

**Program in Critical Care  
Vancouver Hospital and Health Sciences Centre  
University of British Columbia**

**Vinay K. Dhingra, Critical Care Medicine, VH&HSC,  
University of British Columbia**

# **Guidelines For Residents**

Prepared / Revised By: Dr. David D Sweet

Date of Document: October 2008

Last Date of Revision: March 2013

## 1. Introduction

The physicians, nurses and the entire ancillary staff of the Vancouver Hospital intensive care unit welcome you to your rotation in critical care. As this rotation may be different from others you will have experienced in the past, these guidelines have been developed to assist you in your rotation. We hope to make this rotation one of the most enjoyable and rewarding experiences in your training.

Specific roles and objectives have been developed to support your educational needs for this rotation. We would ask that you review this early in your rotation, and then discuss these objectives with your critical care consultants in order to add any educational needs that you might have.

## 2. Background

The ICU provides a unique opportunity to interact with all specialities in the combined or “multidisciplinary” care of critically ill patients.

The care of the critically ill patient at Vancouver Hospital is **multidisciplinary** and **transdisciplinary**. Frequent interaction is required between all members of the patient’s health care team to ensure optimum care for the patient. A spirit of open communication is an absolute necessity, and will allow you to gain the most educationally, from your rotation through critical care.

It is a tertiary care ICU and the provincial centre for trauma, neurosurgery, burns, transplants and plasmaphoresis. There is very high acuity and an overall mortality of 18%.

Any problems encountered during your stay should be immediately referred to the ICU fellow, ICU consultant on call or to the ICU residency co-ordinator, so that such problems may be reviewed and rectified as early as possible.

## 3. ICU Coverage

### *ICU Consultants*

Dr. Kathy Craig

Dr. Dean Chittock

Dr. Vinay Dhingra

Dr. William Henderson

Dr. Juan Ronco

Dr. John Tsang

Dr. Morad Hameed

Dr. George Isac (Medical Manager)

Dr. Don Griesdale

Dr. David Sweet (Undergraduate Program Director ICU)

Dr. Gordon Finlayson (Program Director, Critical Care Fellowship)

On a weekly basis, two ICU consultants will be identified as the directors of the unit. It is their job to ensure that the best possible care is provided for the critically ill patient admitted to the unit. Each day, the ICU consultants will review all cases during the morning patient rounds, individually with the resident or with the resident and fellow during the day, and again during afternoon rounds. The ICU consultants will alternate for consultation or call back during that evening. Each ICU consultant will attend for 7 days at a time, with changeover occurring on Monday.

### *Educational Co-ordinator for the Residents and clinical clerks*

Before the rotation the residents and clerks are expected to review the video-on-demand ICU orientation video which will explain the workings of the ICU and the goals of the rotation. There will also be an evaluation at the end of the rotation with Educational Co-ordinator Dr. Sweet (and possibly at the mid-point)

### *Educational Co-ordinator for the Clinical Clerks*

Similarly, the Educational Co-ordinator will meet with the clinical clerks to review the workings of the ICU and educational goals and objectives at the beginning of the rotation, and provide an evaluation at the end of the rotation.

### *ICU Fellows*

The ICU fellows are an integral part of the intensive care unit. There will be one or two ICU fellows assigned to the unit for the two months of your rotation. The ICU fellows have completed their training in a base discipline either: internal medicine, anaesthesia, surgery or emergency medicine. The ICU fellow is responsible for the supervision of all residents within the unit on behalf of the ICU consultants. In addition, the ICU fellows duties include: co-ordinating the use of units' beds; planning admissions and discharges; co-ordinating and organising transport; addressing nursing or bed shortages and identifying appropriateness of specific procedures. All major patient care interventions and admissions/discharges to the ICU must be co-ordinated through the ICU fellow or ICU attending. The current ICU Fellows include:

Dr. Hussein Kanji  
Dr. Titus Yeung  
Dr. Paul McBeth  
Dr. Julian Barnbrook

Dr. Myp Sekhon  
Dr. Andy Neitzel  
Dr. Harry Brar

### *ICU Residents on call*

Residents are on call 1 in 4. The on call resident will be responsible for all consultations to the ICU on that day and to review them with either the ICU fellow or ICU Consultant. The on call resident will remain “in-house” and will be able to go home following morning rounds the following day. The on call resident is expected to round on all patients with the charge nurse in the evening. The timing of the “evening round” is flexible but often will start between 9:00 and 9:30 pm to be completed by 10:30 to 11:00 pm. Part of this evening round **MUST** include a review of the chest x-rays done at 2100. Following these rounds the attending physician or ICU fellow should be updated on any changes in a patient’s condition or therapy. The on call resident will also carry the cardiac arrest beeper and will be the code team leader. Therefore **ACLS is a prerequisite for this rotation.**

The residents and clinical clerks have three on call rooms available to them. They are located just off the main unit. There are also lockers available to all the ICU residents and clerks; information for this is available through the unit clerk.

### *Clinical Clerks*

Clinical clerks will be assigned patients by the ICU fellow. The clinical clerks **MUST** have a resident assigned along with them. The clinical clerks must review all procedures and modifications to patient management with the resident. The resident must also review and countersign all orders by the clinical clerk.

### *Health Care Team*

Nicola Chalke	Patient Services Manager
Claudette LaCasse	Patient Services Co-ordinator
Connie Trahan	Patient Services Co-ordinator
Greg Mah/Gabriel Loh	ICU Pharmacists
Kate Burrage/Patti Wahl	ICU Clinical Dietary Specialist
Sarah/Sophie	Social Workers
TBD	Chief Paramedical/Supervisor, Respiratory Services
Jocelyn Ross/Suneil Kanda	Physiotherapy
Jill/Nicole	Occupational Therapy
Hermi, Kathy	Unit Clerks
Julia Cheung/Ana Palomino	ICU Administrative Secretaries
Annette In’Thout /Kathy Weglo	ICU Clinical Educators
Denise Foster/ Maureen Gardner/Suzie Logie	ICU Research Co-ordinators

These people will be available to all residents during the day to facilitate patient care. Please do not be afraid to approach the most appropriate person if you have any patient care problems. You will realize that non-physician staff can educate physicians!! These staff will participate in your teaching sessions.

These are members of each ancillary department in the hospital dedicated to the intensive care unit. Most of these services will be represented at the morning rounds. Each of them are excellent in their respective fields and are indispensable in the smooth operation of the intensive care unit. They can also serve as an excellent resource for further learning.

**Please be aware that the charge nurse on call with you has a responsibility to question your actions or orders at any time, if patient care is perceived to be jeopardised. The charge nurse may ask you to call the ICU fellow or ICU Consultant to clarify a care plan. They may also call the ICU Consultant themselves at their discretion.**

### *Holidays*

One week of holiday time is permitted during a two month ICU rotation. Advance notice must be given at least four weeks prior to the rotation. There will generally be no overlap of vacation time amongst residents and applications are handled on a first come first serve basis. Compassionate reasons for time off will be considered and vacation requests during the rotation can rarely be accommodated. The educational co-ordinator **MUST** approve all vacation requests.

### *Resident Call Schedule*

A final draft of the call schedule will be available on the 15<sup>th</sup> of the preceding month. If there are any conflicts please contact the educational co-ordinator. A preliminary draft may be made available earlier through the ICU secretary, Julia, at 55949.

## **4. Guidelines for Daily Activities in the Unit**

### *Patients Admitted to the Unit*

Patients admitted to the unit will remain under the original admitting physician but all orders written in the ICU must be confirmed by an ICU resident. At the time of admission, the resident will review with the ICU fellow or Consultant to determine under which hospital service the patient will be admitted. Patients already admitted to VHHSC will be admitted under the existing service. There are specific admission guidelines for Medical patients (appendix A) and trauma patients (appendix B) at VHHSC.

### *Admissions*

All new or planned admissions **must** be immediately reviewed with the ICU Fellow and/or with the ICU Consultant. It is **essential** that the charge nurse be informed of all admissions, as soon as possible, in order that a bed and appropriate nursing staff can be arranged.

### *Orders for Patient's Charts*

Generally, we encourage that all orders communicated to the patient's chart be written by the resident, after appropriate consultation. It is our units' policy that only the ICU staff may write orders. If other services write orders they will not be processed unless co-signed by the ICU housestaff. Verbal orders are discouraged, but when necessary should be signed as soon as possible. Consequences of a missed verbal order are your responsibility. All verbal orders must eventually be countersigned to make the medical chart complete.

### *Charting*

Patients admitted to the unit require an admission note by the ICU service. In general the assigned resident (usually on call) will be responsible for a complete admission note.

Each patient must be fully examined daily and a complete progress note written. The progress note should include pertinent history, physical examination findings plus laboratory data and results of monitoring as applicable to the patient's problems. This note should also include concerns to be discussed with other members of the patient's medical/surgical team and diagnostic and therapeutic plans. Progress notes must be updated as necessary. Procedure notes following central line insertions, intubation, chest tube placement, arterial catheters etc are required.

Nursing charting is quite thorough so become familiar with the type and information available on nursing charts and flow sheets.

### *Cardiac Arrests*

The code team consists of the ICU resident, as team leader, the medical resident, as junior, along with an ICU and CCU nurse and a respiratory therapist. For intubations on any of the wards a code blue must be called.

Anaesthetic consultants and residents are on call, in hospital, to assist with the airway when required.

### *Pre-Arrest Call*

Often the ICU resident is called when a patient is in impending cardiorespiratory failure. The role of the resident in this situation is to quickly assess the situation and perform a cursory physical examination directed at the ABC's. If the cursory examination indicates the patient would benefit from a critical care admission, this may be arranged for immediately following discussion with the ICU fellow or consultant.

### *Procedures*

All procedures will be discussed during morning rounds with the ICU consultant who with the assistance of the ICU fellow will assume responsibility for their performance. These procedures may include:

1. Insertion or change over wire of central lines via subclavian, internal jugular or femoral routes.
2. Insertion of Swan Ganz catheters and arterial lines
3. Insertion of chest tubes.
4. Bronchoscopy
5. All elective intubations or changing of endotracheal tube.

All procedures whether successful or not **must** be described in the patient's chart.

These techniques will be taught to you during your time here. Your first attempts must be supervised by the ICU fellow or Consultant. The ICU fellow or Consultant must be notified if you encounter any problems with any procedure.

Masks, gown and gloves are mandatory for all procedures including arterial, catheterization, central venous catheterization, pulmonary catheter placement and chest tube placement. All procedures must be done under strictly aseptic conditions. **Hand washing is mandatory before and after any procedure.**

**Removal of central venous catheters:** Removal of central venous catheters suspected or confirmed to be incorrectly placed will be done **only** between the hours of 8:00 am and 5:00 pm when additional support (vascular surgery) may be available or at the discretion of the ICU attending/fellow.

**Fit Testing/ Intubations:** New regulations in response to SARS requires that all residents to be Fit tested for masks. This is arranged via occupational health and safety at the hospital. These masks must be worn for all intubations.

**Junior medical residents:** inexperienced junior residents may be assigned to learn airway management and intubations in the UBC operating room on Wednesday mornings. If interested, please inform the educational co-ordinator. Arrangements are made by paging the slating anaesthetist (pager # 870-3108) on the Tuesday prior to noon, the day before, with the slating anaesthetist.

**Procedural Survey:** A procedural skill survey must be completed prior to the start of the rotation and following completion. (Appendix)

### *Discharges*

All patients discharged from the ICU must have a discharge summary and discharge orders completed by the ICU resident. The discharge summary must include the indication for admission to hospital and ICU, course in the ICU, procedures and complications encountered in the ICU and a summary of ongoing issues and concern for follow up.

### *Deaths*

A number of forms must be completed either upon death or immediately before death. These include the ICU morbidity/mortality sheet (appendix C), the organ and tissue donor referral worksheet (appendix D), notification of death and a progress note in the chart. Please note the organ donor referral sheet needs to be completed and the donor referral team contacted by phone at 1-877-366-6722 for all impending deaths even if you think they are not suitable candidates.

### *Diversion*

As the hospital has matured we have become much busier. Problems are now arising when the ICU is full and on diversion. Although it doesn't seem like it, we can still often have difficulty with admitting patients. There is a process set in place to deal with diversion. For the most part this aspect should be left in control of the ICU fellow and Consultant.

### *HANDWASHING*

**HANDWASHING IS A MANDATORY PART OF THE ICU ROTATION. THIS MUST OCCUR PRIOR TO AND FOLLOWING CONTACT WITH ANY PATIENT. UNIVERSAL ENFORCEMENT IS IN PLACE. PLEASE LIMIT THE SPREAD OF INFECTIOUS ORGANISMS!**



## 5. Rounds, Rounds, Rounds...

### *Morning Seminars (0700-0800)*

The critical care program at VHHSC has a scheduled morning seminar starting at 0700 everyday except holidays and weekends. In the two months a wide variety of critical care topics will be covered; including a three-session program on mechanical ventilation. The ICU resident will be expected to give between one and two sessions in their two-month rotation. Assigned topics are presented outside the conference room or from the educational co-ordinator. **Attendance is mandatory and so is punctuality.**

### *Radiology Rounds (0830-0900)*

Radiology rounds will be in the ICU every morning. The ICU resident will be responsible for interpreting the chest radiograph of their patient, in a specific manner, with subsequent analysis by the radiology fellow.

### *Morning Patient Care Rounds (0900-1230)*

All staff participates in these rounds. They often start at the first bed and proceed through to the end, although this format is dependent upon the individual consultant. The presentations begin with the events overnight or a brief summary of the case. This is followed by a presentation by the respiratory therapist on the events of the past 24 hours, current ventilator settings, weaning parameters, suctioning and blood gas analysis. This is then followed by a presentation from the bedside nurse consisting of a head to toe evaluation of the patient. It is then the responsibility of the resident who has been assigned the patient to formulate a plan for the next 24 hours taking into account the previously reported information and knowledge of the underlying disease. **Please do not simply repeat what was just said by the other services!** This plan is then moulded into the final plan with the assistance of the ICU fellow and Consultant. There is often a fair amount of bedside teaching during these sessions dependant upon availability of time.

### *Afternoon Sign-Out Rounds (1700-1730)*

These rounds are designed to review the events of the day, and communicate with the on call resident key issues and plans for the night.

A daily work schedule pattern is set out in appendix E (guideline only).

### *Morbidity and Mortality Rounds*

These are held on the last Tuesday of every rotation between 1600-1700 in the ICU classroom. Residents familiar with the case will be asked to present a brief informal clinical synopsis.

### *Other (Non ICU Rounds)*

Subspecialty academic half days are encouraged but are subject to adequate ICU coverage. Other activities such as retreats, research days and special seminars will be allowed pending the adequacy of ICU coverage. If there are any questions please contact the educational co-ordinator.

### *Self-Directed Teaching/Learning*

A library of essential textbooks, a selection of peer reviewed critical care journals, audio-visual aids and computer services including access to medline and the world wide web are all available in the Charles Wyse Memorial Library, in the ICU.

A compendium of “classic” literature pertaining to the ICU is also provided. This should function as good references for problems encountered in the ICU. A good starting textbook may include the ICU book by Marini (available for preview in the Library). Additionally, all of the FCCS course lectures can be found on-line for your review.

**No Food or Drink allowed in the Library. No material, for any reason, is to be removed from the library.**

## **6. Red, Blue and YOU...**

The ICU has grown over the years and due to these demands it has now been “split” into two teams. This split is a virtual one and the patients will be intermixed in the actual space. You will be assigned to either the blue or red teams. There are now at least two in-house physicians on call for each night (one from each team). This will be partly covered by Clinical Assistants (MDs). There is enough work for two in-house physicians and therefore all duties must be shared including new admissions and in-patient ICU concerns. In general the “red” patients nurse will contact the “red” resident and the same for the “blue”. However because the amount of work can be significant it is important to work as a team players when we are on call with our colleagues. *Night splitting* is NOT supported.

## 7. ICU Website

The ICU website is [www.ubccriticalcaremedicine.ca](http://www.ubccriticalcaremedicine.ca).

**Username: resident**

**Password: icuresident**

General information about the ICU, as well we will be adding call schedules, teaching lectures etc soon.

Some other critical care sites include:

Canadian Critical Care: <http://critcare.lhsc.on.ca/ccs/index.html>

Society of Critical Care Medicine: [www.sccm.org](http://www.sccm.org)

American Thoracic Society: [www.thoracic.org](http://www.thoracic.org)

Plus many more easily found throughout the web.

## **8. Evaluation**

### *We Will Evaluate You!*

At the end of your critical care rotation we will give you an evaluation of your performance. This information will be added to your in-training evaluation report (ITER) and will be completed by the ICU Consultants with requested feedback from the ICU fellows. If there are problems in your rotation you will be contacted either very early or by the mid point of your rotation to help deal with any issues.

### *You Will Evaluate Us!*

Prior to receiving your ITER, you will evaluate us and place the forms in a sealed envelope. For any difficulties encountered in the training please contact the education co-ordinator early.

## **Appendix A (Guidelines for the Admission of Medical Patients from the Emergency Room)**

1. Unattached medical patients requiring admission to the ICU from the emergency room or outside hospitals will be admitted under the ICU consultant of the day. The ICU consultant will assume the role as “most responsible physician” (MRP), for the duration of the patient’s stay in the in the ICU.
2. Medical patients admitted under the ICU consultant that are prepared for discharge from the ICU will be transferred to the medical clinical teaching unit (CTU) under the CTU consultant on call. This must be arranged through the on-call senior medical resident and/or the CTU consultant. It is expected that the medical resident will see the patient and accept the patient prior to discharge from the ICU.
3. All death summaries and other documentation for patients under the care of the ICU consultant as the MRP shall be the responsibility of that ICU physician.
4. Any medical patient admitted to the ICU from the medical floor will remain the responsibility of the CTU consultant, under whose care they were under at the time of transfer to the ICU. The medical consultant will remain as the attending physician for the duration of the patient’s ICU stay and will accept the patient when the patient is ready for transfer back to the medical floor. In the event of death within the ICU the medical consultant will be responsible for the death certificate and other documentation.

## **Survey of procedural experience**

Please complete the following survey at the beginning of your rotation. This will allow us to know your procedural experience in the past and provide you with the appropriate level of supervision and/or additional support, if necessary. Please also keep track of the number of procedures done during your stay and complete the second part prior to your departure.

Name: \_\_\_\_\_  
 Specialty: \_\_\_\_\_ Date of last ACLS \_\_\_\_\_  
 Start date: \_\_\_\_\_

### **Part I**

Please fill in the number of times you have done the following procedures before the ICU rotation:

Successful intubation of airway \_\_\_\_\_  
 Central venous line insertion \_\_\_\_\_  
 Arterial line insertion \_\_\_\_\_  
 Chest tube \_\_\_\_\_  
 Surgical Knots (e.g. one hand tie, 1 in 5 sec) \_\_\_\_\_

### **Part II**

Please fill in the number of times you have done the following procedures during the ICU rotation:

Successful intubation of airway \_\_\_\_\_  
 Central venous line insertion \_\_\_\_\_  
 Arterial line insertion \_\_\_\_\_  
 Chest tube \_\_\_\_\_  
 Surgical Knots (e.g. one hand tie, 1 in 5 sec) \_\_\_\_\_

Thank you.

### Appendix E (Daily Work Schedule)

Time	Activities	Remarks
7:00 - 8:00	Morning seminar	Be punctual!
8:00 – 8:30	Patient assignment and patient assessment	Supervised by ICU Fellow
8:30 – 9:00	X-ray rounds	With radiologist in X-ray room
9:00 – 12:30	Bedside rounds	Overnight events, current clinical status and plan of therapy will be discussed in team approach. New admission will be discussed in greater details.
12:30 – 13:00	Lunch	
13:00 – 17:00	Detail patient assessment, writing of progress notes, procedures and follow-up on therapeutic responses from a.m.	Individual supervision is available for discussion of clinical problems or procedures
17:00 – 17:30	Sign-out rounds	Quick communications of key issues and plans overnight
18:00 – 7:00	Night duty begins * <b>review of the 2100 routine CXR</b>	ICU attending physician for evening is on duty. Evening rounds focus on new admissions and clinical problems requiring urgent attention.