to closely manage the logistics of courier transfer. Couriers were not allowed on site and had to phone in advance of arrival to be met at the gates and patient samples then transferred. Consequently, to ensure the efficient running of pathology testing during the Olympics, careful and tight management was essential.

Rapid reliable results

A total of 290 pathology tests were performed. These were performed at a steady rate throughout the Games with an average of 19 pathology tests performed daily. In total, 930 prescriptions were dispensed with a mean of 62 prescriptions each day. In a similar pattern to the peak in demand for other services, a rise in prescriptions was seen on day 10 when 122 prescriptions were processed. (Figure 2) Although the team of highly experienced Spire staff had to work long hours to provide the seamless 24/7 pathology service, many felt it to be one of the best experiences of their professional lives to become part of the 2012 Olympic Polyclinic team. Indeed, both Spire Healthcare staff and analytical equipment alike were greatly appreciated by the LOCOG healthcare team.

"The Pentra 80 was a great hit with all the International Olympic team doctors who were fascinated and delighted to have such a great diagnostic system on site that provided rapid results. This was the first Olympics and Paralympics that had such equipment on-site and it proved very popular," commented Kathy Gaule, National Pathology Quality Manager, Spire Healthcare.

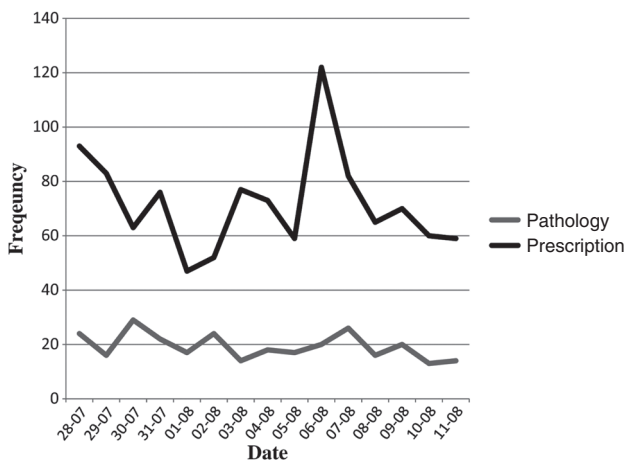


Figure 2 The graph shows the daily number of prescriptions and pathology requests performed in the Polyclinic during the London 2012 Olympic Games. These data demonstrate the variability of the sample recruitment during the period and the importance of flexibility to adapt to workload fluctuations. (Modified from Vanhegan et al, 2013.)

Dr Fergus Macpherson, Pathology Director, Spire Healthcare, affirmed these comments. “The performance of the Pentra 80, and also the support given by HORIBA to enable us to meet the blood testing requirements of our LOCOG contract, have completely confirmed that we made the right decision in opting to use HORIBA across our pathology laboratory network. The reliability of the company and its analysers have been demonstrated in spades at the London 2012 Polyclinic, with rapid support given and only routine analyser maintenance required.”

“I’m only sorry for the HORIBA engineers whose emergency call-out numbers were not required, as the Pentra 80 worked perfectly throughout the Olympics and Paralympics. I believe that they were somewhat disappointed, as they would have liked an excuse to visit while the Games were in progress!”

Backing up the conclusions reached by Spire Healthcare, a recent paper analysing the use of the Olympic Village Polyclinic concluded that the pathology services were able to satisfy demands and that a similar structure of facilities and expertise in one clinic was recommended when planning future mass participation sporting events.^[1]

Conclusions

The London 2012 Summer Olympic Games was the largest mass participation sporting event to be held in the UK. It saw over 10 000 competing athletes from 204 separate nations. Much of these athletes’ healthcare needs were provided by the Polyclinic located in the athletes’ village. Provision and safeguarding athlete health is of paramount importance to the International Olympic

Committee and this was achieved through the role of the Polyclinic.^[1] This laboratory organization contributed to athlete satisfaction since they could receive a rapid and accurate picture of their health without having to leave the Olympic Village. LOGOC requirements were then met. In particular, the compact size of the haematology instrument and the auto-loading option made the P80 suitable for a multidisciplinary laboratory where workload is not very elevated but staff have to run a number of instruments. Finally, Spire Healthcare expectations in term of performances and reliability were fulfilled as they continue to invest in other HORIBA Medical hematology instruments to expand their laboratory services including the recent acquisition of a Pentra Nexus at the Spire Bushey Laboratory.

Reference

- [1] Vanhegan, Ivor S., et al., The London 2012 Summer Olympic Games: an analysis of usage of the Olympic Village ‘Polyclinic’ by competing athletes, *Br J Sports Med*, 47, 415(2013)



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