Video-Based Competency Testing (VBCT) to Prepare BSN Students for Clinical Practice

Ashley Badders, MSN, RN, CCRN – Instructor, Ursuline College, The Breen School of Nursing

Lauren Patton, DNP, RN, CCRN, CHSE – Assistant Professor, Ursuline College, The Breen School of Nursing

Disclosure Statement

- The presenters have no conflicts to disclose

Academic Practice Gap

- Only 23% of new graduate nurses demonstrate entry-level competencies and practice readiness[1]

Competency Testing

- What is “Competency Testing”?
  - Assessment of critical thinking and clinical judgment
- Driving forces
  - CCNE
  - NCSBN & Next-Generation NCLEX (NGN)
  - Practice partners/hospitals
- Objectives
  - Evaluate students’ preparedness for transition to practice
  - Identify opportunities for teaching and learning
  - Evaluate key program outcomes

Competency Testing Continued

- Computerized video-based scenarios
- Tested in LMS (Desire2Learn)
- Student self-evaluation

Competency Test Development

- Competency Committee
- Designated courses
- Faculty-developed scenarios with NGN questions
- Peer review & feedback
- Script-writing
- Filming & editing (support from AV department)
- Test creation in LMS (support from IT department)

Scenario/Script Example

SCENARIO 1: ARDS (Mr. Golden)

Comment/Background: This is an older adult patient with acute respiratory distress syndrome secondary to influenza.

QUESTION 1

Patient report (ED nurse to ICU nurse):

(ED nurse on phone) *This is Bill Golden, a 48-year-old male. He presented to the emergency department this morning with worsening shortness of breath, tachypnea and new onset altered mental status. He was recently diagnosed with influenza A one week ago and had intermittent fever and chills which improved a few days ago. I currently have him on a non-rebreather and his pulse-ox is 93%. BP & HR are stable. He is a full code. He has a past medical history of Gout, hypertension and hyperlipidemia. He has no known allergies. I'll bring him to the ICU in about 10 minutes.*

QUESTION 2

(Patient is now in the ICU; ICU nurse performs an assessment)

(Patient should have slowed responses and pauses due to shortness of breath.)

Hi Mr. Golden, my name is Sarah and I'll be your nurse today. Can you tell me your DOB?

February 15th

Do you know where you are right now?

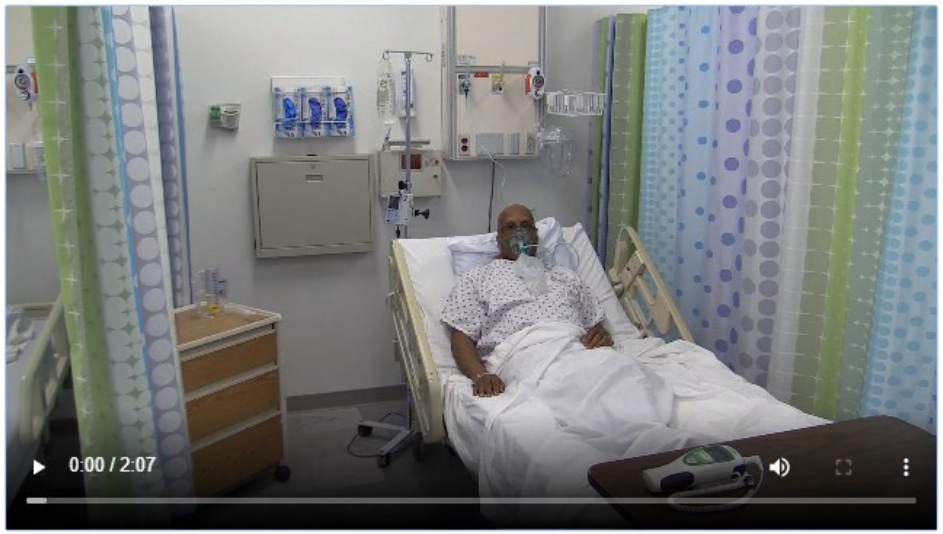
Question 1 (1 point)

Please view the video below then proceed to answer the question.

Based on the report received, which systems assessment is of highest priority when the patient arrives to the ICU? *Only the first response given will be considered for grading.*

Question 2 (5 points)

Please view the video then proceed to answer the question.



Additional information includes the following:

His current vital signs are: HR 126 bpm, BP 82/46 mmHg (MAP 54), RR 30 breaths/min, SpO_2 90% on 100% non-rebreather mask. He has thick sputum and coarse rhonchi throughout all lung fields. His breathing appears labored and he is using accessory muscles. The physician informs you that Mr. Golden's chest x-ray shows bilateral patchy infiltrates.

He is afebrile with a temperature of 37.5 Celsius, but he is diaphoretic.

He has two 18g peripheral IVs and he is on maintenance IV fluids of 0.9% NaCl at 50 mL/hr.

His labs are as follows:

WBC 11.2 µl

Hemoglobin 13.8 g/dL

Hematocrit 39.3%

ABG 7.44 / CO_2 33 mmHg / HCO_3 26 mEq/L / paO_2 70 mmHg

Based on the assessment findings, communicate a written SBAR report to the ICU physician. Include the **priority patient problem** and **TWO priority recommendations**. *(Only the first two recommendations given will be accepted for grading if more than two are given.)*

Please use the letters **SBAR** to identify which components of the report you are giving.

Question 3 (2 points)

The ICU physician suspects that Mr. Golden may have Acute Respiratory Distress Syndrome (ARDS) and orders BiPAP with the following settings: rate 24 breaths/min, FiO2 100%, inspiratory pressure 15 cmH_20, expiratory pressure 5 cmH_20. An arterial line is placed in the left radial artery. Additional orders include:

1 Liter 0.9% NaCl IV bolus

Continuous phenylephrine infusion titrated to maintain MAP above 65 mmHg

The patient's arterial blood pressure following these interventions is 106/62 (78) mmHg

What are <u>two contributing factors</u> that made Mr. Golden susceptible to developing ARDS?

Question 7 (3 points)

The physician has initiated the following orders. Select which orders are appropriate or inappropriate given Mr. Golden's current condition.

- [ ] Obtain a sputum culture.
- [ ] Titrate dexmedetomidine (Precedex) infusion to off once neuromuscular blockade is infusing.
- [ ] Initiate continuous tube feedings via nasogastric (NG) tube at 150mL/hr.
- [ ] Initiate cisatricurium infusion and titrate to train of four (TOF) 0/4 twitches.
- [ ] Prepare for insertion of a right pleural chest tube.
- [ ] Consult respiratory therapy to adjust ventilator settings to inverse inspiratory:expiratory (inverse I:E) ratio to enhance ventilation.

1. Appropriate
2. Inappropriate

Question 11 (2 points)

The ICU physician suspects the patient is in hypovolemic shock secondary to internal bleeding following a pelvic fracture. The following orders have been written as below. **Prioritize these actions in *sequential* order with 1 being the first action you should perform and 4 being the last. Assume that you cannot delegate any of these tasks and therefore must perform them yourself.**

- [ ] Insert urinary catheter
- [ ] Assess peripheral IV for patency
- [ ] Draw type & screen
- [ ] Administer 0.9% NaCl 1,000 mL bolus via the peripheral IV

Question 13 (2.5 points)

During rounds, the physician has written the orders listed below. Based on the previously shown assessment findings and laboratory results listed in the chart, **identify if each order would help, harm, or make no difference for Miss O'Neil at this time.**

Basic Metabolic Panel	Result	Normal Range
Glucose	108	70-110 mg/dL
BUN	42	5-25 mg/dL
Creatinine	3.4	0.5-1.2 mg/dL
Sodium	139	135-145 mEq/L
Potassium	6.2	3.5-5.3 mEq/L
Chloride	101	98-108 mmol/L
Calcium	9.2	8.9-10.3 mg/dL
Complete Blood Count	**Result**	**Normal Range**
WBC	9,800	4,500-10,000/µL
RBC	4.6	4.0-5.0/µL
Hemoglobin	13	12-15 g/dL
Hematocrit	38	36-46%
Platelets	97,000	150,000-400,000/µL
Coagulation Tests	**Result**	**Normal Range**
aPTT	23	20-35 seconds
PT	11	10-13 seconds
Liver Function Tests	**Result**	**Normal Range**
Total Bilirubin	1.4	0.1-1.2 mg/dL
ALT	298	10-35 units/L
AST	364	8-35 units/L
Arterial Blood Gas	**Result**	**Normal Range**
pH	7.31	7.35-7.45
CO2	39	35-45 mmHg
HCO3	18	22-26 mmHg
paO2	68	80-100%

Increase PEEP on ventilator

Normal saline with 20 mEq KCl maintenance IV fluid at 100 mL/hr

Continuous renal replacement therapy (CRRT)

Decrease set rate on ventilator

Prepare for insertion of PICC line

1. Help
2. Harm
3. No difference

Remediation Process

- Immediate view of answer key following submission
- Student self-evaluation/reflection
  - Strengths in test performance
  - Areas for improvement
  - Rationale for missed items

VBCT Statistical Analysis

- Critical Care VBCT
- Chi Square Test of Association
- Results:
  - VBCT passage and ATI Medical-Surgical Level 2 $\chi^2(2)=6.04$, $p<.05$ $n=101$
  - VBCT passage and ATI Pharmacology Level 2 $\chi^2(1)=6.62$, $p<.01$ $n=87$
  - VBCT passage and ATI Comprehensive Predictor Score Above National Avg. $\chi^2(1)=5.15$, $p<.05$ $n=87$
  - VBCT passage and NCLEX pass $\chi^2(1)= 5$, $p<.05$ $n=87$

Limitations & Implications

- Limitations
  - Convenience sample
  - Reliability & validity
  - Longitudinal follow-up
  - Association but not causation
- Implications for Future
  - Preparation for NGN
  - Transition for practice
- Considerations
  - Kinesthetic testing
  - IT resources (computer labs/internet connectivity)

Questions?

Contact Information

- Ashley Badders:
  - Email: ashley.badders@ursuline.edu
  - Office phone: (440) 449-5406
- Lauren Patton:
  - Email: lauren.patton@ursuline.edu
  - Office phone: (440) 449-3425

Reference

- 1. Kavanagh, J., & Szweda, C. (2017). Crisis in Competency: The Strategic and Ethical Imperative to Assessing New Graduate Nurses' Clinical Reasoning. Nursing Education Perspectives, 38(2), 57-62.