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Highlights in Medical Imaging in Finland: The Chairman's Perspective

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How is Medical Imaging Organised in Finland?

Finland is divided into 20 hospital districts, each containing either a central hospital or a university hospital, with a total of five of those in the country, located in Helsinki, Tampere, Turku, Kuopio and Oulu. Every hospital district also contains one to three regional hospitals per district. In addition, almost all the municipalities have their own primary healthcare centre (GP). With regards to radiology, these centres have about 200 small x-ray units. Almost all specialties are represented in the university hospitals, whereas about 10 – 15 specialties are available in central hospitals and some six - seven in regional hospitals. Hospitals are financed by patient contributions and by the municipalities that own the hospitals.

Patients pay 11 euros at primary healthcare centres, 25 euros for outpatient fees to hospitals, and staying in the department ward costs 30 euro per day. These fees cover everything, including laboratory tests, radiology, surgery, etc. University hospitals also get money directly from the Ministry of Social and Health Affairs for teaching and research. The total sum is about 100 million euros per hospital, per year. The ministry is responsible for practice, regulations and controls. Universities are financed by Ministry of Education.

Please Provide Some General Information on the Department of Radiology at Tampere University Hospital

The department consists of two separate departments in the main building, a small unit in the first aid section, and a unit of dental radiology. In addition, we incorporate the radiological departments of three regional hospitals within a 90 km radius of Tampere. We currently have three MRIs (1.5T, 1.5T, 3T), four CTs (64, 64, 16, and four slice), a micro-CT, a PET/CT, three angio labs, 10 ultrasound units, three fluoroscopy units, fully digitised plain imaging systems, PACS, RIS, and a speech recognition system in the Finnish language. We are a filmless and paperless unit.

Our budget for this year is 21.5 million euros. Last year, we performed 196,000 examinations and the expected number for this year is 203,000. Today we have a staff of 208, comprising 50 doctors including nine residents and four physicists, and 145 radiographers and secretaries. There are 1,100 beds in the main building and 50 - 235 in each regional hospital, 1,515 in total. The university hospital is the second largest hospital in Finland, only second to Helsinki. We offer all specialties except organ transplantation, which is concentrated in Helsinki.

What Imaging Exams are in the Highest Demand in Your Department?

The highest demand is for MRI exams and interventional procedures. Waiting lists exist; for example, the waiting time for elective patients to receive an MRI in our hospital is four to six weeks. Also, the waiting time is five weeks for examinations of children, because of the need for anaesthesia. Ultrasound has a waiting time of three weeks. All other services are available in one - three days. In urgent cases, immediate access is naturally given to all services.

We carefully monitor waiting times and if needed, extra work outside normal working time with additional pay is allowed, to manage waiting times.

Are Migrant Employees Common in Medical Imaging Departments in Finland?

At the moment we only have a small number of non- Finnish employees, because of the strict language requirements. Finnish is very difficult to learn and only Estonians commonly understand and speak it. Swedish is the other official language in Finland. People who come from other countries must first learn Finnish and then serve as a trainee for almost a year in different healthcare units.

During that time their skills are assessed. After the trainee period, they take written exams in Finnish law, pharmacology, and clinical matters before they are licensed to work as a doctor. A governmental office grants licenses. Non-Finnish radiographers are very rare in Finland.

Has Medical Imaging in Finland Experienced Understaffing?

The question of personnel is very important. There is currently a sufficient number of radiologists and radiographers in the cities that have university hospitals due to the fact that these cities are also educational centres for staff. People therefore stay longer in the same region. However, outside the university hospital cities, some units are experiencing shortages of doctors and radiographers, for reasons including understaffing, sickness, workload, salary, no work in the region for spouses, etc.

How do we manage the situation? There are currently five - ten private companies that sell radiological services around the country by visiting the department or by using teleradiology. The costs associated with these services are obviously much higher than with normal staff. All in all, we have enough radiologists and radiographers in Finland, but there is a constant competition between the private and public sectors for them.

What is the Process for Educating Residents to Become Radiologists in Finland?

The education of a radiologist begins just after graduation as an MD at the university. Nine months of general practice (GP) service and three months of service in one other specialty than radiology is required. This 12-month period is followed by four years in radiology, including between one-and-a-half to two years' service in the department of a central hospital. The time depends on the size of the unit, equipment, and education as well as on the experience of the chief doctor of the department in question. After this, the doctor will work in a department of a university hospital for two – two-and-a-half years. The total training time is five years. Residents have their own logbooks during their specialisation. In addition to normal service (work, meetings, own lectures), they must accumulate 150 hours of theoretical education, of which 30 hours must be administrative. The residents' education is carefully monitored and in addition, they work together with senior radiologists. The required exams are quite demanding, ensuring that their skill level remains high.

Please Describe the Examination Process for Radiology Residents in Finland.

Residents have three written exams, which they must pass during their specialisation period. They have an exam on medical physics and radiation protection (five questions) during the first year, a normal written exam (six questions concerning the whole field of radiology) during the fourth year, and finally an imaging exam (six cases) during the last year. Our requirements are closely aligned with EU guidelines.

Is Interventional Radiology (IR) Well Established in Finland?

Yes, IR is well established in Finland. I have personally been a pioneer in this field and made the first PTA in 1979. I also introduced laser angioplasty to Finland. TV, newspapers and also Finnish medical journals have actively published our achievements. The number of interventional procedures is increasing every year, and Tampere and Kuopio University Hospitals are well known for their expertise in all kinds of interventional procedures. Our interventions mainly concentrate on vessels, because of the high incidence of cardiovascular disease in Finland.

How Widespread is Teleradiology in Finland?

Teleradiology is widely used in Finland due to the long distances between hospitals, especially in eastern and northern Finland. Almost all radiological units are digitised now and we have comprehensive coverage. In our university's response area (1.2 million people), there are four central hospitals and eight regional hospitals. They can all send images to the university hospital PACS system and vice versa.

Also, our primary healthcare centres are equipped with radiological machines (plain images) that use our PACS. Thus, we can see their images and, with the permission of the patient, doctors there can see the patient's images taken at the university hospital. In the near future, we will introduce a national PACS for long-term archiving in Finland. Even in small villages where there is only a department for plain images, the patient can be sent to the nearest hospital after images have been sent via teleradiology.

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