PROVISION OF PHARMACEUTICAL CARE AND WORKING UP A PATIENT IN THE INPATIENT SETTING[1,2,3] – A STUDENT GUIDE

DESCRIPTION OF GUIDE

This guide has been developed to provide students with a framework to systematically work up a patient, create a care plan, and to communicate this with their practice educator in the inpatient setting.

LEARNING OBJECTIVES

After reviewing this guide, the student will be able to:

- ✓ Explain what is expected when assigned a patient to work up
- ✓ Develop and implement a comprehensive care plan for a medical condition
- ✓ Describe the steps involved in presenting a patient to the practice educator in the inpatient setting

PROCESS

Note: *The resource provided here serves as a general guide for use but the practice educator can amend this at any time to better suit their practice environment and patient population. As approaches and resources may vary, students should always discuss their approach with the practice educator on site prior to completing these types of activities for the first time while on practicum.*

A) Working-up a patient

Students are encouraged to capture patient work-ups by reviewing the patient's medical records, conducting a patient/caregiver interview, and documenting findings using the **Inpatient Work Up Form**.

- The **Inpatient Work Up Form** is a tool that is meant to assist student's in gathering and organizing information related to their patient that will assist in identifying and preventing drug therapy problems.
- Student's should not be simply copying information from the patient chart, but rather be thinking about each piece of information that they transcribe and how this could potentially affect the Drug Therapy Problems (DTP's) identified and the care plans they develop.

1) Collect relevant information from the chart (including old charts, if applicable) including:
    - demographic data
    - gender, weight, height
    - admission information including: chief complaint (reason for admission to hospital), pertinent vitals/physical findings

[1] Adapted from UBC Faculty of Pharmaceutical Sciences Transition Modules.
[2] Cipolle RJ, Strand L, Morely PR. Pharmaceutical Care Practice: The Patient Centered Approach To Medication Management, McGrawHill, 2012.
[3] Adapted with permission from the College of Pharmacy, Faculty of Health Professions, Dalhousie University, Jan 2017.

- history of presenting illness: relevant signs and symptoms experienced by the patient in the time leading up to their presentation to hospital. Summarized in chronological order.
- past medical and surgical history
- allergies/adverse drug reactions: include reaction, date, and consider impact of information on current and future care plans that you may develop for the patient
- social history (i.e. caffeine, alcohol, smoking, IVDU, etc.) including when last used

Tips:
- Look at the admission history for the chief complaint; review of systems.
- Review the emergency admission note for the treatment plan and if any drug levels are ordered.
- Look at consult notes, physician orders and nursing notes.

2) Create the patient's Best Possible Medication History (BPMH) by reviewing the patient's PharmaNet profile, chart notes, and conducting patient/caregiver interview.
   - assess whether the patient has a regular community pharmacy (if applicable): gather contact information
   - assess adherence history and/or concerns
   - assess medication coverage/drug plans
   - gather any relevant information regarding the medical conditions for which the medications are prescribed (e.g. frequency of hypoglycemia in a patient with diabetes and a sulfonylurea is prescribed, usual home BP measurements in a patient on an antihypertensive medication)
   - consider and assess medications the patient was previously prescribed but no longer takes; assess reason for discontinuation

3) Comprehensively review the patient's medication profile for current medications prescribed.

Tips:
- Compare medications to those prior to admission
- Consider all information gathered so far and consider what type of DTPs the patient is experiencing or likely to encounter.
- Consider concerns related to alterations in drug efficacy or toxicity (i.e. renal impairment, hepatic disease, etc.)

4) Collect pertinent vitals, physical findings, labs, microbiology, and diagnostics, using patient chart and site-specific information systems.

5) Collect new diagnosis in hospital and identify all medical issues.

Tips:
- Medical issues can be a disease condition (e.g. pneumonia) or a symptom (e.g. pain)
- Consider DTPs that may arise simply due to hospitalization (e.g. risk of VTE, risk of delirium, etc.)

B) Create a Care Plan

A care plan should be created for each medical problem/issue identified with consideration of the following:

1) **Medical problem/issue**: medical problem/issue identified and relevant lab/findings in order of importance/priority.

Tips:
- Can be a disease condition (e.g. pneumonia) or a symptom (e.g. pain)
- Consists of all medical conditions that a patient comes to hospital with, for, and those that arise during their hospital stay.

2) **Goals of therapy:** overall goal you and the patient are trying to achieve with pharmacotherapy.

Tips:
- Be specific and identify the parameter, desired degree of change and time frame.
- Should be patient specific, realistic, and observable/measurable
- Common goals of therapy: cure a disease, reduce or eliminate/signs or symptoms, slow or halt the progression of a disease, prevent a disease, etc.
- Consider when you would expect each goal of therapy to be met

3) **NESA & DTPs:** for each medical issue make a list of actual and potential drug therapy problems (DTPs) and prioritize them based on acuity and patient preferences.

Tips:
- Compilation of the DTP list comes from:
  - Patient interview – consider compliance; swallowing; adverse drug reactions
  - Medication administration record – consider if patient is taking meds as prescribed; IV line in; prn usage
  - RN/MD communication
  - Physical exam
  - Labs/Lytes & patient specific changes: Cr &CrCl, eGFR, weight, liver, age etc.- to aid diagnosis, to monitor progress, to determine correct dosage
- Always consider the following:
  - What is the indication for the drug? (Necessary)
  - What is the duration of treatment?
  - Is there any duplication of therapy?
  - Is it the drug of choice for this patient? (Effective)
  - Has the dosage been adjusted for patient specific changes? This could include renal or hepatic function, patient weight, etc. (Safety, Adherence)
  - What signs/symptoms or lab values should be followed for efficacy and toxicity? Are baseline labs needed? Is there any medication adversely affecting renal or hepatic function?
  - Possible side effects – which are likely to occur and which have already occurred
  - Are there clinically significant drug interactions

- Should the patient be receiving any other medications? (Unmet needs)

4) **Assessment of Alternatives:** assess the alternatives that could be used to resolve the DTPs.

Tips:
- Consider:
  - Drug and non-drug interventions (i.e. education preventative therapy, referrals, etc.) and evaluate based on efficacy, onset, safety, drug interactions, convenience and cost.
  - Interventions to prevent further related DTPs.
  - Patient specific factors (e.g. patient wishes/goals, age, concurrent medications/conditions, cost, etc.)
- Be prepared to provide a rational for your decision making regarding inclusion of exclusion of all options.

5) **Recommendation/Plan:** develop a plan and outline recommendations to resolve drug therapy problems identified and how it will be implemented.

Tips:
- Recommendation should appropriately resolve the DTP(s), achieve goals of therapy, and prevent other DTP(s)
- Choose the best option and provide justification
- Pharmacological recommendations should include: drug, dose, route, frequency, and duration
- Make executable recommendation (how, when, who, education required, referrals, etc.)

6) **Monitoring Plan**: outline a patient specific monitoring plan including parameter (efficacy and toxicity) and time frame and how it will be implemented.

Tips:
- Consider referring to goals of therapy to assess if they are being met.
- Indicate who will be responsible for monitoring the specific parameter
- Continue to assess for any new DTPs.

C) Presenting patient to practice educator

Once you completed steps above, using the **Requirements Checklist for Inpatient Presentation to Practice Educator** as a guide, present your patient to the practice educator. Review the tips below on the structure and flow of the report:

My patient [initials], male, [age], admitted [date] to [ward] or transferred from [hospital] on [date] ➢ *Brief description of patient*	
His chief complaint and history of presenting illness is:	1 – 5 minutes

➢ *Why patient was admitted to hospital and chronological account of events leading to hospitalization* The working diagnosis is: The differential diagnosis is:	
Allergies are: ➢ *Include type of reaction(s) and when they occurred* Social history is:	30 seconds
The past medical history is significant for: - e.g. CHF – had an echo at SPH 2 months ago with EF of 18% - e.g. High blood pressure – BP on admission is 140/80 ➢ *Provide the evidence for the disease*	3-5 minute
Medications prior to admission per Pharmanet and confirmed with patient are: ➢ *List the meds and their indication*	1-3 minute
Review of systems reveals/physical exam/investigations/lab values ➢ *Highlight abnormal findings)…*	1-3 minute
Current medical problem list and medications in hospital are: ➢ *List the medical issues/problems (prioritize)* For each medical problem state: ➢ *Relevant lab values/findings/signs and symptoms* ➢ *Goals of therapy (realistic, patient specific)* ➢ *DTPs (NESA may help with this; prioritized based on acuity, reason for admission, patient preferences)* For each drug therapy problem identified: - Outline the viable therapeutic alternatives, ➢ *Discuss pros/cons of each* - Describe the best option/plan to resolve the DTP and the rationale to support the final recommendation ➢ *Select the best option in collaboration with the patient and healthcare team* ➢ *Make executable recommendations (e.g. start ramipril 2.5 mg once daily rather than "start an ACE inhibitor")* ➢ State the monitoring plan ➢ *Identify a practical monitoring plan (what, how, when, and who); include efficacy and safety endpoints, frequency of monitoring, and who will be responsible for monitoring – (e.g. 3 days after starting ramipril check SrCr and potassium levels for any changes from baseline rather than "watch renal function and check electrolytes" after starting the ACE inhibitor)*	5 minutes 5-10 minutes 5-10 minutes 5-10 minutes

- Have the practice educator assess the patient work up and report and provide feedback using the **Requirements Checklist for Inpatient Presentation to Practice Educator** form. Use the feedback received in this activity to refine the process and integrate any suggestions for improvement into future activities.

D) <u>Continue to follow patient, implement recommendations, monitor therapy</u>

- Continue to follow the patients you are assigned as directed by your practice educator
- Every day, assess the following:
    - New information in the chart or patient information systems
    - Vital signs, MAR records
    - Check in with your patient to assess drug therapy and other monitoring parameters
    - Implement changes with your practice educator as indicated by patient needs
    - Document in chart notes as applicable
    - Counsel your patient as appropriate, especially at discharge if applicable
    - Implement any seamless care plans at discharge

ACCESSORY RESOURCES

- **Inpatient Patient Work Up Form** (see below and folder on Connect/Canvas)
- **Allergy Assessment – A Student Guide** (see folder on Connect/Canvas)
- **Requirements Checklist for Inpatient Presentation to Practice Educator** (see Appendix 2)
- **Medication Reconciliation and BPMH Interview – A Student Guide** (see folder on Connect/Canvas)
- **General Medication Counseling – A Student Guide** (see folder on Connect/Canvas)

Patient Monitoring Form

Name: _____ Age: _____

Male ☐ Female ☐ Adm Weight: _____ Height: _____

Adm Date: _____ Adm Time: _____

Patient ID

Chief Complaint:

History of Present Illness:

Past Medical History:

Past Surgical History:

Family/Social History:

PTA Medications:

Current Medications:

Caffeine: _____ **Last used:** _____
Alcohol: _____ **Last used:** _____
Smoker: _____ **Last used:** _____
IVDU: _____ **Last used:** _____

Allergies (Rxn and Date):

OTCs/Herbals:

Community Pharmacy:

Adherence/Aids?

Pertinent Vitals/Physical Findings on Admission:

Vitals:
CNS/Neuro:
HEENT:
CVS:
RSP:
GI:
GU:
Liver/Renal:
HEME:
LYTES/Fluids:
ENDOCRINE:
MSK:
DERM:
ID:

Diagnostics (CXR, CT, GI Scope, ECG…)

New/Working/Differential Diagnosis in Hospital:

Medical Issues:

DATE	Baseline	Admission																
Vitals																		
Temp																		
BP																		
HR																		
RR																		
O_2 Sat																		

Labs																		
Na+																		
K+																		
Urea																		
Cr																		
CrCl																		
Cl/CO_2																		
WBC																		
Neut																		
Plts																		
Hgb																		
MCV																		
RDW																		
INR																		
AST																		
ALT																		
GGT																		
TSH																		
trop																		

Microbiology												
Date	Site	Organism	amp	clox	vanc	cfaz	ctx	cipr	t/sx			

Notes

Date	In	Out

Medical Condition & relevant labs/findings (in order of importance/priority)	Goals of Therapy	NESA & DTPs. For each drug: indication, route, dose, regimen, duration Is this condition caused by a drug?	Alternatives and Plan	Monitoring Plan (Targets, SE)