

Guidelines for the utilisation of intensive care units

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The intensive care unit

1. An Intensive Care Unit (ICU) is a geographically defined area in the hospital providing care for critically ill patients with specialized personnel and complex equipment.

Whilst an ICU may exist as part of another department, ideally there should be an autonomous department of intensive care, treating all acutely ill patients of the hospital. An ICU provides extensive evaluation and monitoring, and access to sophisticated and comprehensive treatment. The ICU should have easy access to the emergency room, the operating rooms, laboratory and imaging facilities. An ICU groups:

Critically ill patients. Patients may be admitted to the ICU primarily because they are in an unstable condition with impaired vital organ function. Some patients may also be admitted because they are at high risk of developing serious and preventable complications. Patients with no chance of recovering to a reasonable quality of life should not be admitted to the ICU. Patient dependency may vary from ICU to ICU but should always be monitored; several ICU levels may be considered.

Skilled and specialized personnel. The ICU is staffed with a specific group of specially trained doctors, nurses and other allied personnel (e.g. physiotherapists, technicians) in appropriate numbers.

Doctor specialists in intensive care medicine or "intensivists" (see definition below) must have the responsibility of overall medical care. They should keep close contacts with the primary physicians, and other consultants who will contribute specific expertise and will take re-

sponsibility for patient's medical care after discharge from ICU.

Specialist equipment. The ICU should provide at least facilities for cardiac monitoring and invasive hemodynamic monitoring, temporary cardiac pacing, ventilatory support and pump-controlled administration of infusions. Facilities for blood gas, haemoglobin and electrolyte measurements should be provided in the ICU or in the immediate vicinity.

2. An ICU should function 24 h a day, 7 days a week. There must be at least one doctor immediately available at all times who can deal with all emergencies.

3. Each ICU (or department of intensive care) must have a designated director, who is responsible for the medical care, the policy and the general organization. Each ICU should also have a head nurse who is responsible for all nursing functions.

4. Although the optimal number of beds is variable, a unit with less than 6 beds is hardly cost effective and flexible. On the other hand, units of more than 12 beds may be more easily managed if separated into smaller or specialized subunits. Actual bed requirement depends on the size of the hospital and the nature of admission and discharge patterns.

5. The present guidelines apply to any ICU, whether general (medical-surgical) or specialized. Some hospitals have several ICUs. Grouping of these separate ICUs into a department (with one directorate) should be encouraged. If the ICUs remain separate, close professional interactions between these ICUs are essential.

The intensive care specialist

The intensive care specialist combines the following components.

Training and experience

An intensive care specialist ("intensivist") must be able to coordinate the activities of doctors, nurses and allied

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health professionals and must have proper training and experience in his discipline. The specialty of intensive care requires a primary specialty (anaesthesiology, internal medicine and specialties thereof, surgery or paediatrics) and at least 2 years of full-time training and experience in intensive care medicine. As an alternative, some countries may offer a full (at least 5 years) training programme in intensive care medicine.

Training is the development of professional expertise in its broader sense. Training entails the exercise of scientific judgement and the practice of "state of the art" professional interventions. Appropriate training involves therefore three requirements.

Practical environment. The trainee will be confronted with the clinical situations as described in the curriculum of intensive care medicine. This means that the trainee may need to rotate among different ICUs. The ICUs and the respective hospital need to provide the operational facilities required for "state of the art" medical care and professional interventions. Major professional interventions are described in detailed protocols.

Coaching and supervision. The trainee will be under continuous supervision of full-time ICU staff with recognized scientific knowledge and experience of intensive care medicine.

Control. Each ICU participating in a training programme requires proper accreditation.

This training must include diagnosis, monitoring and management of acute disease processes and procedures; the precise content is defined elsewhere (Guidelines for training in intensive care medicine).

Professional activity

The intensive care specialist must devote the majority of his/her professional activity to the ICU. He/she must be responsible for patient's care in the ICU.

Commitment to intensive care

The intensive care specialist must promote intensive care (inside and outside the ICU), develop treatment protocols: he/she must participate in teaching and continuing medical education for doctors, nurses and paramedics. He/she should have a special commitment to maintain ethical standards. He/she must promote the interrelations with the other specialists by regular communication.

Updating of the knowledge

The acquired knowledge should be regularly updated by reference to current medical literature, continuing medical education programmes and scientific meetings.

The ICU director

Each ICU (or department of intensive care) must have a designated medical director, who is an intensive care specialist, responsible for:

- patient care, admission and discharge policies, treatment protocols and liaison with relatives;
- administration of the ICU, including ICU budgeting, collection of data (case mix, outcome, costs) and total quality assessment;
- participation in education and research, adapted to the local requirements. Smaller units should have education programmes and should be encouraged to develop studies on case reviews or participation in multicentre studies;
- liaison with the public regarding the social and ethical issues related to intensive care.

He/she must have sufficient time available in the ICU. Ideally, he/she should have a full-time assignment in the ICU.