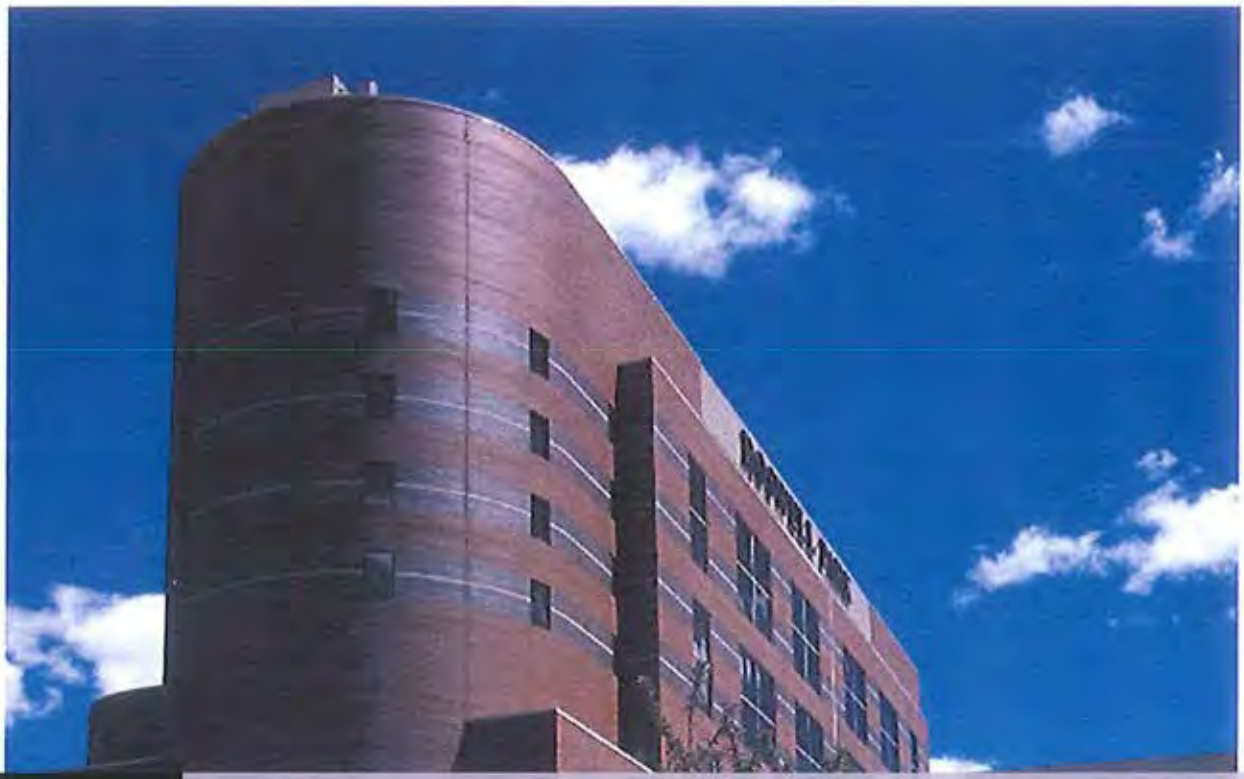

ROSWELL PARK CANCER INSTITUTE

AGENCY ORIENTATION MAILING PACKET

ROSWELL PARK CANCER INSTITUTE

MEMORANDUM

TO: Agency Nurses

FROM: Staff Development

DATE: 2015

RE: Agency Nurse Orientation

Enclosed is a packet of information for you to read in preparation for your orientation as an Agency nurse at Roswell Park Cancer Institute. Please bring all materials with you on your first day.

In the packet, you will find:

- Policies and Procedures: Please review and complete the "Mandatory Policy Review Form"
- Power-points/article: Please review all.
- Inside Cancer: go to web-site and complete enclosed worksheet "Inside Cancer" to the best of your ability. The web-site is www.insidecancer.org
- Tests: Please complete the following tests using the resources provided.
    - IV Push Test
    - Medication Calculation Test
    - NEO checklist
    - NEO Post-Test

You will be expected to successfully complete a comprehensive orientation exam in order to begin the clinical orientation. The information that you will be tested on is covered in the material provided and the classroom portion of your orientation. You will be given 2 attempts to successfully complete this.

If you will be working in a critical care area (ICU, IMCU, PACU), you will also be expected to successfully complete the Critical Care Exam and will have *1 attempt* to successfully complete this. Please refer to the "Critical Care Exam Review for Exam", which is located in the packet, for a general idea of what to review before taking this exam.

On your first day, you will meet with a Staff Development Instructor in the hospital lobby at the Information Desk at 0700. You will complete the classroom portion of your orientation. You will also review equipment used at Roswell and will receive training in our EMR system. In addition to the classes, you will be provided a total of 2 - 12 hour shifts in your clinical area to complete your orientation

As an Agency Nurse, you will not be given a parking pass for the parking garage, and will be required to pay the full daily rate of $9/day if you park in the parking garage on campus. Information regarding alternate parking options is available upon request. Also, you will be required to provide photo ID and pay $20 for an Identification Badge on your first day here at RPCI.

Please coordinate your schedule with your agency before your start date. Unless otherwise coordinated, you will be expected to work 12 hours on your first day here, a portion of which will be spent in class and the remainder in the clinical area. Please wear or bring your scrubs for working in the clinical area.

If you have any questions, please bring them with you and we will be glad to answer them for you.

Critical Care Review for Exam

Approximately 50 questions
A mix of multiple choice, labeling, and rhythm interpretation

Items to know:

Analysis of a rhythm:
Normal sinus, atrial fib, atrial flutter, v tach, v fib, heart blocks, bigeminy, PVCs, asystole

- There are strips to identify, and questions with verbal descriptions of rhythms

Treatment of lethal arrhythmias

- Drugs – cardizem, adenosine, dopamine, atropine, epinephrine, digoxin, amiodarone
- Defibrillation and pacing

Electrical conduction system

- Components
- How an impulse is generated and how it flows

Hypoxia and its effect on the alveoli and the pulmonary arterial bed

ABG

- Interpretation
- Components

Lung anatomy

- Dead space – anatomic vs instrumental

Ventilators

- Alarms and what they indicate
- How to troubleshoot alarms

Neuromuscular blocking agents

- antidote (not Atropine)
- policy

Vigileo/Arterial Lines

- assembly / tubing
- use / indications

ROSWELL PARK CANCER INSTITUTE

MEMORANDUM

To: Agency RN

From: Nursing Education

Date: 2015

Subject: **MANDATORY POLICY REVIEW**

It is an expectation of the Nursing Department that new employees become familiar with the department's policies and procedures. For those policies of immediate importance, copies will be provided to you to read during your orientation program. **You are responsible for knowing the content contained therein.** Opportunity will be provided during class for policy review, and questions will be answered if further clarification is necessary.

Your signature, required below, indicates that you have reviewed and/or received copies of these policies and that you understand their content.

I have received and reviewed the following policies and understand the content:

a) Administration of Medications (RPCI Policy 1018.1)
b) Administration of Non-Chemotherapeutic Medications by the IV Push Method (RPCI Policy 420.1)
c) Occurrence Reporting (RPCI Policy – 464.1)

Date: _____

Signature: _____

cc: Personal History file

Roswell Park Cancer Institute Policy and Procedure	Date Issued: 1/15/2010	Number: 1018.1
Title: Administration of Medications	Revision: 5	Effective Date: 6/16/14
Prepared by: Nursing Practice Committee	Approved by: Michael B. Sexton, General Counsel	Page: 1 of 7

A. GENERAL STATEMENT OF POLICY

Medications shall be administered only by qualified staff members authorized by and within the guidelines of the respective licensing agencies of the State of New York and who are the staff members of Roswell Park Cancer Institute.

B. SCOPE

This policy and procedure applies to Professional Nursing Staff, Medical Staff, and other licensed personnel staff.

C. ADMINISTRATION

This policy and procedure will be administered by the Chief Executive Officer, Medical Director, Vice President of Patient Care Services, Director of Patient Care Services, Nurse Administrator, Nurse I/II, LPN, Clinical Nursing Supervisor, and the Nursing Staff Development Instructor.

D. POLICY / PROCEDURE

Medication Administration

1. **Nurses**

   a. Registered Professional Nurses, Licensed Practical Nurses, Graduate Nurses and agency nursing personnel are permitted to independently prepare and administer medications.

   b. Select nursing students may administer medications under the direct supervision of an institute Registered Nurse or a clinical instructor from an affiliated School of Nursing.

   c. Nursing instructors from affiliated Schools of Nursing requesting privileges for students to administer medications must have competencies documented by the Nursing Education Department. The institute registered nurse or clinical instructor maintains the responsibility to verify that all medications administered by nursing students have been administered as prescribed.

   d. Each professional member of the Nursing staff has the responsibility to question any order if he/she feels it is inappropriate, erroneous or will not serve the patient's best interest, or if the patient has not consented. For additional information, please refer to Nursing Policy #405 - Medication Administration and Institute Policy #1017.1 – Medical and Professional Staff Relations.

2. **Medical Staff**

a. Medications may be administered by licensed practitioners of medicine and dentistry that have been granted clinical privileges by RPCI. This includes physician house staff and foreign graduates with permits for institutional practice approved by RPCI.

b. Medical students may administer medications under supervision of a licensed physician. Administration is documented in the patient's electronic medical record in the EMAR by the RN selecting "mark as done by other" selecting the correct provider for administration. The provider will have the request for sign off in their unsigned documents tab and immediately upon log in to EMR

c. Certified Nuclear Medicine Technologists may administer radioisotopes.

d. Physician's Assistants may administer medications delegated to them by their supervising physicians and defined in the Practice Act.

e. Nurse practitioners may administer medications as established by RPCI protocols.

f. And appropriately trained pharmacists and other health care professionals under the direct supervision of a member of the Medical Staff or house staff only in extraordinary situations where other appropriate personnel are not immediately available for medication administration.

g. For more information, please refer to the Rules and Regulations of the Medical Staff available on the RPCI Intranet i2.

3. **Other Licensed Staff**

a. Medications may be administered only by persons authorized by their respective licensing agency within the State of New York and approved departmental policy. The persons include:

   i. Pharmacists: In New York State, pharmacists can be separately certified to administer certain vaccines to adults 18 years of age and older. Roswell Park does not currently utilize pharmacists to administer vaccines.
   ii. Respiratory Therapists and Technicians – at the direction of a licensed physician, a licensed respiratory therapist or technician may administer medications needed for respiratory care.

4. **Medication Orders As They Pertain To Medication Administration**

a. It is the responsibility of the qualified staff member administering a medication to confirm prior to administration that the medication order is complete and accurate. All medication orders must be written clearly/legibly or entered electronically into the EMR, must be complete and must be signed by the practitioner responsible for the order. In addition, all orders must have a printed or stamped name of the practitioner for written orders.

b. Additionally, all "prn" orders will require a statement of the indication(s) for the use of the medication. Administration of "prn" medications will be for the indication written on the medication order.

c. In an emergency situation a legible hand written order with complete patient information will be accepted.

d. For additional information on prescribing medications, please refer to Institute Policy #1009.1.

5. **Prior to Administration**

a. Staff shall:

i. Have knowledge about the medication(s), including but not limited to indications, action, common side effects, important adverse effects and proper administration methods.

ii. Verify that the medication selected is the correct one based on the medication order and product label.

iii. Verify that the medication is stable based on visual exam for particulates or discoloration and that the medication has not expired.

iv. Verify that there is no contraindication.

v. Verify that the medication is being given utilizing the "five rights"
- Right patient name
- Right drug
- Right dose
- Right route
- Right time/duration

And when applicable:

- Right volume
- Right rate of administration
- Expiration date/time

vi. Verify patient name and date of birth or medical record number. When possible, the patient should actively participate in the identification by verbalizing these two identifiers just prior to administration.

vii. Educate the patient, or if appropriate, the patient's family about any potential significant adverse reaction and other concerns about administering a new medication, and documents the same.

viii. Discusses unresolved significant concerns about the medication with the patient's physician, prescriber, and/or relevant staff.

b. For units/clinics utilizing bar code scanning technology for medication administration, see Section 6.

c. When administering chemotherapy, there are additional considerations (i.e. 2 RN verification, safe handling of hazardous drugs, etc), please refer to Institute Policy #428.1 – Administration of Chemotherapy and Investigational Chemotherapeutic Agents, Nursing Policy PCS #403 – Handling of Hazardous Drugs by the RN and Nursing PCS #405.3 SOP Chemotherapy Administration.

6. **Knowledge Based Medication Administration (KBMA)**

a. KBMA uses patient and clinical information in the EMR and dispensing information from the Pharmacy system to validate medication administration for a patient at the point of care ("Five Rights").

b. When the end user scans the barcode on a patient's wristband and medication, KBMA compares the scanned data to medication orders entered through the EMR, compares the dispensing information from Pharmacy, and displays the information in a time-oriented electronic Medication Administration Record (eMAR).

c. For units/clinics utilizing bar code scanning technology for medication administration, bar code scanning of patient identifier(s) (on wristband) and medication(s), as well as response to the KBMA alerts and warnings shall be required for all patients. Instances of override of the barcode medication administration system will be documented and monitored by nursing management.

d. For additional information regarding the use of KBMA, please refer to PCS 405.2 – KBMA Medication Administration.

7. **Monitoring and Assessment**

a. The effects of medications on patients are monitored to evaluate the effectiveness of the therapy and to minimize the occurrence of adverse events. The monitoring of the effects of medications on patients will be a collaborative process between the healthcare team, the patient and the family and/or caregiver. The monitoring and assessment of the effects of the medication includes, but is not limited to, direct observation of the patient during assessment, evaluation or other patient contact to determine the patient's physiological response to the medication administered and any problem or adverse effects associated with the medication, gathering the patient's own perceptions about side effects, and when appropriate, perceived efficacy.

b. Administration of PRN medications must be followed by documentation of the staff member's assessment of the patient's response to the medication.

c. When a new medication is administered to a patient, the first few doses (number of doses is dependent on the specific medication) will be monitored.

d. Because patients may experience adverse reactions to new medications, the patient will be observed and assessed during the initiation of the administration of the medication.

e. For medications that are known to commonly produce side effects or sensitivities, the patient will be observed and assessed for side effects and adverse events as long as necessary.

f. The patient will receive a test dose for medication when this is both appropriate and available for medication administered on a first-time basis in an effort to identify adverse drug reactions, allergies or sensitivities to the medication.

g. Laboratory studies or other clinical studies may be ordered as necessary and appropriate to monitor the patient's response to the new medication to prevent unnecessary side effects or adverse reactions.

h. Information that is obtained by medication monitoring and patient assessment will be documented in the patient's medical record, either written or electronic medical record.

8. **Adverse Drug Reaction**

a. Any actual or suspected adverse drug reaction (ADR) must be reported to the Department of Pharmacy and a medication variance must be completed on line using Quantros by the individual discovering the variance. Please refer to Institute policy # 464.1 for more information on Occurrence Reporting and Medication Variance Reports.

b. An ADR is defined as a response to a drug which is undesired, unintended or unexpected, and which occurs at doses normally used in humans for prophylaxis, diagnosis or therapy of disease, or for the modification of physiological function. The ADR is rated for severity. All observations, interventions and patient responses pertaining to the ADR will be documented in the patient's medical record. For additional information, please see Institute Policy #408.7 – Adverse Drug Reaction Reporting

9. **When Medications Are Not Administered**

a. When a medication that has been ordered for a patient is not administered for any number of reasons (patient refusal, patient unable to receive medication, patient unavailable, etc) the medication listed on the medication administration record must be marked as 'not done' with the reason why the medication was not given indicated.

b. Prescribers are to be notified of any medication that is not administered as ordered. Documentation of this notification should be placed in the medical record. The medication that was not given must then be returned to Pharmacy with patient identifier information included so that proper accounting is achieved.

10. **Medication labeling**

a. Whenever possible, the Pharmacy Department will provide medication for patients at RPCI in unit dose containers following all State and Federal labeling guidelines. Please refer to Pharmacy Policy MM.05.01.09 – Medications are Labeled for additional labeling requirements for Pharmacy.

b. Outside of Pharmacy, medications shall be labeled according to the following general guidelines:

i. Labels include the name and strength of the medication/solution, dosage/strength, the date and time prepared, and the initials of the person preparing the label.

ii. Any time one or more medications are prepared but are not administered immediately, the medication container must be appropriately labeled.
iii. No more than one medication or solution is labeled at one time.
iv. No medication is to be administered from an unlabeled container, or illegibly labeled container.
v. Any medication or solution found unlabeled or illegibly labeled must be immediately discarded.
vi. For units/clinics utilizing bar code scanning technology for medication administration, any medication without a barcoded package shall be returned to the pharmacy for a replacement.

c. For additional information, please see specific department policy/procedure on medication labeling:

i. Nursing Policy PCS-405 – Medication Administration
ii. Peri-operative Services Policy 200.24.1 – Safe Medication Delivery in the OR
iii. PCS 405.2 SOP – KBMA Medication Administration

11. **Patient's Own Medications**

a. If a medication is non-formulary and is not readily available, the patient's supply may be used with a prescriber's order to use patient own supply. It is recommended that the use of patient's own medications in the hospital be limited to those not available in the Pharmacy. Medications that are not to be administered should be sent home.

b. Qualified staff can only administer medications brought from home with a specific 'Patient Own Medication' physician order. Only those medications brought from home which have been verified by a pharmacist may be administered.

c. Please refer to Pharm Policy 803 for further information on verification.

d. For inpatient units utilizing bar code scanning technology for medication administration, the patient's own medication product(s) shall be dispensed in packaging with a barcode unique to the patient and medication order at the time of Pharmacy verification. This barcode shall be used for the medication identity during the barcode scan process.

12. **Bedside Medications**

a. Prescribers may order certain medications and alternative supplements to be left at the bedside for self-administration in those instances when the needs of the patient will be best met. A specific and complete order for each medication and alternative supplement is required. A separate order is required for the patient to keep medication at the bedside. **Only medications approved for use at the bedside or in a self-medication program may be kept at the bedside.**

b. Education and training are provided for patients involved in bedside administration of medications. The information provided includes the following: name of medication to be administered, the method of administration, the dosage and frequency of administration, the expected actions and side effects and how to monitor the effects that the medication is having. For units/clinics utilizing bar code scanning technology for medication administration, documentation of the medication administration should be marked as having been done manually on the eMAR with the override reason of "patient self-administered medication."

c. No unsecured controlled substances may be left at the patient's bedside pending administration.

d. The responsible nurse is to verify and document that the patient has taken the bedside medication and it was taken as ordered.

e. For more information on Bedside Medications and a listing of medications/items that can be prescribed for bedside storage, please refer to Institute Policy #1009.1 – Prescribing Medication.

13. **Documentation**

a. Each dose of medication administered shall be properly documented on the eMAR **after** the medication is administered.

b. The qualified staff member that administers the medication is responsible for documenting the medication administration in the medical record with the following information:

i. Date of time of administration
ii. Medication name, dose, and route of administration
iii. Patient response to medications administered and effect of medication documen
iv. Legal signature and title of person administering the medication

E. ADDITIONAL PROCEDURES

1. Institute:
   a. Adverse Drug Reaction Reporting # 408.7
   b. Chemotherapy policy # 428.1
   c. Occurrence Reporting (Patient/Visitor/Security) Include Medication Variance Reports #464.1
   d. Prescribing Medications #1009.1
   e. Verbal/Telephone Prescribers Orders #1006.1
   f. Use of Abbreviations #1015.1
   g. Use of Controlled Substances #1419.1

2. Pharmacy Department:
   a. PH.1100 – Filling and Labeling of All Drug Containers by the Pharmacy Department
   b. MM. 05.01.09 – Medications are Labeled
   c. PH.803 – Medications brought to the Institute by Patients

3. Patient Care Services (Nursing):
   a. PCS 403 - Handling of Hazardous Drugs by the RN
   b. PCS 405 – Medication Administration
   c. PCS 405.1 SOP – Non-KBMA Medication Administration
   d. PCS 405.2 SOP – KBMA Medication Administration
   e. PCS 405.3 SOP – Chemotherapy Administration

F. DISTRIBUTION

This Policy and Procedure will be distributed to all Institute Managers via the RPCI internal web page and to holders of backup hard copies of the manual. Managers are responsible for communicating policy content to pertinent staff.

Roswell Park Cancer Institute Policy and Procedure	Date Issued: 5/1/1986	Number: 420.1
Title: Administration of Non-Chemotherapeutic medications by the IV Push Method	Revision: 4	Effective Date: 5/5/14
Prepared by: Departments of Pharmacy and Nursing	Approved by: Michael B. Sexton, General Counsel	Page: 1 of 2

A. GENERAL STATEMENT OF POLICY

A Registered Nurse (RN) or Graduate Registered Nurse (GN) at Roswell Park Cancer Institute (RPCI) may administer non-chemotherapeutic medications by the intravenous (IV) push method after successful completion of the formal staff development program and demonstration of competency.

B. SCOPE

This policy and procedure applies to all RNs and GNs who meet eligibility criteria and have completed the staff development program. Successful implementation requires the cooperation of the Medical Faculty and Pharmacy staff.

C. ADMINISTRATION

This policy and procedure will be administered by the Department of Nursing Administrative Staff, Ambulatory Care Nurse Managers, and Department Administrators of Clinical Departments where RNs and GNs are employed.

D. POLICY / PROCEDURE

1. Eligibility to begin instruction at this level requires:

    a. successful completion of Medication Administration staff development program,
    b. successful completion of staff development program for IV Push Medication, and
    c. successful completion of annual CPR review.

2. The RN/GN or Chemotherapy Nurse may administer only those medications that are on the approved list and within the dose guidelines as recommended by the Pharmacy and Therapeutics Committee. The approved list is reviewed annually by the Pharmacy & Therapeutics Committee. Recommended additions and changes to the list are made by the Pharmacy and Therapeutics Committee.

3. The nurse, having received the physician's written order, must know the recommended dose range, the purpose, action and contraindications of the drug. The nurse will follow the Nursing Department policies and procedures for administration of medications.

4. Following administration of the drug, continued accurate and pertinent observations of the patient are essential as well as appropriate documentation.

5. Prescriber's orders for drugs to be administered IV must be clear and complete. The nurse is responsible to clarify orders with the prescriber when necessary and to inform him of any pertinent change in the patient's condition prior to administering the drug.

6. IV push into an arterial line is not allowed.

7. Private duty nurses may not administer IV push medications unless they are RPCI employees and have completed the appropriate staff development program.

8. Only registered nurses assigned to the Adolescent/Pediatric Unit, and/or Clinic and RNs with critical care privileges, may administer IV push medications to pediatric patients.

9. The Guidelines attached to this policy are to be used only as a quick reference for IV push administration. They have not been designed to replace the reference materials listed. Any questions regarding more explicit information than is provided here should be referred to the Pharmacy Department.

10. Definitions:

    a. RN/GN - A Registered Professional Nurse or Graduate Registered Professional Nurse, who successfully completed IV therapy education programs and who has met all the other eligibility requirements.

    b. IV Push - A gradual continuous injection administered into an intravenous line over a prescribed period of time, according to recommended guidelines. If a medication requires an administration time exceeding 4 minutes, intermittent infusion procedure should be followed.

    c. RN - A registered nurse, who successfully completed IV therapy education programs and who has met all the other eligibility requirements.

    d. Critical Care - registered nurse who has successfully completed the requirements for and has been granted critical care privileges.

    e. Emergency situation – those situations in which the immediate administration of the drug as necessary for proper treatment.

    f. Supervision of MD - The physician ordering the medication or a designee physician must be available on the nursing unit in the Ambulatory Center, or the area where the patient is being treated at the time of drug administration.

E. DISTRIBUTION

This Policy and Procedure will be distributed to all Managers via the RPCI internal web page and to holders of backup hard copies of the manual. Managers are responsible for communicating policy content to pertinent staff.

F. ATTACHMENT

Guidelines for Administration of Approved IV Push Medication please use this link .

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

(This list includes but is not limited to current medications listed as formulary and administered in RPCI clinical areas. It is not inclusive of all IV medications administered at RPCI. Changes/adjustments can and will be made based on current literature and/or research based standard of practice changes)

****All Piggybacks will be pre-mixed in Pharmacy with the exception of emergency drugs and PRN medications.***

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Acetazolamide (Diamox)	500 mg / 5 ml (100 mg/ml) rate: 100 – 500 mg / minute	Yes	Yes	Yes	VS 4	**Do not give IM.**
Adenosine (Adenocard)	6 mg rapid IV Push over 1-2 seconds. May repeat with 12 mg dose- rapid IV Push. Total dose over a 5-10 minute period should not exceed 30 mg	Yes	**NO**	**NO**	VS 1	**MD MUST be present for administration of initial dose.** **Must be given undiluted/follow each IV bolus with Normal Saline flush.** Use injection site on administration set as close as possible to vein site.
Amiodarone (Cordarone) **Pulseless VT**	300 mg IV Push (dilute to 20 ml with D5W)	Yes	**NO**	**NO**	VS 1	**MD MUST be present for IV push dose.** *Do not confuse with amrinone (Inocor) **Central line preferred, avoid extravasation. Administer through an in-line filter.**
Amiodarone (Cordarone) **Arrhythmia** ***Loading dose***	Loading Dose: 150 mg over 10 minutes	**NO**	**NO**	**Critical Care/5th floor only**	VS 1	Maintenance dose must be mixed in a non-PVC container. *Do not confuse with amrinone (Inocor) **Central line preferred, avoid extravasation. Administer through an in-line filter.**
Amiodarone (Cordarone) **Arrhythmia** ***Continuous infusion***	Infusion: 360 mg (1 mg/min) over 6 hours then 540 mg (0.5 mg/min) over 18 hrs. Then 0.5 mg/min thereafter.	**Continuous infusion only** **Critical Care/5th floor only**			VS 1	Maintenance dose must be mixed in a non-PVC container. *Do not confuse with amrinone (Inocor) **Central line preferred, avoid extravasation. Administer through an in-line filter.**

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Argatroban	See Argatroban dosing guidelines	**Continuous infusion only**			VS 4	Must monitor aPTT per recommendations noted in guideline.
Atracurium besylate (Tracrium)	Initial dose: 0.4 – 0.5 mg/kg Maintenance dose: 0.08-0.1 mg/kg prn Continuous Infusion: 5-10 mcg/kg/min	ICU / PACU only	NO	NO	VS 1 Train of Four monitoring	**Neuromuscular blocking agent: Patient must be on life support system.** **REVERSAL AGENTS (pyridostigmine or neostigmine with atropine or glycopyrolate) MUST BE IN PT ROOM** Presence of MD is required for initial dose * Central line preferred, Avoid extravasation.
Atropine sulfate Asystole	1 mg IV Push. Repeat every 3-5 minutes. Max total dose of 3 mg.	Yes	Emergency only in the presence of MD	NO	VS 1	
Atropine sulfate Bradycardia	0.5 mg IV Push. Repeat every 3-5 minutes. Max total dose of 3 mg.	Yes	Emergency only in the presence of MD	NO	VS 1	
Benztropine (Cogentin)	1 to 2 mg given 1 to 4 times daily. Give at a rate not to exceed 1 mg/minute.	Yes	Yes	NO	VS 4	Must be given undiluted

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Bumetanide (Bumex)	0.5 – 1 mg IV over 1 – 2 minutes	Yes	Yes	Yes	VS 4	
Calcium Chloride Electrolyte replacement	1 – 2 gram IV over 1 – 2 hours	N/A	N/A	Yes	VS 4	Avoid extravasation, Central line only.
Calcium chloride (1 gram/10 ml) (13.6 mEq/ 10 ml) Emergency	500 mg – 1 gram Do not exceed 1 ml / minute	Yes Emergency/ Code only	NO	N/A	VS 1	Avoid extravasation. Central line only
Calcium Gluconate Electrolyte replacement	1-2 gram IV over 1 – 2 hours	N/A	N/A	Yes	VS 4	Avoid extravasation. Central line preferred.
Calcium gluconate (4.65 mEq/10 ml) Emergency	7 – 14 mEq (15-30 ml) – do not exceed 2 ml/minute	Yes Emergency/ Code only	NO	N/A	VS 1	Avoid extravasation. Central line preferred.
Cosyntropin (Cortrosyn)	0.25 mg diluted with 2-5 ml normal saline and administered over 2 minutes.	Yes	Yes	NO	VS 4	Refer to Cosyntropin Stimulation test protocol (may be found in i2)
Desmopressin (DDAVP)	Diabetes insipidus 2 - 4 mcg (in divided doses)	Yes	NO	Critical Care/5th floor only	VS 1	Hemophilia A & Von Willebrand disease (type 1)

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Dexamethasone (Decadron)	Wide range of recommended doses IV Push over 3 - 5 minutes	Yes (doses up to 20 mg)	Yes (doses up to 20 mg)	Yes	VS 4	Recommended IV Push (with exception of doses greater than 20 mg)
Dexmedetomidine (Precedex)	Loading dose: 1 mcg/kg over 10 minutes. Maintenance dose: 0.2 to 0.7 mcg/kg/hour (titrated to response)	**Not given IV push**		**ICU, IMCU, PACU only**	VS 1	
Dextrose 50% (25 gm/ 50 ml)	20 – 50 ml IV Push (maximum recommended rate = 3 ml/minute)	Yes	Yes	**NO**	VS 4	May be given peripherally for emergency treatment of severe hypoglycemia – administer in large arm vein. Repeat Finger Stick Blood Glucose in 30-60 minutes.
Diazepam (Valium)	2 – 10 mg Do not exceed 5 mg/minute	Yes	**NO Unless Conscious Sedation Privileged**	**NO**	VS 1	**Must be given undiluted.** Administer into a large vein to avoid thrombosis Use injection site on administration set as close as possible to vein site. **Flush IV line with 10 ml of NS after dose**
Digoxin	Loading dose: 8 – 12 mcg/kg IBW in divided doses Maintenance: 0.125 mg – 0.25 mg DAILY	Yes	**NO**	Yes	VS 4	May give undiluted IV Push over 5 minutes.

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Diltiazem (Cardizem) *Loading dose*	Loading dose: 0.25 – 0.35 mg/kg IV Push over 2 minutes	Yes	NO except 5th floor	NO	VS 1	
Diltiazem (Cardizem) *Continuous infusion*	Infusion: 5-15 mg/hour	Continuous infusion only Critical Care/5th floor only			VS 1	
Diphenhydramine (Benadryl)	25 – 50 mg IV over at least 1 minute	Yes (doses up to 50 mg)	Yes (doses up to 50 mg)	Yes - but recommended IV Push	VS 4	Maximum single dose = 100 mg Maximum daily dose = 400 mg
DOBUTamine (Dobutrex) Dose less than or equal to 10 mcg/kg/min	2.5-10 mcg/kg/minute	Continuous infusion only Critical Care only			VS 1	Infuse via central line. Avoid extravasation.
DOBUTamine (Dobutrex) Doses greater than 10 mcg/kg/min	11-15 mcg/kg/minute	Continuous infusion only ICU/PACU only			VS 1	Infuse via central line Avoid extravasation.

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
DOPamine (Intropin) ***Low dose-*** **Doses less than or equal to 3 mcg/kg/min.**	1-3 mcg/kg/minute	**Continuous infusion only**			VS 4	Infuse via central line. Avoid extravasation.
DOPamine (Intropin) ***Intermediate dose-*** **Doses 4-10 mcg/kg/min.**	4-10 mcg/kg/minute	**Continuous infusion only** **Critical Care/5th floor only**			VS 1	Infuse via central line. Avoid extravasation.
DOPamine (Intropin) ***High dose-*** **Doses greater than 10 mcg/kg/min.**	> 10 mcg/kg/minute	**Continuous infusion only** **Critical Care only**			VS 1	Infuse via central line. Avoid extravasation.
Enalaprilat (Vasotec)	0.625 – 1.25 mg over 5 minutes	Yes	Yes	Yes	Telemetry & VS 2 x 24 hrs Then VS 4	VS prior to administration. BP q 15 minutes x4 after administration. BP q 4 hours x24 hours then BP q 8.

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
EPINEPHrine (Adrenalin) Cardiopulmonary	0.5-1 mg IV Push (1:10,000 dilution)	Yes	Emergency only in the presence of MD	NO	VS 1	Avoid peripheral administration. Avoid extravsation.
EPINEPHrine (Adrenalin) Anaphylactic shock	0.1-0.25 mg (1:1000 dilution)	Yes	Emergency only in the presence of MD	NO	VS 1	Avoid peripheral administration. Avoid extravasation.
EPINEPHrine (Adrenalin) [vasopressor] Continuous infusion	1-5 mcg/minute	Continuous infusion only ICU/PACU only			VS 1	Titrate to response. Infuse via central line. Avoid extravasation.
Esmolol (Brevibloc) IV push	500 mcg/kg IV over 1 minute	Yes	NO	NO	VS 1	Central line preferred Avoid extravasation.
Esmolol (Brevibloc) Continuous infusion	50-200 mcg/kg/min	Continuous infusion only Critical Care only			VS 1	Central line preferred. Avoid extravasation.
Ethacrynic Acid (Edecrin)	0.5 - 1 mg/kg IV slowly over several minutes (max. 100 mg in a single dose)	Yes	NO	Yes	VS 4	

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Fentanyl (Sublimaze) IV push	25 - 100 mcg IV over 1-2 minutes	Yes	Emergency only in presence of MD or Conscious Sedation Privileged	Yes Maximum dose = 100mcg Comfort care may exceed 100 mcg	VS 1 Piggy back- VS3	
Fentanyl (Sublimaze) Continuous infusion	Start at 1-2 mcg/kg/hour. Titrate to 10 mcg/kg/hour. May require higher dose for patients in extreme pain or end of life.	Continuous infusion only Critical Care only			VS 1	
Flumazenil (Romazicon)	0.2 mg (2 ml) IV over 15 seconds	Yes	Yes	NO	VS 4 Obtain VS & O_2 sat 15 min after administration	Must be given undiluted
Fosphenytoin (Cerebyx) Loading dose	15 – 20 mg PE / kg (PE=phenytoin equivalents)	Yes	Yes	NO	VS 1	Do not exceed 150 PE/minute-may cause cardiovascular collapse if given too rapidly.
Furosemide (Lasix) IV Push	20 – 80 mg IV over 1-2 minutes	Yes	Yes	NO	VS 4	
Furosemide (Lasix) Continuous infusion	Titrate as ordered	Continuous infusion only			VS 4 Strict I&O	
Glucagon	1 mg (unit) over 1 minute	Yes	Yes	NO	VS 4	Dilute with diluent provided. Do not add to IV solution.

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Haloperidol lactate (Haldol)	Initial dose based on degree of agitation. Average dose is 2 to 5 mg Range is 0.5 to 10 mg	Yes	**NO**	Yes	VS1 (IVP) VS 4 (piggyback)	Only haloperidol lactate may be given IV
Heparin Sodium **Loading dose**	Loading dose: 5,000 units IV over 1 minute then start continuous infusion (dose varies)	Yes	Yes	Yes	VS 4	*Heparin 25,000 units in 250 ml D5W available for infusion.* *Protamine sulfate used for heparin overdose
Heparin Sodium **Continuous infusion**	See heparin protocol	Continuous infusion only			VS 4	*Heparin 25,000 units in 250 ml D5W available for infusion.* *Protamine sulfate used for heparin overdose
Hydralazine Hydrochloride (Apresoline)	10 – 20 mg (max. rate 5 mg/ minute)	Yes	**NO except 5th floor**	**Critical Care/5th floor only**	VS 1	*Compatible with NS only.*
Hydrocortisone sodium succinate (Solu-Cortef)	100 mg IV Push – administer over 30 seconds Higher doses may be necessary	Yes (doses up to 100 mg)	Yes (doses up to 100 mg)	Yes – but recommended IV Push	VS 4	
Hydromorphone (Dilaudid)	0.5 –2 mg every 4-6 hours as needed. IV slowly over 2-3 minutes.	Yes	Yes	Yes	VS 4	Monitor for respiratory depression Naloxone for reversal
Insulin, Regular	2 – 10 units IV	Yes	Yes	**NO**	VS 4	Only regular insulin may be given IV. Strict blood glucose monitoring.

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Ketamine	Starting dose is 0.1 – 0.2mg/kg per hour (may start lower) Increase by 0.1mg/kg/hour q 6 hours	**Continuous Infusion Only** Critical Care Only for first 24 hours.			VS 1 **After 24 hours, if stable may change to VS 2.**	If stable for 24 hour period, may transfer to non-critical care area.
Ketorolac (Toradol)	15 – 30 mg IV over ≥ 15 seconds	Yes	Yes	Yes - but recommended IV Push	VS 4	*Use lower doses in the elderly*
Labetalol (Trandate, Normodyne) Continuous infusion	Continuous infusion - initial infusion 0.5 - 2 mg/minute - titrate to response , up to 30 mg total dose	**Continuous infusion only** Critical Care only			VS 1	
Labetalol (Trandate, Normodyne) Intermittent bolus	Intermittent bolus: up to 20 mg IV every 4 hours	Yes	**NO** except 5th floor	**NO**	VS 1	Monitor BP Maximum effect usually occurs within 5 minutes of dose.
Levothyroxine (Synthroid)	Varies depending on indication (IV dose is usually ½ of the PO dose)	Yes	Yes	**NO**	VS 4	Give IV Push only. Not stable for infusion
Lidocaine (Xylocaine) Emergency	Bolus: 50 – 100 mg IV May repeat in 3-5 minutes. Max 3 mg/kg	Yes	Emergency only in the presence of MD	**NO**	VS 1	

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Lidocaine (Xylocaine) **Continuous infusion**	Infusion: 1-3 mg/minute	**Continuous infusion only** Critical Care only			VS 1	
Lorazepam (Ativan)	0.5 - 2 mg (diluted) Do not exceed 2 mg / minute	Yes	Yes	**NO**	VS 4	*Dilute with equal volume of diluent. Do not exceed rate of 2 mg/minute. Avoid extravasation.*
Meperidine (Demerol)	50 – 100 mg slow IV (dilute to 10 mg/ml)	Yes	Yes	Yes	VS 4	Observe for respiratory depression. Reversal agent – naloxone
Methadone	Initial: 2.5 – 10 mg every 8-12 hours; titrate slowly to effect	Yes	**NO**	Yes	VS 4	***Methadone injection may be given undiluted over a minimum of several minutes or diluted in 50 ml of Normal Saline and administered over 15 minutes.***
Methylprednisolone (Solu-medrol)	40-125 mg IV over > 1 minute dose range varies	Yes (doses up to 125 mg)	Yes (doses up to 125 mg)	Yes - but recommended IV Push	VS 4	

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Methylene Blue	Methemoglobinemia:1-2 mg/kg Ifosfamide induced encephalopathy: Prevention- 50 mg q 6-8 hours Treatment- 50 mg q 4-8 hours until symptoms resolve	Yes	Yes	Yes	VS 4	
Metoclopramide (Reglan)	10 mg IV over 1-2 minutes	Yes (doses up to 10 mg)	Yes (doses up to 10 mg)	Yes - but recommended IV Push	VS 4	
Metoprolol (Lopressor) Dose less than or equal to 5 mg IV every 4 hours	Dose less than or equal to 5 mg IV	Yes	NO except 5th floor	Yes	VS 4	No cardiac monitoring required for doses less than or equal to 5 mg IV Q 4 hours. Monitor for bradycardia; Hold if HR < 60 and/or SBP < 100

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Metoprolol (Lopressor) **Dose greater than 5mg if continuation of therapy**	5-10 mg	Yes	**NO except 5th floor**	Yes	VS 4	Indications: 1. If IV metoprolol has been initiated in ICU or IMCU, patient may continue to receive IV metoprolol on a regular floor without cardiac monitoring as long as dose does not exceed 10 mg IV every 4 hours. 2. Conversion of an oral beta blocker to IV therapy while patient is NPO; No cardiac monitoring required for doses less than or equal to 10 mg IV Q 4 hours. Monitor for bradycardia; Hold if HR < 60 and/or SBP <100
Metoprolol (Lopressor) **Initial dose or dose greater than 10 mg**	Initial dosing: 5-10mg Continuation of therapy: Greater than 10 mg	Yes	**NO except 5th floor**	Yes	VS 1	Monitor for bradycardia; Hold if HR < 60 and/or SBP < 100
Midazolam (Versed)	1 – 5 mg IV over 2 minutes	Yes	**NO Unless Conscious Sedation Privileged**	**NO**	VS 1	Caution: 2 concentrations available- (1 mg/ml and 5 mg/ml) Observe for respiratory depression Reversal agent – Flumazenil

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Milrinone	Loading dose 50 mcg/kg administered over 10 minutes. Maintenance infusion - 0.375-0.75 mcg/kg/min	**Continuous infusion only** Critical Care/5th floor only			VS 1 **After 24 hours, if stable may change to VS 2**	
Morphine	2.5 – 15 mg IV over 4-5 minutes (dilute to 10 mg/ml)	Yes	Yes	Yes	VS 4	Observe for hypotension and respiratory depression. Reversal agent – naloxone
Naloxone (Narcan)	0.4 – 2 mg	Yes	Yes	**NO**	VS 4 **Obtain VS and O_2 sat 15 min after administration**	
Nesiritide (Natrecor)	Loading dose: 2 mcg/kg over 60 seconds. Maintenance dose: 0.01 mcg/kg/minute; may titrate up to 0.03 mcg/kg/minute	**Continuous infusion only** Critical Care only			**VS 1**	Loading dose should be given from infusion bag and administered over 60 seconds. **Do NOT use starting dose that is higher than the initial recommendation.** Not recommended for use > 72 hours.
Nicardipine (Cardene)	0.5-15 mg/hour (Dose varies based on indication for use - see package insert)	**Continuous infusion only** Critical Care only			VS 1	Infuse via central line. Avoid extravasation.
Nitroglycerin	5-200 mcg/minute (titrate per order)	**Continuous infusion only** Critical Care only			VS 1	

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Norepinephrine (Levophed) **Doses 2-10 mcg/min**	Titration between 2-10 mcg/min.	**Continuous infusion only** **Critical Care/5th floor only**			**VS 1 Patients requiring > 8 mcg/min should be assessed for possible transfer to ICU. Once VS stabilized VS can be done every 30 -60 minutes until infusion off**	Avoid extravasation. Infuse via central line.
Norepinephrine (Levophed) **Doses greater than 10 mcg/min**	10-40 mcg/minute - titrate. Doses ≥ 40 mcg/minute may be necessary at the discretion of the physician.	**Continuous infusion only** **ICU only**			VS 1	Avoid extravasation. Infuse via central line.
Ondansetron (Zofran)	Post-op nausea/vomiting - 4 mg Prevention of chemotherapy induced emesis- usual dose is 8 mg, range is 8-24 mg	Yes (doses up to 16 mg)	Yes (doses up to 16 mg)	Yes - but recommended IV Push	VS 4	Doses up to 16 mg may be administered undiluted over 1 minute.
Palonesetron (Aloxi)	0.25 mg IV 30 minutes prior to start of chemotherapy administration, day 1 of each cycle	Yes	Yes	**NO**	VS 4	Administer IV Push only IVpush over 30 seconds Not stable for infusion

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Phenobarbital [barbiturate]	100 – 320 mg / day (do not exceed 60 mg/ minute)	Yes	Emergency only in the presence of a MD	NO	VS 1	Dilute up to 10 ml with sterile water AVOID EXTRAVASATION
Phenylephrine (Neosynephrine)	Rate: 50-200 mcg/minute until blood pressure is stabilized, then may be decreased to 40 to 60 mcg/min	Continuous infusion only Critical Care/5th floor only			VS 1	AVOID EXTRAVASATION. Infuse via central line.
Phenytoin (Dilantin) Loading Dose	Loading dose = 15-20 mg/kg IV Administer loading dose as an infusion. **Max. rate = 50 mg/min (25 mg/min in the elderly)**	NO	NO	Yes (dispensed as kit)	VS 1	AVOID EXTRAVASATION. Prepare immediately before use. Use inline filter.
Phenytoin (Dilantin) Maintenance Dose	100 mg every 8 hours	NO	NO	Yes (dispensed as kit)	VS 4	AVOID EXTRAVASATION. Prepare immediately before use. Use inline filter.
Physostigmine (Antilirium)	2 mg IV slowly over ≤ 1 mg / minute	Yes	NO	NO	VS 1	Do not add to IV solution Atropine should be available
Prochlorperazine (Compazine)	5 – 10 mg IV may be given undiluted	Yes	Yes	Yes - but recommended IV Push	VS 4	

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Propranolol (Inderal)	1-3mg/dose slow IV push. Repeat every 2-5 minutes up to a total of 5 mg. Max rate=1 mg/minute	Yes	NO	NO	VS 1 May reduce to VS2 if patient hemodynamically stable.	Reserve for life-threatening arrhythmias Monitor ECG
Protamine sulfate	1 mg protamine per 100 units heparin; 1 mg protamine for each mg of enoxaparin	Yes	Yes	NO	VS 4	Inject without further dilution over 1-3 minutes. Maximum of 50 mg in any 10 minute period.
Pyridostigmine	10-20 mg very slow IV (give with or shortly after atropine or glycopyrolate)	ICU/PACU only	NO	NO	VS 1	Observe for respiratory depression
Sodium Bicarbonate	50 mEq (50 ml of 8.4% solution) over 1-3 minutes	Yes	Yes	Yes	VS 4	
Vasopressin Code Blue only	40 units IV push	Yes	NO	NO	VS 1	Code blue only.
Vasopressin Continuous infusion	1-4 units/hour	Continuous infusion only Critical Care/5th floor only			VS 1	Infuse via central line, avoid extravasation. For replacement of deficiency in shock state; can be used as a first line agent or as a supplement to the other vasopressors in shock states

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
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VS 4: Vital Signs Every 4-8 hours

Roswell Park Cancer Institute Guidelines for Administration and Monitoring of IV Medications - ADULTS ONLY

Generic / (Brand Name) Parameter (if applicable)	Dose*	IV Push – Critical Care ICU,IMCU, PACU RN	IV Push- Inpatient Unit RN	IV Piggyback	Minimum Monitoring	Cautions and Comments
Vecuronium (Norcuron) Initial dose	Initial dose: 0.05 – 0.1 mg/kg over 1-2 minutes	ICU /PACU Only	NO	NO	VS 1 Train of Four	Neuromuscular blocking agent: Patient must be on life support system. REVERSAL AGENTS (pyridostigmine or neostigmine with atropine or glycopyrolate) MUST BE IN PT ROOM Presence of MD is required for initial dose
Vecuronium (Norcuron) Continuous Infusion	Titrate 0.8 –1.2 mcg/kg/min	Continuous infusion only ICU/PACU only			VS 1 Train of Four	Neuromuscular blocking agent: Patient must be on life support system. REVERSAL AGENTS (pyridostigmine or neostigmine with atropine or glycopyrolate) MUST BE IN PT ROOM Presence of MD is required for initial dose
Verapamil (Calan, Isoptin)	2.5 – 5 mg (over 2 minutes); second dose of 5-10 mg may be given 15-30 minutes after initial dose if patient tolerates but does not respond to initial dose	Yes	Emergency only in the presence of a MD	NO	VS 1	Monitor ECG and blood pressure Infuse over 3 minutes in patients greater than 65 years of age.

*** Doses provided are commonly used but may not include all potential doses. Refer to other drug information sources for more detailed dosing information. ADULTS only – refer to appropriate reference sources for pediatric dosing recommendations.**

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
VS 4: Vital Signs Every 4-8 hours

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University of Connecticut Health Center John Dempsey Hospital- IV Medication Guidelines- Updated February 29,2013

Minimum monitoring:
VS 1: Continuous Cardiac Monitoring and Vital Signs pre-administration of drug, then every 15 minutes x 4; every 30 minutes x 2; then every 1-2 hours.
VS 2: Vital Signs Every 2-4 hours
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Roswell Park Cancer Institute Policy and Procedure	Date Issued: 3/1/1985	Number: 464.1
Title: Occurrence Reporting (Patient/Visitor/Security) Includes Medication Variance Reports	Revision: 16	Effective Date: 2/10/15
Prepared by: Counsel for Risk Management, Department of Nursing	Approved by: Michael B. Sexton, General Counsel	Page: 1 of 6

A. GENERAL STATEMENT OF POLICY

It is the responsibility of all Roswell Park Cancer Institute (RPCI) Staff to report any occurrence that is not consistent with the routine operation of the RPCI or RPCI policies and procedures. Incident reporting is done in accordance with New York State Regulations. Under NYS law, incident/occurrence reports are confidential and not subject to disclosure or discovery to patients, families, attorneys, or other outside agencies or persons, except for the NYS Department of Health. The purpose of occurrence or incident reporting at RPCI is to:

1. Document promptly the facts and circumstances surrounding an event/incident.
2. Alert hospital administration and Counsel for Risk Management to potential liability situations.
3. Create data with which to monitor the number and type of incidents occurring in the hospital.
4. Provide a tool for in-service and for prevention of risks.
5. Facilitate peer review.

B. SCOPE

This policy and procedure applies throughout RPCI.

C. ADMINISTRATION

This Policy and Procedure will be administered by the Medical Director through the Counsel for Risk Management. The cooperation of all department heads and hospital personnel is required.

D. POLICY / PROCEDURE

OCCURRENCE REPORTING SYSTEM OVERVIEW

1. In the event of an occurrence that is not consistent with the routine operation of RPCI or the routine care of patients, or RPCI policies and procedures, it is the responsibility of the RPCI associate (any individual who is engaged or acting in any of the following capabilities: volunteer, HRI or PBC employee, medical staff member, certain contract workers, private duty nurse, agency nurse, student volunteer or any contract employee liaison) who was directly involved or witnessed the incident to complete an incident report as soon as practical but no later than the end of shift. RPCI supervisors are required to ensure that all staff are familiar with this requirement. In some instances it

may be necessary for a supervisor or designee to file a preliminary occurrence report for the purpose of timeliness.

2. It may be appropriate for the same event to be reported in multiple reports - i.e. an employee is injured when assisting a fallen patient with the patient event reported through Quantros and the employee injury through the Institute's electronic reporting system.

TYPES OF OCCURRENCES

1. Patient or Visitor Accident/Occurrences - All patient or visitor accident/incidents are to be reported. The employee involved in, observing, or discovering the occurrence is responsible for initiating a report of the events, by end of shift if at all possible, as follows.

   a. The occurrence report should be completed objectively, without extraneous comments, personal opinion, conjecture, criticism or blame assignment.

   b. To maintain confidentiality, employees should refrain from discussing any unusual occurrences.

   c. A report is to be completed in the Quantros system for each occurrence that:

      - results in an injury to a patient or visitor,
      - could have resulted in an injury or property damage of serious consequences,
      - adversely affects a patient's condition, and/or
      - indicates a deviation from authorized practice or expected outcomes, results from situations that represent known or potential medical and/or systems problems.

   d. Events that require an Internal Occurrence Report include, but are not limited to:

      - suspected or alleged incidence of sexual, physical or psychological abuse (must be reported to Chief Medical Officer and/or Counsel for Risk Management regardless of whether reporter determines complaint to be credible)
      - peri-operative death; cardiac or respiratory arrest; acute MI;
      - incorrect procedure performed;
      - incorrect site or patient operated on;
      - unplanned return to the OR;
      - lack of consent;
      - incorrect sponge, needle count;
      - instrument, device breakage or malfunction;
      - reintubation in OR or PACU;
      - lost specimen;
      - unplanned admission to hospital after ambulatory surgical procedure;
      - adverse events related to IVCS;
      - improper transfers;
      - aspirations;
      - IV infiltrations;
      - radiographic contrast reaction;
      - pulmonary embolism/DVT not present on admission;
      - adverse outcome related to anesthesia;
      - adverse outcome of procedural/surgeries;
      - dehiscence or rupture of wound;
      - anastomatic leak requiring return to OR;
      - pneumothorax after catheter insertion;

- hemorrhage/hematoma complication related to procedure/OR;
- falls;
- misuse of equipment/malfunction during use;
- retained foreign body;
- radioactive material misadministration;
- Medication safety variance
- Blood transfusion reactions. Submitted in the EMR.
  PLEASE NOTE - THIS IS NOT A COMPREHENSIVE LIST

2. Medication Variance. A medication variance is any unusual, unexpected and/or preventable event that may cause or lead to inappropriate medication use and/or patient harm while the medication is in the control of the health professional or patient. Variances involving medication safety must be reported to the responsible practitioner and to the appropriate nurse manager/department supervisor. Immediate corrective action must be taken when appropriate to ensure the safety of the involved patient. The process of reporting medication variance is a non-punitive one, which seeks to examine systems and identify both actual and potential errors.

   a. Submitted in the Quantros System.

   b. The attending physician shall be immediately made aware of any variance identified. When the attending physician is unavailable, the covering physician must be notified and the patient's attending physician must be notified as soon as he/she is available.

   c. When any variance is identified, the responsible supervisor is to be notified.

   d. A medication variance can occur at any point in the entire medication administration process from the prescription of the medication to the transcription, preparation and administration. Examples include, but are not limited to:

      - incorrect patient
      - incorrect drug
      - incorrect dose of drug
      - incorrect route
      - incorrect frequency/time of administration
      - incorrect rate of IV solution administration
      - drug incompatibilities
      - omission or delay of any medication without substantiated reason
      - adverse/allergic drug reaction

   e. Immediate treatment or corrective action is to be taken upon discovery of the variance, if required.

      - The medication variance process must be completed online using Quantros by the individual discovering the variance.
      - The unit/area Nurse Administrator/Ambulatory Nurse Manager or Department supervisor has the responsibility of reviewing the incident and initiating appropriate corrective action. If the variance involves an orientee, the Staff Development Instructor is consulted but immediate action should be taken by the Nurse Administrator/Ambulatory Nurse Manager, Department Supervisor, or his/her designee.

- If the variance was a known or suspected ADR, the online Medication Variance will be completed in Quantros. If an allergy is identified, the allergy must be documented in the patient's medical record and entered into the EMR.

3. Employee Accident or "Near-Miss"

   a. When an RPCI associate is injured or is involved in an unsafe situation an Employee Incident Report is to be submitted. This report may be in addition to a patient or visitor occurrence report, depending on the nature of the event. The report is to be filed as soon as practical following the event, but no later than the end of the employee's shift. If the employee is unable to file the report, the supervisor is to submit a report within the time limits based on the extent of information he or she has available at that time. Employee Occurrence Reports are filed in the Lawson System. This is accessed via the associate i2 homepage using the reporting button located just below the employee's photograph.

   b. All Employee Occurrence Reports are forwarded to: The Employee Clinic, Occupational and Environmental Safety. HR Workers' Compensation Office, the Employee's supervisor and Infection Control (for blood and body fluid exposures). Further distribution to other offices, such as Public Safety may occur based on the nature of the event. In no event will an employee occurrence report be released to an individual who is not specifically authorized to handle such confidential information.

   c. All employee and visitor accident which occur after Employee Clinic hours will be referred to the Nursing Supervisor, who will arrange to have a physician examine the injured individual.

4. Security Incidents

   a. Submit in the Quantros System.

   b. Whenever there is a potential hazard or harm to a patient, employee, or visitor (i.e. theft, fire, property damage, suspicious individual, etc.) the supervisor or person in charge shall immediately call the Public Safety Department at Ext. 3069 or in emergency situations Ext. 3333.

   c. All incidents that are investigated by the Public Safety Department shall be documented by the investigating officer. The initial report shall be entered by the end of the officer's shift. Additional information can be added to the report per department policy.

5. Motor Vehicle Accidents. When an employee/driver is involved in a motor vehicle accident involving an RPCI vehicle, or other vehicle while on RPCI business, the following procedure should be followed to the extent possible in view of the nature of the accident and/or the injuries sustained:

   a. Submit the MV104 report via Public Safety.

   b. The employee/driver should call the police (911) and remain with the vehicle until the police arrive and pertinent information has been exchanged.

c. The employee/driver should contact RPCI Public Safety at 845-3069 to report the accident and receive further instructions.

d. To the extent possible, the employee/driver should advise RPCI Public Safety whether any occupant of the RPCI vehicle or the other vehicle or vehicles involved in the accident appears to be injured; whether the RPCI vehicle or any other vehicle involved in the accident must be towed from the scene; whether animals or materials of a biological, chemical or toxic nature were being transported at the time of the accident and should identify the vehicle involved in the accident and the location of the accident.

e. Any Public Safety Officer who receives notice of a motor vehicle accident involving an RPCI vehicle or other vehicle being used on RPCI business should notify the Risk Manager immediately (page through hospital switchboard). The driver/employee involved in an accident with an RPCI owned vehicle should complete the Accident Report From located in the glove box of the vehicle at the scene as soon as possible and deliver the form to the security office.

f. Employee/drivers involved in accidents with RPCI vehicles or while on RPCI business must also complete an accident report (form MV104) and forward the completed form to the Chief of Public Safety within 24 hours of the accident, if possible or as soon as possible thereafter. Public Safety will conduct an investigation as necessary and complete a Security Incident Report.

REPORTING AND FURTHER COMMUNICATION

a. To the extent possible, an occurrence report should be completed in the electronic reporting system (Quantros) by the end of the shift on which the event occurred or is discovered.

b. Any incident or injury to a patient/visitor must be reported immediately to the nurse in charge or clinical supervisor on duty at the time. If an incident occurs away from the nursing unit or center, the charge nurse for the unit or clinic to which the patient is assigned must be informed.

c. A physician must be notified of any occurrence involving any actual or potential injury to the patient or a medication/transfusion incident. If the injury is of a serious nature, the attending physician must be notified immediately.

d. Entries into the electronic reporting system are to be completed promptly to allow for review and follow-up by the department supervisor and/or parties involved. These reports are CONFIDENTIAL. Copies are not to be made. The Occurrence Report does not go in the patient's medical record.

e. Documentation in the patient's medical record shall include the factual description of the occurrence or event (e.g. patient found on floor) and the nurse and physician's examining notes. **It is not included in the medical record that an occurrence or incident report was completed.** The written description of the occurrence in the patient record shall include only factual statements describing the incident and the patient's condition, without extraneous comment, personal opinion, conjecture, criticism or blame assignment.

f. All occurrences or incidents should be reviewed and investigated by the department supervisor or charge person to determine the cause and corrective actions needed. There should also be an evaluation to determine if the occurrence should be

considered reportable to the Department of Health under Section 405.8 of the New York State Hospital Code (See Policy 408.3).

g. Any report of physical or sexual abuse, whether judged to be credible or not, will be reported immediately to the Counsel for Risk Management and to the Chief Medical Officer. After investigation a letter, to the patient or individual complaining on behalf of the patient, will be sent within 30 days from the Office of Risk Management.

h. The Counsel for Risk Management will have the responsibility for routing copies to other departments, department heads, and/or Administration for further investigation as deemed necessary.

i. Departments receiving Occurrence Reports from the Counsel for Risk Management are required to investigate and complete a follow up. The follow up must be completed within 10 days of receipt and entered into Quantros.

j. Occurrence Reports for Patients/Visitors are maintained by the office of the Counsel for Risk Management. These are confidential records and are utilized for peer review; therefore, they are protected under Section 2805 of the New York State Public Health Law.

k. Summaries and, as necessary, detailed reports of occurrences should be regularly presented, reviewed and acted upon by responsible departments through their quality assurance activities. In addition, department medical staff and hospital committees will be requested to review specific cases or trends identified and may be required to perform peer review.

l. Hospitals are required to notify the NYS Department of Health of any incident which is reportable under Section 405.8 of the New York State Hospital Code, Rules and Regulations on Incident Reporting. The Medical Director through the Counsel for Risk Management or designee is responsible for submitting this report (see Policy 408.3).

m. Occurrences shall be reported and reviewed through the QI Committee for recurring patterns, both for individual practitioners/staff and the hospital in order to determine if other actions are indicated.

n. The Employee Health Clinic will provide aggregate and trended data to the Occupational and Environmental Health and Safety Dept and to the QI Committee for review and supportive action.

o. Aggregate data and, as necessary and appropriate, individual occurrences will be reported through the QI Committee to the Board of Directors through established mechanisms.

E. DISTRIBUTION

This Policy and Procedure will be distributed to all Institute Managers via the RPCI internal web page and to holders of backup hard copies of the manual. Managers are responsible for communicating policy content to pertinent staff.

New Employee Orientation

UNDERSTAND PREVENT & CURE CANCER

ROSWELL PARK

Welcome

Welcome to Roswell Park Cancer Institute!

Students, Volunteers, and Contractors are held to the same policies, laws, and regulations as our employees. Please review this packet carefully and keep it as a resource.

UNDERSTAND PREVENT & CURE CANCER

ROSWELL PARK

Mission, Vision, Values

Mission
To understand, prevent and cure cancer.

Vision
To position RPCI among the Nation's leading cancer centers

Values
*Innovation *Integrity *Teamwork
*Commitment *Compassion & Respect

UNDERSTAND PREVENT & CURE CANCER

ROSWELL PARK

Overview

The course will cover:

- Corporate Compliance
- Privacy of Health Information
- Respect in the Workplace
- Public Safety
- Emergency Preparedness
- Workplace Safety
- Infection Control
- RPCI Policies

UNDERSTAND PREVENT & CURE CANCER

ROSWELL PARK

Corporate Compliance

To do the right thing and treat patients, coworkers, and the public with dignity, integrity, and respect while complying with rules, regulations and internal policies and procedures. An aspect of quality improvement.

IT'S THE RIGHT THING TO DO.

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Corporate Compliance: Federal Laws, Rules, and Regulations

Fraud and Abuse Laws: These laws are targeted at healthcare providers who submit false claims to the government.

False Claims Act: prohibits "knowingly" presenting a false or fraudulent claim for payment.

Knowingly means:

- having actual knowledge that the information is false
- acts in reckless ignorance or disregard of the truth or falsity of the information

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ROSWELL PARK

Corporate Compliance: Federal Laws, Rules, and Regulations

Deficit Reduction Act (DRA): To reduce federal spending by making significant changes to the Medicare and Medicaid programs.

Please refer to RPCI's Corporate Compliance Summary Policy #126.1 for more information on Federal and State Laws that pertain to RPCI employees.

Compliance Program

- Promotes workplace adherence to laws, regulations and Institute Policies and Procedures
- Advances the prevention of fraud, waste, and abuse
- Furthers the mission of RPCI
- Demonstrates commitment to honest and responsible conduct
- Identifies and prevents criminal and unethical conduct
- Improves the quality, efficiency and consistency of services
- Encourages us to report potential problems
- Prompt and thorough investigations of alleged misconduct

Policy 125.1: RPCI Corporate Code of Conduct

Code of ethical behavior that addresses how employees, volunteers, contractors, and students are to treat patients, colleagues, and others that we meet or do business with.

There are 7 principles that are outlined in the Code of Conduct:

1. Professional and Respectful Behavior
2. Legal Compliance
3. Business Ethics
4. Confidentiality
5. Conflicts of Interest
6. Business Relationships
7. Protection of Assets

Policy 126.1: Corporate Compliance Summary Policy

- This policy states that every employee, volunteer, contract staff, and student will strive to act in accordance with the provisions of any applicable law and the Corporate Code of Conduct. They will encourage other employees, volunteers, contract staff, and students to act the same.
- Provides detailed information about the role various Federal and State laws play in preventing and detecting fraud, waste and abuse in federal health care programs. These Federal and State laws protect you from retaliation (or punishment) if you report a compliance concern in good faith.
- Please refer to this policy's Appendix for more information on the Federal and State laws that pertain to your job.

Policy 126.1: Corporate Compliance Summary Policy (continued)

- Roswell Park will take steps to achieve compliance with its policies by *utilizing monitoring and auditing* systems designed to detect misconduct by its employees, volunteers, contract staff, and students.
- Roswell Park will also promote a *reporting system* whereby employees, volunteers, contract staff, and students can report misconduct within the organization without fear of retaliation.
- Any employee, volunteer, contractor, or student who has knowledge of activities that he or she believes may violate a law, rule or regulation **has an obligation**, promptly after learning of such activities, to report the matter to his or her immediate supervisor, the Compliance Officer, or the Chief Executive Officer.

Policy 103.1: Non-Retaliation Policy

- People with knowledge of actual or potential wrongdoing, misconduct, or violations of the compliance plan are to report it immediately.
- People who report problems or concerns <u>in good faith</u> will be protected from retaliation, retribution or harassment.
- Issues that should be reported include: Unethical relationships with vendors or contractors, inappropriate care of patients or equipment, unethical or inappropriate staff behavior, fraudulent or false actions, improper billing practices, breach of confidentiality, bribes, kickbacks, or incentives

How to Report

To report a suspected violation:

- Contact your supervisor or other manager
- The Corporate Compliance Officer, Kathy Mastrobattista
- Anonymous Corporate Compliance Submission Form, found on i2
- The Corporate Compliance Hotline: 845-3566
  - Issues can be reported anonymously, be sure to provide all essential information.

All information is kept confidential. No retaliatory actions taken against informants reporting in good faith.

Corporate Compliance Summary

- All employees, volunteers, students, and contract workers are expected to adhere to each applicable Institute policy.
- All policies can be found in the *Institute Policies* section of the internal website. In addition, individual departments may maintain separate departmental policies.
- Failure to comply with Institute and/or departmental policies may result in dismissal from RPCI.

Privacy of Health Information

The Health Insurance Portability and Accountability Act (HIPAA): A rule that was created in 1996, it mandates national standards to protect the privacy of personal health information.

- HIPPA is a common standard for the electronic use and transaction of patient information within the health care industry.
  - Health Care facilities are required to comply with the regulations.
  - The HIPAA Privacy Rule is one part of the larger federal rule.

PHI

- HIPAA regulations address a patient's Protected Health Information. PHI is medical information that can be traced to, or identified with, a particular patient.
- PHI is information created or received by a health care organization that relates to the past, present, or future health or condition of an individual.
- Examples of PHI include (but are not limited to): name, birthday, address, photo, medical record number, e-mail address, phone number, etc.

Patient Privacy Basics

Minimum necessary: means employees have access to the information necessary to do their job, but nothing more. Based on the principle that patient information is shared only with those who need to know the information in order to perform their duties.

Keep confidential what you know, hear or see: A patient arrives at RPCI needing treatment and care for a vast range of conditions – all that are all highly sensitive and personal to those patients. Keep all forms of information about a patient's health care private.

Patient Privacy Basics

Maintaining patient privacy and confidentiality requires that any information about a patient **CANNOT** be repeated to **ANYONE** who is not involved with that patient's care.

Compliance

- Patient Information can be shared for treatment, payment and healthcare operations.
- If our patient gives their permission, the clinician can discuss information with their family or caregiver.
- A written notice of our privacy practices and patient's privacy rights must be provided to each patient.
- Patients must give authorization before any healthcare providers can disclose PHI, other than treatment, payment or health care operations.
- Patients have the right to restrict the use and disclosure of their own PHI, other than treatment, payment or health care operations.

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Patient Rights

- Patients can ask if there have been non-routine uses and disclosures of their PHI
- Patients may request to correct any errors or changes to their PHI
- Patients can access their personal medical records more freely

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How can we keep PHI safe?

- Store paper records securely, such as in a locked file cabinet in a locked area
- Shred papers that contain PHI when you are finished
- Use **ZIX** encryption for secure messaging between clinicians and patients
- Do not share computer passwords
- Keep printers and fax machines in secure areas so visitors cannot view paper with PHI.
- Be careful what you leave on answering machines/voicemail
  - Do not say "This is Roswell Park Cancer Institute" on voicemail message

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HIPPA & IT Security

It is about the **assurance** of protecting electronic PHI:

Confidentiality

✓ the information is accessible only by authorized staff, people and processes

Integrity

✓ the information hasn't been inappropriately altered/destroyed

Availability

✓ the information is there when needed

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When in Doubt…

- Ask your supervisor
- Review Policy 408.10: *Confidentiality of Health-Related Information*
- Contact:
  Privacy Officer – *Cheryl Canfield* x8027
  Security Officer – *Mike Mineo* x2349

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Respect in the Workplace

Our program requires that all of us adhere to practices that are designated to make the workplace more secure, including:

- Respecting each other
- Following Institute policies and procedures
- Assisting in maintaining a safe and secure work environment
- Not engaging in verbal threats or physical actions which create an unsafe work environment

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Respect in the Workplace

What is DIVERSITY?

- Diverse means differing one from another; distinct; varied.
- Diversity is not limited to race and gender…it is about all things that make us unique and similar as individuals
- Workplace diversity is a collective mixture of experiences and abilities applied in pursuit of common organizational objectives.

Respect in the Workplace

Why all the emphasis on diversity?

- Diversity is about more than race, gender and age
- Diversity is about promoting the value of a diverse workforce to meet the needs and challenges of a diverse employee and patient population
- To foster an environment of inclusiveness in the workplace
- A multicultural workforce is the key to providing culturally competent care

Respect in the Workplace

There are three primary categories of diversity:

- Biological (race, age, gender, ethnicity, sexual orientation, etc.)
- Cultural/Personal (religious beliefs, nationality, parental status, marital status, hobbies, military experience, etc.)
- Workplace (role/responsibilities, organizational level, job title, function, union/non-union, etc.)

Respect in the Workplace: Federal and State Laws

Title VII, Civil Rights Act of 1964: prohibits discrimination by covered employers on the basis of race, color, religion, sex or national origin.

Civil Rights Act of 1991: modification of Title VII; right to trial by jury on discrimination claims; emotional distress as a result of discrimination; limits to awards.

NYS Human Rights Law: discrimination is prohibited in New York State when it is based on: race, creed, color, national origin, age, gender, sexual orientation, disability, marital status, arrest and/or conviction record in the areas of: employment, housing, public accommodations, education, and credit.

Americans with Disabilities Act of 1990: protections against discrimination to Americans with disabilities.

Respect in the Workplace

Individuals with questions or concerns are encouraged to contact the Office of Diversity & Inclusion at (716) 845-4567, or refer to the Roswell Park Cancer Institute policies listed below:

- 102.2: Reasonable Accommodations for Employees with Disabilities
- 102.3: Workplace Harassment
- 103.1: Non-Retaliation
- 125.1: RPCI Corporate Code of Conduct

What is Sexual Harassment?

- Sexual harassment is defined as unwelcomed, unwanted behavior of a sexual nature.
- Sexual harassment occurs when someone is subjected to sexual attention or behavior that he or she considers inappropriate or offensive.
- Sexual harassment is prohibited by law under the Civil Rights Act of 1964 as a form of sex/gender discrimination.

What You Need to Know

- Sexual harassment is illegal, unacceptable conduct and it will NOT be tolerated.
- Roswell Park has a "zero tolerance" policy on sexual harassment (Institute Policy 102.3), and immediate and appropriate action will be taken.
- It is every employee's right to work in an environment free of harassment.
- Sexual harassment can occur at any level of the organization and everyone is expected to abide by the law and RPCI 's Workplace Harassment Policy.

Examples of Unacceptable Behavior

- Making sexual comments or innuendoes either directed towards the person or in general
- Telling off-color, sexually-based jokes or anecdotes
- Using vulgar, sexually explicit language
- Asking explicit questions about one's sex life, fantasies, preferences
- Making comments that are either explicitly or implicitly sexual in nature about a person's clothing, body shape or look
- Asking a person for dates, repetitively, when that person has turned you down
- Using sexually derogatory terms to refer to women or men
- Whistling, making kissing sounds or vulgar smacking sounds
- Rumor-mongering about a person's sex life

If you feel harassed…

Let the person know that the behavior is unwelcomed and ask for the behavior to stop. If harassment continues:

- Report the behavior to your Supervisor
- Report the behavior to Human Resources:
  - Director of Diversity & Inclusion (x4567)
  - Employee and Labor Relations Office (x1088)
- Report the behavior to the Corporate Compliance Officer (x3566)

Understanding Workplace Intimidation

Workplace intimidation can be physical or verbal behavior that is offensive, intimidating, malicious, or insulting, that creates an environment of hostility, injures someone, or violates ones dignity.

Your responsibility:

- Know and adhere *233.1 Violence in the Workplace Policy*
- Treat all employees with respect
- If you are a Supervisor:
  - Put staff first
  - Trust that staff are honorable, and if they tell you they need something, believe it!

Examples of Intimidating Behavior

- Comments that undermine a caregiver's self-confidence in caring for patients
- Failure to adequately address safety concerns or patient care needs expressed by another caregiver
- Intimidating behavior that has the effect of suppressing input by other members of the healthcare team
- Retaliation against any member of the healthcare team who has reported an instance of violation of the code of conduct or who has participated in the investigation of such an incident, regardless of the perceived veracity of the report

Responding to Workplace Intimidation

- **Don't** push back – treating intimidation with intimidation
- **Do** tell the person that you find their behavior unacceptable.
- **Do** report inappropriate behavior that continues.

Diversity in the Workplace

- Be open about differences
- Don't make assumptions
- Encourage questions
- Maintain your friendships with people different from you
- Don't ask someone to be a spokesperson for his/her group
- Don't tell ethnic or sexual jokes
- Be honest about your feelings
- Remember that mistakes happen

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Diversity in the Workplace

Roswell Park Cancer Institute:

- promotes the value of a diverse workforce to meet the needs and challenges of a diverse patient population
- fosters an environment of inclusiveness
- supports a multicultural workforce as a key to providing culturally competent care

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Public Safety

All Public Safety Officers are Sworn New York State Peace Officers and are on duty 24 hours a day, 7 days a week.

The Division of Public Safety is located just inside the hospital entrance on the ground floor and is responsible for:

- Protecting staff, patients, visitors, students, and property
- Investigating and recording incidents, thefts, disturbances, vandalism, accidents, and traffic accidents
- Enforcing New York State Laws
- Patrolling campus
- Building access door control

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Emergency/Non-Emergency Numbers

Calling from ***inside*** RPCI	Calling from ***outside*** RPCI
Pick up the phone and say **Public Safety** and you will be directed to the Public Safety Command Center or call: **Emergencies x3333** **Non-Emergencies x3069**	Emergencies call 845-3333 Non-Emergencies call 845-3069

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Secure Building Access

Follow procedures which include:

- Personal escort (i.e. Public Safety Officer or authorized staff member)
- Sign in at the Public Safety Office
- Provide photo ID
- Use your employee ID card with the appropriate access information encoded
- Receive prior written approval

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Identification/Uniform

- Always wear your ID badge with the picture side out (visible) and above the waist.
- Protect your ID badge and your RPCI - issued uniforms so they cannot be misused. You are responsible for property assigned to you.
- If your identifications badge is lost, contact Public Safety immediately to report the loss and have the card deactivated.

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Workplace Violence

- Roswell Park Cancer Institute is committed to our employees' health and safety.
- Our goal is to promote the safety and well being of all staff, patients, and visitors.
- Roswell Park does not tolerate violence in the workplace and will make every effort prevent violent incidents from occurring through the Workplace Violence Prevention Program.

Emergency Action Plans

- Emergency Codes:
  - Red, White, Blue, Pink
- Weather Emergencies
- Utility Interruptions
- Threats
- Chemical Emergencies

Workplace Safety

Everyone at Roswell Park has a role in workplace safety.

The best emergency equipment will be of no use if it is in disrepair or inaccessible.

Do not block access to:

- Doors or hallways
- Eyewashes
- Fire alarm stations
- Fire extinguishers
- Spill kits

CODE RED: Fire Emergency

- Remember: R A C E
  - Rescue anyone in danger
  - Alarm
  - Confine/contain the fire
  - Evacuate (includes oxygen shutoff)

  The Nurse Leader will determine if a patient unit will be evacuated.

CODE WHITE: Disaster Plan

- Remain or return to your work area
- Direction will be communicated throughout the institute buildings
- Departments will support staffing of the Labor Pool as requested by the individual in charge

CODE BLUE: Medical Emergency

CODE BLUE can be called for a patient, employee, or visitor.

- ✓ Call 3333 and give exact location and nature of emergency
- ✓ Stay with the person. Provide care to the level of your ability
- ✓ Automatic Electronic Defibrillators are available in all buildings
- ✓ A CODE BLUE team responds to all CODE BLUE announcements. **No one else should respond to the CODE area.**

CODE PINK: Missing Child/Person

- ✓ Immediately upon suspicion notify the Nursing Supervisor
- ✓ If this is delayed for any reason, notify Security directly
- ✓ Prepare a description of the individual

Weather Emergencies

Tornado Procedure

- Watch: weather conditions are right for the formation of tornados
- Warning: funnel clouds have been observed

Snow Emergency

- Transportation plans are in place call in if you need assistance
- Roswell Park does not close. Please discuss plans with your supervisor

Utility Interruptions

We have emergency plans are in place to deal with interruptions of:

- Water
- Natural Gas
- Electricity

As in a Code White, information will be provided regarding any necessary actions.

Hazardous Material Emergencies

Radiological, Biological, Chemical

- Follow the directions given at your department and the specific training regarding the handling of a spill or release.
- When in doubt, call the OES office at x5998, or use the emergency number x3333 for guidance and assistance.

Critical Circuits

- Backup power is provided through a set of emergency generators.
- All of the fixed critical equipment is connected to the generator.
- Portable equipment is covered only when it is plugged into a RED outlet.
- **Do not** use red outlets for high load non critical devices.

Electrical Equipment Inspection Program

- Every electrical device in use in the Hospital must be inspected prior to being used. This includes personal items.
- Use the Work Order Request process to schedule an inspection of your item or discuss with your supervisor.

Waste Separation Program

Our program is vast with over 10 waste streams.

- The clear bag is most common
- Use the clear bag for general trash disposal
- Think before you toss; will this item harm any one handling this bag?

For more details go to the Waste Separation guide on i2.

Emergency Operations Plan

- The RPCI Emergency Operations Plan is located on the home page of the Institute's intranet.
- Departments have written their own Department Emergency Operations Plans (DEOP) specific for:
  1. Protecting their operations
  2. Responding when normal department functions cannot occur
  3. Responding to Institute or community emergencies

Accident and Incident Reporting

Quantros Incident Reporting System: Link in i2. Reporting tool for patient and visitor incidents and accidents.

Employee Incident Reporting Form: Found on your i2 directory page. Reporting tool for employee incidents and accidents.

Infection Control

Hand hygiene is the foundation of infection prevention.

- Hand hygiene lowers the risk of transmitting infections from one person/object to another.
- Wearing gloves does not replace hand hygiene.
- Use soap and water when:
  - Hands are visibly soiled
  - When alcohol based hand sanitizer is not available
  - After using the restroom/bathroom

Infection Control

Washing with soap and water:

- ✓ Wet hands with water and apply soap
- ✓ Rub hands together for at least 15 seconds
- ✓ Rinse and dry with a disposable towel
- ✓ Use the towel to turn off the faucet

Using Hand Sanitizer:

- ✓ Apply the product to the palm of one hand and rub hands together
- ✓ Cover all the surfaces of hands and fingers and rub until hands are dry (at least 15 seconds)
- ✓ Don't forget your thumbs!

Personal Hygiene in all Work Areas

- ✓ Regular bathing or showering
- ✓ Clean uniforms, lab coats or personal clothing
- ✓ Long hair should be pulled back or up

Bacteria and Viruses

Bacteria are germs that can usually be killed with antibiotics, such as:

- Strep throat
- Staph infections
- Tuberculosis
- Clostridium difficile

Viruses are germs that cannot be killed with antibiotics.

- Chicken pox/ shingles
- Flu
- Hepatitis
- HIV/AIDS
- Measles

There are vaccines to prevent some viruses.

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Big Bugs Need Big Guns

Super bugs are bacteria that are resistant to most antibiotics.

Examples:

- ✓MRSA- Methicillin Resistant Staph Aureus
- ✓VRE- Vancomycin Resistant Enterococci

Protect yourself, your patients and your family by:

- ✓Using good hand hygiene
- ✓Good environmental cleaning
- ✓Following isolation guidelines

Some people are colonized (carriers) without even knowing it.

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Water, Mold and Insects

Report any of these to your supervisor immediately:

- ✓Stagnant water
- ✓Water leaks
- ✓Mold
- ✓Insects/pests inside the building

These conditions can be very harmful to our patients.

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Vaccines

Vaccines are important to protect yourself, your family and your patients

Examples:

- ✓ Chicken Pox
- ✓ Hepatitis B
- ✓ Influenza - both the seasonal influenza vaccine and the new H1N1 (swine flu) vaccine

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What If You Are Sick

- ✓ Notify your supervisor and consult with Employee Health
- ✓ You should not come to work if you have a communicable disease such as: chicken pox, measles, influenza, etc.
- ✓ Should not come to work if you have any of the following:
  - ✓ Temp >100
  - ✓ Acute diarrhea
  - ✓ Contagious rashes/ draining lesions
  - ✓ Acute illness

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Standard Precautions

Previously referred to as **Universal Precautions**

- ✓ Treat all blood, body fluids, secretions, excretions (except sweat, non-intact skin and mucous membranes) as if they are infected

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Transmission Based Precautions

- Designed for patients with proven or suspected infection/colonization with pathogens (germs) that are more serious and/or are easily spread to others
- Additional precautions beyond Standard Precautions are needed

Examples:
- ✓Airborne Precautions
- ✓Droplet Precautions
- ✓Contact Precautions
- ✓Contact Plus Precautions

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Airborne Precautions

Used for small organisms (germs) that stay suspended in the air and can travel long distances, such as tuberculosis.

Requires:
- ✓N-95 respirator masks
- ✓Respirators require fit testing
- ✓Patient must be in a private, negative pressure room
- ✓Door must remain closed

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Watch for 'Airborne' Signs…

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Droplet Precautions

- Used for organisms (germs) spread through respiratory secretions or contact with mucous membranes
- Do not stay suspended in the air over long distances (ex. pertussis, seasonal and H1N1/swine influenza)
  - ✓Does not require special ventilation
  - ✓Does require private room but door can be open
  - ✓Requires isolation mask (not N-95 mask)

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Watch for 'Droplet' Signs…

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Contact Precautions

Used for organisms (germs) spread by direct or indirect contact with the patient or the patient's environment, such as MRSA or VRE.

Requires:
- ✓Private room
- ✓Gown and gloves
- ✓Dedicated equipment
- ✓Meticulous hand hygiene

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Watch for 'Contact' Signs…

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Contact Plus Isolation

Used for patients with Clostridium Difficile, and has a hard shell like a nut.

Requires:

- ✓ Gown and gloves
- ✓ Dedicated equipment
- ✓ Wash hands must be washed with soap and water (not hand sanitizer) to penetrate the shell

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Watch for 'Contact Plus' Signs…

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Watch for 'Protected Environment' Signs…

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Key Points About Personal Protective Equipment (PPE)

- ✓ Put on before anticipated contact with patient
- ✓ Put on before entering the patient's room
- ✓ Remove and discard at the doorway before leaving room (except for N-95 respirator masks- remove these after leaving room)
- ✓ Perform hand hygiene

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Sequence for Putting on PPE

1. Gown
2. Mask or respirator (if needed)
3. Goggles or face shield (if needed)
4. Gloves

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Sequence for Taking Off PPE

Sequence is important so you minimize the chance of contaminating your skin and clothing.

1. Remove gloves
2. Remove face shield or goggles
3. Remove gown
4. Remove mask or respirator

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Perform Hand Hygiene Immediately After Removing PPE

- If hands become contaminated during PPE removal, wash hands before continuing removal.
- Share your care and not your germs!

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Exposures

Report blood and body fluid exposures to Employee Health or your supervisor immediately. Information regarding risk of exposure can be obtained from an Infection Control Officer and/or RPCI's Infection Prevention and Control Manual, found on i2.

- ✓ Immediate post exposure follow-up and prophylaxis (if indicated) is critical.
- ✓ Employees who have not received the Hepatitis B vaccine and can be exposed to blood and body fluids at work, should really consider receiving it - contact Employee Health for more information.

Roswell Park is continually looking for safer sharps available on the market to protect our employees.

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Infection Control

As a representative of Roswell Park you are required to follow our policies and procedures.

For clarification or interpretation of this material please:

- Ask your supervisor
- Consult the policy & procedure section on i2
- Contact Infection Prevention & Control

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RPCI Policies

For more information, please review policies on i2

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Reasonable Accommodation Policy For Employees with Disabilities Policy #102.2

It is the policy of Roswell Park Cancer Institute to assure that qualified individuals with disabilities have equal and full access to services, programs, activities and employment as stated in the law.

- Accommodations will be provided for individuals with disabilities when such accommodations: are reasonable, are related to performing the essential functions of a job, for applicants competing for a job, for benefits and privileges of employment, and that do not impose a financial or operational hardship on the Institute.
- A reasonable accommodation is any change or adjustment to a job or work environment that permits a qualified applicant or employee with a disability to:
  - participate in the job application process
  - perform the essential functions of a job
  - enjoy benefits and privileges of employment equal to those enjoyed by employees without disabilities

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Reasonable Accommodations Definitions and Processes

Qualified individuals with disabilities:

- Have a physical, mental, or medical impairment which prevents the exercise of a normal bodily function or is medical diagnosed; have a record of such an impairment; or are regarded as having such an impairment.
- To be "qualified", individuals must also be able to perform the essential functions of the job they hold or are applying for, with or without an accommodation, and without endangering the health and safety of themselves or others.

Interactive Process:

The interactive process is when the employee, the employee's health care provider, the department supervisor and Human Resources Management collaborate about the nature of the disability and the limitations that may affect the employees' ability to perform the essential job duties. It entails a good faith effort by the Institute and the employee to discuss the limitations and/or performance issues the employee's disability may pose. The purpose of this discussion is to determine what (if any) accommodations may be needed.

Reasonable Accommodations Roles & Responsibilities

Employee's Role

- To comply with the policy.
- To participate in the interactive process.
- To consider safety in all our actions.
- To communicate changes in ability to perform work.
- For more information contact:
  - Your Supervisor
  - Policy 102.2

Supervisor's Role

- To comply with the policy
- If a request for an accommodation is made by an employee, contact the Director of Employee Benefits & Services to initiate the interactive process.
- Work with the Director of Employee Benefits & Services to determine what accommodation, if any, can be made.
- If an accommodation is made, periodically evaluate the accommodation to ensure it meets the needs of the employee and the Institute.

Use of RPCI Corporation Resources Policy #105.1

Employees are permitted to use Institute resources for Institute purposes only.

Examples of Institute Resources:

- Office and medical supplies
- Equipment
- Vehicles
- Postage
- Photocopies
- Computers
- Internet access
- Telephones
- Fax machines
- E-Mail
- Overnight mail

Use of RPCI Corporation Resources Policy #105.1 (cont'd)

- This policy prohibits the use of e-mail for sending sexually explicit, inappropriate, harassing or otherwise offensive materials.
- This policy also prohibits the use of computer resources for visiting inappropriate and non-business related websites.
- Employees are to refrain from using RPCI resources and property for personal business and anything other than work-related activities.

Workstation Usage Institute Policy #912.1

- Employees are required to log off or lock their computer (using control-alt-delete) if they will be away from their computer for longer than a few minutes.
- This is especially critical in clinical areas to protect the confidentiality of patient information and to avoid violation of HIPAA and other privacy laws and policies.

Social Media Institute Policy #130.1

All RPCI employees must abide by all applicable policies and procedures regarding RPCI's Internet and intranet systems:

- confidentiality of health-related information
- proprietary information
- the corporate code of conduct

Participation on Social Media Sites shall not interfere with work commitments or productivity, or involve potential risk to the security of RPCI's network or IT resources.

E-Mail Use Institute Policy #905.1

- E-mail messages sent on behalf of the Institute should be written professionally and contain only appropriate content.
- Incidental personal use of RPCI e-mail is to be kept to a minimum.
- Employees may not send chain letters, distribute mass e-mails (unless necessary for Institute business), or forward jokes, pictures, etc., regardless of content, through RPCI e-mail.

E-Mail Use Institute Policy #905.1(cont'd)

Under no circumstances is an employee to include content in an e-mail that could be construed as sexual or other harassment, discrimination, defamation, or infringement of another's copyright/patent/ trademark rights.

Internet Access Institute Policy #917.1

- Employees are prohibited at all times from accessing websites that are pornographic, offensive, obscene, or otherwise inappropriate.
- Employees are not permitted to play games or engage in gambling activities using RPCI Internet access.
- Employees are not permitted to listen to music or radio through the Internet.

Internet Access Institute Policy 917.1 (cont'd)

- Incidental, occasional, infrequent use of RPCI Internet access for personal matters is acceptable.
- However, excessive work time spent on websites such as Facebook, espn.com, amazon.com, etc. is in violation of this policy.
- RPCI periodically monitors employee Internet use.

Weapons Possession on Institute Grounds Policy #1503.1

Employees are prohibited from bringing, possessing and/or carrying weapons or any instrument capable of being a weapon and inflicting bodily harm on Institute grounds or in Institute vehicles.

This includes firearms, knives, pocket knives, black jacks, metal knuckles, etc.

Weapons Possession on Institute Grounds Policy 1503.1 (cont'd)

Tools needed for scraping or cutting boxes or other materials will be provided by the department, including box cutters.

Depending on their job duties, some employees may get their supervisor's permission to carry personal multi-tools, such as a Leatherman.

RPCI Parking Rules and Regulations

Parking in RPCI lots:

- All vehicles must be parked in accordance with RPCI parking regulations. Failure to abide by these regulations will result in a City of Buffalo parking violation. These regulations include but are not limited to the following.
- Vehicles must be parked in one designated space and may not be over or outside the lines.
- A valid handicapped permit must be displayed on any vehicle parked in a handicapped space.
- A valid RPCI permit must be displayed on any vehicle parked in an RPCI assigned parking lot.

RPCI Parking Rules and Regulations

Parking in RPCI lots (cont.):

- You must inform the Parking and Transportation office of any changes in vehicle information.
- You may only park in your designated lot unless otherwise authorized by the Parking and Transportation office.
- You must use your access card (if applicable) to enter and exit the assigned parking area.
- You must inform the RPCI Parking office or Public Safety if you a monthly parker and are parking a temporary, loaner, or rental vehicle in an RPCI lot.
- All RPCI lots have a 5 mph speed limit.

RPCI Parking Rules and Regulations

Sharing Parking:

- Parking assignments may only be used by the person assigned.
- If you are sharing a vehicle with an immediate family member employee from your household that also has assigned parking, there may be more than one sticker displayed on a vehicle. You may not park more than one vehicle in the same lot at the same time.
- Swipe cards and permit stickers are non-transferable and can only be used by the person authorized on the vehicle registered with RPCI parking.
- Assigned parking may not be sublet at any time including periods of leave or other absences.
- If you are carpooling with a monthly parker, you may only park in their assigned lot if you are parking a vehicle that is registered with RPCI parking and assigned to that lot.

Unscheduled Absenteeism Monitoring Institute Policy #228.1

- Employees who demonstrate excessive, unexplainable, and/or potentially abusive unscheduled leave usage will be monitored.
- Unscheduled absences include those days an employee calls in for a shift he/she was scheduled to work without prior approval to be absent.
  - Although an employee may be permitted to charge accruals (e.g., where a valid reason is given for calling in), these unscheduled absences may still be considered excessive.

Unscheduled Absenteeism Monitoring Institute Policy #228.1(cont'd)

- An excessive number of unscheduled absences or a pattern of absences occurring in conjunction with pass days, holidays, or scheduled time off may be abusive.
- Excessive tardiness or leaving prior to the completion of the scheduled shift could also constitute time abuse.
- If there are issues that prevent an employee from reporting for work as scheduled, the employee should talk with the supervisor to see if there is a solution.

Alcohol and Controlled Substances in the Workplace Drug Free Workplace Requirement Institute Policy #205.1

RPCI is committed to providing a drug and alcohol free workplace.

Employees are prohibited from arriving for work under the influence of drugs and/or alcohol, and from consuming drugs and/or alcohol during their shift and breaks.

Employees Health Clinic Services Institute Policy #106.1

Confidential Medical Certificate & Absences Greater than Four Work Days

- For personal medical absences (occupational or non-occupational), greater than four (4) consecutive work days (pass days excluded), you must submit a Confidential Medical Certificate (CMC) to the Office of Employee Benefits and Services as well as receive clearance through the Employee Health Clinic prior to returning to work.
- The CMC collects information required when an employee is unable to work due to a medical condition.

Transitional Duty

- Employees requesting to work with restrictions due to an occupational or non-occupational injury/illness/condition may be able to return to work on a transitional duty status.
- The Office of Employee Benefits and Services will make every effort to respond to an employee's request to return to work with restrictions within five (5) business days from the receipt of the medical certification.

Compliance

- Failure to comply with the CMC process will result in the employee being placed on unauthorized leave and the employee will be referred to the Office of Employee/Labor Relations.

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Alcohol and Controlled Substances in the Workplace Drug Free Workplace Requirements Policy #205.1

- Supervisors may send employees to the Employee Health Clinic for evaluation if they have "reasonable suspicion" that the employee is impaired.
- The Employee Assistance Program (EAP) provides confidential assistance to employees for problems, including drug and alcohol problems, and can be reached at x5945.

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Campus Tobacco Free Environment Institute Policy #1314.1

- Smoking is prohibited **everywhere** on the RPCI campus and its satellites, both indoors and outdoors on RPCI property, including buildings, grounds, parking ramp, surface parking lots, cars parked in the ramp and surface lots, and Institute vehicles.
- For those employees who wish to stop smoking, education, pharmacological aids, and smoking cessation programs are available.

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Conclusion

- Seek clarification from supervisor if you have questions about a policy.
- Report policy violations to:
  - Immediate Supervisor,
  - Employee & Labor Relations Office, x1088
  - Office of Diversity & Inclusion x4567
  - Corporate Compliance Hotline, x3566
- Cooperate with Institute investigations.

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Conclusion

- All employees are expected to adhere to each applicable Institute policy and follow safety procedures.
- Other policies that may apply to you can be found in the Institute Policies section of the internal web and in the hard copy of the manual. In addition, individual departments may maintain separate departmental policies.
- Failure to comply with Institute and/or departmental policies may subject the employee to corrective counseling and/or disciplinary action in accordance with the collective bargaining agreements, if applicable.

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Thank You!

For more information on any topic covered or not covered in this packet please connect with your supervisor, department administrator or a member of the Education Office.

Please complete the post test and checklist and submit it to the Education Office Staff.

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Volunteers, Students, & Contract Workers Orientation Inservice Checklist

Name: _____ **Start Date:** _____

Department: _____ **Today's Date:** _____

Please review the materials provided to you and return this checklist to the appropriate person listed for your area:

Volunteers: Director of Volunteer Services
Students: Clinical Instructor or the Education office 2nd Floor RSC Building
Contract Workers: Department Head responsible for your assignment at RPCI
Development/Alliance Foundation Staff: Executive Assistant, Development
Per Diem Employees: Post test to be returned to HR Training (separate document)

Corporate Compliance

_____ RPCI Code of Conduct Policy #125.1
_____ Corporate Compliance Summary Policy #126.1
_____ Non-Retaliation Policy #103.1
_____ Hotline Number/How to Report a Suspected Violation

Privacy of Health Information

_____ HIPPA Confidentiality Guidelines
_____ PHI
_____ Minimum Necessary and Patient Privacy Basics
_____ Compliance and Patient Rights

Respect in the Workplace

_____ Sexual Harassment
_____ Diversity and Workplace Diversity
_____ Respect in the Workplace
_____ Hand Hygiene and Personal Hygiene

Infection Control

_____ Hand Hygiene and Personal Hygiene
_____ Standard Precautions
_____ PPE *Job Specific
_____ Exposures

Safety

_____ Emergency & Non-Emergency Numbers
_____ Emergency Codes
_____ Hazardous Material Emergencies
_____ Critical Circuits
_____ Electrical Equipment Inspection Program
_____ Waste Separation Program
_____ Fire Safety R.A.C.E
_____ ID badge security and proper wearing
_____ Workplace Violence Prevention

RPCI Policies

_____ Reasonable Accommodation Policy #102.2
_____ Use of RPCI Resources Policy #105.1
_____ Workstation Usage Policy #912.1
_____ Social Media Policy #130.1
_____ E-mail Use Policy #905.1
_____ Internet Access Policy #917.1
_____ Weapons Possession Policy #1503.1
_____ Unscheduled Absenteeism Monitoring Policy #228.1
_____ Employee Health Clinic Services Policy #106.1
_____ Drug & Alcohol Free Policy #205.1
_____ Campus Tobacco Free Environment Policy #1314.1

I have received the orientation materials and have reviewed and understand all content.

_____ _____
Signature *Date*

_____
Supervisor/Departmental Designee/Education Dept. Signature

5.27.2015

ROSWELL PARK CANCER INSTITUTE

Employee Name: _____ Today's Date: _____
Print name

Signature: _____

Orientation Post Test: Volunteers, Students, & Contract Workers

Please indicate your answers to by circling your answer choice.

1. RPCI has a code of conduct that all employees, volunteers, students, and contract workers must follow. T F
2. The Corporate Compliance hotline number is 845-3566. T F
3. The corporate compliance hotline should only be used after you've discussed the matter with your supervisor. T F
4. Roswell Park has 10 principles under the Code of Conduct. T F
5. Keeping information about our patients confidential is a requirement of all staff, contract workers, volunteers, and students. T F
6. Harassment of any form is not tolerated at Roswell Park. T F
7. People who report problems in good faith will be protected from retaliation, retribution, and harassment. T F
8. The Roswell Park Drug and Alcohol Free policy is number 205.1. T F
9. Information regarding risk of exposure can be obtained from the Infection Control Officer and RPCI's Exposure Control Plan in the Infection Control Manual. T F
10. Hand-washing, like wearing personal protective equipment, is not that critical in safe-guarding yourself from infection. T F
11. Only certain job titles at Roswell Park have a role in workplace safety. T F
12. Roswell Park has a Waster Separation and an Electrical Equipment Inspection Program. T F

13. Gloves and masks are a common example of PPE. T F

14. The following are the correct codes for: T F
    Fire: Red
    Medical Emergency: Blue
    Disaster: White
    Missing Person: Pink

15. The R.A.C.E. acronym for a fire means: T F
    R= Rescue anyone in danger
    A= Sound the alarm
    C= Contain the fire
    E= Evacuate people in immediate danger,
    Or at the direction of nursing supervisor

16. In the event of a fire alarm or drill T F
    in your building, staff can go about
    their business normally.

17. Extension 3333 is the internal Roswell Park number T F
    for emergencies.

18. Roswell Park has a formal Workplace Violence Prevention T F
    Program.

19. Employees are required to log off or lock their computer if T F
    they will be away from their computer or workstation for
    longer than a few minutes.

20. Roswell Park Cancer Institute promotes the value of a T F
    diverse workforce to meet the needs and challenges of
    a diverse patient population.

Medication Calculation Competency

Study Guide

Roswell Park Cancer Institute
Nursing Orientation

This is a study guide to prepare Roswell Park Cancer Institute RNs and LPNs for the Medication Calculation Competency test that is a part of Nursing Orientation. It is an overview of general math calculations and pharmacology.

RPCI Nursing Education
Developed: Oct. '08

Outcomes

The RN or LPN should be able to:

- Recognize and use common conversion factors for drug calculation equivalencies
- Perform standard IV drip calculations
- Calculate drug dosages

Equivalents

1 ml = 1 cc	30 ml = 1 ounce
5 ml = 1 teaspoon (tsp)	1 kg = 2.2 pounds
3 tsp = 1 tablespoon (tbsp)	1 Gm = 1000 mg
15 ml = 1 tablespoon (tbsp)	1 mg = 1000 mcg

Conversions

To Convert:

Ounces to Milliliters = multiply ounces by 30

Pounds to kilograms = divide by 2.2

Kilograms to Pounds = multiply by 2.2

Grams to Milligrams = move decimal 3 places to the right → or multiply by 1,000

Milligrams to Grams = move decimal 3 places to the left ← or divide by 1,000

Rule of Thumb....

When converting within the metric system, you can simply move the decimal point three places to the left or right, depending whether you are changing to a larger or a smaller unit of measure.

Calculations

Ratio and Proportion: Desired over On Hand

D Desired (Amount ordered) Divided By
OH Amt on hand

Example:
Dr. has *ordered* Demerol 75mg for your patient. The Demerol *on hand* is in a concentration of 50mg/2ml.How many ml will you give to your patient?

D = 75mg
OH = 50 mg/2ml

Set Up:

$$\frac{75\text{ mg}}{50\text{ mg}} \text{ X } \frac{x\text{ ml}}{2\text{ ml}}$$

Cross multiply:

75mg x 2ml = 150mg/ml 50mg x x ml = 50mg/xml

$$\frac{150\text{mg/ml}}{50\text{mg x}}$$

ANSWER: 150mg/ml divided by 50mg/ml

X = 3ml

Calculations

Calculate the Flow Rate:

To calculate the right flow rate for a patient, you need to know the following:

- How much solution did the doctor order?
- How much time is allowed for delivery?

Take the amount of solution to be administered and divide it by the delivery time.

Example: $\frac{\textbf{1000 ml}}{\textbf{8 hours}}$ **= 125 ml per hour**

Calculate Medication Infusion Rate:

To calculate the medication infusion rate, you need to know the following:

- The dose required per hour
- The stock on hand/supplied
- The amount of solution

Example: 20,000 units of Medication X is added to 500ml of 0.9% NS. Dose prescribed is 100 units per hour. Calculate the rate of infusion in ml/hr.

$$\frac{\textbf{Dose Required}}{\textbf{Stock Supplied}} \times \frac{\textbf{Volume of Solution in mls}}{\textbf{1}}$$

$$\frac{\textbf{100}}{\textbf{20,000}} \times \frac{\textbf{500}}{\textbf{1}} = \textbf{2.5 ml per hour}$$

PRACTICE QUESTIONS

1. The order is for 100mg. The label reads 250mg/5ml. You would give _____ml(s).

2. The order is for 30ml. You would give _____ tablespoons.

3. The order is 2 mg. The label reads 0.5mg per tablet. You would give _____ tablets

4. MD orders Talwin 50mg. You have Talwin 10ml vial with 30mg/ml. You would give ____ ml

5. A patient is to receive 2mg of a drug for every kg of body weight. The patient weighs 100 pounds. How many milligrams of the drug should she receive? _____mg

6. A client is to receive 3,000 units of Heparin. The Heparin is supplied in 5,000 units/ml. How many milliliters should the nurse administer? _____ml

7. A client is to receive 840mg of a medication in a 24-hr period. The medication is to be given q4h. How many milligrams will be given for each dose? _____mg

8. 240mg of Medication E elixir is to be administered. The stock from the pharmacy comes as 120mg in 5ml. Calculate the volume to be administered. _____ml

9. 20,000 units of Heparin is added to 500ml of 0.9% NS. Dose prescribed is 100 units per hour. Calculate the rate of infusion in ml/hr. _____

10. Medication B is supplied as 1 gram in 5ml. the dose prescribed is 600 mg. Calculate the volume required. _____

11. The PCA machine holds 50ml, containing 500mg of Medication P. The doctor has ordered a bolus dose of 50mg. Calculate the volume to be delivered. _____

12. The doctor has ordered 500mls of 5% Dextrose to be delivered over 4 hours. Calculate the rate of infusion in mls/hr. _____

13. Mrs. Jones is to receive Staphcillin 1gm IM every 6 hours. You have Staphcillin powder 5gm vial. Directions are to add 8.6ml sterile water and then each ml will contain 500mg. How many ml of the Staphcillin solution will you give? _____

14. Your patient weighs 60 kg. The doctor has ordered a single dose of 2mg/kg of Medication G. This medication is provided as 60 mg in 2ml. Calculate the volume to be administered. _____

15. You have added 100 grams of Medication A to 1 litre of 0.9% saline. The doctor has ordered the medication to be given at 5 grams per hour. Calculate the rate of infusion in ml/hr. _____

Medication Calculation Study Guide

Practice Answer Sheet

1. 2 ml
2. 2 tablespoons
3. 4 tablets
4. 1.7 ml
5. 91 mg
6. 0.6 ml
7. 140 mg
8. 10 ml
9. 5.0 ml/hr
10. 3 ml
11. 5 ml
12. 125 ml/hr
13. 2 ml
14. 4 ml
15. 50 ml/hr

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Name:_____ **Date:**_____

Unit:_____

RN Medication Calculation Test

1. 10,000 units of heparin are added to 1 liter (1000 cc) of 0.9% Normal Saline. The Dose prescribed is 400 units per hour. Calculate the rate of infusion in ml/hr.

2. 20,000 units of heparin are added to 500ml of 0.9% Normal Saline. Dose prescribed is 100 units/hour. Calculate the rate of infusion in ml/hr

3. Fentanyl is supplied as 100mcg/2ml. The physician order states to give 50mcg IV push times one now. What is the volume to be administered?

4. 240mg of Medication E elixir is to be administered. The stock from pharmacy comes as 120mg in 5ml. Calculate the volume of elixir to be administered.

5. The order is for 125mcg of Medication F. The stock available comes as 62.5mcg tablets. How many tablets will be administered?

6. 500ml of 5% Dextrose is to be delivered over 4 hours. Calculate the rate of infusion in ml/hr.

7. Your patient weighs 60kg. The doctor has ordered a single dose of 2mg/kg of propofol. This medication is provided as 60mg/2ml. Calculate the volume to be administered.

8. Your patient weighs 70kg. She is to have 5mg/kg of Medication J. Medication J is supplied as 500mg/5ml. Calculate the volume to be administered.

9. The PCA machine holds 50ml, containing 500mg of Demerol. The doctor has ordered a bolus dose of 50mg. Calculate the volume to be delivered.

10. IV therapy is ordered for your patient. He is to have 2 liters of 0.9% Normal saline over 12 hours. Calculate the rate in ml/hr.

11. 100 grams of sodium bicarbonate have been added to a 1 liter bag of 0.9% normal saline. The dose prescribed is 5 grams per hour. Calculate the rate of infusion in ml/hr.

12. 180mg of cardizem is to be administered. The stock from pharmacy comes as 120mg in 5 ml. Calculate the volume to be administered.

13. Mrs. Homer weighs 72kg. She is to have 5mg/kg of 5-fluorocil. 5-fluorocil is supplied as 500mg/5ml. Calculate the volume required.

14. The PCA machine holds 60ml, containing 600mg of a medication. The doctor has ordered a bolus dose of 30mg. Calculate the volume to be delivered.

15. IV therapy has been ordered for Mrs. Jones. She is to have 3 litres of 0.9% Normal Saline over 24 hours. Calculate the rate of infusion in ml/hr.

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Name:_____ **Date:**_____

Unit:_____

Administration and Monitoring of IV Medications-Adults Only

1. Verapamil may be administered by a unit RN during an emergency in the presence of an MD.

   True False

2. Valium should be administered at a rate of _____.

3. A unit RN may administer digoxin via IV push.

   True False

4. Lasix may be administered at a rate of _____.

5. The minimum monitoring of vital signs for the administration of hydralazine is

   _____.

6. A heparin overdose is treated with _____.

7. Corticosteroids doses are dependent on the indication for use.

   True False

8. Dilantin should be administered via _____ using an

   _____.

9. Ativan should not be administered at a rate faster than _____.

10. Narcan, a reversal agent for _____, may be administered at a dose of

    _____ with a minimum monitoring of _____.

11. Zofran is administered for _____.

12. When changing from an IV to PO medication, the dosage maximum may need to be adjusted.

True False

13. Calcium Chloride is a vesicant agent.

True False

14. If pharmacy prepares a drug, the administering nurse is relieved of any responsibility.

True False

15. If you are unfamiliar with a medication that is ordered on your patient, you should:

_____.

16. Lasix may cause ***hyper***kalemia. True False

17. Digoxin is used to treat a ***slow*** heart rate. True False

18. Morphine may be administered at a rate of _____.

19. Only anti-neoplastic agents have vesicant potential.

True False

20. Telemetry monitoring is required for a patient receiving IV enalaprit.

True False

21. Only _____ insulin may be given IV.

22. _____ needs to be cautioned in patients with Hemophilia A and Von Willebrand disease.

23. Metoprolol should be held for if HR_____ and/or systolic blood pressure _____.

23. Intravenous Aloxi should be administered via push only.

True False

24. Flumazenil is the reversal agent for _____

Name: _____ **Date:** _____

INSIDE CANCER

1. Although in rare cases one mutation is enough, it is usually an _____ of mutations that irreversibly transforms a _____ cell into a _____one.

2. The hallmarks of cancer are that tumors have a minimal set of capabilities that allow it to function.
   T
   F

3. Cancer cells have to learn how to grow in the _____of growth _____ that normally succeed in _____ the _____
of normal cells.

4. **Apoptosis**
a) The process of programmed cell death
b) a check and balance on aberrant tissues
c) a form of protection for the organism.
d) all of the above

5. All cancers access the vascular system to help support it.
   T
   F

6. Cancer cells are orderly in appearance and structure.
   T
   F

7. Cancer cells do not respond to signals that usually regulate cell _____ and _____.

8. No two cancers are the same. They're all different. There are tremendous variations in the molecules that are involved in making a cell cancerous.
   T
   F

9. Cancer cells have learned how to proliferate indefinitely and have become _____.

10. The inactivation of a number of controls that confines a cell to the site and tissue where it normally grows allows the cancer cell to:
a) move
b) metastasize
c) regenerate
d) migrate

11. Adjuvant therapy is where you _____ the body's _____ _____
with agents that activate the immune system and make them _____ to foreign cells in our body, such as _____ cells.

12. The changes in the nature of the genes of cancer cells compared to normal cells are:
1.
2.
3.

13. What cancer is the leading cause of cancer deaths in the United States?
a) colo-rectal
b) stomach
c) lung
d) leukemia

14. The cell cycle is composed of 4 stages:

Match the stage with the definition

G1 - 1st gap stage	a) cell grows and replenishes its resources
S - synthesis	b) cell divides into 2 daughter cells
G2 - 2nd gap phase	c) cell synthesizes DNA in preparation for cell division
M - mitosis	d) the cell synthesizes proteins and other cellular components needed for cell division.

15. 3 Types of genes that contribute to cancer:
1. _____(gas pedal)
2. _____(brakes)
3. _____(inept mechanic)

16. Two types of cancer that genetics play a large role in are:
a) lung and breast
b) leukemia and colon
c) brain and lung
d) colon and breast

17. The known causes of cancer include:
1.
2.
3.
4.
5.
6.

18. Approximately _____ of cancer patients inherit a genetic affect conferring a susceptibility to cancer over their lifetimes.
a) 1%
b) 5%
c) 10%
d) 25%

19. There are approximately 20 known or suspected cancer-causing agent in every cigarette.
T
F

20. Squamous-cell carcinoma can be directly attributed to damage from exposure to _____ rays.

21. An increase in the consumption of these foods may lower a person's risk of developing cancer:
a) green-leafy vegetables
b) chicken and fish
c) fruits and vegetables.

22. Pollution, food additives and industrial wastes account for less than ___ of cancers in the United States:
a) 20%
b) 30%
c) 5%
d)10%

23. There are no common factors that influence the development of cancer in one part of the world compared to another part.
T
F

24. Many disorders are _____ and _____ by _____. There are sub-specialties that use new diagnostic tools in the continuing study of the disease: _____ and _____ _____.

25. The reason 2 people may have a different response to the same drug and treatment does not have anything to do with genetics.

T
F

Myelosuppression

RPCI Nursing Education 2010

Learning Outcomes

At the end of this session, the oncology nurse will be able to:

- Indentify the pathophysiology of myelosuppression
- Describe the treatment rational and expected patient outcomes

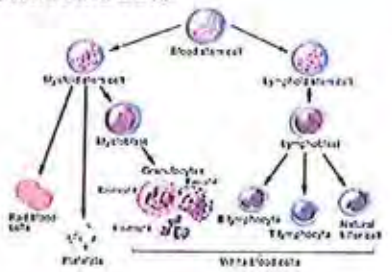
Definitions

- Myelosuppression
  - A reduction in bone marrow function that results in a reduced production of RBC's, WBC's and platelets in the peripheral circulation
  - Hematopoesis
    - The process of blood cell formation

Hematopoesis

- Production of white blood cells, red blood cells and platelets from pluripotent stem cells
- Pluripotent stem cells found mainly in the bone marrow
- The stem cells differentiate and become committed to producing a single blood cell lineage which is a series of actively proliferating "progenitor" cells

Hematopoesis



Hematopoesis

- White Blood Cells (WBC)
  - Normal value 4-10.5k/mm³
  - Life span 6-8 hours
  - Host system defense against invading organisms
  - Composed of:
    - Neutrophils – 55%-70%
    - Lymphocytes – 20%-40%
    - Monocytes, Eosinophils, and Basophils -0%-8%

HEMATOPOESIS

- Red Blood Cells (RBC) – Erythrocytes
  - Normal value 4.6-6.2 mil/mm³
  - Life span 120 days
  - Are responsible for the transport of O_2 and CO_2
  - *Hemoglobin:* Iron containing oxygen transport protein of RBC's
  - *Hematocrit:* proportion of blood volume occupied by RBC's

hematopoesis

- Platelets
  - Normal value 150-400k/mm³
  - Lifespan: 5-10 days
  - Stick to blood vessel wall at site of injury
  - Assist in conversion of fibrinogen to fibrin for clot formation

Etiology of Myelosuppression

- Chemotherapy
  - Works by interfering with the division of rapidly dividing cells (both cancer and progenitor cells)
  - Progenitor cells are temporarily unable to produce new cells
  - Nadir: point a which the lowest blood cell count is reached

Etiology of Myelosuppression

- Radiation Therapy
  - If irradiated field involves large portion of the skeleton
  - Especially major bone marrow production sites

Etiology of Myelosuppression

- Manifestations of Disease Process
  - Leukemia
  - Leukemic cells expand within the bone marrow, normal blood cell production is suppressed
  - Other cancers that effect bone marrow production: lymphoma, solid tumors, tumors that involve bone marrow and impair blood cell production

Risk Factors for Myelosuppression

- Increased chemo or radiation therapy dose
- Patients with history of prior cancer treatments
- Direct bone marrow involvement
- Decreased ability to repair cellular damage
- Prolonged exposure to chemotherapy agent

Cytopenia

- A reduction in the number of blood cells or the lack of cellular elements in the blood
  - Neutropenia
  - Thrombocytopenia
  - Anemia

Neutropenia

- Decrease in the number of circulating neutrophils in blood evidenced by and Absolute Neutrophil Count (ANC) less than 1000/mm³
- Decreased WBC, especially neutrophils places patient at risk for infection
- Infections can be exogenous or endogenous

Neutropenia

- Patient considered neutropenic with an Absolute Neutrophil Count (ANC) <2000/mm³
- Risk of infection increases with ANC <1000/mm³
- Normal ANC Range = 1.5-8.0 (1,500-8,000/mm³)
- Calculating ANC

$$\frac{\%\text{ Segs} + \%\text{ Bands}}{100} \times \text{Total WBC} = \text{ANC}$$

Neutropenia

- Infection Risk w/ANC
  - ANC = 1500-2000 Not significant
  - ANC = 1000-1500 Minimal
  - ANC = 500-1000 Moderate
  - ANC = <500 Severe

Neutropenia

- Other Risk Factors for Infection
  - Impaired cell-mediated or humoral immunity from corticosteroid therapy
  - Hematologic malignancies
  - Loss of protective barrier

Neutropenia

- Assessment
  - Vital Signs – 38.0°C (100°F) – significant
  - Signs of infection may not be apparent
  - Look for subtle signs of change in LOC or functional status
  - C/O Pain
  - Most common sites of infection

Neutropenia and Infection Management

- Antibiotic, antifungal, and antiviral medications for the organism isolated
- Hematopoietic growth factors
- Meticulous wound care/ line care
- Patient education
  - Infection Prevention
  - Diet

Anemia

- Anemia
  - Males = Hgb <13.5 grams/dl
    - Normal 14-18g/dl
  - Females = Hgb <12.0 grams/dl
    - Normal 12-16g/dl
- Signs and Symptoms
  - Related to decreased oxygenation and physiologic compensatory mechanism

Anemia

- Treatment
  - Typically treat severe cases (Hgb <8g/dl)
  - Mild to moderate (8g/dl to normal) generally not treated
- Research Indicates
  - Fatigue, ↓ functional status and ↓ quality of life in moderate to mild anemia

Anemia Assessment and Management

- Patients screened throughout treatment
- Be aware of signs and symptoms
- Consider non-cancer related symptoms
- Lab work
- Decision to treat based on patient's risk assessment

Anemia Clinical Management

- Treatment options:
  - Erythropoietin
    - Procrit (epoetin alfa) or Aranesp (darbepoetin alfa)
- Guidelines for use:
  - Hgb <10-11 for symptomatic patients)
  - Asymptomatic anemic patients at high risk for developing symptoms

Thrombocytopenia

- Decrease in the circulating platelet count below 100,000/mm³
  - Normal platelet count 150,000-400,000/mm³
  - Platelet life span 8-10 days
- Occurs after NADIR
- ↓ platelet count = ↑ risk for bleeding and hemorrhage

Thrombocytopenia Risk Factors

- Disease Related
  - Idiopathic thrombocytopenia purpura or thrombotic thrombocytopenia purpura
  - Hypo/hyper coagulation disorders
  - Invasion of tumor cells into the bone marrow
  - Cancers involving the bone marrow

Thrombocytopenia Risk Factors

- Treatment Related
  - Chemotherapy
  - Radiation therapy
  - Endotoxins
  - Medications that alter platelet development

Thrombocytopenia Assessment

- Signs and Symptoms of Bleeding
  - Bruising, Petechiae, Epistaxis
  - Hematuria, Frank bleeding from venipuncture site
- Signs and Symptoms of Intracranial Bleed
  - Changes in LOC, Restlessness, Headache, Ataxia
  - Pupil Changes (late sign)

Thrombocytopenia Assessment

- Lab Data
  - Platelet Count – normal 150-400k/mm³
    - 40-60,000/mm³
    - < 20,000/mm³
    - <10,000/mm³
  - Coagulation Values
    - Fibrinogen
    - PT – prothrombin times
    - PTT – partial thromboplastin time

Thrombocytopenia Management

- Minimize occurrence of bleeding
  - Thrombocytopenia precautions w/platelet count <50,000/mm³
- Avoid invasive procedures
- Monitor for complications
- Patient/family education

Thrombocytopenia Management/Treatment

- Platelet Transfusion
- Neumega (oprelvekin)
- Transfusion related issues
  - Transfusion reaction
  - Development of anti-platelet antibodies

Hemorrhage

- Definition – the occurrence of abnormal internal/external discharge of blood
- Risk Factors
  - Disease related
  - Treatment related

Hemorrhage

- Assessment
  - Physical Examination
  - Lab Data

Hemorrhage Management

- Administer appropriate blood products
- Administer oxygen
- Give vasopressor drugs
- Minimize bleeding
- Monitor for complications

Myelosuppression Psychosocial

- Fear and uncertainty
  - Waiting to develop fever, infection and/or bleeding
- Physical and social isolation
  - Feel like a burden to caretaker
  - Utilize appropriate interdisciplinary interventions

Myelosuppression Patient Education

- Assess patient's learning needs and barriers to learning
- Teach patient/family how and why myelosuppression occurs
- Assess patient's awareness of neutropenia/thrombocytopenia precautions
- Skill assessment
- Energy conservation techniques
- Psychosocial services available at Roswell

Questions

Arterial Pressure Monitoring

Purpose

- Direct, continuous and accurate blood pressure monitoring
  - Labile BP
  - Important for assessing the effects of medications on the patient's hemodynamic status every few seconds
  - Able to monitor and display systolic, diastolic and mean BP
  - Hemodynamic instability
- Frequent blood draws
  - Especially ABGs

Cuff vs Arterial Line

- the arterial blood pressure measurement will be the most accurate reading as long as the catheter is patent and the transducer system is properly set up and functioning (Chulay & Holland, 1996)

Cuff vs Arterial Line

- measure different components of the circulating blood volume
  - arterial systems measure pressure,
    - the amount of force exerted by circulating blood over a specific area
  - Cuff pressures measure flow
    - the amount of blood circulating over a specific time

Pulsus Paradoxus

- In normal individuals with spontaneous respirations
  - SBP will decrease 5-10 mmHg
- Mechanical ventilation
  - Affects blood flow to heart
  - Resp changes are represented as a %
  - Can be an indicator of fluid responsiveness

Procedure and Equipment

RPCI Procedure V-1

- Insertion can only be performed by
  - Physician
  - CRNA
  - NP/PA

Insertion - Equipment needed

- Transducer kit
- 0.9 NS 500cc
- Arterial line kit
- Pressure cable

Insertion - Procedure

- If arterial site used
  - Allen test must be performed
    - Check collateral circulation
- When catheter successfully inserted
  - Short, rigid wide bore tubing
  - Attach pressure tubing to catheter and flush
    - After priming tubing
  - Physician will suture in place
  - Clean area over catheter site and sutures
  - CHG tegaderm dressing
  - Further secure catheter and tubing

Set Up

- Check all connections prior to spiking tubing
- Prepare a 500 ml bag of normal saline
- Spike the bag with the transducer administration set.
- Remove all air from the tubing and transducer set.
- Pay particular attention to the transducer part of the Tubing and the flush port. Pressurize the pressure bag to 300 mm Hg.

Errors

- Kinked or obstructed
- Bubbles

EV1000

Set Up

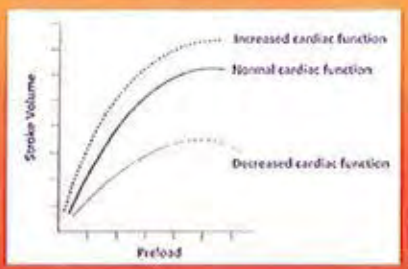
- Information needed to set system up
- Height
- Weight
- Age

- Requires special tubing
- 0.9 NS 500 cc
- Pressure Bag

EV1000

- A less invasive way of monitoring CO_2 using the arterial line
- Measurements obtained
- SVV – Stroke Volume Variance
- SVV is more accurate in control ventilated patients
- SVV = SVmax – SV min = %
  SV mean
- CO/CI – algorithm based
- CO = SV x HR
- CO = PR x [std(BP)*X]

Frank-Starling Curve



Assessment

- Flush system should be checked every 4 hours
  - Pressure bag inflated to 300 mmHg
  - Fluid present in bag
  - Flush system delivering appropriate amount (1-3 cc/hr)
- Tubing change every 96 hours
- Sterile dressing every 96 hours
- Flush bag change 96 hours

Assessment

- Must be checked every hour
  - Insertion site and all connections

Patient can exsanguinate in less than 5 minutes if the line becomes disconnected

- Monitor extremity every 4 hours
  - Color
  - Temperature
  - Capillary filling

Phlebostatic axis

Figure 3. The phlebostatic axis, marked on the patient's chest, is the precise anatomical point of origin of the hemodynamic pressures being measured.

ZERO

- Zero the transducer and monitor by placing the transducer at the phlebostatic axis of the patient
- Close the line off to patient and open to air
- Press zero on the monitor
- To monitor pressure, close the port off to air and open to patient

AACN Practice Alert

- Relevel the transducer with any change in the patient's position & q4H
- Referencing the system 1 cm above the left atrium decreases the pressure by 0.73 mm Hg
- Referencing the system 1 cm below the left atrium increases the pressure by 0.73 mm Hg

Square wave test

- With the transducer connected to the monitor, select arterial monitor, and perform a transquick check by fast flushing the line.
- As you do this, you should see a change in the waveform. This is called a square wave test.
- done to determine if the monitoring system can accurately reproduce a patient's cardiovascular pressures

Square Wave test

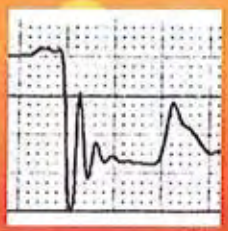
- the waveforms will be damped (toned-down) to some degree—
- problems occur when the system is "overdamped" or "underdamped"
- Fast flush technique
- When the fast-flush is pulled, the waveform should square off, oscillate (bounce) and come back to rest

Overdamped

- With an overdamped system, the waveform loses its characteristic landmarks and appears unnaturally smooth, with a diminished or absent systolic point.
- Overdamping results in falsely low systolic and falsely high diastolic pressure readings.
- In order to determine if the waveform is a result of an over-damped system or is an accurate reflection of a patient's status, the dynamic response characteristics must be tested.

underdamped

- An underdamped system will record falsely high systolic pressures (10- 30 mm Hg) and falsely low diastolic pressures.
- Underdamping most often in the form of systolic overshoot (the artificial exaggeration of systolic pressure).



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- Reviewed and updated June 2012

NURSING POLICY Patient Care Services Roswell Park Cancer Institute			
TITLE:	Blood and Blood Product Transfusion Administration	Number: 328	Revision: 3
Authored by:	Nurse Practice Committee	Issue Date: 9/10/2013	
Approved by:	Maureen Kelly, RN, MS Vice President / CNO and Joanne Becker, MD, Clinical Chief Laboratory Medicine	Effective Date: 05/13/2015	

1.0 PURPOSE

To define purpose, prerequisite, nurse practice guidelines, and personnel associated with blood and blood product administration.

2.0 RESPONSIBILITY

This policy applies to the Registered Professional Nurse (RN), Licensed Professional Nurse (LPN), Nurse Practitioner (NP), Physician Assistant (PA) and Physicians authorized to administer blood products in all areas with the exception of the Operating Room (OR).

3.0 CROSS-REFERENCE

Nursing SOP# 328.1: Transfusion of Blood Products
Institute Policy# 1012.1: Guidelines for the Use of Blood Derived and Cellular Therapy Products

4.0 DEFINITIONS

Blood products: plasma, packed red blood cells (RBC), platelets, cryoprecipitate or albumin

5.0 POLICY

5.1 Blood product transfusion is a procedure with potential for patient harm and requires strict compliance with all regulations pertaining to infusion.

5.2 Prerequisites

A. A written order to transfuse blood, non-cellular products or albumin, must be on the Physician order sheet or in the EMR. The order must specify the product. Federal law prohibits the dispensing of blood without an order.
   1. Verbal orders to a registered nurse must be immediately entered in the EMR as per the Institute Policy #1006.1 Verbal/Telephone Prescribers Orders.

B. Informed Consent
   Except as otherwise noted in the consent form, the patient's consent for Blood Product Transfusion will be valid for the entire treatment course of the patient's disease while under the care of Roswell Park Cancer Institute.
   1. A copy of the consent is to be FAXED to Blood Bank. The Blood Bank will enter the date of the consent into the laboratory database. Blood products will not be released until the relevant consent is received (except in an emergency situation).
   2. The original consent will become part of the medical record and placed in the patient's chart.

C. Type and Screen

1. The nurse or phlebotomist drawing the blood must verify the patient's identification with requisition, and label the tube at the bedside.
2. The requisition must be appropriately completed with the date and the initials and identification number of the nurse or phlebotomist drawing the blood immediately after collecting the sample. These initials and identification number verify that all identification steps have been completed.
3. A type and screen sample is good for 3 days. Note: a cross-match is only required for red blood cells. A 30 day sample (used for preoperative patients without antibodies who have not been transfused or pregnant within the last 3 months) outdates on day 30 from collection or 3 days after use for a cross-match whichever is shorter.
4. A new sample is not required for platelet or plasma orders if a type and screen was historically performed on the patient. Compatibility tests of the sample protect the patient against ABO hemolytic reactions.

D. A patient may, at any time, refuse a transfusion of blood products.
See Institute Policy #473.1 Blood and/or Blood Products Refusal/Restriction

1. The provider will be notified of the refusal, and the registered nurse must document the refusal in the medical record.
2. The Blood Bank must also be notified (if the product was released).

E. RNs, LPNs, Hospital Clinical Assistants (HCA), Certified Nurse Assistants (CNA), Transport Services and volunteers may pick up blood products from the Blood Bank. Blood products (with the exception of albumin), may be sent through the pneumatic tube system.

5.3 Administration (refer to Nursing SOP# 328.1 Transfusion of Blood Products)

A. The person administering the transfusion *and* the witness **must** be licensed personnel: an RN, LPN, NP, PA, or Physician. The blood product verification and confirmation of correct patient identification must be double-checked by two licensed personnel prior to the transfusion.

B. The LPN shall only administer a transfusion when an RN, NP, PA, or Physician is immediately available on site.

C. Graduate Nurses (GNs) may **not** administer, witness, nor verify blood products.

D. **The blood product verification and confirmation of correct patient identification must be double-checked by two licensed personnel at the bedside/chair prior to the transfusion.**

E. Each identification procedure shall be documented on the Blood Product Identification Tag (Form #F00627).

F. Two persons authorized to initiate blood transfusions shall be immediately available during a blood product transfusion.
1. The patient should be observed for the first 15 minutes of the transfusion.
2. The rate and the duration of infusion of all products including albumin, is dependent on the patient's clinical condition. RBC's are generally infused over 2 hours (using 22g catheter or larger) depending upon the patient's ability to tolerate increased intravascular volume.
3. If a predisposing condition exists or the patient is over the age of 65, the prescriber may order a specific rate of infusion which takes precedence over routine practice.

4. The patient's vital signs are documented **before**, **after the first 15 minutes and compared to baseline values.** They are also documented at the **completion** of a **transfusion.**
5. If there is a change in the patient's clinical condition, more frequent observations may be required and/or contact the provider for further orders.
6. The patient receiving their **first** transfusion must be monitored for 30 minutes afterward.
7. The patients receiving chronic transfusions with no history of adverse reactions do not require post monitoring unless the patient's clinical condition has changed during the infusion.

G. All blood products must be administered using the Alaris infusion pump, with the exception of stem cell, lymphocyte, and photopheresis products.

H. All transfusions including albumin must be completed within **four** hours of start time.

I. **Normal Saline** is the **only** solution to use before, during, or after a blood product transfusion to clear the tubing.

J. Any other drug or medication, including those intended for intravenous use must not be added to or mixed with blood or components.

K. Change blood tubing after two units of blood.

L. **If the patient experiences any of the symptoms of a transfusion reaction STOP the transfusion immediately, keep the line open by infusing a new bag of 0.9% NaCl through new tubing and notify the prescribing practitioner and Blood Bank immediately of the symptoms.**

See Institute Policy 463.1 Transfusion Reaction

M. The identity of the prescriber and Blood Bank personnel receiving notification are to be documented in the medical record. The product received from Blood Bank must be compared to the product order from the prescriber.

N. A Transfusion Reaction Form in EMR must be completed. (a Quantros report is **not** required).

O. Vital signs must be documented in the EMR as soon as possible and prior to Transfusion Reaction Form completion. This important information allows the Blood Bank to provide supplementary products for the patient.

6.0 RELATED POLICY/SOP

Institute Policy #473.1: Blood or Blood Products Refusal/Restriction
Institute Policy #463.1: Transfusion Reaction
Institute Policy #408.5: Policy For Consent Or Refusal Of Transfusion Of Blood Products
Institute Policy #405.1: Policy and Protocol for the Massive Transfusion of Blood and Blood Products

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CE
2.0
ANCC/AACN
CONTACT HOURS

Getting to know oncologic emergencies

Because cancer treatments are more successful than ever before and survival rates continue to improve, you're likely to see oncologic emergencies in your practice. We'll help you get to know the most common emergencies, teach you how to recognize them in your adult patients, and let you know what you need to do when caring for patients experiencing these problems.

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Staff Nurse, PACU • Fox Chase Cancer Center • Philadelphia, Pa.

The author has disclosed that she has no significant relationships with or financial interest in any commercial companies that pertain to this educational activity.

A PATIENT WITH CANCER is at risk for various metabolic, structural, and hematologic emergencies after initial diagnosis and treatment. These emergencies range from mild to life threatening, and all require your prompt attention.

In this article, I'll review the most common oncologic emergencies: tumor lysis syndrome (TLS), hypercalcemia, syndrome of inappropriate secretion of antidiuretic hormone (SIADH), pericardial effusion, spinal cord compression, and superior vena cava syndrome (SVCS). I'll also discuss which patients are most at risk, signs and symptoms to watch for, diagnostic tests, treatments, and nursing interventions that can help your patient recover without permanent injury.

Let's take a closer look with the help of a case study to illustrate each emergency.

The 411 on TLS

Katie Bell, 66, comes to your facility complaining of being excessively weak and tired with bouts of nausea and muscle cramps. She's had diarrhea for a week, and she says she's been urinating only once a day and then just a little bit. She's been receiving chemotherapy for lymphoma.

Results of serum electrolyte testing show elevated potassium and uric acid levels and a decreased calcium level. Based on her symptoms, the electrolyte imbalance, the type of cancer she has, and the chemotherapy she's been receiving, you suspect TLS.

TLS is caused by the destruction of malignant cells, usually as a result of chemotherapy used to treat rapidly growing cancers. These dying cancer cells release large amounts of potassium, phosphorus, and nucleic acid into the circulation. The kidneys can't keep up with the large volume of toxins that need to be filtered out of the body.

This disorder develops in patients being treated for malignancies that have a large tumor burden, such as in leukemia, lymphoma, and small-cell lung cancer. Occasionally, TLS may follow treatment with radiation, tamoxifen, steroids, or interferon.

Signs and symptoms of TLS include:

- hyperkalemia (high potassium level)
- hyperphosphatemia (high phosphorus level)
- hypocalcemia (low calcium level)
- acidosis (high uric acid level)
- azotemia (high levels of urea, creatinine, and other waste products usually filtered by the kidneys)
- diarrhea
- lethargy
- muscle cramps
- nausea and vomiting
- weakness
- oliguria (decreased urine output)
- acute renal failure
- cardiac arrhythmias.

After confirming the diagnosis of TLS, the health care provider orders intravenous (I.V.) fluids (150 to 200 mL/hour) to increase urine volume and restore electrolyte balance. He also orders a loop diuretic to counteract the oliguria and sodium bicarbonate added to the I.V. fluids to alkalize Katie's urine. He adds allopurinol (Zyloprim) to the drug regimen to inhibit uric acid. If Katie doesn't respond to treatment and her symptoms become severe, she may need hemodialysis.

You'll need to monitor Katie's electrolyte and uric acid levels for evidence of fluid volume overload and assess her urine pH to confirm alkalization. Continue to monitor her for worsening electrolyte imbalance and make sure she knows what signs and symptoms of electrolyte imbalance to report, such as nausea and muscle cramps.

Be hyper-aware of hypercalcemia

Anne Brooks, 39, comes to your facility complaining of vomiting, feeling constantly thirsty, and fatigue. She says that she keeps getting headaches and that she's urinating a lot more than usual, and she's constipated. Anne is currently being treated for breast cancer. Serum electrolyte testing shows that she has a calcium level of 14 mg/dL (normal, 8.8 to 10.4 mg/dL). The diagnosis is hypercalcemia—a serum calcium level greater than 11 mg/dL.

Hypercalcemia is the most common metabolic oncologic emergency, affecting 20% to 30% of patients with cancer. It occurs when more calcium is released from bones than the kidneys can excrete or the bones can reabsorb (see *What happens in hypercalcemia*). Hypercalcemia is most often seen in patients with squamous cell lung cancer, breast cancer, lymphoma, or multiple myeloma.

Signs and symptoms of hypercalcemia depend on how quickly it develops and how severely the calcium level is elevated. The patient may experience:

- nausea and vomiting
- constipation
- polyuria (increased urine output)
- polydipsia (excessive thirst)
- weakness
- lethargy or fatigue
- kidney stones
- bone pain
- headache
- confusion
- altered level of consciousness (LOC)
- dehydration
- dysrhythmias.

The treatment goal for hypercalcemia is to decrease the serum calcium level by 2 mg/dL every 24 to 48 hours. Anne receives I.V. 0.9% sodium chloride solution for up to 2 days, followed by diuresis with furosemide (Lasix). She also receives I.V. bisphosphonate to inhibit bone resorption. If her calcium level doesn't decrease significantly, she may need dialysis. The health care provider may also order plicamycin (Mithracin) to block the effects of vitamin D or parathyroid hormone; it has been reported to be effective in up to 80% of patients with hypercalcemia secondary to malignancy.

If Anne remains constipated, provide a stool softener or laxative as ordered. If she continues to vomit, administer an antiemetic drug as prescribed. Encourage her to consume 2 to 3 L of fluid a day after she's discharged, unless contraindicated because of a cardiac or renal condition, and to maintain her nutritional intake. Encourage mobility to prevent bone breakdown from immobility. Teach Anne and her family to recognize and report early signs and symptoms of hypercalcemia.

SIADH spells trouble

Jennifer Kay, 53, comes to your facility after coughing up blood at home. She's complaining of excessive fatigue, constant headaches, and feeling irritable and confused. She's gained 15 pounds (6.8 kg) over the past month and a half.

What happens in hypercalcemia

Calcium resorption from bone increases.

↓

Calcium enters extracellular fluid at an increased rate.

↓

Calcium movement into extracellular fluid exceeds the rate of calcium excretion by the kidneys.

↓

Excess calcium enters cells.

↓

Excess intracellular calcium decreases cell membrane excitability.

↓

Reduced membrane excitability affects skeletal and cardiac muscles and the nervous system.

↓

Patient may display fatigue, confusion, and decreased level of consciousness.

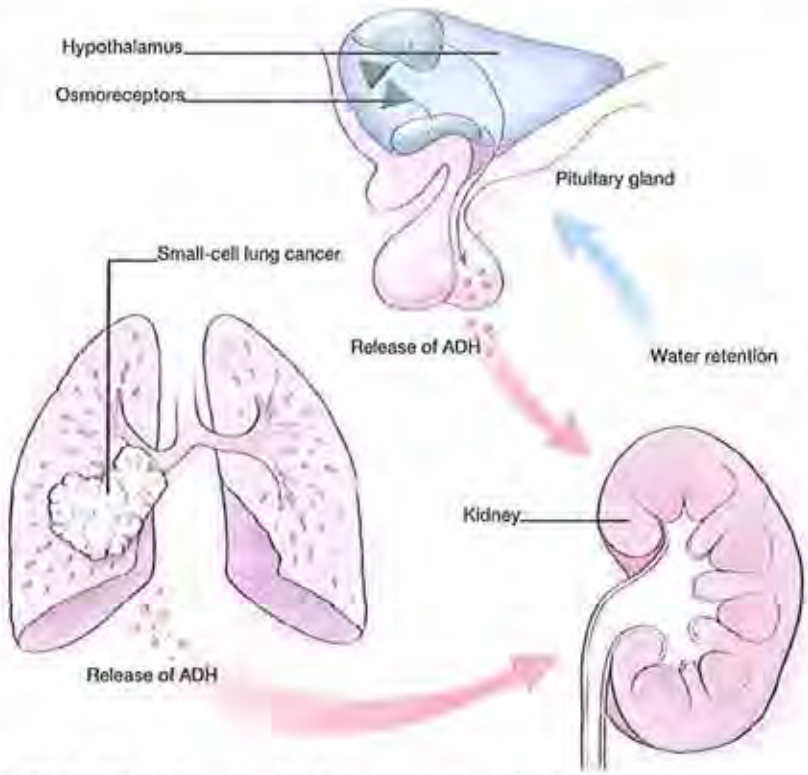
Results of stat blood tests show that Jennifer has a serum sodium level of 124 mEq/L (normal, 136 to 145 mEq/L). The results of a serum osmolality test show 274 mOsm/kg water (normal, 280 to 295 mOsm/kg water). A later test of urine sodium and osmolality levels reveals a urine sodium level of 21 mEq/L and a urine osmolality level of 278 mOsm/kg water. A chest X-ray shows a lesion in her right lung. Based on her low serum sodium level (hyponatremia) and the other test results, Jennifer is diagnosed with SIADH, possibly caused by small-cell lung cancer.

In SIADH, an excessive release of antidiuretic hormone (ADH) causes an imbalance in the normal fluid and electrolyte balance. The kidneys absorb free water, causing hyponatremia and concentrated urine. The relationship between water and sodium is related to aldosterone and ADH; aldosterone regulates sodium and ADH regulates water (see *SIADH: Fluid regulation gone wild*). A bronchogenic carcinoma is often the ectopic source of excessive ADH secretion. Certain chemotherapeutic drugs can also stimulate release of ADH.

The patient may be asymptomatic until her serum sodium level drops below 125 mEq/L. Symptoms are generally mild to moderate, as in Jennifer's case, and include:

- anorexia
- fatigue
- headache
- muscle cramps
- weakness
- weight gain
- difficulty concentrating
- confusion
- personality changes
- depressed deep tendon reflexes
- lethargy
- nausea
- vomiting
- constipation
- oliguria.

Severe, life-threatening symptoms occur when the patient's serum sodium level drops below 115 mEq/L. At this point, the brain is permeated with water, which can cause seizures and coma.



SIADH: Fluid regulation gone wild

Released by the pituitary gland, antidiuretic hormone (ADH) regulates water output and reabsorption by the kidneys. When plasma osmolality (the concentration of substances, such as sodium, in the patient's blood) goes above the normal set point, osmoreceptors in the hypothalamus stimulate ADH release to decrease urine output and restore plasma osmolality to its set point.

In certain malignancies, tumor cells produce ectopic (displaced) ADH. The increased ADH leads to water retention. This excess water enters cells and causes signs and symptoms.

Jennifer's fluid intake will be restricted to less than 1 L/day until her serum sodium level returns closer to normal. After pathology tests confirm small-cell lung cancer, she's started on antineoplastic therapy to destroy the cancer cells that are producing excessive ADH. She's also given demeclocycline (Declomycin), which inhibits the effect of ADH on the renal tubules so the kidneys can excrete water. If Jennifer's serum sodium level drops below 115 mEq/L, she'll be moved to the intensive care unit.

Implement seizure precautions and closely monitor Jennifer's neurologic status for signs of deterioration. Explain to her the importance of fluid restriction and teach her that it may take 3 to 10 days to start working and that her

Illustration by Marcia Hardstock

Picturing cardiac tamponade

fluids will be restricted until antineoplastic therapy is successful. Monitor her fluid intake and output closely and weigh her daily. Teach her about the possible adverse reactions to demeclocycline, such as photosensitivity, nausea, infection, and hepatoxicity. Finally, teach her family how to respond if Jennifer has a seizure.

Don't let pericardial effusion escape

James Egger, 27, comes to your facility complaining of shortness of breath, dizziness, chest pain, and heart palpitations. He's anxious, and he says he gets tired easily and he's noticed that his neck veins seem to be sticking out. He's been battling leukemia. An electrocardiogram (ECG), chest X-ray, and computed tomography (CT) scan reveal pericardial effusion.

Pericardial effusion occurs when excess fluid accumulates in the pericardial sac, compressing the heart. This leads to cardiac tamponade, a life-threatening emergency that compromises cardiac function and decreases cardiac output (see *Picturing cardiac tamponade*). Normally, 15 to 50 mL of fluid fills the pericardium; an accumulation of 50 mL or more leads to effusion. If the fluid increases slowly, compensation can occur. But if the increase is rapid, even a small effusion can cause cardiac collapse, shock, and death.

Pericardial effusion mainly affects patients with primary tumors of the heart or metastatic lung or breast cancer, but it can also develop in patients with melanoma, leukemia, lymphoma, and those receiving chemotherapy or radiation to the chest wall.

Signs and symptoms of pericardial effusion include:

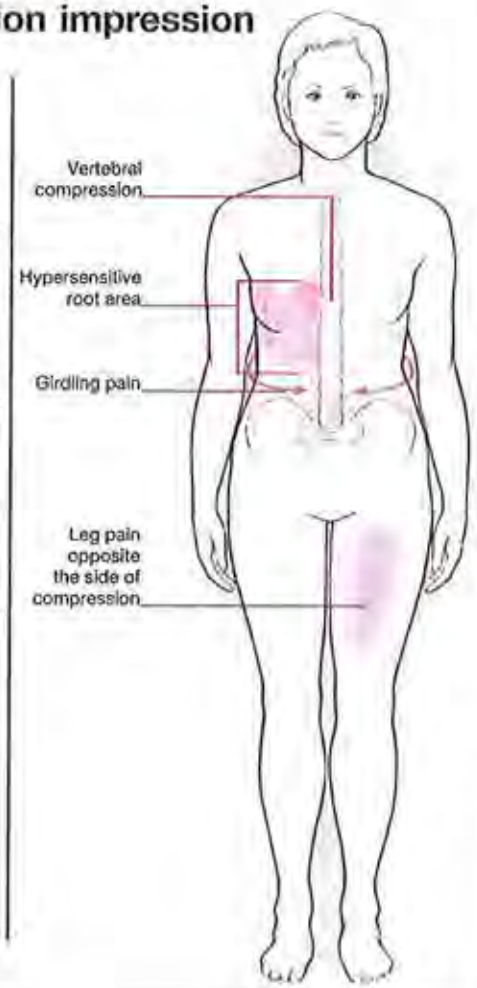
- pulsus paradoxus (a decrease in systolic blood pressure of more than 10 mm Hg during inspiration)
- neck vein distension
- heart palpitations
- chest pain
- dizziness
- anxiousness
- fatigue
- hiccups
- distant heart sounds
- pulmonary rales
- ascites
- tachypnea (rapid breathing)
- dyspnea (shortness of breath)
- orthopnea (shortness of breath when lying down that's relieved when sitting or standing)
- tachycardia
- diaphoresis.

The physician performs pericardiocentesis, the removal of excess fluid via a large-bore needle inserted into the pericardial space. He orders prednisone and a diuretic agent. Unfortunately, fluid will often reaccumulate. If this happens to James, he may undergo surgery to create an opening in the pericardium (pericardial window).

Monitor James' vital signs, his oxygen saturation status, and his ECG frequently. Record his fluid intake and output and review lab findings. Assess heart and lung sounds and his skin color and temperature. Watch for pulsus paradoxus, neck vein filling, and altered LOC. Elevate the head of the bed to ease James' breathing and reposition him every 2 hours, encouraging him to cough and deep-breathe. Minimize his physical activity to reduce oxygen requirements and provide supplemental oxygen if ordered.

Compression impression

Spinal cord compression occurs when a growing tumor presses on the spinal cord or metastases replace or erode the vertebrae, causing them to collapse and press on the spinal cord. Initially, pressure on a nerve root causes chest or back pain, pain girdling (encircling) the affected area, hypersensitivity to touch near the area, or pain in the opposite leg. If the pressure isn't relieved, further spinal cord injury leads to sensory and motor function losses.



Comprehending spinal cord compression

Remember your patient Jennifer Kay? She's returned to your facility with back pain that gets worse every time she lies down, accompanied by a tingling sensation in her right leg that won't go away. She reports never having experienced back pain like this before. It's been 2 months since she completed her treatment for small-cell lung cancer. You suspect spinal cord compression caused by new tumor growth. Magnetic resonance imaging (MRI) of Jennifer's spine is ordered. Because of the potential for disability if spinal cord compression isn't treated swiftly, Jennifer is immediately given I.V. dexamethasone to reduce pain and edema as a precaution, pending results of the MRI.

Spinal cord compression results when a

ILLUSTRATION BY MARCIA HARRISTOCK

tumor or collapsed vertebra puts pressure on a nerve root (see *Compression impression*). Most commonly occurring in the thoracic region, it can lead to permanent loss of sensory and motor function if the pressure isn't relieved. Metastatic cancers, such as lung, breast, kidney, and prostate cancers, are the most common causes of spinal cord compression. Myeloma, lymphoma, and kidney cancer can also cause vertebrae to deteriorate.

The hallmark sign of spinal cord compression is new-onset back pain that worsens with movement, when lying down, or when coughing, and that radiates along the dermatome innervated by the affected nerve root. Other signs and symptoms include local inflammation and edema and venous stasis. Motor weakness may lead to numbness, tingling, loss of reflexes, and eventual paralysis of the legs and arms, possibly accompanied by a loss of bowel or bladder function.

The results of Jennifer's MRI confirm a tumor on her spine. Radiation therapy is ordered to reduce the tumor burden, which will help reduce the pressure on her spinal cord. If Jennifer's symptoms progress despite radiation therapy, she may undergo surgery to remove the tumor. Because of the rapid treatment she received, Jennifer will continue to be ambulatory.

You'll need to monitor Jennifer's neurologic status for signs of deterioration. Assess her pain and administer pain medication as ordered. Assist with range-of-motion exercises to maintain muscle tone. While she's immobile, make sure to prevent complications such as skin breakdown.

Superior knowledge of SVCS

Michael Carter, 48, comes to your facility complaining of shortness of breath, a cough that won't go away, and difficulty swallowing. You notice that his face and neck are swollen and he has a bluish discoloration on his arms and hands. Michael has advanced lymphoma. Based on his signs and symptoms, it's likely that he's experiencing SVCS. A chest X-ray, a thoracic CT scan, and venography are ordered.

SVCS occurs when venous flow through the superior vena cava is obstructed, impairing venous circulation or drainage from the head and arms. The vena cava is vulnerable to obstruction because it's thin-walled, surrounded by lymph node chains, and enclosed in a tight compartment. The most common cause of SVCS is lung cancer. Other oncologic causes include breast cancer, lymphoma, thymoma, Karposi's sarcoma, and metastatic mediastinal tumors. Central venous catheter insertion may also cause SVCS. If left untreated, SVCS may lead to oxygen deprivation to the brain, laryngeal edema, bronchial obstruction, and death.

Signs and symptoms of SVCS include:

- dyspnea
- nonproductive cough
- hoarseness

On the Web

These online resources may be helpful to your patients and their families:

American Cancer Society: **http://www.cancer.org**
Cancer Care: **http://www.cancercare.org**
Cancer Consultants Oncology Resource Center: **http://www.cancerconsultants.com**
Chemotherapy.com: **http://www.chemotherapy.com**
Mayo Clinic Cancer Center: **http://www.mayoclinic.com/health/cancer/CA99999**
National Cancer Institute: **http://www.cancer.gov**
WebMD Cancer Health Center: **http://www.webmd.com/cancer**.

- dysphagia (difficulty swallowing)
- facial swelling
- edema of the head, neck, arms, or hands, possibly accompanied by discoloration of the upper extremities
- increased intracranial pressure with associated visual disturbances, headache, and altered LOC.

Results of diagnostic testing confirm that Michael has SVCS. Radiation therapy with adjunct chemotherapy is ordered to reduce the tumor burden. He'll also receive corticosteroid therapy to reduce inflammation and swelling. An I.V. stent may be an option if venous flow doesn't improve.

Monitor Michael's cardiopulmonary and neurologic status. Watch his fluid volume status and administer fluids with caution to minimize edema. Encourage him to conserve energy to minimize dyspnea, and position him so he can breathe easier, which will help reduce anxiety and promote comfort. Avoid using his arms for venipuncture and blood pressure measurement.

Emergency averted

Oncologic emergencies can cause devastating complications for patients who are already dealing with life-altering diagnoses. Being aware of these emergencies, their signs and symptoms, proper diagnosis, and the appropriate treatments will not only help you improve quality of life for your patients, but may also help them survive. ■

Learn more about it

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