



CURRENT ISSUES IN EMERGENCY AND CRITICAL NURSING PRACTICE

Prof. Datuk. Dr. Hjh. Bibi Florina Abdullah

Pro-Chancellor

Lincoln University College Malaysia

Identify the current global issues in emergency and critical nursing

Discuss the issues that affects healthcare delivery system

CRITICAL CARE NURSING

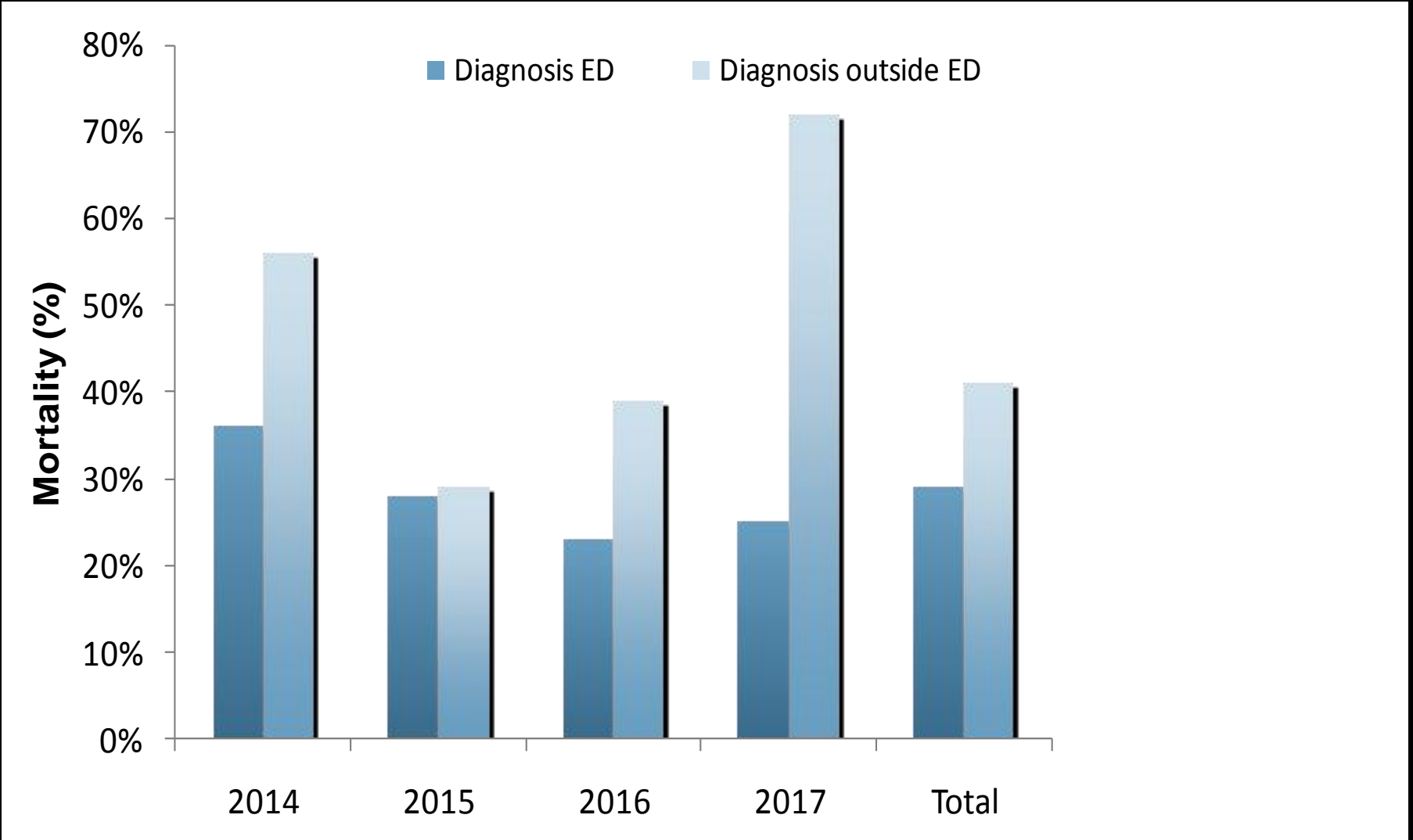
Critical care nursing is that specialty within nursing that deals specifically with human responses to life-threatening problems.

Schorr (2009) & Bastani (2011)

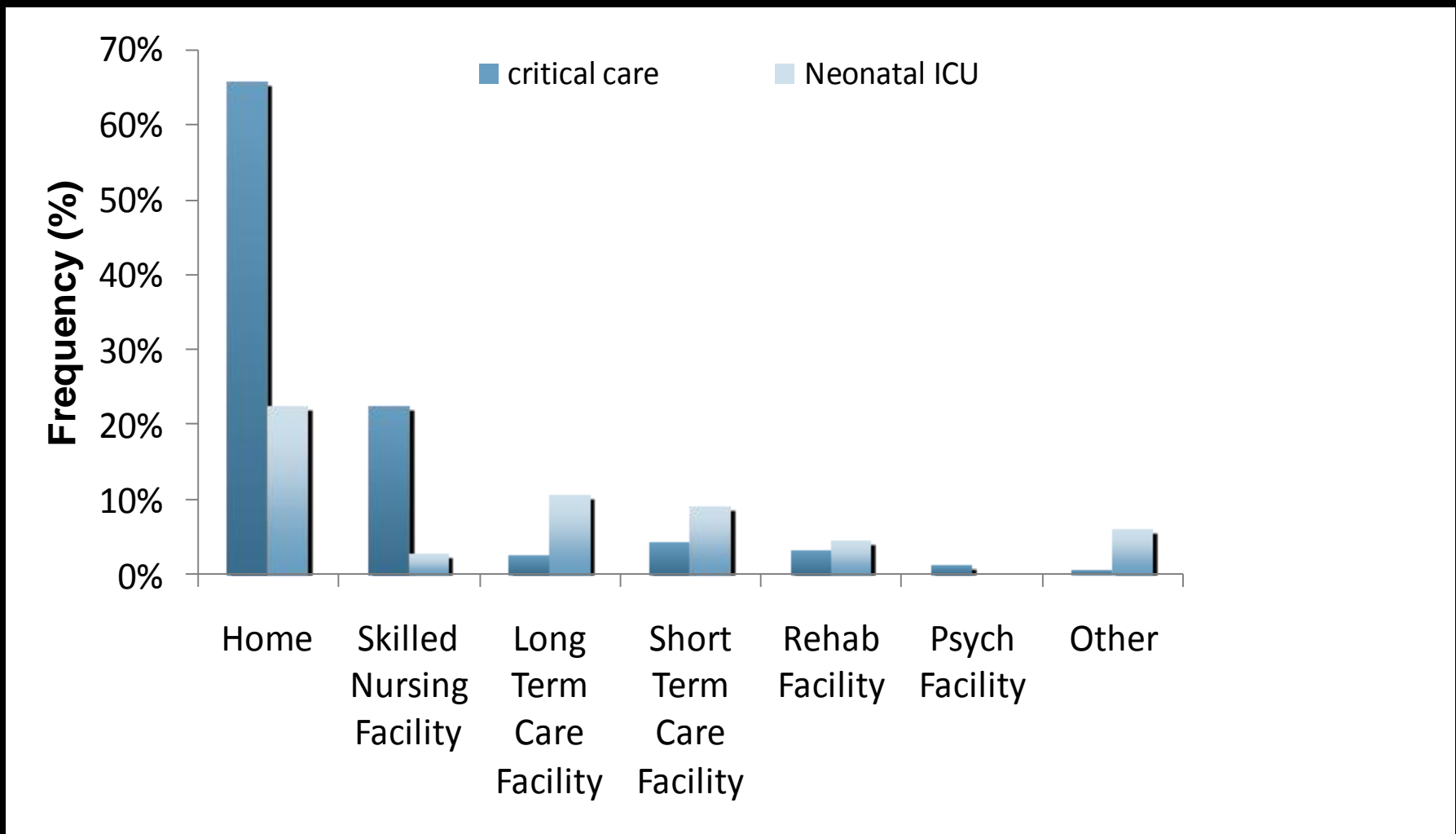
EMERGENCY NURSING

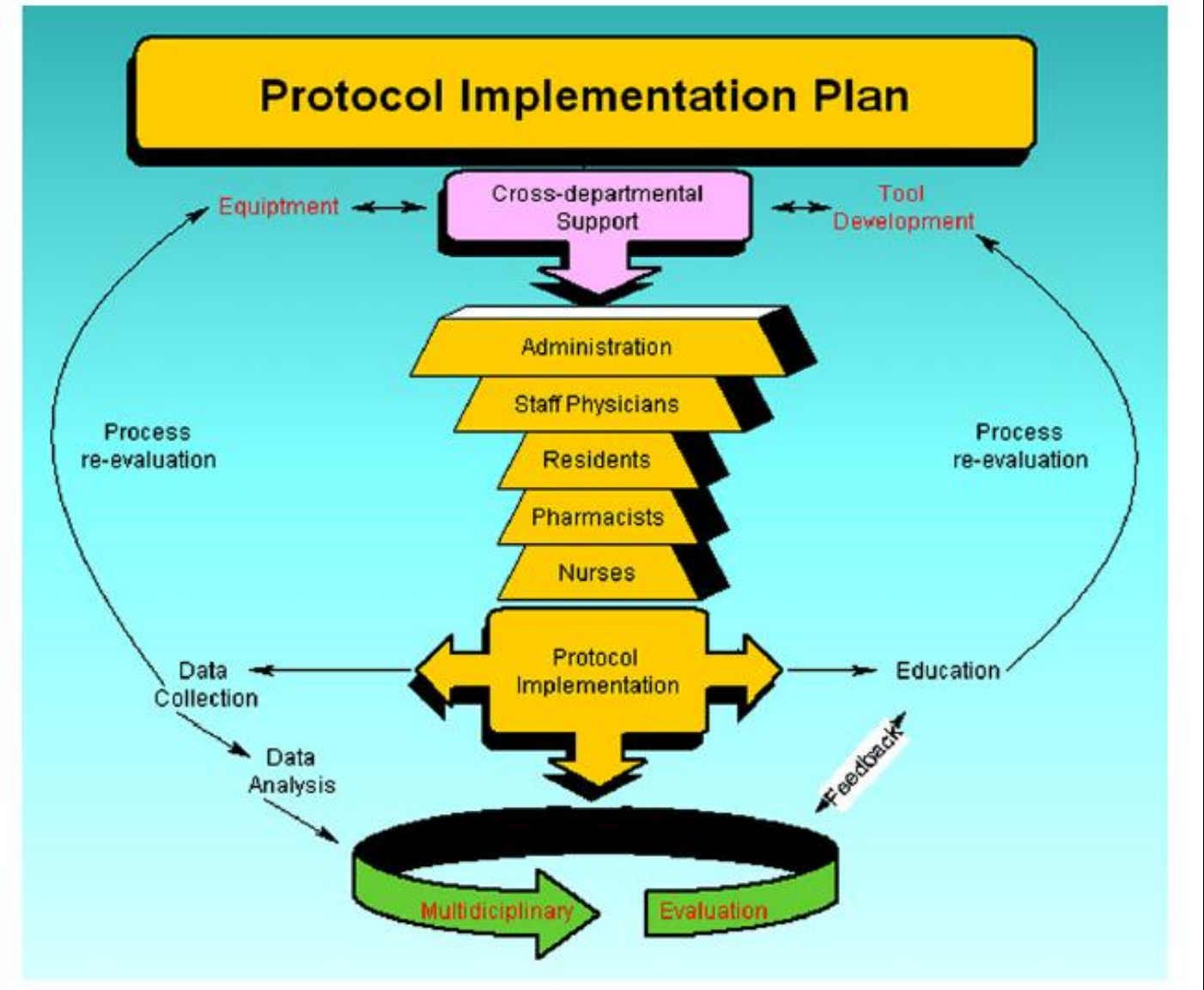
Emergency nursing is that specialty within nursing that deals specifically with human responses from simple to life-threatening problems however, in a fast paced environment.

EARLY DIAGNOSIS IN THE EMERGENCY DEPARTMENT IMPROVES SURVIVAL



FINAL DISCHARGE POSITION AFTER HOSPITAL STAY





INITIAL RESUSCITATION

Is defined as a protocolized resuscitation of a patient with actual tissue hypoperfusion (hypotension persisting within hematocrit level of 4 mmol/L) and SPO₂ of $\leq 80\%$.

INITIAL RESUSCITATION

During the first 60 minutes of resuscitation, the goals of initial resuscitation should include all of the following as one part of a treatment protocol:

- Defibrillation or cardioversion
- Mechanical ventilation
- Mean arterial pressure (MAP) ≥ 65 mm Hg
- Urine output ≥ 0.5 mL.kg⁻¹.hr⁻¹
- Glucose monitoring every 15 min

DEFIBRILLATION

For witnessed adult cardiac arrest when an AED is immediately available, it is reasonable that the defibrillator be used as soon as possible. For adults with unmonitored cardiac arrest or for whom an AED is not immediately available, it is reasonable that chest compressions be initiated while the defibrillator equipment is being retrieved.

DEFIBRILLATION

Adults

- In-hospital cardiac arrests start with 150 joules

Pediatrics

- Maintain at 150-200 joules

Neonatal

- Maintain at 150 joules or less
- Do not attempt to start at 200 joules

MECHANICAL VENTILATION FOR ACUTE RESPIRATORY DISTRESS SYNDROME (ARDS)

Target a tidal volume of 6 mL/kg versus 12 ml/kg (predicted) body weight. The others are optional:

- Plateau pressures ≤ 30 cm H₂O
- Use of PEEP at end expiration to avoid alveolar collapse
- Back up respiratory rate maintain at 20 breaths per minute
- Semi fowlers for PaO₂/FIO₂ ratio ≤ 100 mm Hg
- For pregnancy, remove PEEP, and use Assist-Control mode

OXYGEN ADMINISTRATION TO PRETERM

Resuscitation of preterm newborns of less than 35 weeks of gestation should be initiated with low oxygen (21% to 30%), and the oxygen concentration should be titrated to achieve a preductal oxygen saturation approximating the interquartile range measured in healthy term infants after vaginal birth at sea level. Initiating resuscitation of preterm newborns with high oxygen (65% or greater) is not recommended.

Either continuous or intermittent sedation be minimized in mechanically ventilated sepsis patients, targeting specific titration endpoints

SEDATION, ANALGESIA, AND NEUROMUSCULAR BLOCKADE

Without ARDS due to the risk of prolonged neuromuscular blockade following discontinuation must be maintained, either intermittent bolus as required or continuous infusion with train-of-four monitoring of depth of blockade should be used

A short course (< 48 hours) for patients with ARDS induced and $\text{PaO}_2/\text{FIO}_2$ ratio ≤ 150 mmHg

Vasopressor therapy initially target a mean arterial pressure (MAP) of 65 mm Hg.

Norepinephrine as the first choice vasopressor

Dobutamine infusion be administered or added to vasopressor (if in use) in the presence of (a) myocardial dysfunction as suggested by elevated cardiac filling pressures and low cardiac output, or (b) ongoing signs of hypoperfusion, despite achieving adequate intravascular volume and adequate mean arterial pressure.

A strategy to increase cardiac index to predetermined supranormal levels.

Intravenous antimicrobial therapy be started as early as possible and within the first hour of recognition of septic shock and severe sepsis without septic shock.

Initial empiric anti-infective therapy include one or more drugs that have activity against all likely pathogens (bacterial and/or fungal or viral)

DRUG THERAPY

After return of spontaneous circulation, antibiotics and inotropes/vasopressors should be used to maintain a systolic blood pressure above the fifth percentile for age. Intra-arterial pressure monitoring should be used to continuously monitor blood pressure and identify and treat hypotension.

Crystalloids be used in the initial fluid resuscitation in patients with hypovolemia or massive blood loss

Initial fluid challenge in patients with sepsis-induced tissue hypoperfusion with suspicion of hypovolemia to achieve a minimum of 30ml/kg.

A protocolized approach to blood glucose management in ICU patients with mechanical ventilation, commencing insulin dosing when two consecutive blood glucose levels are >180 mg/dL. This approach should target an upper blood glucose ≤ 180 mg/dL rather than an upper target blood glucose ≤ 110 mg/dL

2. Blood glucose values be monitored every 15 minutes until glucose values and insulin infusion rates are stable and then every 4 hrs thereafter.



Intravenous glucose and enteral nutrition rather than total parenteral nutrition (TPN) alone or parenteral nutrition in conjunction with enteral feeding in the first 7 days after admission to the ICU.

BLOOD PRODUCT ADMINISTRATION

In patients with severe sepsis, platelets be administered prophylactically when counts are $\leq 10,000/\text{mm}^3$ in the absence of apparent bleeding,

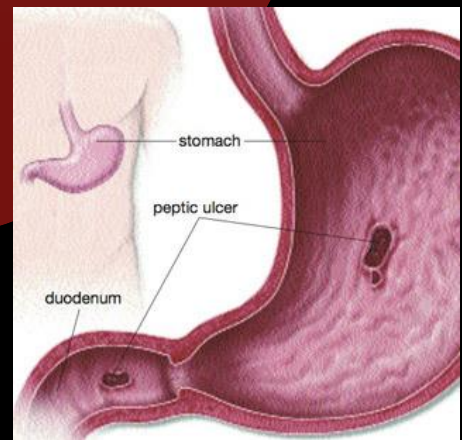
Higher platelet counts ($\geq 50,000/\text{mm}^3$ are advised for active bleeding, surgery, or invasive procedures).

Red blood cell transfusion occur when the hemoglobin concentration decreases to <7.0 g/dL to target a hemoglobin concentration of 7.0 to 9.0 g/dL in adults.

STRESS ULCER PROPHYLAXIS

Stress ulcer prophylaxis using H₂ blocker or proton pump inhibitor be given to patients with severe sepsis/septic shock who have bleeding risk factors.

When stress ulcer prophylaxis is used, we suggest the use of proton pump inhibitors rather than H₂ receptor antagonists.



IMPROVING SENSORY ORIENTATION

Additional approaches to improving sensory orientation for patients in critical care may include:

Provision of a clock, calendar, bulletin board, and windows with proper ventilation

Speakers and online communication system connected to nurses station.

Televisions must be out of reach of patients and operated by remote control.

If possible, telephone service should be provided in each room in critical care units.

Collaboration and partnership should be implemented if training and development is not available in an institution for further development of emergency and critical care

Further education on the current global issues in emergency and critical care be focused on:

- Early diagnosis in the emergency department improves survival
- Final discharge position after hospital stay
- Protocol implementation plans

Healthcare workers should educate themselves further on emergency and critical care issues:

- Initial resuscitation
- Defibrillation
- Mechanical ventilation and oxygenation
- Drug therapy such as antibiotics, sedations, inotropes, and vasopressors
- Fluid resuscitation
- Glucose monitoring and nutrition
- Blood transfusion
- Stress ulcer prophylaxis



THANK YOU