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Abstract

The aim of this study was to present the Polyclinic operation at the 2004 Athens Olympic Village. During the Olympic Games from the 13th to the 29th of August 2004, 6.019 patients visited the Polyclinic of the Olympic village and a number of 8.017 medical problems were recorded. Their daily distribution was increased progressively and from the seventeen to the eighteen of August 2004 it was received on an average of 430 visits on a daily basis. A number of 3.578 of patients (44.62%) visited the outpatient department, followed by the Department of Physical Therapy with 1.724 visits (21.5%), while the Radiological Department followed with 1.321 radiological tests. The more frequent of medical problems were relate to the locomotor system (65%). Strains and strains were the most injuries suffered athletes and the hip, knee, ankle and lumbar spine were the anatomical sites that injured more. The Olympic Village polyclinic provided medical care for a large variety of medical problems that could be treated on-site without transfer to a higher-level facility, thereby providing directed medical care for this special population in a secure environment.

Key Words: *Olympic Games, Polyclinic, health management.*

The Polyclinic of the Olympic Village

The Olympic Village of Athens offered free housing for 16.655 athletes and their chaperones from 202 countries. It had the most extended period of operation concerning all the other Olympic venues in which thousands of volunteers and paid personnel worked. As well as, 400 accredited journalists and many special guests from Athens 2004 and from the national teams.

The Polyclinic consisted basic structure of health care for the residents of the Olympic village, which was designed, manufactured and equipped according to the international specifications of the International Olympic Committee (IOC).

The Polyclinic was built on a plot of land with a total surface of 7.500 square meters in the northern part of the village, with high level consideration and high qualitative specifications. Also, the design of Polyclinic's spaces included special systems for the safe entering of individuals with disabilities. Contrary to the Olympic Games of Atlanta and Salt Lake City (Eaton et al, 1997; Stiel et al, 1997), the complex, from the beginning, was created aiming for the needs of residents of the Olympic village during the Olympic Games, but also after the Games. In contrast, the Polyclinic of Sydney (Gerber, 2000; Jorm and Visotina, 2000; Reeser et al, 2003) had been designed for the creation of an elementary school.

The Polyclinic aimed for the provisions of first medical care services in the population that consisted the community of the Olympic village - with the athletes being the top priority - with the use of modern technological means and with the contribution of specialized scientific personnel that provided voluntarily services. Its operation was harmonized with the laws of Greece, as well as with the regulations and the processes of International Olympic Committee and the OCOG (Olympic Committee of Olympic Games), Athens 2004.

Staff

The personnel that provided its services during the Olympic Games in the Polyclinic of the Olympic village were 210 doctors of various specialties, 80 nurses, 100 physical therapists and masseurs, 120 general administrators, 80 dentists, technicians, assistants, 20 podiatrists, 45 pharmacists and 50 X-ray technicians.

The total number of medical personnel was selected through the volunteer process. Among the volunteers, participated professors from the corresponding departments of the University of Athens strengthened the scientific quality of the provided work. The nursing personnel that worked in the Polyclinic during the Games came from the three Bodies of Armed Forces, who were removed from their stations, and from volunteering nurses from hospitals. Polyclinic's administrative personnel undertook the administrative and secretarial support of all provided services, from the arrival of the patients and their management

during the whole stay at the Polyclinic, up to the maintenance of medical files and the technical support of services. The places of administrative services were manned through the data base of Athens 2004 volunteers. In the majority, individuals with knowledge in the sector care for patients (medical and nursing students), were used and in the occasion the use of foreign languages.

The services

The services were always provided to the patients by the personnel of Polyclinic in a close collaboration with the doctors of the National Olympic Teams, as stated by the deontological ethics that the IOC has applied. However, there were cases, where the national teams prohibited the examination of their athletes, if previously the responsible doctor hadn't been informed, as it also had occurred in the Atlanta Games. In the functional departments of Polyclinic, it included: the Outpatient department, department of Physical therapy, Emergency department, Department of diagnostic laboratories, Biopathological laboratories, and One-day clinic and pharmacy.

The outpatient department

This department operated throughout the duration of the Games daily from 8.00 am until 10.00 p.m. in two separate 7 hour shifts with a total of 13 medical departments of different specialties specifically in: dental, general medicine, pathology, foot and ankle clinic, sports injuries, orthopedic, cardiology, ophthalmology, gynecology, surgical, psychiatric and dermatology. During the games there were 3.578 (a total of 44.62%) medical complaints recorded.

The physical therapy department

The same as outpatient department were the hours of operation in the physical therapy department (PTD). One hundred physical therapist and masseur volunteers offered their services, while for the coverage of the athletes increased needs the department allocated the topmost equipment, such as a dynamic therapeutic swimming pool, treadmill, spa and hydro massage. There was also a completely equipped room with a dynamic therapeutic gym and sauna. The visits at the PTD during the period of the games were 1.724 patients.

The Emergency department

The Emergency department operated on a 24-hour basis and provided emergency services for all patients who were sent there. It was an open ar-

chitecture with six examining beds, a completely equipped septic surgery room, insulated room, a room for plaster placement and a room of invigoration. The Emergency department accepted 998 medical conditions.

The Radiological Department

In the Polyclinic the Diagnostic laboratories were equipped with MRI and CT-scan, ultrasounds, X-rays and a pantograph, following in the footsteps of Sydney's Polyclinic. The Radiological department contacted 1.321 radiological tests.

Diagnostic laboratories

In addition, the medical laboratories operated in the underground space of the Polyclinic, which made a wide range of blood, biochemical and microbiological tests, when a doctor of Polyclinic or doctors that accompanied the athletes demanded it. By the Biopathological department of laboratories accepted 397 samples of blood for biochemical tests.

The polyclinic's one-day clinic

Polyclinic's One-day clinic aimed for the short-term hospitalization of its patients. Also, the pharmacy functioned with –a main goal– to be the supplier for various departments, as well as to distribute medicine to the population which the Polyclinic was responsible for.

Hellenic Center of Infectious Disease Control (HCIDC)

Finally, the Polyclinic had a special office for the (HCIDC), which had undertaken the recording and the correlation of all suspect cases with the network of contribution monitoring of Greece.

Administration

The Polyclinic seeking to constitute a model in the benefit of health services in the Olympic Games and simultaneously for the rejection of hindrances that were faced in previous Games due to the absence of an informative system, developed and functioned a complete informative system of patient management constituted from four main sub systems: a) Patient management and Medical action, b) Biopathological management laboratories, c) Radiological

laboratories management and d) Record keeping and management of medical images. Via the informative system that was accomplished on one hand the direct identification of athletes, chaperones and remaining members of the Olympic family on the basis of their unique number of registration and on the other hand was given the possibility to have direct and reliable picture from the operation of Polyclinic in the Administration, who with its order allowed the confrontation of problems that resulted from the daily operation.

Operation

With the entry of patients in the Polyclinic areas, the responsible employee in the secretary's office (the head secretariat, the secretariat for Emergency circumstances, the Physical therapy secretariat), typed in the cards code of accreditation in the proportional field of screen of its terminal or scans the visitor's barcode and the mentioned field is completed automatically. On the computer screen the personal information of the individual appeared with the particular card of accreditation. In the case that the individual wasn't registered at the database, the secretariat's employee was educated accordingly so that they enter the required personal and demographic information of the patient that was mandated by the Medical Encounter Form (MEF). The MEF in equivalence with the Olympic Games of Sydney was a standardized form that on one of its pages included the patient's demographic information, as well as the clinical information of medical evaluation for each incident, while the second page included relative code that was required for the statistical follow-up of medical incidents.

In the case where a patient wished to visit the department of Physical therapy for the first time, they were led to the head secretariat where the personnel also registered the information and created the incident. In the case the treatment was not completed in one appointment, in the next visits they were addressed directly to the secretariat department of Physical therapy. The same occurred for the outpatients, in which the doctor asked for more visits for reexamining the situation or the completion of the treatment. After entering the department of outpatients, the management of patients came from the responsible secretariat of the department. The orders for laboratorial tests were registered, either from the Polyclinic doctor that requested them or from the secretariat of the outpatients in the case where the patients referenced from doctors of the national teams in the HIS, and the results were printed out by the LIS per analyst. The Pharmacy's employees followed corresponding processes. Finally it has to be stated that the informative system of the department of Diagnostic laboratories functioned autonomously, according to the structure of RIS-PACS. For this reason the daily operation program of the department was shaped by its own secretariat, which was independent from

the head secretariat of Polyclinic. The department also has its own telephone line for the planning and briefing of appointments in regards to the publication of results. The lack of interconnection of the sub systems HIS and RIS-PACS forced the responsible employee to register the information for the department’s incidents in retrospect to the HIS.

This action aimed for the observation of reliable files and functional results. The workflows are presented in *Figures 1 and 2*.

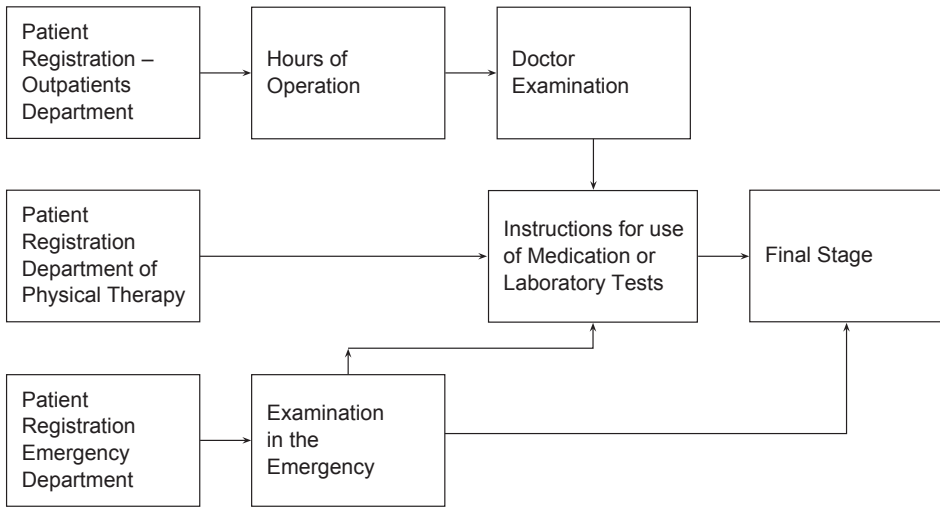


Figure 1: *Flow chart of the outpatients.*

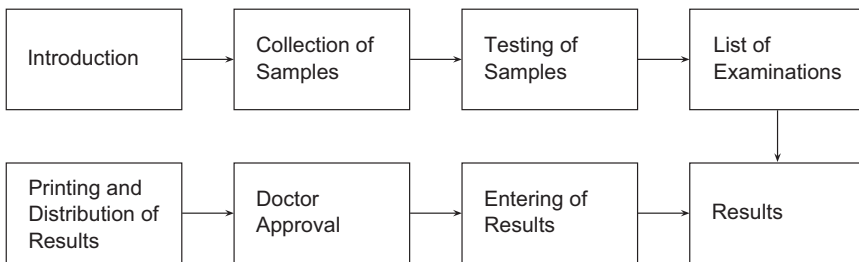


Figure 2: *Patient flow chart in the director of biopathological laboratories.*

Language services

The innovation which was inaugurated at Sydney with the use of specialized medical translators was also followed in Athens. The personnel of Polyclinic of the Olympic Village who was unable to communicate with patients and the in-

jured because of common language and communication difficulties, could use the medical translators services, which were offered by specifically educated medical translators that were assigned in the space of Polyclinic and covered the following languages: English, French, Spanish, Arabic, Russian and Chinese.

Conclusions

- The operation of the Olympic Village's Polyclinic extracted compliments from athletes, factors, chaperones and head executives of the International Olympic Committee. Beyond these however, the use of highly indicators of services proves the success of the Polyclinic. During the Games at the Polyclinic an exceptionally high percentage of 90% of the total recorded incidents were faced which needed medical care in all the Olympic venues.
- The organization and the operation were influenced with a large extent by the way of Polyclinic's organization in Sydney. It used the innovations and modernism that it imported, but simultaneously and at the opinion of organizers placed the bases for still one more achieving operation in Beijing and London.
- The hindrances that were presented in Atlanta exceeded due to the absence of electronic systems of patient management and concluding the observed delay in assisting patients. The Administration of Polyclinic which consists of professionals with much experience in the health administration units sought the operation of «digital» –paperless/film less– polyclinic, in which the bureaucratic processes were limited in minimal and its operation aimed to constitute the model of operation for units of other countries. The processes of patient management contributed in the aid of quality care and in the effectiveness of the operating unit.
- The function of the Polyclinic building constituted an additional point of avant-garde of the Greek Olympics. The smoothly operated biomedical venues, in combination with the technologically developed medical devices received compliments from the visitors and the patients.
- The complex nature of undertaking was faced with the multidimensional participation of all involved parts: the Greek State, the Organizational Committee of Athens 2004 and Polyclinic's personnel, which worked with passion and will for the successful result of the Olympic Games.

References

Eaton, B.S., Woodfin B.A., Askew J.L. (1997). The Polyclinic at the 1996 Atlanta Olympic Village. *Medical Journal Australia*, 167: 599-602

- Gerber, M. (2000). Specialist medical interpreters for the Sydney Games. NSW Public Health Bulletin, 11 (8): 155
- Jorm, L., Visotina, M. (2000). Keeping the dream alive - and healthy: Public health preparations for the Sydney 2000 Olympic and Paralympic Games: guest editorial NSW Public Health Bulletin, 11(8): 137-138
- Reeser, J.C., Willick, S., Elstad, M. (2003). Medical services provided at the Olympic Village Polyclinic during the 2002 Salt Lake City Winter Games. Wisconsin Medical Journal, 102: 20-25
- Stiel, D., Trethowan, P., Vance, N. (1997). Medical planning for the Sydney 2000 Olympic and Paralympic Games. Medical Journal Australia, 167: 593-594

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