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Medical services at the FIFA world cup Qatar 2022

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ABSTRACT

Objective The Football World Cup is among the biggest sporting events in the world, but data to inform the requirements of medical care for such tournaments are limited. This study describes the athlete and team medical services at the FIFA World Cup Qatar 2022.

Methods Three different medical service entities were identified through a needs analysis based on expert advice, team physician interviews and questionnaires prior to the event: 'Team Services' to provide any workforce or equipment needs of the teams, a 'Polyclinic' to manage any acute medical demands, and a 'recovery centre' to improve game readiness throughout the tournament. All services had been set up prior to the tournament and thoroughly tested.

Results Of a total of 832 athletes, ~1300 team delegation and ~130 match officials, 167 individuals including 129 (77%) athletes and 38 (23%) non-athletes were assessed in the polyclinic. For the 129 athletes (median 4 players per team), medical imaging was the most requested service, which peaked during the group phase of the tournament. Most requests were received during normal working hours despite many games finishing late at night. 30 of the 32 participating teams solicited medical services for their players at least once. Three teams made use of the recovery facilities, and 17 teams requested additional medical equipment or clinical assistance.

Conclusion Central imaging services was the most used medical resource at the FIFA World Cup Qatar 2022, and over half of teams required additional medical equipment or personnel. These data may inform planning of medical services for similar events in the future.

INTRODUCTION

Organising team medical services at major sporting events is a challenge many Sports Medicine professionals face. Despite the multitude of events, there is little documentation on the medical services' needs of teams, especially for major Football tournaments. Most research initiatives focus on the number and types of injuries and illnesses sustained by the participating athletes.¹⁻³

Together with the Olympic Games, the Football World Cup is unarguably the biggest sporting event in the world. The 2022 edition was held in Qatar, all stadiums were within 30km of its capital city Doha, which allowed a centralised organisation of all team medical care.

The aim of this study was to describe the organisational side of the team medical services at the

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ No data are available on the medical services requested during a football world cup. Previous data have only focused on injury and illness surveillance.

WHAT THIS STUDY ADDS

⇒ This study describes the patterns of medical needs for teams participating in a Football World Cup tournament, ranging from equipment to clinical assistance, with medical imaging being the most requested service.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Organisers of future events should focus on accessible medical imaging facilities and maintain flexibility to accommodate last minute requests of all types.

FIFA World Cup Qatar 2022 and to analyse its provision based on factors around the participating teams. These data could help future event organisers and medical professionals involved in major events to optimise medical services.

METHODS

Scope of service

Our organisation was the only sports medicine service provider at the FIFA World Cup Qatar 2022. The mandated scope of the team medical services was to provide medical care to the 832 athletes, but also to ~1300 FIFA accredited team delegation and FIFA staff, ~130 match officials as well as an unknown number of tournament VIPs. The team medical services aligned with the wider general medical service provision to the tournament. It did not include spectator and field-of-play medical care, which was provided by other medical organisations in the country. It also did not include direct, basic medical support of the teams themselves, which was managed by each team's medical staff.

In terms of medical conditions, it was agreed between the local organising entity of the FIFA World Cup Qatar 2022 and our organisation that team medical services would see a wide range of problems, however, any complex chronic diseases, neurological, psychiatric, cardiovascular, life-threatening or limb-threatening conditions such as head or spine injuries or severe abdominal trauma



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was considered to be out of scope and to be treated directly in an appropriate tertiary care centre.

At the request of FIFA and in view of recent events in football, special initiatives regarding the assessment of concussion and cardiac symptoms in athletes were also established.

Services

Based on a needs analysis consisting of individual interviews with experienced team physicians, a team questionnaire sent out prior to the tournament to the participating federations and previous experience, the team medical services were organised in three parts:

1. In-hospital medical services ('Polyclinic'), typical inpatient and outpatient services in a Sports Medicine hospital including two special initiatives for the tournament (Sports Cardiology and Concussion).
2. Out-of-hospital medical services ('Team services'): Provision of medical equipment and secondment of staff to teams on request.
3. Recovery services ('Recovery centre'): In addition to pure medical care and in view of injury and illness prevention, an initiative to improve post exercise recovery was also developed and offered to teams.

Polyclinic

The polyclinic was organised within an existing sports medicine hospital (Aspetar Orthopaedic and Sports Medicine hospital) which, for this purpose, was partly dedicated to the tournament, that is, a part of the hospital was not accessible to the general public for the duration of the event. The hospital offers a wide range of specialists and facilities in areas such as sports medicine, orthopaedic surgery, physiotherapy, general surgery, dentistry, general practice, family medicine, emergency medicine, internal medicine, cardiology, anaesthesia, radiology, pharmacy, podiatry, exercise physiology and laboratory medicine. The hospital operated on a 24-hour schedule for most of the services from 9 days prior to the tournament to the day after the final match.

Team services

The 'Team Services' task was to support the participating teams to deliver the best medical care by supplying medical equipment and additional medical staff on request. The department fulfilling this role had a vast experience in event medical care, covering many international sporting events in the country over the years. They also provide medical services to all Qatari National teams (all sports) and teams of the Qatar Stars League (Qatar's highest football league) throughout the year and are thus well experienced and equipped in view of the requirements of professional football.

Recovery centre

To enable the potential demand for post exercise recovery services by teams and match officials, a bespoke facility ('Recovery Centre') was created within the Polyclinic building. The facility consisted of a pool (water temperature 31°C) to conduct exercise activities in the water, contrast whirlpool baths (hot at 35°C and cold at 9°C), massage cubicles for massage therapists to operate, a stretching and mobilisation area with access to various vibration devices (foam rollers, massage guns, massage balls), a rest area with reclining chairs for compression pulse therapy, an area with spin bikes and a Sports Nutrition station preparing recovery nutrition (eg, whey protein shakes, sports foods).

Specialised services: concussion and sports cardiology

An independent Concussion Assessment and Recovery Service (CARS) was available for the first time in a Football World Cup. It formed part of an effort to support team physicians to identify and manage suspected brain injuries, driven by the FIFA Concussion Protocol ('Suspect and Protect').⁴ The purpose of the CARS was first to offer independent assessment and recommendations for players with suspected concussion. The second purpose was to assist in cases where the final diagnosis was elusive (ie, to confirm or exclude concussion), and thereby determining management and player availability for ongoing selection. The CARS consisted of a basic assessment, including video review of the incident, followed by an individualised sports physician directed concussion examination. The assessment included SCAT5, neurological, cervical, sensorimotor and vestibulo-ocular tests (Neuroflex). Optional further assessments included computerised neurocognitive evaluation, exercise stress testing, neurosurgical assessment and neuroimaging. Overall concussion management was offered, including rehabilitation and return to play guidance.

A 24-hour on call sports cardiology service was established to provide time sensitive consultations to players and referees. The service included cardiac preparticipation screening (eg, after illnesses/infections) but more importantly focused on assessing cardiac symptoms or exclusion/confirmation of cardiac pathology to give eligibility to play recommendations. A separate cardiac emergency pathway for athletes was established in collaboration with the national heart centre as referral unit. Additionally, a multidisciplinary team was available up to discuss complex cases if required (including sports cardiology radiologists, electrophysiologists and cardiac interventionalists). A remote data transfer service allowed for ECGs and clinical information obtained by ambulance crews or in stadium clinics to be reviewed instantly by the sports cardiologist on call. A mobile cardiac service for investigations (ECG, echocardiography) was also available to teams.

Access to services

In the year leading up to the tournament, all teams were informed on several occasions of the available medical services and facilities through the medical department of FIFA. For the medical staff of the participating teams, a site visit was organised 6 months before the start of the competition during the FIFA Team Doctor Workshop held in Doha. In addition, various types of information material to tailor the services to the individual needs of each team were distributed in the lead up to the tournament.

During the tournament, access to services was enabled through a Medical Command Centre (MCC). This 24-hour call centre was the central unit which coordinated all medical services around the tournament. Teams and persons requiring medical assistance were to call a specific phone number and from there would be directed to the matching medical provider. On occasion teams deviated from this process by contacting service providers directly (typically due to pre-existing personal relationships). Irrespective, all encounters and requests for medical supplies were documented either through the MCC, the hospital's electronic medical record, or both. For the team medical services, a dedicated, sports medicine experienced nurse operated the line, triaged and directed the requests to the appropriate specialist in the athlete polyclinic or, if out of scope, to a suitable tertiary care centre. The team medical services part of the MCC

was operational from 10 days before the tournament (coinciding with the arrival of the first teams) to 1 day after the final match.

Most of the tournament's processes had been trialled a year earlier during a test event, the FIFA Arab Cup Qatar 2021, a tournament with 16 nations on the same dates and using largely the same venues as the 2022 event.

This study was part of a larger project analysing clinical services at major football events, approved by the Institutional Review Board of Aspire Zone Foundation (Application number E202211048).

For practical reasons, patients were not involved in the planning of this research study.

No data of this study will be shared.

The investigation was funded internally.

Equity, diversity and inclusion statement

The study included the total-available population of athletes and team staff participating in the FIFA World Cup Qatar2022, and thus participants from a broad range of ethnic/racial and socio-economic backgrounds and different genders. The research team included scientists, medical practitioners and administrators with diverse national, educational, ethnic/racial and socioeconomic backgrounds.

RESULTS

Medical Command Centre

From 10 November 2022 (10 days prior to the start of the event) to 19 December 2022 (1 day after the final match), the team part of the MCC received 262 requests (between 1 and 18 per day). Eighty-two per cent of the requests concerned players, 6% team staff/delegation, 5% FIFA staff, 4% VIPs, 1% Referees (2% remained unclassified).

Of the 262 requests, 253 (97%) were managed by the dedicated athlete facilities (polyclinic, recovery centre, team services), 9 (3%) were referred to tertiary care centres for advanced specialist consultations such as ENT, ophthalmology, dermatology, orthodonture, etc.

With the games starting at 13:00 hours, 16:00 hours, 19:00 hours and 22:00 hours, the majority of initial contacts came between 10:00 hours and 22:00 hours (peaks occurred around 11:00 hours and 20:00 hours). Only one call was received between midnight and 06:00 hours. Most calls were received during the second week of the tournament, coinciding with the second and third (ie, last) matches of the group phase of the competition.

All requests were actioned immediately based on the timeline requested by the teams. For most demands (imaging, laboratory investigations, recovery activities, etc), teams demanded a specific time, often dictated by their training schedule. Interestingly, very urgent (immediate) imaging requests were not common.

Thirty-one of the 32 participating teams logged at least one request (definition see [table 1](#)), the average number of requests per team was 7.6 (range between 1 and 30). (The number of requests does not necessarily equal the number of medical encounters, as a 'request' can also be a referral to another facility or service).

Table 1 Definition of common terms

Request	Demand for a specific service
Encounter	Interaction between a patient and a specific healthcare provider

Polyclinic

Over the period of the tournament, the polyclinic served a total of 438 encounters for 167 unique individuals of the different patient groups (129 players, 26 team delegation and FIFA staff, 10 VIP and 2 uncategorised patients). An encounter was defined as an interaction between a patient and a healthcare provider (see [table 1](#)), there can, therefore, be several encounters per patient (eg, if a patient has an examination by a doctor which triggers an X-ray and ultimately receives a cast). Several patients were served more than once (ie, for different issues or on different days), resulting in an overall patient count of 257. An average of 4.8 players per team were seen at least once (median 4, range 1–18). The distribution of patients between the different departments is illustrated in [table 2](#). As expected, medical imaging was the most solicited. Interestingly, podiatry was the second most-used service. On the other end of the spectrum, only one surgery was performed during the tournament and the specialist orthopaedic surgeons were consulted for only one other player. (NB: two other individuals (one player, one team official) had surgeries at a tertiary care centre, one for a non-sports related issue, one for polytrauma).

Approximately 30% of all patients (77 out of 257) seen in the polyclinic were non-players (ie, Team delegation, FIFA staff and VIPs). This was not consistent between countries, some teams had an equal number of requests for team delegation/VIP and players, whereas other countries did not have any requests for non-players.

The number of medical encounters per team was variable, 30 of the 32 teams had at least one encounter, the mean was 12 (range 1–64). Two teams did not use our services, one of them used another private healthcare facility. The number of encounters per country (players+officials) is illustrated in [figure 1](#).

The number and category of patients attending the polyclinic each day is illustrated in [figure 2](#). Most visits occurred during the group phase. A second peak is visible towards the end of the competition. This is due to a separate, exhibition football tournament with FIFA VIPs and former players (not an actual World Cup competition).

The busiest times in the polyclinic were the mornings between 10:00 hours and 12:00 hours. Even though the hospital operated on a 24-hour schedule and some matches started only at 22:00 hours and finished around midnight, very few patients presented after 22:00 hours: Only three patients were seen between 0:00 hours and 06:00 hours, all for medical imaging.

Team services

Whereas the polyclinic had its peak activity during the competition, team services was most in demand in the lead up to the tournament: 17 teams requested additional pieces of equipment for their medical staff such as physiotherapy beds, hot-cold compression devices, weight scales, etc. In total, 67 items of equipment were loaned to teams for the duration of the tournament. Towards the end of the tournament, the number of requests for consumables (eg, bandages, medications, supplements) increased. Some requests could not be fulfilled because products/equipment requested was not part of the standard care provided by our facility.

During the tournament, 52 medical staff were seconded to provide medical and allied health services to six teams, the referees and two ancillary tournaments related to the event: The 'Legends' Tournament (2 days) was supported with three doctors, seven physiotherapists and six massage therapists. The 'Fans' Tournament, which was held over 17 days with a

Table 2 Distribution of the 257 polyclinic patients between the different departments

	Athlete	Team delegation	VIP	FIFA staff	Other
Radiology	91	7	9	7	2
Podiatry	21			2	
Pharmacy	8	3	5	4	1
Sports medicine	8	1	8	3	
General/emergency medicine	13	1		1	
Dentistry	7	3		2	
Surgery	2	1	3	3	
Cardiology	8				
Laboratory	5	2			
Rehabilitation	3			3	
Concussion	1				
Exercise physiology	2				
Medical supplies (braces, etc)	3		4	2	
Other	8				
Total	180	18	29	27	3

total of 64 matches, required 3 doctors and 6 physiotherapists. The seconded staff provided a total of 2500 hours of ancillary services for massage, physiotherapy, podiatry, sports medicine and nursing.

Recovery centre

The recovery centre was used by 3 teams with a total of 204 individual encounters. The visits occurred throughout the tournament for the duration each of the three teams stayed in the competition. The most popular recovery methods were the water-based recovery activities in the pool, cold/hot/contrast baths, massage, pulse and vibration therapy within the stretching area. Spin bikes and water cycling activities were the least used modalities. Over 800 nutritional recovery items were dispensed. The most common recovery drinks served were formulated with whey protein and mixed carbohydrates. Carbohydrate gels, sports bars and other functional products containing collagen were also in demand.

Specialised services

The newly developed services were in variable demand. Only one team made use of the CARS for a suspected concussion. Here, the CARS team, supported by external independent

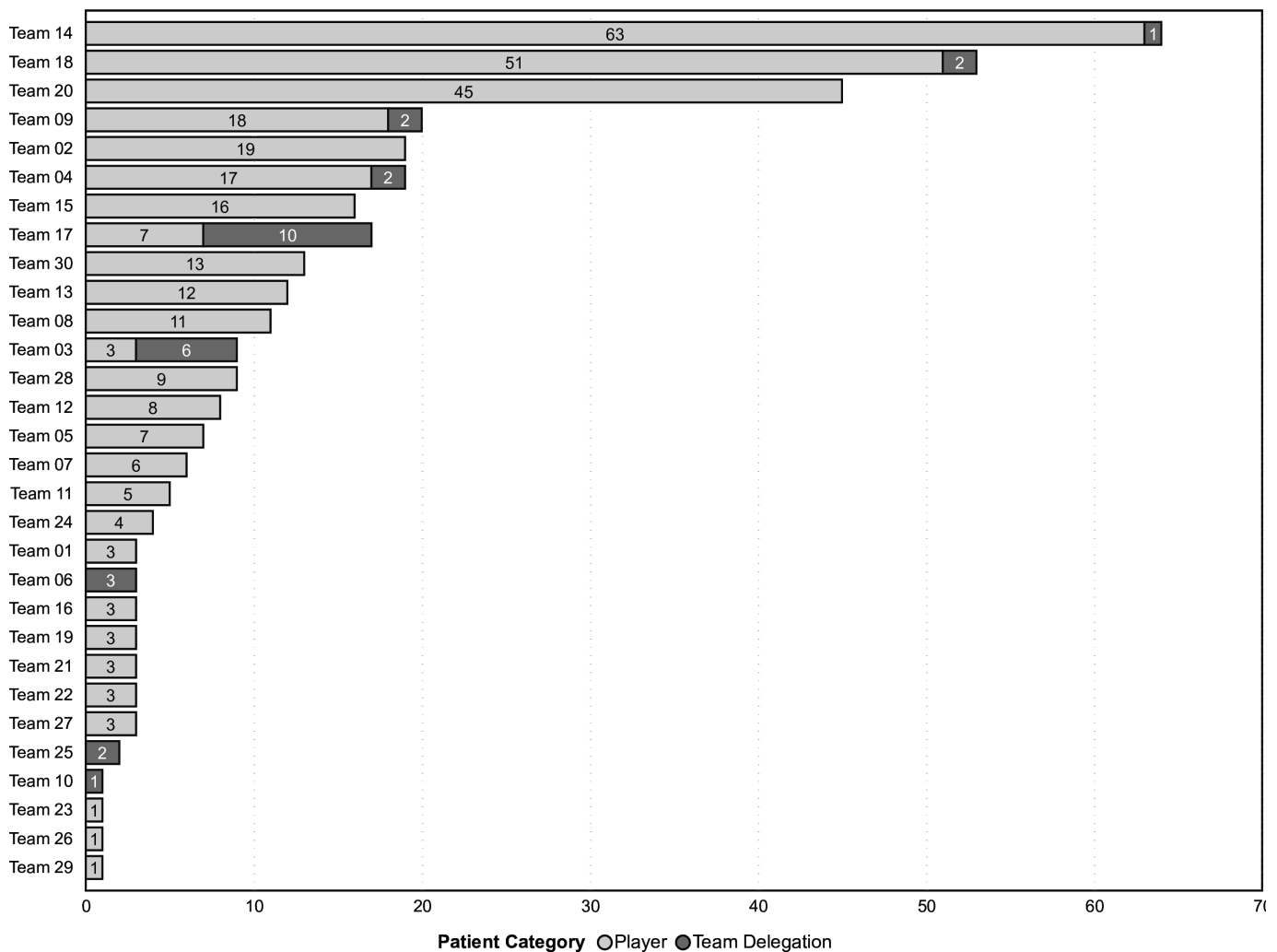


Figure 1 Number of encounters per country (players+officials). Each horizontal bar represents one country, the different grey scaling illustrates the different patient categories.

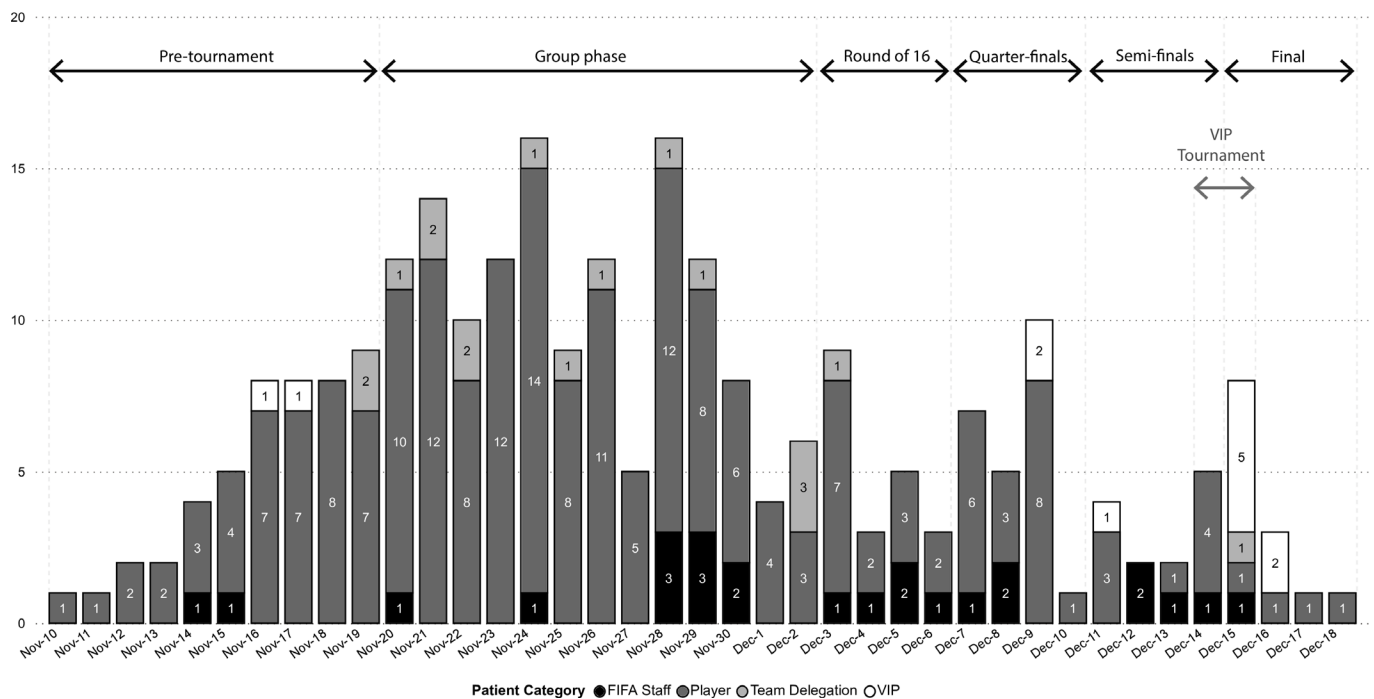


Figure 2 Timeline of service provision in the polyclinic. The horizontal axis illustrates the dates during the tournament, the vertical axis the number of patients attending each day. The different shading of the vertical bars illustrates the patient categories. The different phases of the competition and the separate VIP exhibition tournament are indicated.

experts was able to give clear recommendations to the team doctor regarding the management and return to play. The sports cardiology tournament service was used by 8 athletes of 6 national teams, requiring a total of 10 ECG, 8 echocardiograms, one cardiac MRI and one 24 hours ambulatory ECG. Furthermore, the sports cardiology experts led the consultation of three further patients that were primarily investigated and treated at the tertiary cardiac care centre (three ECGs, three echocardiograms, one 24 hours ambulatory ECG, one exercise ECG and three cardiac-specific blood tests).

DISCUSSION

For the first time, our study provides a detailed description of the demands on medical services at a Football World Cup. The main findings are that prior to the tournament, requests for additional medical equipment by teams were common. During the competition, medical imaging was the most requested entity. The peak of requests occurred during the last part of the group matches. Additional service offers such as recovery facilities or podiatry support were in high demand, more than other established medical specialties.

Comparison of medical service requests to injury and illness data

Injury surveys for football world cups have been reported on a regular basis for more than 20 years.³ More recently, reports on illnesses have been added. Although no data on injuries and illnesses during the FIFA World Cup Qatar 2022 have been published yet, the surveys during previous World Cups consistently report musculoskeletal issues as the most common medical problem (~60 injuries per 1000 player hours or 1–2 injuries per match), with illnesses and other conditions representing only a minority (~7 illnesses per 1000 player days).^{1,2}

These data partly reflect the medical services requested in our study. Medical imaging, mostly used to diagnose musculoskeletal problems, was by far the most frequently used service. Interestingly, with 64 matches played in the tournament and 129 athletes seen in the polyclinic (of which 91 underwent medical imaging), our data also reflect the incidence rate of 1–2 injuries per match reported in the injury surveillance of previous world cups. This is despite the fact that not all injuries require imaging, and not all injuries are sustained in matches. The demand for assistance in other medical matters was relatively low and often limited to specialist advice (which were referred to an appropriate tertiary care centre), laboratory investigations or pharmacy requests. This is likely because most teams travel with well-equipped medical staff who can provide a large variety of medical services, except investigations needing more complex diagnostic apparatus, such as imaging or laboratory equipment. Some teams, however, had travelled with their own diagnostic ultrasound machines and point of care laboratory testing devices. It is thus unknown how many of the total injuries and illnesses ultimately presented to the tournament medical services and how many were managed solely at team level. Future research could help answering this question, for example, by including this aspect in the team injury and illness surveillance, which is usually conducted by FIFA at such tournaments.

Comparison to other events

Data regarding polyclinic services at major sporting events have been previously reported for Olympic Games.^{5–7} These are only partly comparable to our results: The Olympic Games involve more participants (around 10 000 for Summer Games, 3000 for Winter Games vs 800 at a Football World Cup) from more countries (more than 200 for Summer Games, 90 at Winter Games vs 32 at a Football World Cup) and feature a large range of

sports. Some of the Olympic Sports are much less injury prone than football, while others report more injuries. Conversely, the demand for services differs: Whereas we logged 493 encounters for 167 unique patients (129 players) among the 832 athletes during the 4-week period of the competition, 3220 for around 10 000 athletes occurred at the polyclinic of the 2012 Olympic Summer Games in London⁷ and 1639 for 3000 athletes at the 2018 Olympic Winter Games in Pyeongchang.⁶

There are also some similarities: the busiest period for the Summer Olympic Games polyclinics was the second week of competition and in our competition the group phase, both coinciding with the presence of most athletes and highest competition load.

In contrast to the Olympic Games, where polyclinic structures are specifically set up for the event and manned by volunteers, the current approach used an established medical structure (sports medicine hospital) and its staff, experienced in treating athletes and sports related medical problems. Therefore, operational and administrative coordination issues such as previously reported for newly established medical services at sporting events⁶ were absent. Existing processes were only marginally changed and adapted for the event. This is of importance in areas where there are distinct differences in medical matters between athletes and non-athletes, such as (sports) cardiology.

To our knowledge, no data for team support or recovery services at other events have been previously published. Interestingly, our recovery centre including advice on the most appropriate strategies was in high demand by some teams. This was somewhat unexpected, as it could be assumed that teams at World Cup level would have a clear, preplanned recovery strategy for the tournament as well as access to specialist equipment. It is likely that the ease of access to our facility and expertise made some teams reliant on this service rather than setting up their own recovery operations within the team hotels. Also, the additional high-quality processes in recovery nutrition preparation were appealing to some visiting medical teams. Further to the use of the facility, there were also requests for recovery plans and recommendations for the optimum use of the different recovery options.

Teams competing in a sporting event in a different country always encounter logistical issues in shipping equipment and medications and/or accessing facilities and equipment that might be needed to support their athletes. Many teams have limited resources for shipping large and small items of equipment and prefer to source locally and/or rely on organising committees/local institutions to borrow various items. Having access to equipment loans and/or specific pharmacy/consumables/supplements items was deemed beneficial by the teams when this was offered to them. The increased requests of consumables towards the end of the tournament reflects the need for teams to plan for longer stays and identify in advance what can be locally supplied.

Challenges+recommendations

A challenging decision prior to the start of the tournament was to dedicate a part of a hospital entirely to the World Cup teams. Privacy and confidentiality for each athlete and team was a key requirement in organising centralised medical care. Closing parts of the hospital to the public and ensuring no contact between athletes of different teams attending the facility at the same time was considered mandatory. This did have an impact on hospital 'business as usual', resulting in reduced outpatient activity and less surgical throughput. However, adequate planning and staff cooperation reduced this impact to less than 6% loss of total

average revenue over the 8-week period. This included the period prior to the tournament, where services were slowed down to ensure good continuity of care during the tournament and to allow finetuning and staff onboarding of all processes which would not have been possible with normal patient traffic.

In other tournaments with a smaller number of teams present at each site, the above will probably be of lesser importance, as the risk of confidentiality breaches is lower. Thus, the reduction of normal services in an established healthcare facility at tournament sites with only a small number of teams is probably not necessary, as the clinical workload emanating from the tournament is also relatively low.

The switch to a 24-hour service instead of the normal 8-hour standard working day for several departments in the hospital was identified as mandatory, given the match schedule of the tournament. In retrospect, such modification of working hours is likely not necessary for all departments. Evidently, with the last matches finishing around midnight, demands for medical imaging or emergency treatments were to be expected for later during the night. Interestingly, however, virtually no requests were received after midnight (ie, after the late matches), likely because team physicians assessing injuries after these matches scheduled imaging mostly for the next day. Other services (laboratory, physiotherapy, etc) were not solicited at all during this period of the day and could well have been operated on a normal on-call schedule.

A positive experience was the simplification of medical imaging requests. Under normal circumstances, a hospital clinician would assess any patient prior to any imaging. Instead, we allowed team physicians (who were all temporarily licensed in the country for the duration of the tournament) to request medical imaging of their choice directly in dialogue with our medical imaging staff, without involvement of a local hospital-based clinician. This significantly streamlined the process and was well received by the medical staff of all teams.

One further notable challenge to highlight were last minute requests for medical coverage only partially related to the event, such as VIP football tournaments ('Legends' and 'Fans' tournaments) or other social events involving sporting activities. We had prepared for such demands by having set aside a team of dedicated staff (doctor, physiotherapists, massage therapists) for these purposes. This avoided unnecessary disturbance of other processes when gathering resources for the coverage of such events.

Communication

In an event potentially involving the sport's superstars as patients, communication in medical matters is key and must walk a fine line between preserving confidentiality of the player and allowing enough information flow to efficiently plan the patient's medical journey.

In the planning of the event, different layers of communication were therefore identified: (1) external communication about medical matters (eg, injuries of prominent players) and (2) internal communication regarding medical matters within the hospital and with other medical stakeholders of the tournament such as the medical staff of each team or the FIFA medical department.

For layer 1, it was clear that any communication would be managed by the patient's team and/ or through FIFA's media/communication department. A spokesperson from our side was nevertheless nominated prior to the event to fulfil any additional communication duties if required.

Layer 2 required the communication of different levels of information: whereas the team medical staff of an injured player needed rapid and easy access to complete and detailed results of examinations or investigations, other stakeholders only required basic information: For example, guest service representatives in the hospital needed the name of the athlete and the requested service to register, but did not require any detailed information about the clinical condition. The FIFA medical office on the other hand needed an overview of the clinical workload situation of the tournament, ideally in real time.

To address these individual requirements and in addition to the personal contact between clinicians, several electronic solutions were used. The main tool of communication with the medical staff of the teams was a secure electronic portal (Philips Carestream, My view image sharing portal) that was set up for each team doctor prior to the tournament. While this portal was, from its conception, a radiology tool to communicate medical images and reports, we used it to upload any type of information for fast and secure access by the team physician (laboratory results, medical reports, etc) Given that the most common requests were for medical imaging, we also introduced so-called audio-visual reports (AVR) (AVR digital)—short videos of the medical imaging with the radiologist speaking about the main findings and highlighting them on the images. These reports were available in several languages to accommodate the different nationalities.

Novel applications across the Microsoft office 365 suite were used to facilitate controlled internal communications between the MCC and the various stakeholders at the hospital. These included Power Apps, Power Virtual Agent Lists, Microsoft Teams, Power BI, Power Automate and Sharepoint. This capability offered easily bespoke digital solutions that could be accessed selectively by key staff groups to maintain confidentiality while

meeting all the security and data safety standards mandated under law.

At the same time, this system also allowed real time data visualisation through Microsoft Power BI. Access to such anonymised, real-time visual reports were provided to the key stakeholders (FIFA Medical department, MCC). Figure 3 shows an example (screenshot) of such live report.

Limitations

The current work does not cover any ‘field of play’ or other medical services delivered by each team’s own medical staff. We also did not collect any detailed information on the number of each team’s own medical staff or the pathologies treated internally by each team. Therefore, the number of medical problems presenting to the polyclinic reported here might underestimate the true incidence. Some of this information has been collected by FIFA and will likely be presented in the future.

CONCLUSION

In the organisation of the team medical care support for the FIFA World Cup Qatar 2022, we set up a three-part system based on the individual needs of each team: Team services aimed at providing all teams with the best possible equipment and staff, a polyclinic catering to a wide range of medical expertise and diagnostic tools, and the creation of a recovery centre focused on improving the readiness of teams for the next match.

The services were provided by an organisation and its staff, all of whom had previous experience with major sporting events and elite athletes in various functions. Established and previously tested routine processes were only slightly altered for the tournament.

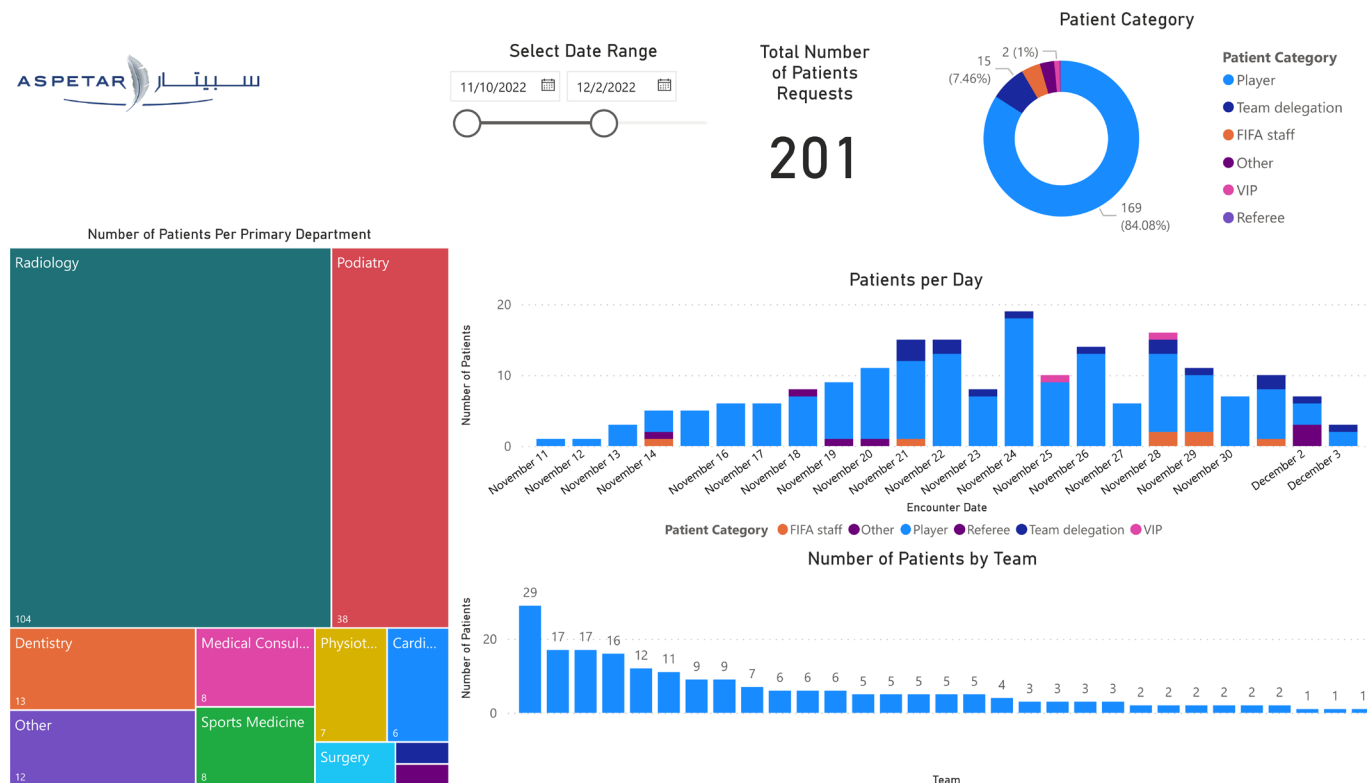


Figure 3 Example (screenshot) of a real time report provided to key stakeholders to keep track of medical matters during the tournament (teams have been anonymised).

The greatest challenge during the tournament were unforeseen requests and secondary events requiring medical coverage, which were not related to the primary task, that is, player medical care during the competition. Communication and flexibility in all approaches was, therefore, key to success.

While the described setting with a 'one for all' centre for medical services will likely not be repeated anytime soon for a male football world cup due to the geographical situation of future events, the presented data nevertheless gives an overview of what can be expected in terms of medical requests in such a tournament. These data are important to inform medical preparations at other international football tournaments, especially those held in one city.

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