

Surge Staffing Education and Cross-Training in a Hospital Setting

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INTRODUCTION

Topic & Background

- Society of Critical Care Medicine's tiered staffing model (Surge Staffing)
- Disaster response education must be flexible
- Rapid redeployment of resources in response to an increased patient volume
- Expand nursing personnel resources

Problem

- ED & ICU overwhelmed during pandemic
- OR & clinics closed or functioned in limited capacities
- Nursing staff underutilized
- Negative impact on patient outcomes and staff morale

Team Members

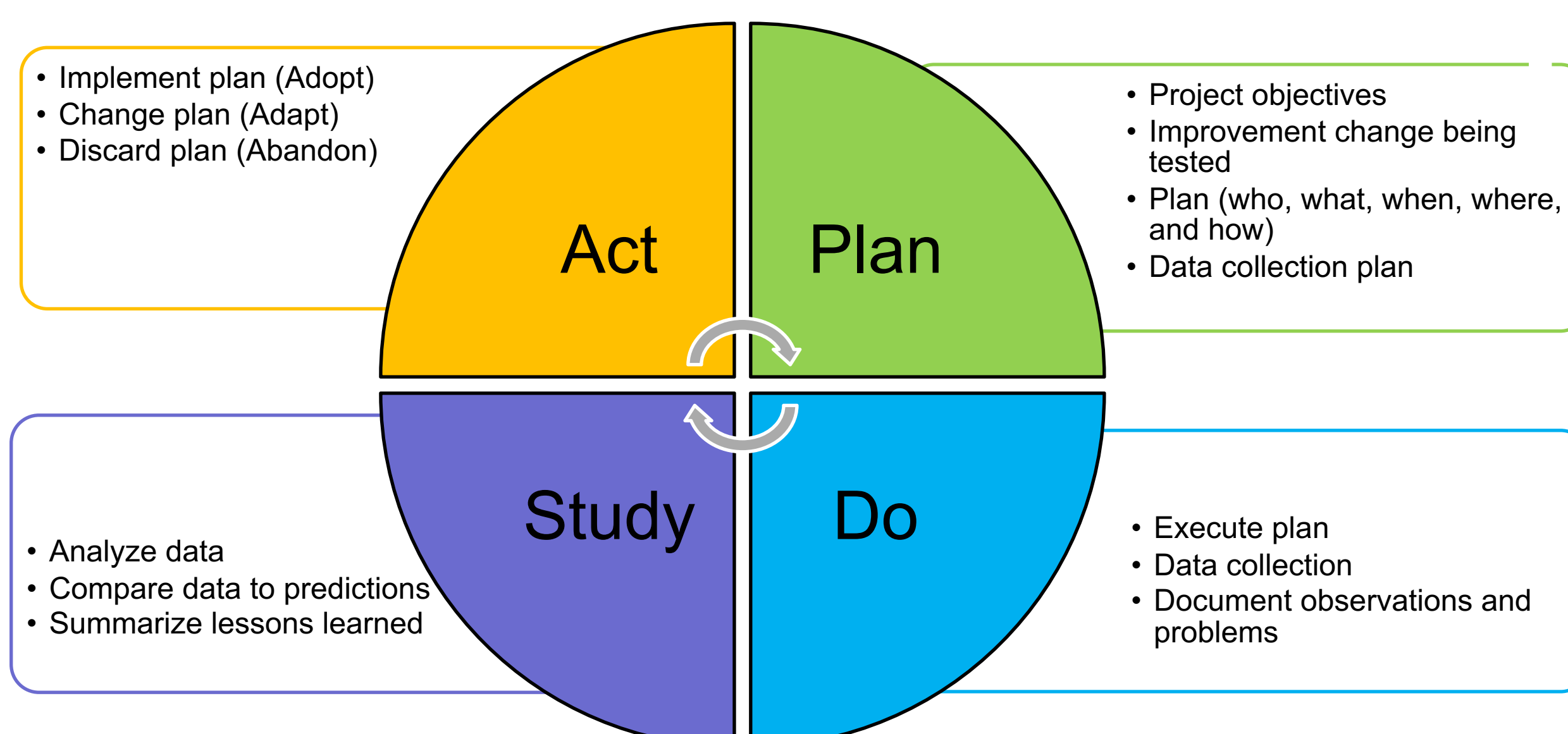
- Chief Nursing Officer
- ED and ICU Clinical Nurse Specialists
- Clinical Nurse Educator

Aim

- To develop ED and ICU core competency education and assessment to increase the number of clinic and OR nurses trained within the hospital system to support a standardized tiered staffing model.

RESULTS

- Results are expected to demonstrate a subjective improvement in the confidence of ED and ICU core competencies among participants.
- Knowledge gained immediately post-course quiz versus a 6-month check on learning may suggest regular interval training.



METHODS

Content Modules

- Pharmacology
- Hemodynamics
- Central lines
- Invasive blood pressure devices
- Primary and secondary surveys and assessment
- Ventilator settings and troubleshooting
- EtCO₂ monitoring

Formative Assessment

- High-Fidelity Simulation
 - 20-minute structured simulation (single or group participation)
 - Scenario: Decompensated sepsis
 - Pre-brief intent of assessment scenario
 - Subjective and objective pre-hospital and ED histories
 - A Laerdal SimMan® 3G with the Laerdal Learning Application (LLEAP)

Summative Assessment

- Summative Assessment
 - In-person pre- and post-tests
 - One item per confidence and content
 - Multiple choice and true/false questions
 - Likert scale questionnaire to measure confidence levels based on the U.S. Army's Individual Critical Task List

IMPLICATIONS

- Improved patient outcomes & staff morale
- Improved flexibility to increased patient volume and acuity
- Enhanced staff diversity
- Improved interdepartmental relationships
- Increased population of cross-trained nurses

RECOMMENDATIONS

- Implementation
 - Didactic content will be delivered in-person via PPT over an 8-hour training day (45 minutes/module).
- Evaluation
 - Training day pre- and post-intervention questionnaires
 - 6-month post-intervention questionnaire
- Future research:
 - Semi-structured interview of ED & ICU nurses about supplemental nurses' skills and value.
 - Analyze EMR data
 - Patient ED dwell and wait time
 - Overall door-to-discharge or admission time with and without the supplemental nursing staff.
 - Analysis of the nurse-to-patient ratio and patient outcomes with and without the supplemental nursing staff.

Post-Intervention Questions

Question	1= not at all confident / do not agree 3 = neutral 5 = very confident / strongly agree
Level of basic critical care/emergency knowledge/skill at end of course	1 2 3 4 5
Preparing for intubation and managing a ventilated patient	1 2 3 4 5
Knowledge of vasoactive medications	1 2 3 4 5
Interpreting an arterial or venous blood gas	1 2 3 4 5
Setting up for and monitoring an invasive blood pressure (arterial line or central venous pressure)	1 2 3 4 5
Confidence in caring for a stable ICU or emergency department patient	1 2 3 4 5
Learning objectives were clear	1 2 3 4 5
Course content was organized and well planned	1 2 3 4 5
Presentations were clear and organized	1 2 3 4 5
What content would you add?	

1. Ventilator settings include respiratory rate, tidal volume, positive end-expiratory pressure (PEEP), inspiratory time, fraction of inspired oxygen (F_IO₂)
• True
• False

2. You just received the blood gas results for a patient in diabetic ketoacidosis. Which of the following values would you expect to see?
a) pH 7.25, pCO₂ 28, pO₂ 95, HCO₃ 18
b) pH 7.42, pCO₂ 36, pO₂ 97, HCO₃ 24
c) pH 7.55, pCO₂ 30, pO₂ 88, HCO₃ 22
d) pH 7.35, pCO₂ 45, pO₂ 96, HCO₃ 26

3. A patient presents in severe respiratory distress. The provider asks you to prepare for intubation. Which of the following medications would you anticipate needing?
a) Succinylcholine and clindamycin
b) Etomidate and acetaminophen
c) Geodon and methocarbamol
d) Succinylcholine and etomidate

4. Which of the following vasopressors is considered a first line drug for hypotension in the setting of septic shock?
a) Rocuronium
b) Dobutamine
c) Norepinephrine
d) Propofol

5. In addition to invasive blood pressure monitoring, arterial lines can be used to administer IV fluids and medications.
a) True
b) False

Scan the QR code to view the references, training curriculum, and content.

