ICU
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An Interview with Nils Smith-Erichsen

Dr. Nils Smith-Erichsen is a Consultant in the ICU at Akershus University Hospital in Oslo, Norway. He shares his views on Intensive Care in Norway.

Please Tell Us About Your Experiences Working as an Intensivist in Norway.

When I began as a full-time intensivist in 1979, only a few colleagues were in the same position in Norway. I trained as an anaesthesiologist at Rikshospitalet University Hospital and my interest in intensive care started during this period. The unit is a section of the department of anaesthesia at Akershus University Hospital, a secondary care hospital located 20km north-east of Oslo. It is a general ICU with 10 beds. We serve all specialties except cardiac surgery and neurosurgery. The unit is staffed with three doctors; one full-time, one 80% and myself 60% (40% of my time is devoted to my university function) as well as 80 nurses of whom 50 are working full-time, in addition to two assistants and one secretary. In 2006, we treated 473 patients, 60% of whom were in need of mechanical ventilation.

How Many Intensive Care Units are Currently Operating in Norway? Are There Any Areas of High Demand in the ICU?

According to the Norwegian Intensive Care Registry (NIR), 31 units report data to the registry. In 2005, 8,259 patients were treated in 28 Norwegian ICUs according to NIR. These patients generated 40,880 ICU days and 23,440 ventilator days. Approximately 10,000 patients are treated in Norwegian ICUs per year, or about 0.2% of the Norwegian population. The most demanding group in our ICU are patients with severe infections. In recent years, the number of elderly patients, patients with haematological malignancies and those with severe co-morbidities have increased demand on ICU facilities.

What Technological Advances in Norway are Making ICU Services More Efficient?

The introduction of continuous renal replacement therapy and the development of more sophisticated ventilators have made intensive care more efficient in recent years. The increasing use of syringe pumps for continuous medication has also contributed. In our unit, the introduction of a patient data management system (PDMS) in 2000 has been the most important tool. Akershus University Hospital was the first to implement such a system in Norway. Finally, I anticipate that the introduction of specialised ICU beds will also help.

Is Cost-Effectiveness a Focus for Norwegian ICU?

There is a continual demand for reducing costs in intensive care in all Norwegian hospitals, however only minor attention is devoted to how efficiently available resources are used. NIR use the Nine Equivalents of Nursing Manpower use Score (NEMS) as a measure of resource use in intensive care (Miranda 1997). This score can be correlated to nurse workload and costs as a measure of efficiency. Efficiency measures are not yet a focus of NIR. We have used it in our hospital on a project basis, but not published any data. To my knowledge, only three studies from Norway have been published. Two of them are cost-benefit studies calculating the cost of intensive care and the cost per expected year of survival for survivors (Thoner 1987, Løes 1987). The third study is an average cost-effectiveness study using the expected remaining years of survival in survivors after 18 months (Flaatten 2003). According to Flaatten, personnel costs comprise about 65% of total costs of intensive care.

Is There Any Noteworthy Research in the Field of ICU Taking Place in Norway?

There are ongoing clinical studies on long-term results after intensive care under the guidance of Professor Hans Flaatten at Haukeland University Hospital in Bergen in western Norway. Both clinical and experimental studies of high quality are going on at Ullevaal University Hospital in Oslo under the guidance of Professor P.A. Steen. His special field of interest is clinical and experimental research on cardio-pulmonary resuscitation. At the University Hospital in Northern Norway in Tromsø, Professor Lars Bjertnaes and his group have been doing experimental studies on acute lung injury in a sheep model for several years.

How is Education for Intensivists Organised in Norway?

The Norwegian system of postgraduate specialisation for physicians incorporates anaesthesia and intensive care in one specialty. After passing their final exam, medical students must do a one-year postgraduate internship in internal medicine and general surgery, followed by six months in general practice under the guidance of a general practitioner. Once they have received their medical license, they can start their specialisation in anaesthesia and intensive care in selected certified hospitals where a minimum of a year and a half must be in a university clinic. To become a specialist requires an additional four and a half years in anaesthesia and intensive care and six months in a medical or paediatric department. During the training period candidates must go to educational courses for 260 hours of which 222 hours are obligatory. At the end of each course

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candidates must pass an exam to obtain certification. The title ‘specialist in anaesthesiology’, is granted after application to the Norwegian Medical Association.

Does Norway Experience Any Problems in Centralising Services for Isolated Communities?

Norway has about 40 acute care hospitals to cover a population of about 4.6 million people. Two thirds of the population lives in the southeast area of Norway while the remaining third resides in the western and northern regions. Our nature and climate makes communication difficult in some areas, particularly during autumn and winter months. As a result, it is sometimes necessary for hospitals to confirm that patients can reach hospital within reasonable time. Therefore, only advanced healthcare services, such as organ transplant, open-heart surgery and rare diseases have been centralised. The question of centralising more common healthcare services is now on the agenda and is discussed among the public, medical personnel and politicians, as the hospital is an important employer in some communities.

How is Reimbursement for ICU Services Organised in Norway?

The ICU has its own budget, based on that of the department of anaesthesia and the hospital’s budget as a whole. The hospital budget is partly based on a fixed sum from the government and an activity-dependent reimbursement. Hospital activity is measured by DRG. This is valid for the vast majority of Norwegian hospitals, which are publicly- funded. There may be exceptions for a few private hospitals, but I believe they also receive their major funding from the government.

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