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INTENSIVE CARE UNIT

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An intensive care unit (ICU), also known as an intensive therapy unit or intensive treatment unit (ITU) or critical care unit (CCU), is a special department of a hospital or health care facility that provides intensive care medicine.

HOW INTENSIVE CARE UNITS WERE BORN?

- Harvey Cushing was the most brilliant brain surgeon of his generation. His patients adored him, describing him as caring and kind, but he kept his staff in a perpetual state of terror. He was intolerant of mistakes and could be cold, harsh and bullying. But he was forgiven, because his results spoke for themselves.
- Before Cushing, eight out of 10 brain surgery patients died. In his hospital, the surgeon reduced mortality to just 8%.
- In a time before antibiotics, and the ever-present risk of bacterial infection killing anyone going under the knife, Cushing operated under the strictest cleanliness. He wore gloves and a mask, doing whatever he could to sterilize the wound and reduce the chance of disease. Crucially, Cushing continued the care after he had finished his operations – the period when patients were at greatest risk of dying.
- Cushing carried over his meticulousness during surgery to the post-operative care of the patients
- He often tended to patients' wounds himself, ensuring they were kept free of infection. He introduced strict observation systems and record keeping – and the first widespread use of x-rays and blood pressure monitoring.

Each individual patient was the focus of care by a team of specialist staff.

- “Cushing's whole ward was more like an intensive care unit than other surgeons,” Spencer explains. “The nurses and junior surgical staff knew that if the bed sheets were not tucked in properly, the dressing wasn't clean or the patient was complaining, they were going to be in big trouble.”
- As operations became more complex through World War Two and into the 1950s – with, for example, the first open heart surgery – Cushing’s pioneering post-operative care became widespread, saving countless lives
- In August 1952, the Blegdam Hospital in the Danish capital Copenhagen was overwhelmed by hundreds of seriously ill polio patients. Without assistance to help them breathe, most would die. The only treatment available was a mechanical respirator system, known as an iron lung.
- The polio epidemic in Copenhagen resulted in 316 patients developing respiratory muscle paralysis and/or bulbar palsy, with subsequent respiratory failure and pooling of secretions. The Blegham Hospital, the hospital in Copenhagen for communicable diseases, had only one tank respirator and six cuirass respirators at the time. This was completely inadequate to support the hundreds of polio patients with respiratory failure and bulbar palsy. The mortality rate from polio with respiratory failure and bulbar involvement was historically 85–90% and, as the epidemic progressed, the situation looked desperate.

Professor Lassen, chief physician at the Blegdam Hospital, had a strong desire to provide treatment for all polio victims, despite insufficient respirators, and therefore consulted with Dr Bjorn Ibsen, a Copenhagen anesthetist.

Professor Lassen hoped that positive pressure ventilation, as used in modern anesthesia at that time, might be a solution. Two days later, a 12-year-old girl with polio and resultant respiratory failure and bulbar palsy had a tracheostomy formed

just below the larynx: a rubber cuffed tracheostomy tube was inserted and positive pressure ventilation successfully delivered manually with a rubber bag.

Tracheostomies had been performed in Copenhagen for 4 years before this, but with little beneficial effect on outcome.

Dr Ibsen had the idea of caring for all such patients in a dedicated ward, where each patient could have their own nurse. Thus, in December 1953, the specialty of intensive care was born.

Intensive care has undergone enormous change since the establishment of the specialty more than 65 years ago, and further changes will undoubtedly be seen in coming years.

INTENSIVE CARE MEDICINE

Intensive care medicine, also called critical care medicine, is a medical specialty that deals with seriously or critically ill patients who have, are at risk of, or are recovering from conditions that may be life-threatening.

It includes:

- providing life support,
- invasive monitoring techniques,
- resuscitation,
- end-of-life care.

Patients may be referred directly:

- from an emergency department
- from a ward if they rapidly deteriorate
- immediately after surgery if the surgery is very invasive and the patient is at high risk of complications.

MOST COMMON TYPE OF ICU

- Neonatal intensive care unit (NICU).
- Pediatric intensive care unit (PICU).
- Coronary care unit (CCU)
- Neurological Intensive Care Unit (NeuroICU).
- Post-anesthesia care unit (PACU)
- High dependency unit (HDU)

NEONATAL INTENSIVE CARE UNIT (NICU)

This specialty unit cares for neonatal patients who have not left the hospital after birth. Common conditions cared for include:

- prematurity and associated complications,
- congenital disorders such as congenital diaphragmatic hernia,
- complications resulting from the birthing process.

PEDIATRIC INTENSIVE CARE UNIT (PICU)

Pediatric patients are treated in this intensive care unit for life-threatening conditions such as

- asthma,
- influenza,
- diabetic ketoacidosis, or
- traumatic neurological injury.

CORONARY CARE UNIT (CCU)

Also known as Cardiac Intensive Care Units (CICU) or Cardiovascular Intensive Care Unit (CVICU), this ICU caters to patients specifically with

- congenital heart defects or
- life- threatening cardiac conditions such as a myocardial infarction or a cardiac arrest.

NEUROLOGICAL INTENSIVE CARE UNIT (NEUROICU)

Patients are treated for brain aneurysms, brain tumors, stroke, and post-surgical patients who have undergone various neurological surgeries performed by experienced neurosurgeons require constant neurological exams. Nurses who work within these units have neurological certifications.

POST-ANESTHESIA CARE UNIT (PACU)

Also known as the post-operative recovery unit, or recovery room, the PACU provides immediate post-op observation and stabilization of patients following surgical operations and anesthesia

HIGH DEPENDENCY UNIT (HDU)

Most acute hospitals have a transitional high dependency unit (HDU) for patients who require close observation, treatment and nursing care that cannot be provided in a general ward, but whose care is not at a critical stage to warrant an (ICU) bed

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