PRE- AND POST-ORIENTATION EVALUATION OF COMPETENCY OF CRITICAL CARE NURSES

REPORT

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Ibtisam Ghrayeb
RN BSN.PGD Pediatric, HN Ped. ICU

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ACRONYMS

BKAT	Basic Knowledge Assessment Tool (Test) in critical care nursing
BSN	Bachelor of Science in Nursing.
CC	Critical Care
CCN	Critical Care Nursing
CCU	Critical Care Unit
ICCN	Intensive and Critical Care Nursing
ICCN-CS-1	Intensive and Critical Care Nursing – Competence Scale
ICU	Intensive Care Unit

INTRODUCTION

Intensive care unit (ICU) nursing requires high levels of qualification and competency to ensure optimum patient care. Competent ICU nurses have a significant impact on the physiological and psychological well-being of ICU patients. An orientation program covering intensive care nursing practices, education, and appropriate nurse staffing is a proven approach to improve the quality of care of critically ill patients (Penoyer, 2010). The Palestinian Ministry of Health (PMOH) currently has many nurses working in various hospitals in critical care and intensive care units but does not offer a standard orientation program.

This document is the result of the combined efforts, commitment, and dedication of a small group of professionals who reviewed and developed a unified orientation program in CCN. This orientation program provides detailed technical information for 12 competency domains in nursing care in intensive care units. The aim of the orientation is to enhance the uniformity and standardization of critical care nursing, according to evidence-based knowledge and practices, and ultimately contribute to improving the quality of care provided to critically-ill Palestinian patients.

These efforts have been supported by the Palestinian Health Capacity Project (PHCP), a five-year project funded by USAID and implemented by IntraHealth International, Juzoor for Health and Social Development, and the Education in Health Department at the PMOH.

Ten CCN senior nurses/preceptors[1] completed a training of trainers (TOT) course on the developed orientation program. Trained CCN clinical preceptors are responsible for running the orientation program in their hospitals. The program is run once a week for three months alongside the clinical training supervised by the preceptors.

As one step toward this objective, Juzoor conducted a baseline and post-orientation assessment of nurses' perceptions of their competency level in ICU units to inform the design and content of the orientation program. The assessment involved participation of nurses from four hospitals that offer ICU services.

OBJECTIVE

The aim of this activity was to conduct baseline and post-orientation assessments of nurses' perceptions of their competency level in ICU units before and after the implementation of the orientation program to measure changes in self-reported and knowledge test scores, and the need for an orientation program. This assessment will help educators, clinicians, and supervisors apply the orientation program accordingly, as well as address educational needs in the ICUs.

[1] A preceptor is a skilled practitioner or faculty member who supervises students/new employees in a clinical setting to allow practical experience with patients.

METHODOLOGY

The methodology for this assessment consisted of administering a series of assessment tools to newly appointed individual nurses to assess their own competencies. The tools were administered to nurses recruited from four pre-selected hospitals that agreed to participate in the pilot phase of the program. All selected hospitals had ICU units and met the criteria described below. To participate in the assessment, the nurses also had to meet certain criteria based on tenure, education, and place of work. Each element of the methodology is described in detail below.

ETHICAL CONSIDERATIONS

Permission for the assessment was obtained separately from each participating hospital. Hospitals were not compared with each other and there was no violation of patient privacy, or the rights, privacy, or confidentiality of assessment participants.

PARTICIPATING HOSPITALS

Information was collected through site visits and reports to identify potential hospitals to participate in the study. Based on this information, four hospitals were selected from which to recruit nurses to participate in the assessment including the Palestine Medical Complex (PMC) and Al-Makassed Hospital in the middle of the West Bank, Hebron Governmental Hospital in the South of the West Bank, and Rafidia Hospital in the North of the West Bank.

Participating hospitals were chosen because they were:

- Geographically distributed, representing the three regions of the West Bank (North, Central, South)
- Major providers of critical care service in the country
- Referral sites to and from tertiary hospitals

And because they had:

- A large number of nurses in critical units in the hospitals
- A reasonable number of critical care beds
- Leadership willing to participate in the pilot of the CCN orientation program

Collectively, these hospitals contain 81 critical care beds and have 146 critical care nursing staff (102 males/44 females) assigned to the beds. Further information on each of these hospitals is available below. Al-Makassed Hospital is a teaching and referral hospital, and has four units in which critical care nurses work. The hospital has 30 beds and 61 nurses (54% male/46% female). The Palestine Medical Complex (PMC), the largest hospital in the West Bank, offers a wide range of services, has 20 ICU beds in two different units, and 31 CCN nurses (83% male/17% female). Hebron Governmental Hospital is located in the most heavily populated area of the West Bank has 23 ICU beds in two units, and 36 CCN nurses (85% male/15% female). Rafidia Hospital is the

largest government hospital in the northern region for surgery intensive care and has 10 ICU beds (including 3 pediatric and burn beds), and 18 CC nurses (61% male/39% female).

Palestinian Hospitals Included in the CCN Assessment				
Department	**Number of Beds**	**Number of Nurses**	**Number of Male Nurses**	**Number of Female Nurses**
Al-Makassed Hospital				
ICU Surgical	8	20	10	10
CCU	12	18	8	10
Neurosurgery	3	12	7	5
OH Surgery	7	11	8	3
Total	30	61	33	28
Palestine Medical Complex (PMC)				
ICU/CCU	8	15	13	2
General ICU	10	16	12	4
Total	18	31	25	6
Hebron Governmental Hospital				
ICU*	6 mixed (including children)	16	13	3
CCU and Intermediate Care Unit**	17	20	15	5
Total	23	36	28	8
Rafidia Hospital				
ICU	10 (including 3 for pediatric and burn beds)	18	11	7

* The ICU does not have an isolation room and hemodialysis is performed in the ICU when needed

** The Intermediate Care Unit does not have a mechanical ventilation machine

ASSESSMENT TOOLS

Researchers identified and applied existing assessment tools that have been widely used in other critical care settings to ascertain measures of competency. The Basic Competency Scale ICCN-CS-1 self-assessment tool allows participants to self-assess their competency according to scaled responses in multiple domains. The second tool, the Basic Knowledge Assessment Tool includes a knowledge test administered to each participant and independently scored. Both tools cover competencies that nurses working in critical care settings are expected to master and include topics that are core to the critical care nursing in-service training curricula. Additionally the various competency domains are also central to any orientation program that nurses would receive before assuming duties in a critical care unit. More detail on these tools follows, and the tools used for the assessment are available as annexes to this report.

1. Basic Competency Scale ICCN-CS-1 Self-assessment Tool (Annex 1)

The basic competency scale ICCN-CS-1 (Intensive and Critical Care Nursing Competency) refers to the undergraduate nursing student competency booklet that was developed based on new national standards for nursing education endorsed by the AQAC/PMOHE for the BSN degree. This tool is used to ensure continuity of competency-based learning at the level of performing of skills, to keep as a record in the newly-employed nurses' files to identify learning needs and to follow up on progress, as well as for evaluation and appraisal. The basic competency scale ICCN-CS-1 (Intensive and Critical Care Nursing Competency Scale Version 1) uses a Likert rating scale[2] of 1-5, where 1 is poor and 5 is excellent. Individuals assess and self-report their competency in each of these domains. A facilitator explains and guides the participants in completing the self-assessment process through one-on-one meetings in each hospital. This rating system can be used for basic competency assessments in professional development discussions in intensive care units. The tool used for this assessment consisted of 160 items in the following 12 domains:

1. General
2. Cardiac System
3. Cardiothoracic Surgery
4. Respiratory System
5. Hematology System
6. Gastrointestinal System
7. Renal System
8. Integumentary/Wounds/Burns
9. Trauma
10. Neurologic System
11. Multi-System
12. Behavioral

[2] The Likert scale is used to measure respondents' attitudes or feelings towards a certain topic using a range of answer options (i.e. a 1-5 rating scale), which offers more nuanced responses.

2. Basic Knowledge Assessment Tool (BKAT 4) (Annex 2)

The BKAT-4 is the Basic Knowledge Assessment Tool (Test) used in critical care nursing. It is used before and after orientation classes as a pre-test or as a post-test when assessing the readiness of newly-employed nurses, with or without previous experience in critical care nursing, to work in critical care units.

The initial version of the BKAT (BKAT-1) was co-authored by Jean C. Toth, RN, MSN, CNS, PhD, BCCC, from The Catholic University of America, Washington, DC, and Kathleen Ritchey, RN, MSN, CNS, formerly of the Veterans Administration Medical Center, Washington, DC. All subsequent BKATs and their versions were authored by Dr. Toth. Since that time, a ten-member panel of experts, professional experience, and review of literature evidence were used to validate/update the tool. These revisions included questions, material, and answers.

The BKAT test has been presented as a valid and reliable test of basic knowledge for critical care nursing, ICU, and other nursing specialties such as emergency nursing care.

The tool consists of 100 multiple choice questions, each worth 1 point, for a maximum score of 100. The questions have been reviewed by the local CCN expert to ensure that they are in line with the local context and the orientation program.

SAMPLE/PARTICIPANTS

In the pre-orientation assessment, the sample aimed for a total of 16 general BSN nurses assigned to adult critical care units with an employment period ranging from 1-7 months to participate in the pre-orientation competency evaluation. Four nurses from each of the participating hospitals were identified. Among the 16 participants, most were graduates of the national nursing program and had worked for less than one year. Thirteen of the participants (81%) were male, while three women made up the other 19% of the study sample. The number of participants per hospital and the assigned unit in which they worked is shown below and demonstrates that participants were selected from multiple critical care settings if the hospital had more than one available unit.

Number of Participants per Hospital and Intensive Care Unit

Intensive Care Unit	Al-Makassed Hospital	PMC	Hebron Governmental Hospital	Rafidia Hospital	Total
Neurosurgery ICU	1				1
Coronary Care Unit (CCU)	1	4	2		7
Surgical ICU	1	4	2	4	10
Open Heart	1	4			5
Total	4	4	4	4	16

The mix of participants by gender is shown below:

Female	3	18.75%
Male	13	81.25%

Pre-Orientation DATA COLLECTION

Data was collected January 12-15, 2017 by the evaluator. The BKAT test and self-competencies scale (1CCN-CS-1) were distributed and completed by the participants under the supervision of the evaluator, in the presence of the clinical preceptors in each hospital during the morning shift. Participants had 40 minutes to complete the exam. The evaluator then scored the exam and shared results with participants

Post- Orientation DATA COLLECTION

Data was collected between July 13 and August 13, 2017 (after implementation of the CCN orientation program) from participating nurses from Al-Makassed Hospital (2 males/1 female), Hebron Governmental Hospital (3 males/1 female), Rafidia Hospital (2 males/1 female), and PMC (4 males).

Two nurses were removed from the study as they were transferred to other departments in the same hospital. Their scores have been removed from the assessment.

The BKAT test and self-competencies scale (1CCN-CS-1) were distributed to the participants under the supervision of the evaluator, in the presence of the clinical preceptors in each hospital during the morning shift.

Profile of the Participants

- Four nurses from Hebron Governmental (Alia) Hospital in Hebron and the Palestine Medical Complex (PMC) in Ramallah
- Three nurses from Al-Makassed Hospital in East Jerusalem and Rafidia Hospital in Nablus (period of employment less than one year)
- All nurses are holders of Bachelor of Science in Nursing (BSN)
- 78.57% of the sample was male
- Most are national nursing program graduates

Number of Participants per Hospital and Intensive Care Unit

Intensive Care Unit	Al-Makassed Hospital	Hebron Governmental Hospital	Rafidia Hospital	PMC
Neurosurgery ICU				
Coronary Care Unit (CCU)	2	2		
Surgical ICU	1	2	3	2
Open Heart				2
Total = 14				

Female	3	21.428%
Male	11	78.57%

FINDINGS

I. ICCN-CS-1 Self-assessment

As a group, the average self-reported level of competency across all 12 domains covered in the ICCN-CS-1 assessment tool was 57.6% (3 on the 5-point scale), indicating that they assessed themselves as being moderately proficient. Self-assessment scores were highest in the areas of cardiac thoracic surgery, respiratory systems, and trauma. Participants reported the least level of competence in the areas of neurological and renal systems.

Pre-Orientation Results of ICCN-CS-1 Self-assessment

Category	Percentage of Competencies	Main Score	Scale
General	55.5%	3	Moderate
Cardiac System	57.2%	3	Moderate
Cardiac Thoracic Surgery	72.0%	4	Good
Respiratory System	63.0%	4	Good
Hematology System	50.5%	3	Moderate
Gastrointestinal System	58.9%	3	Moderate
Renal System	47.8%	3	Moderate
Integumentary/Wounds/Burns	59.5%	3	Moderate
Trauma	62.5%	4	Good
Neurological System	44.5%	3	Moderate
Multi-system	59.1%	3	Moderate
Behavioral	60.6%	4	Good
Average	**57.6%**	**3**	**Moderate**

Pre-orientation Results of ICCN-CS-1 Self-assessment per Hospital

Basic Competence (total 160)	Hospital 1 Al-Makassed		Hospital 2 Hebron/Alia		Hospital 3 Rafidia		Hospital 4 PMC	
General (7)	3.2	Moderate	2.4	Poor	2.5	Moderate	3	Moderate
Cardiac System (32)	2.72	Moderate	2.5	Moderate	2.6	Moderate	3.62	Good
Cardiac Thoracic Surgery (6)	4.21	Good	3.88	Good	1.99	Poor	4.32	Good
Respiratory System (29)	3.371	Moderate	2.783	Moderate	2.83	Moderate	3.612	Good
Hematology System (3)	2.061	Moderate	2.204	Poor	2.266	Poor	3.03	Moderate
Gastrointestinal System (24)	2.669	Moderate	2.996	Moderate	2.899	Moderate	3.216	Moderate
Renal System (14)	3.23	Poor	2.643	Moderate	2	Poor	2.69	Moderate
Integumentary/ Wounds/Burns (12)	3.682	Good	2.912	Moderate	2.268	Poor	3.032	Moderate
Trauma (4)	3.34	Moderate	2.778	Moderate	2.861	Moderate	3.521	Good
Neurological System (15)	2.2	Poor	2.1	Poor	2	Poor	2.6	Moderate
Multi-System (3)	2.68	Moderate	2.85	Moderate	2.98	Moderate	3.31	Moderate
Behavioral (11)	2.98	Moderate	2.31	Poor	3.31	Moderate	3.52	Good
Level of Basic Competencies	**2.99025 Moderate**		**2.6963 Moderate**		**2.542 Moderate**		**3.28908 Moderate**	

Post-Orientation Results of ICCN-CS-1 Self-assessment

Category	Percentage of Competencies	Main Score	Scale
General	72.380%	4	Good
Cardiac System	76.946%	4	Good
Cardiac Thoracic Surgery	72.56%	4	Good
Respiratory System	84.547%	5	Excellent
Hematology System	79.791%	4	Good
Gastrointestinal System	72.473%	4	Good
Renal System	59.553%	3	Moderate
Integumentary/Wounds/Burns	73.539%	4	Good
Trauma	87.29%	4	Good
Neurological System	87.346%	5	Excellent
Multi-System	83.194%	5	Excellent
Behavioral	86.325%	5	Excellent
Average	**77.99%**	**4**	**Good**

Post orientation Results of ICCN-CS-1 Self-assessment per Hospital

Basic Competence (total 160)	Hospital 1 Al Makassed		Hospital 2 Hebron/Alia		Hospital 3 Rafidia		Hospital 4 PMC	
General (7)	4	Good	3.8	Good	2.9	Moderate	3.7	Good
Cardiac System (32)	4	Good	3.8	Good	3.19	Moderate	4.73	Good
Cardiac Thoracic Surgery (6)	3.47	Good	3.83	Good	1.9	Poor	4.53	Excellent
Respiratory System (29)	3.73	Good	4.27	Good	4.09	Good	4.80	Excellent
Hematology System (3)	3.77	Good	4.08	Good	3.33	Moderate	4.75	Excellent
Gastrointestinal System(24)	2.69	Good	4.20	Good	3.70	Good	3.87	Good
Renal System (14)	3.1	Moderate	3.4	Moderate	2.07	Poor	3.31	Moderate
Integumentary/ Wounds/Burns (12)	5.75	Good	4	Good	3.72	Good	3.22	Moderate
Trauma (4)	3.70	Good	4.56	Excellent	4.5	Excellent	4.68	Excellent
Neurological System (15)	3.76	Good	4.48	Good	4.21	Good	5	Excellent
Multi-system(3)	3.55	Good	4.08	Good	4	Good	5	Excellent
Behavioral (11)	3.93	Good	4.56	Excellent	4.03	Good	4.72	Excellent
Level of Basic Competencies	**3.62 Good**		**4.09 Good**		**3.47 Good**		**4.36 Good**	

II. Basic Knowledge Assessment Tool (BKAT 4) Exam

The tool consists of 100 multiple choice questions, each worth 1 point, for a maximum score of 100.

For this exam, the following categories apply:

Level of Competence	Score Range on BKAT Exam
Poor	Less than 70
Moderate	70-79
Good	80-89
Excellent	90 or higher

For this exam scores of less than 70 were considered poor and scores of 90 to 100 are considered excellent.

The average test score for the BKAT was 69.3%, or Moderate. Scores ranged from a low of 44.3% to one participant who scored 100%.

Pre-orientation Results of BKAT Exam

Score	Number of Participants	Percent
Less than 70	9	56.2%
70-79	3	18.8%
80-89	2	12.5%
90 and above	2	12.5%
Average		**69.3%**

Pre-Orientation Results of BKAT Exam per Hospital

Scores by hospital are presented in the table below and reveal that nurses working in the larger hospitals, Al-Makassed and PMC, tended to achieve the highest scores.

Participant No.	Al-Makassed	PMC	Hebron Governmental (Alia) Hospital	Rafidia Hospital
1	81%	100%	50.0%	44.3%
2	72.2%	97.3%	57.2%	57.2%
3	78.2%	64.3%	64.3%	64.3%
4	80.3%	78.6%	60.0%	60.0%
Average	**77.9%**	**85.0%**	**57.9%**	**56.4%**

Post-orientation Results of BKAT Exam:

Total Post-orientation Results of BKAT Exam

Score	Number of Participants	Percent
Less than 70	2	14.285%
70-79	6	42.857%
80-89	3	21.42%
90 and above	3	12.5%
Average		**80.25%**

Post-orientation Results of BKAT Exam per hospital

Participant No.	Al-Makassed	PMC	Hebron Governmental (Alia) Hospital	Rafidia Hospital
1	81.57%	96.052%	76.315%	97.368%
2	Dropped	93.42%	73.684%	Dropped
3	78.947%	71.2052%	77.63%	71.052%
4	82.894%	64.473%	67.105%	86.842%
Average	**81.1%**	**81.2%**	**73.7%**	**85.0%**

CONCLUSIONS AND RECOMMENDATIONS

All participants in this study were BSN nurses. Most had graduated from local universities and some from outside the country and had only recently been assigned to their unit. None of the PMOH or Palestinian non-PMOH hospitals offered a structured critical care nursing orientation program when these nurses were hired to work in the critical care units.

A one-week general orientation program is conducted by the EiH Department at the PMOH and covers PMOH administration regulations, rules such as annual leave, vacation, and use of the

health information system (HIS). Later, new nurses are partnered with senior nurses who train and support them for one month. After one month, an evaluation for the new nurse takes place.

The lack of orientation is evident from the self-assessment scores and knowledge tests. Nurses reported many areas in which they did not feel they had an adequate degree of competency in CCN settings. Additionally, test scores showed that nurses were not able to answer key questions related to CCN skills, with participants scoring an average of only 69.3%.

The working environments of the hospitals involved in this evaluation vary greatly. This is in part reflected in the assessment of the competency of nurses working in critical care units within these settings. Nurses in hospitals with more staff and more CCN units were more likely to score better on the BKAT. This may have resulted for a number of reasons including 1) the most qualified nurses might be recruited to work in these facilities; 2) these nurses are exposed to a wider variety of cases and learning opportunities; 3) nurses in larger facilities may receive more peer support and mentoring; and 4) larger facilities may offer more opportunities for in-service training. For example Al-Makassed Hospital is one of the largest hospitals, with four intensive care units for adults and the highest number of critical care nurses. PMC provides a wide range of services, including neonatal care, maternity care, internal medicine, pediatrics, general surgery, and cardiovascular surgery. In contrast, Rafidia Hospital has one intensive care unit and one surgical ICU.

Given the moderate levels of reported competence and the differences in work settings, the need for a structured orientation program for CCN is apparent. Professional staff working in critical care should be required to meet recognized standards and core competencies.

An orientation program that uses a self-assessment approach assists nurses to maintain and improve their practice by identifying their strengths and areas needing further development. The orientation program for critical care nurses is very important to help new nurses become acquainted with their working environment. New nurses have little to no experience in the area where they are newly hired, typically only follow the basic standard operating procedures, and may not have the confidence to act proactively. Orientation programs increase confidence, improve quality, contribute to patient safety, increase the self-esteem of staff, decrease incident reports, improve patient and family satisfaction, and decrease stresses to nurses and families.

The critical care nursing orientation program should be scaled to all hospitals that provide critical care nursing.

Based on post-orientation findings, there was a positive evaluation of the course. Compared to the pre-orientation sum, the post-orientation sum of competency ratings was significantly higher.

The 14 nurses' self-rated competencies were as follows:

- The basic competency level scored "good," averaging 72.380%

- Neurologic System scored the highest for knowledge categories at 87.3469%
- Renal System competency was rated the poorest at 59.553%
- Overall average knowledge was rated 77.99%

This study supports the implementation of critical care training for new nurses' skills. The availability of trained nurses is more important for critical care patient outcome than the availability of technology.

All trainees are staff nurses. Most graduated from local universities, and some from outside the country. No structured critical care nursing orientation program was found in the sample hospitals.

ANNEX 1: CCN COMPETENCY SELF-EVALUATION

Critical Care Nursing

	Competencies	Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5 = highest	5 = highest
I	**GENERAL**		
	1. Describe the general function and set up of each clinical setting		
	CCU ICU		
	2. Explain the roles and responsibilities/scope of work of nurses working in each clinical setting;		
	CCU ICU		
	3. Identify emergency equipment used in each critical care setting		
	CCU ICU		
	4. Provide and Receive Shift Report in each critical care settings		
	CCU ICU		
	5. Recognize different international emergency codes and understand how to intervene in each code		
	Code Blue		
	Code Pink		
	Code Yellow Priority Scale Range Priority Scale Range		

	Competencies	Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5 = highest	5 = highest
II	**CARDIAC**		

	1. Perform full cardiovascular assessment		
	2. Apply leads for cardiac monitoring		
	3. Identify, interpret, and monitor cardiac rhythms		
	4. Recognize indications for and manage patients requiring **central venous access**		
	5. Recognize indications for and manage patients requiring **mixed venous oxygen saturation (SVO2)** monitoring		
	6. Monitor hemodynamic status and recognize signs and symptoms of hemodynamic instability		
	7. Manage patients who have:		
	• Acute Coronary Syndrome		
	• Acute Myocardial Infarction		
	• Acute Dysrhythmias		
	• Acute Heart Failure		
	• Peripheral Vascular Disease		

Competencies	Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
	5 = highest	5 = highest
1. Recognize indications and potential complications of, and manage patients requiring:		
• 12-lead ECG		
• Arterial catheter		
• Cardioversion (Synchronized)		
• Defibrillation (External)		
• Central venous pressure monitoring		
• Pacemakers (Temporary)		
• Pacemakers (Permanent)		
• Implantable Cardioverter Defibrillators (ICD)		
• Cardiac Resynchronization Therapy Device (CRT-D)		
• Invasive Hemodynamic Monitoring (Venous and Arterial)		
• Intra-aortic Balloon Pump (IABP)		
• Percutaneous Coronary Interventions		
• Cardiac Catheterization (Diagnostic and Therapeutic)		
• Vascular Stenting		

Competencies	Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
	5 = highest	5 = highest
2. Understand the use and indications of the most common drugs:		
• Inotropes		
• Vasopressors		
• Vasodilators		

	• Anti-arrhythmics		
	• Anti-hypertensive		
	• Diuretics		
III	**CARDIOTHORACIC SURGERY**		
	1. Prepares the cardiac surgery ICU room for a patient returning from bypass surgery		
	2. Receives report from the anesthesia providers and continues plan of care		
	3. Surveils closely the post-op cardiac surgery patient and documents according to guidelines		
	4. Recognizes abnormal findings and values and reports to physician		
	5. Implements urgent and routine pharmacologic and non-pharmacologic therapies as ordered		
	6. Supports patient and/or family through immediate post-operative period		

	Competencies	**Pre-Orientation Priority Scale Range (1 – 5)**	**Post-Orientation Priority Scale Range (1 – 5)**
		5 = highest	**5 = highest**
IV	**RESPIRATORY**		
	1. Performs a comprehensive Respiratory Assessment		
	2. Basic Life Support (BLS)		
	3. Advanced Cardiac Life Support (ACLS)		
	4. Interpret arterial blood gas results		
	5. Recognize indications for and manage patients requiring:		
	• Endotracheal tubes		
	• Bronchoscopy		
	• Chest tubes		
	• Conventional modes of mechanical ventilation		
	• Non-conventional modes of mechanical ventilation (e.g. high frequency)		

	• Non-invasive positive pressure ventilation (e.g., BiPAP, CPAP, high-flow nasal cannula)		
	• Oxygen therapy delivery devices		
	• Prevention of complications related to mechanical ventilation (ventilator bundle)		
	• Prone positioning (lateral rotation therapy)		
	• Tracheostomy		

Competencies		**Pre-Orientation Priority Scale Range (1 – 5)**	**Post-Orientation Priority Scale Range (1 – 5)**
		5 = highest	**5 = highest**
	1. Pulmonary therapeutic interventions related to mechanical ventilation:		
	• Airway clearance / Suctioning		
	• Intubation		
	• Weaning		
	• Extubation		
	• Respiratory monitoring devices (e.g., SPO2, SVO2, ETCO2) and report values		
	• Therapeutic gases (e.g., Oxygen, Nitric Oxide, Heliox, CO2)		
	2. Thoracentesis		
	3. Manage patients who have:		
	• Acute Respiratory Failure		
	• Acute Respiratory Distress Syndrome		
	• Pulmonary Embolism		
	• Pulmonary Edema		
	4. Understand the use of respiratory medication/ indications for the use of the most common drugs		
	• Bronchodilators\nebulizers		
	• Steroids		

	• Sedation and paralyzing agents		
Competencies		**Pre-Orientation Priority Scale Range (1 – 5)**	**Post-Orientation Priority Scale Range (1 – 5)**
		5 = highest	**5 = highest**
V	**HEMATOLOGY**		
	1. Manage patients receiving transfusion of blood products		
	2. Monitor patients and follow protocols pre-, intra-, post-intervention for hematology and immunology problems (e.g.,plasmapharesis, exchange transfusion, leukocyte depletion)		
	3. Monitor patients and follow protocols related to blood conservation		
VI	**GASTROINTESTINAL**		
	1. Monitor patients and follow protocols for pre-, intra-, post-procedure for gastrointestinal problems (e.g., Upper endoscopy (EGD), *Percutaneous endoscopic gastrostomy* (*PEG*) placement)		
	2. Recognize indications for and manage patients requiring:		
	• Gastrointestinal monitoring devices (e.g., intra-abdominal compartment pressure)		
	• Gastrointestinal drains		
	3. Perform gastro intestinal assessment:		
	*Nutritional Status		
	*Blood Glucose		
	*Biochemistry & hematology results		
	*Weight		

	Competencies	Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5= highest	**5=highest**
	1. Recognize indications for and complications of enteral and parenteral nutrition		
	2. Administer parenteral feedings and monitor daily balance		
	3. Administer enteral feedings and monitor patients tolerance		
	4. Intervene to address barriers to nutritional/fluid adequacy (e.g., chewing/swallowing difficulties, alterations in hunger and thirst, inability to self-feed)		
	5. Identify gastro intestinal conditions:		
	*Obstruction		
	*Perforation		
	*Infection		
	*Ulceration		
	*Bleeding		
	* Poisoning		
	* Hepatic alterations		
	* Pancreatic alterations		
	6. Understand the indications for the use of the most common drugs		
	• Prokinetics & motility		
	• Laxatives		
	• Insulin/hypoglycemic agents		
	• Probiotics		

Competencies		Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5 = highest	5 = highest
VII	**RENAL**		
	1. Perform full renal assessment		
	2. Recognize indications for and manage patients requiring renal therapeutic intervention (e.g., hemodialysis, Continuous renal replacement therapy (CRRT) , peritoneal dialysis)		
	3. Understanding principles of hemodialysis		
	• Handling a double lumen catheter/ gortex/shunt		
	• Identifying the right size dialyzer		
	• Identifying the required blood tests- hepatitis B, hepatitis C, HIV		
	• Attaching patient to dialysis machine		
	• Assessing & caring for patient during hemodialysis		
	• Ending a dialysis process/reassessing patient (vital signs & body weight)		
	• Handling the machine after completion of a dialysis round (cleaning & disinfection)		
	1. Manage patients receiving electrolyte replacement		
	2. Monitor patients and follow protocols pre-, intra-, post-renal procedure (e.g., renal biopsy, ultrasound)		

Competencies		Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5 = highest	5 = highest
	1. Manage the patient with:		
	• Acute Kidney Injury or Disease		
	• Acute fluid and electrolyte imbalance		
VIII	**INTEGUMENTARY/ WOUNDS/ BURNS**		

	2. Recognize indications for and manage patients undergoing therapeutic integumentary interventions		
	• Wound VACs		
	• Pressure reduction surfaces		
	• Fecal management devices/ stoma care		
	• IV infiltrate treatment		
	1. Identify the appropriate bandages required and apply appropriately		
	2. Manage splints, braces, and casts for injuries as necessary		
	3. Assess post-operative wounds and implement wound care as ordered		
	4. Manage patients requiring progressive mobility		
	5. Demonstrate how to determine the extent of a burn injury		

Competencies		**Pre-Orientation Priority Scale Range (1 – 5)**	**Post-Orientation Priority Scale Range (1 – 5)**
		5 = highest	**5 = highest**
	1. Discuss the goals of pain control in the burn patient		
	2. Participate in the delivery of care in the resuscitative, acute and post-acute phases of a burn patient		
	3. Describe the nursing care needs of the post burn patient		
IX	**TRAUMA**		
	1. Participate in performing the primary and secondary survey of a trauma patient		
	2. Describe how ABCDE is used in thoroughly assessing the trauma patient for abnormal findings		

	3. Assist in performing emergent interventions for patients with abnormal assessment findings e.g., intubation, fluid resuscitation, preparation for surgery		
	4. Describe the nursing care needs of the post trauma patient		

Competencies		Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5 = highest	5 = highest
X	**NEUROLOGIC**		
	1. Perform a full neurological assessment:		
	* Use of the Glasgow Coma Scale:		
	* Assisting with Optic nerve testing using Ice-water		
	* Observe testing for vestibular function (Caloric testing , Dolls eyes)		
	* Identify signs and symptoms of increased Intracranial Pressure (ICP)		
	2. Monitor patients and follow protocols for neurologic procedures (e.g., pre-, intra-, post-procedure)		
	3. Recognize indications for and monitor/manage patients requiring neurologic monitoring devices and drains (e.g., ICP, ventricular drain)		
	4. Manage age-related communication problems		
	5. Manage patient who has increased ICP		
	6. Manage patient who has Acute Stroke		

Competencies		Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5= highest	5=highest
	7. Understanding the use and indications of most common neurological medications:		
	• Mannitol		
	• Hypertonic saline		
	• Phenytoin		
	• Haloperidol		
	• Steroids		
	• Immunoglobulin		
XI	**Multi-System**		
	Manage the patient who has		
	1. Sepsis or Septic Shock		
	2. Immuno-compromise (e.g., transplant recipient, HIV)		
	3. Multi-organ System Failure		

Competencies		Pre-Orientation Priority Scale Range (1 – 5)	Post-Orientation Priority Scale Range (1 – 5)
		5= highest	5=highest
XIV	**BEHAVIORAL**		
	1. Respond to behavioral emergencies (e.g., nonviolent crisis intervention, de-escalation techniques)		
	2. Recognize indications for and manage patients requiring:		
	• Behavioral therapeutic interventions		
	• Restraints		
	1. Utilize behavioral assessment tools (e.g., delirium, alcohol withdrawal, mini-mental status)		

	2. Recognize indications for and manage patients undergoing:		
	• Therapeutic hypothermia		
	• Intermittent sedation		
	• Continuous sedation		
	• Procedural sedation		
	• Minimal sedation		
	• Moderate sedation		
	• Deep sedation		

ANNEX 2: BKAT EXAM

BKAT Exam 2000 (3).pdf