

ACCIDENT SERVICES IN A UNIVERSITY HOSPITAL

By

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How to organize accident centres is probably one of the most urgent problems in the world of surgery and medicine today. This article is intended to describe an accident hospital for musculoskeletal, intracranial and abdominal injuries for an area of about 800,000 of population including the capital of Finland. The hospital complex consist of two parts as seen in the photographs.



The main building of the Töölö Hospital serves entirely for accidents and orthopaedic surgery, containing nursing wards for 200 patients. The operative department is in the upper floor and consists of five theatres and one postanaesthetic nursing room. Different offices, auditorium for 100 students and dining rooms are located in the second floor, central kitchen, central heating system, central laboratory and rooms for medical students being located down in the first floor. A wing, large and quite new, is attached to the main building above.



The wing, seen here from the side of the casualty entrance, is lower, composed by three floors. The upper, third floor, consists of the *Neurosurgical Clinic* with its wards and its operative department for four modern theatres, and the *Central Automatic X-ray Department*. The whole second floor, on the street level, is constructed for *Casualty and Outpatient Departments*, with opposite separate entrances for each. The casualty entrance leads to the reception desk, to the waiting and examination rooms, to three shock rooms for major accidents and to two operation theatres for minor injuries. There is a direct corridor connecting with the big ordinary Outpatient Department. The separate entrance of the Outpatient Department leads via information and reception desk to the large main waiting room. This again is openly connected with a number of examination, instruction and dressing rooms. This outpatient service has an operative department of its own, consisting of three modern theatres and a vast plaster room. *The Central Blood Bank Service* with its laboratories, the *Rehabilitation Department* including a pool, facilities for physio- and occupational therapy, the *Central Supply Service*, *Hospital Pharmacy* and *Electroencephalography* work in the first floor.

THE HOSPITAL AS A WHOLE

The hospital, directed by the present writer, is called Töölö Hospital. The number of regular beds is 255, out of which 80 are reserved for orthopaedics, 61 for neurosurgery and the rest for accidents as mentioned above. The turnover of the Töölö Hospital last year was 40,557 new cases, of which 4,632 were in-patients with 79,735 hospital days.

During office hours the *Outpatient Department* is run in turn by a team consisting of two senior orthopaedists, one neurosurgical and five orthopaedic registrars. *Casualties*. A separate duty team takes care of casualties. This team consists of one senior orthopaedist and one senior neurosurgeon together with three registrars. One of the opera-



Operation theatres of the Outpatient Department.

tion theatres of the outpatient department is used for nonaseptic clinical cases. The outpatients have to make an appointment for their visits and to have a written recommendation. There are about 350 outpatient visits a day. The annual ambulatory turnover was 93,088 of which 22,321 were casualties. *The Blood Bank System* of the Finnish Red Cross is fortunately located in this hospital, open day and night. A specialist in *Physical medicine and Rehabilitation* is responsible for the corresponding department, the turnover of which last year was 36,821 visits. All registrars of the hospital have to take care of the exercises of the in-patients. This so-called non stop exercise system is uniformly used throughout the wards.

The X-ray Department is run by two senior radiologists, one registrar specializing in roentgenology of bone and joint and two rotating registrars. The automatic X-ray machinery produces finished dry radiographs in 15 minutes. Last year the production of X-ray pictures was 95,882. – The newly constructed large *Central Laboratory* was opened

only at the end of 1961. Its chief is a lecturer in internal medicine, specializing in laboratory work. The service for *Electroencephalography* had last year 1,829 examinations, of which 746 were for in-patients. – The hospital is divided into two university clinics.

THE CLINIC FOR ORTHOPAEDICS AND TRAUMATOLOGY

This clinic has 194 beds of which 80 are reserved for orthopaedics. Its chief is the University Professor of Orthopaedics and Traumatology. The staff consists of 5 lecturers, who are senior orthopaedic surgeons with a complete schooling also in general surgery, 15 registrars, of which 5 are qualified general surgeons specializing for 2–3 years in orthopaedics and traumatology; the other 10 are rotating registrars obtaining practice for general surgery in one year. There are furthermore 10 so-called amanuenses, almost qualified physicians, practising for 3–6 months. The number of nurses is 81, of which 18 belong to the operation department of the clinic with five theatres and a postanæsthetic room. The nurses of the clinic are helped by so-called assistant nurses with a minor schooling, numbering 53. About 3,000 operations were performed last year and the clinical material consisted a.o. of 1,400 fractures and furthermore of abdominal, thoracic, peripheral nerve and vascular injuries.

The work of the clinic starts at 8 o'clock in the X-ray department, attended by the whole staff, whereafter some of the surgeons take care of the wards and the others of the operative work. Each Wednesday the professor makes the rounds of half the clinic. As regards the development of surgery, one of the seniors takes care of surgery of the hand, one of vascular surgery, one of serious injuries of the spinal column and one of plastic problems. Occasional difficult problems, needing specific thoracic surgery, are transported to the University Clinic for Thoracic Surgery. The maxillary and mandibular fractures are treated by a visiting oral surgeon from the University Dental Clinic. Facial injuries, needing plastic surgery, are sent to the Red Cross Hospital for Plastic Surgery in the city. As regards the aftercare and follow-up, patients are routinely treated twice a week, partly by the outpatient department, partly by a hospital team.

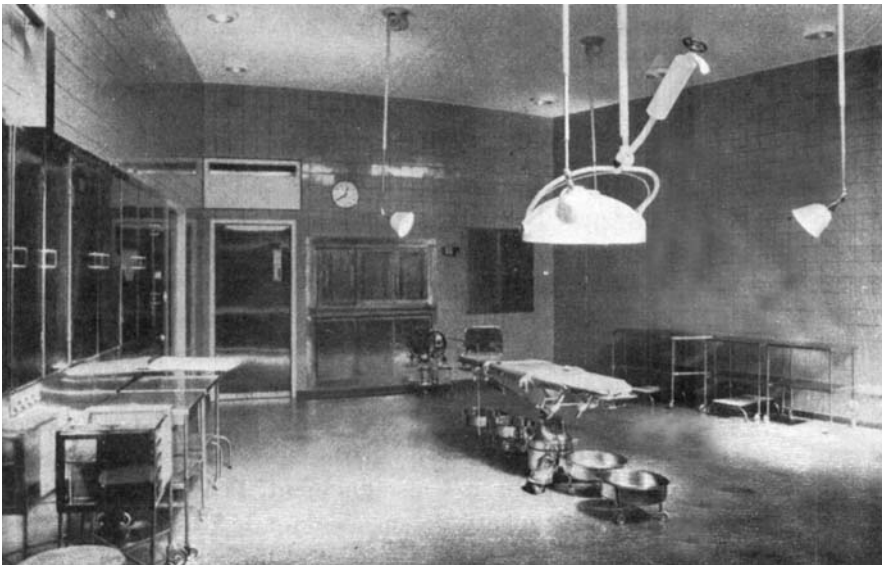
Teaching. There are at present 60 medical students, called candidates, to be taught. Lectures by the professor are given twice a week,

and after these lectures the students, divided into small groups, are instructed by the senior surgeons. A team of these students also attends the work of surgeons on duty. — As regards the surgical instruction the whole staff attends each Saturday morning from 8 o'clock until 11 o'clock the staff conference and meeting of the clinic, arranged by a lecturer and headed by the professor. At this occasion also the programme for the following week is decided. The activities of the hospital, and the Saturday morning meetings in particular, are apt to stimulate scientific thinking. Research work is continuously going on.

THE CLINIC FOR NEUROSURGERY

This clinic has 61 beds. This clinic, headed by Dr Gunnar af Björkstén, University Lecturer in Neurosurgery, takes care of operative intracranial injuries. 1,500 neurosurgical in-patients were treated last year with 5,900 hospital days. The number of operations was 752. The staff of this clinic consists of three senior neurosurgeons and four registrars. There is continuous cooperation between the two clinics. A chair of neurosurgery was established recently.

Concluding, I should say that this type of university hospital offers excellent opportunities for teaching, training and research. The com-



One of the operation theatres.

bined duties and functions of traumatology orthopaedics and neurosurgery explain the fact that the hospital seems to be overstaffed compared to its complement of patients or beds. To the staff belong a number of different specialists, but it could not work successfully without general surgeons with modern knowledge and skill. Due to the fact that only a qualified general surgeon in Finland is permitted to specialize in orthopaedics, and that even most of the rotating registrars have had earlier experience in surgery, the accident services in the Töölö Hospital have proved to be workable, although more full-time surgeons are desired. An orthopaedic surgeon is most privileged working together with a neurosurgeon in the enthusiastic atmosphere of an accident hospital.

SUMMARY

Töölö Hospital, the accident centre of Helsinki, directed by the writer, containing the University Clinic for Orthopaedics and Traumatology and the Clinic for Neurosurgery, is described. The turnover of this hospital of 255 beds was last year 40,557 new cases, of which 4,632 were in-patients. The outpatient department was visited by 93,688 patients of which 35,925 were new, the number of casualties being 22,321. The number of staff members is 40, consisting of 28 surgeons, 4 X-ray men, 5 anaesthetists and 3 other specialists. The hospital has offered excellent opportunities for teaching, training and research, and it has also worked successfully in accident services. Only a qualified general surgeon in Finland is permitted to specialize in orthopaedics.

RESUME

Description de l'hôpital de Töölö, qui est le centre d'Helsinki pour les accidentés, dirigé par l'auteur, qui contient la Clinique de l'Université pour l'orthopédie et la traumatologie, ainsi que la Clinique de Neurochirurgie. Cet hôpital qui compte 255 lits a traité l'année dernière 40.557 nouveaux cas, dont 4.632 malades hospitalisés. Le Service des traitements ambulants a été consulté par 93.688 malades dont 35.925 étaient des cas nouveaux, le nombre des accidents s'élevant à 22.321. L'hôpital a une équipe de 40 membres, dont 28 chirurgiens, 4 radiologistes, 5 anesthésistes et 3 autres spécialistes. L'hôpital a fourni d'excellentes conditions à l'enseignement, l'entraînement et la recherche. Il a eu aussi beaucoup de succès dans le traitement des accidentés. Seul un chirurgien général qualifié est autorisé en Finlande à se spécialiser dans l'orthopédie.

ZUSAMMENFASSUNG

Töölö Hospital, das zentrale Unfallskrankenhaus in Helsinki, das vom Verfasser geleitet und die Universitätsklinik für Orthopädie, Traumatologie und die Klinik für Neurochirurgie umfasst, wird beschrieben. Die Patientanzahl dieses Krankenhauses mit 255 Betten war im letzten Jahre 40,557 neue Fälle, von denen 4,632 in das Krankenhaus aufgenommen wurden. Das Ambulatorium wurde von 93,688 Patienten besucht, von denen 35,557 neu waren. Die Anzahl der Unfälle war 22,321. Die Zahl der Stabmitglieder ist 40 und besteht aus 28 Chirurgen, 4 Röntgenologen, 5 Narkotisören und 3 anderen Spezialisten. Das Krankenhaus bietet ausgezeichnete Möglichkeiten für Unterricht, Ausbildung und Forschung, und es hat auch mit Erfolg in der Unfallhilfe gearbeitet. Nur ein in allgemeiner Chirurgie qualifizierter Arzt, kann in Finnland sich in der Orthopädie spezialisieren.