UNIVERSITY OF ALBERTA

Faculty of Pharmacy + Pharmaceutical Sciences

Patient Care Process

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Preface:

The Patient Care Process Working Group was formed in July 2010 with pharmacy representation from the Faculty of Pharmacy & Pharmaceutical Sciences at the University of Alberta, Alberta Health Services, community practice, and primary care.

The purpose of the Patient Care Process document is to outline a systematic and standardized approach to teach the provision of direct patient care in the practice of pharmacy (for undergraduate students, residents, experiential learners, preceptors and practitioners).

In addition, in the undergraduate pharmacy curriculum, a need was identified to help link independent components of patient care in the context of the whole patient care process.

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The patient care process materials were substantively updated (2025).

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Revision 1 Working Group Members (2018): Theresa Charrois, Michelle Foisy, Lisa Guirguis, Sheila Walter, Michelle Picard, Michelle MacDonald
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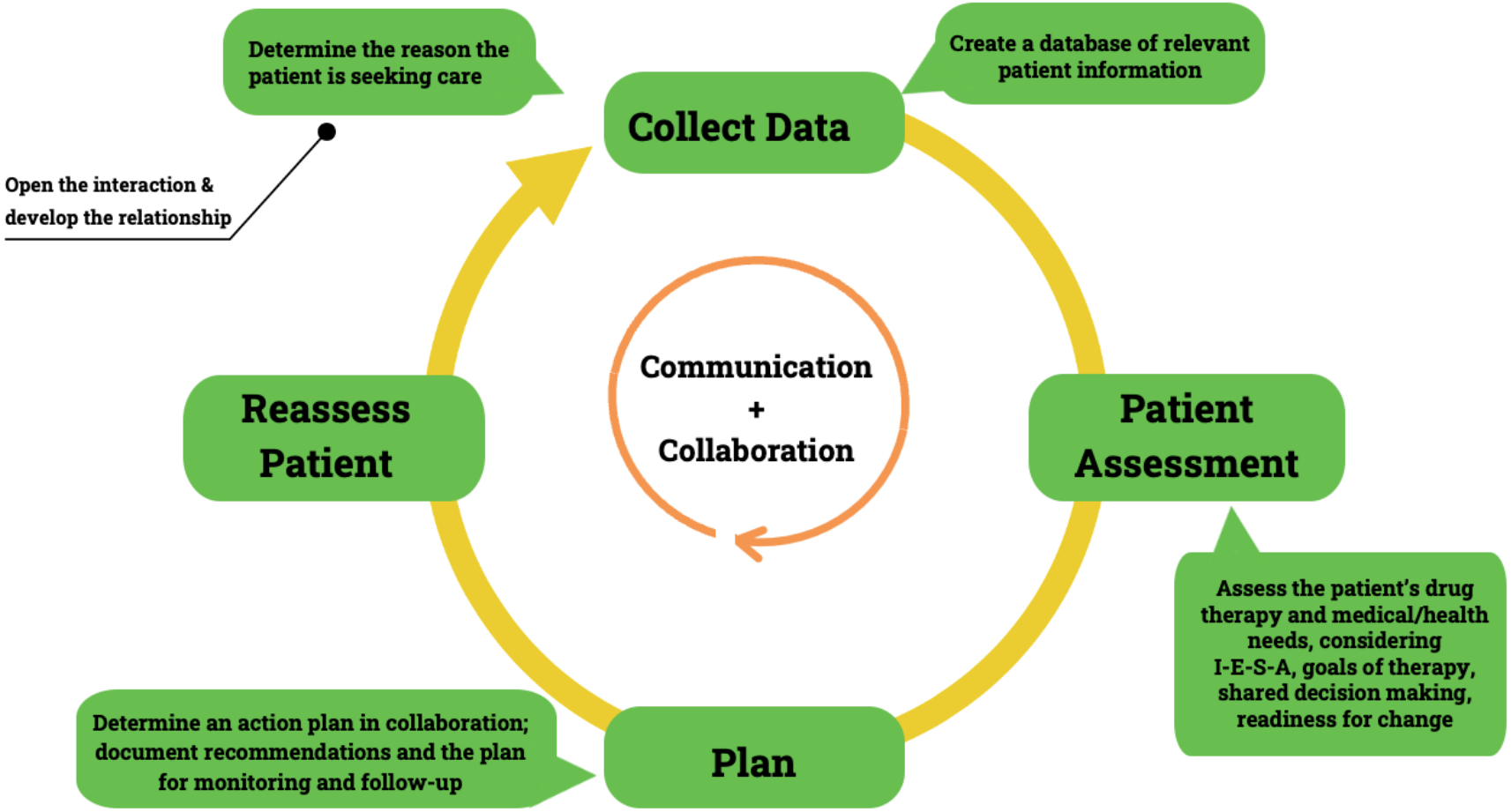
Patient Care Process Diagram



Collect Data and Create/Update Patient Database

Introduction

- A patient database allows pharmacists to put together available and relevant patient information in order to assess drug therapy
- Use information collected from: patient, circle of care, patient records (pharmacy, electronic medical records (EMR, Netcare), other medical records)
- The scope of information gathered depends on the practice site, setting of the interview, type of assessment, relevance of information, and timeframe
- Relevant information that is not in the patient care record will need to be added/documented

The following outlines a comprehensive set of data points that could be useful for patient assessment. *When using this document/process, consider what sections or subsections within are relevant for each specific patient care scenario*. Some items will be documented for all patients; some items are relevant only in certain situations. The list of items and questions is not meant to be exhaustive.

Consider the following prompts to inform how to facilitate information gathering:

- Whether the patient is known to the pharmacist or a new patient
- Practice setting (e.g. community, ambulatory, acute care, etc)
- Date/time of information already documented (e.g. if recent, may not need to confirm)
- Relevance to the reason for assessment and/or pertinent medical condition/therapy (e.g. acuity and/or complexity of presenting concern)

Demographics

- Name (preferred name), DOB, PHN, sex at birth, pronouns, address, telephone, emergency contact, agent/caregiver (if appropriate), languages spoken, other members of the health care team (circle of care)
- Height, weight, ideal body weight (IBW), body mass index (BMI) (if relevant), body surface area (BSA) (if relevant)

Reason for Assessment

- Why is the patient seeking care, being referred, or requiring assessment? Describe the condition/problem/concern
- What are the patient's health-related goals and priorities?
    - You may need to discuss what can be addressed today vs. future visits (based on time allocated, practice setting, etc)

History of Present Illness (HPI)

- The HPI refers to a more detailed assessment of the patient's concern and/or presenting symptom(s) +/- related medical conditions
- Symptoms that would be considered Red Flags should also be assessed and a referral made to the appropriate care provider
- Several different approaches can be taken to support the exploration of what a patient has been experiencing. For acute symptom assessment, SCHOLAR-E or another mnemonic may be useful to structure this process. For a more chronic or complex situation, a more flexible, narrative

approach with specific questions related to the condition(s) +/- investigations, etc should be obtained.

- Seek an understanding of what the patient's knowledge of their health condition/concern is and explore why having that condition might be a problem for them.

Symptoms	What are the main symptom(s)? Are you experiencing any other symptoms?
Characteristics	Describe the symptom(s) further. How severe is the symptom (e.g. on a scale of 1-10, mild, moderate, severe)? How do the symptom(s) interfere with your life (e.g. work, daily activities, leisure)?
History	Have you had these symptoms before? [If yes, did you try anything in the past that helped manage it?] How frequently do they occur?
Onset	When did it start? ● What were you doing when it started? ● What is a gradual or abrupt onset? How long have you had the symptom(s) for?
Location	Where are you experiencing/feeling it the most? Does it move (radiate) anywhere else?
Aggravating factors	What makes it worse? (consider timing in the day, triggers related to activity or environment or social context or food/medications)
Remitting factors	What have you tried that makes it better? (consider self-care measures, non-pharmacologic interventions, pharmacologic interventions)
Explanation	What do you think is causing/contributing to the symptom(s)/problem?

- There are also other tools used to characterize a patient's presenting symptom(s).
  - **SCAR:** Symptoms, Characteristics, Aggravating, Remitting
  - **SOCRATES:** Site, Onset, Character, Radiation, Associations, Time Course, Exacerbating & Relieving Factors, Severity
  - **OPQRST:** Onset, Provokes or Palliates, Quality, Radiates, Severity, Time
  - **LOCQSMAT:** Location, Onset, Chronology, Quality, Severity, Modifying Factors, Additional Symptoms, Treatment
  - **RAISE**: Red flags, Adherence, other Interventions, Safety, and Effectiveness may also be a helpful mnemonic to reassess a patient's therapy.

Past Medical History (PMH)

- List current medical conditions/problems (dates and duration)
- List hospitalizations, surgeries, accidents, injuries (if relevant)
- Note specialists currently involved in care; other clinics/caregivers (if relevant)

Allergies

- List medication, food, environmental, and contact allergies

- Describe reaction (date, onset, signs/symptoms, severity, management [pharmacologic/ non-pharmacologic], and outcome)
- Assess whether it is a true allergy or an intolerance
- Ask whether it has been rechallenged and/or if there has been a reaction to other medications in the same class

Best Possible Medication History (BPMH)

- **Current medications**
  - List indication, dosage, regimen, duration of use, outcome
  - Quantify use of prn medication (check refill frequency, ask patient)
  - Link current medications with current medical conditions (table format, other)
  - Include: eye/ear/nose products, inhalers, patches, creams, ointments, injectables, medication samples
  - Include: OTC, NHPs, traditional medicines, vitamins, minerals, other supplements

- **Previous medications**
  - List past medications dependent on relevance to medical history and indication for new therapies and/or previous medication issues
    - e.g. antimicrobial use in the past 3 months
  - List indication, dosage, regimen, duration of use, outcome (as relevant)
  - Why was the drug discontinued? (cure/condition resolved, ineffective, adverse event)

- **Adverse effects/Drug intolerance**
  - Describe adverse effect (date, onset, signs/symptoms, management [pharmacologic/ non-pharmacologic], outcome)
  - Ask whether other medications in the same class have been tried/tolerated

- **Immunizations**
  - List vaccinations received as relevant to the patient's medical conditions/assessment being completed

- **Medication adherence**
  - Use open-ended, non-judgmental questions to ascertain the patient's ability to adhere to medications as prescribed, considering items such as:
    - How is the medication prescribed vs. how does the patient actually take the medication? (consider times, frequency, food; verify refill frequency)
    - How often in a week does the patient miss a dose of medication?
    - What is the system used to manage/remember medication (i.e. supports, reminders, calendars, certain cues/times of day, blister packs, dosette)

        - Use/functional ability (e.g. dexterity (opening vials), ability to self-administer/given by caregiver (vision, swallowing, memory))
        - Explore barriers and facilitators to taking medications consistently (i.e. patient preference/beliefs, adverse effects, cost/coverage, drug formulation, dosing schedule, health literacy, digital literacy, memory, technique, functional ability, housing/social determinants of health)

- **Medication experience**
    - "The medication experience is an individual's subjective experience of taking a medication in [their] daily life." (Shoemaker, 2008) A patient's medication experience may shape their attitudes, preferences about drug therapy, and drug taking behaviour.
    - Be attentive and seek an understanding of the patient's general attitude to medications, preferences, concerns, understanding, and cultural and ethical beliefs.
    - Often this information is gathered indirectly in the patient interview.

- **Other considerations**
    - Who is ordering medication refills, pick-up/delivery
    - How does the patient self-monitor (e.g. blood pressure, blood glucose, laboratory work)
    - Where and how are medications stored?
    - Who is most responsible for administering medications? (patient, agent/caregiver)

See Appendix for annotated BPMH with Medication Reconciliation (Source: Alberta Netcare Learning Centre)

Family History (FH)

- Includes first-degree relatives only (medical condition status of living and causes of death/age)
- Attention to disease states where family members are known to be at an increased risk or where the condition is genetically linked
    - Examples may include heart disease, hypertension, hyperlipidemia, diabetes, cancer, osteoporosis, substance use disorder, mental illness, etc

Functional History (FxH)

(if relevant)

- Consider mobility limitations (e.g. previous stroke, chronic pain, use of a wheelchair or ambulation aids), anticipated health decline (e.g. life limiting illness such as advanced cancer), level of independence or reliance on caregivers, cognitive abilities (e.g. developmental delay, dementia), language barriers (e.g. need for interpretation services)
- Ability to do basic activities of daily living (bADL) and instrumental activities of daily living (iADL)
- Describe functional decline (onset, activity impacted); existing or needed supports

Social History (SH)

- Consider the relevance of history being gathered, as some aspects of social history are more sensitive for some patients. Remember to use a non-judgemental approach.
- Enquire about the impacts of social determinants of health (consider barriers to health care access such as unhoused/marginally housed, recent immigration, language, inclusion within stigmatized populations)
- Nutrition, exercise, education, occupation/work history, relationship status, living conditions (where and with whom?)
- Substance use (caffeine, alcohol, tobacco/nicotine products, recreational drugs): type, amount, pattern, duration, date/time last intake or history of use [for a smoker: # ppd and/or pack-years (#ppd x # yrs smoked)]
- Sexual History (if relevant, e.g. functional, pregnancy, STIs)
- Cultural or religious practices that may impact medication use

Review of Systems (ROS)

- While a complete ROS may help identify further problems (medical conditions, adverse effects), use clinical judgement when determining the need for further assessment of one or more body systems (e.g. consider information available from other health care providers)
- The head-to-toe approach can be used as a guide to assess relevant systems. Example signs and symptoms across body systems are presented below. The depth and breadth of information gathered will depend on the patient's reason for assessment, medical conditions, and care setting.

General	energy levels, weight changes, ailments, pain
Integument	rashes, dryness, pruritus, hair loss, nails
Head/Neurologic	mental status, headache, syncope, seizures, tremor, weakness, vertigo, neuropathy
Eyes	redness, discharge, blurring, vision, pain, glaucoma, cataracts
Ears	hearing loss, tinnitus, earache, discharge
Nose/Sinuses	rhinitis, sinus congestion, discharge
Mouth/Pharynx	dentition, hoarseness, pharyngitis, ulcerations
Neck	swollen lymph nodes/glands, goitre, pain
Chest/Lungs	cough, dyspnea, wheezing, sputum, asthma, bronchitis, pneumonia
Cardiovascular	chest pain, murmurs, palpitations, hypertension, myocardial infarction
Gastrointestinal	dysphagia, odynophagia, reflux, nausea, vomiting, bowel movements, stool
Urinary	pain, frequency, urgency, incontinence, retention, bleeding
Hepatic/Renal	organ function, infection (hepatitis, pyelonephritis)
Reproductive	libido, discharge, infection, menstrual, menopause
Musculoskeletal	stiffness, pain, motion, swelling, redness, deformities
Endocrine	thyroid, diabetes, adrenals, estrogen, testosterone

Adapted with permission from: Longe RL et al. Physical Assessment- A Guide for Evaluating Drug Therapy. Baltimore, MD: Lippincott Williams & Wilkins, 1994. Table 1.3, P1-9 to 1-10.

Investigations: Physical Exam (PE), Vital Signs (VS)

- Review or perform (considering scope of practice, competency) relevant investigations
- Physical Exam: inspection, auscultation, percussion, and palpation

- Vital Signs: BP, HR, RR, temp

Investigations: Laboratory Findings, Imaging, Diagnostics

- Laboratory Findings: Review relevant laboratory tests (e.g. CBC/differential, electrolytes, SCr, liver chemistry, coagulation tests, microbiology results, drug levels, etc.)
- Imaging: may include findings from X-rays, CT scans, MRIs, ultrasounds, ECHO, PET scans
- Diagnostics: may include results from biopsy/pathology, endoscopy, paracentesis, and point-of-care testing

Introduction

- Consider whether all required data for a complete assessment is available; if no, order (considering scope of practice, competency) or collaborate to obtain information (for example, laboratory data, physical exam findings, diagnostics) necessary data
- Assess the patient's current drug therapy and health/medical needs to determine if there are any drug therapy problems (DTPs)

Types of Drug Therapy Problems (DTPs) when assessing drug therapy:

Assessments	Type of DTP
Indication	Unnecessary Drug (no clinical indication; duplicate therapy; non-drug management more appropriate/effective)
	Drug Therapy Required (untreated or inadequately treated medical condition/symptom; primary prevention)
Effectiveness	Ineffective Drug (incorrect drug; not first line agent; wrong formulation; not effective in this situation)
	Dose too Low (correct drug but wrong dose or frequency/interval or duration; drug interaction*)
Safety	Adverse Drug Reaction (ADR), intolerance
	Dose too High (toxicity/adverse effect; correct drug but wrong dose or frequency/interval or duration; drug interaction*)
Adherence	Over-adherence (using more than prescribed)
	Non-adherence (not able or willing to use drug as prescribed: health literacy, values/beliefs, convenience, cost, formulation, availability)
No DTPs Identified	Drug therapy is appropriate for a specific patient; ongoing monitoring is required

**Drug interactions may include those with other drugs, food, laboratory tests, diseases, and blood products. Drug interactions may lead to a dose too low, dose too high, ineffective drug, or ADR type DTP.*

Writing Drug Therapy Problem Statements

- DTP statements should include:
    a. an undesirable event or risk of an event (may be a sign/symptom, diagnosis, disease, abnormal lab value, etc)
    b. whether it is a potential or actual problem
    c. what the risk is - briefly describing what evidence supports it as a problem
    d. the drug therapy involved
- Only 1 DTP should be identified per drug, utilizing the I-E-S-A assessment framework to prioritize multiple issues (as relevant). For example, a patient may be experiencing a drug adverse effect (S) but if the drug is not indicated (I) that would be the problem stated.
- It is important not to directly 'solve' the problem when writing the DTP statement (i.e. by stating a drug or class that should be started, as an example), leaving room to explore alternative solutions to the problem
- For example:
    a. JW is at risk of stroke due to uncontrolled blood pressure (BP 155/98) despite first line diuretic therapy.
    b. MM is experiencing ongoing elbow pain (VAS 7/10) despite regular use of low-dose ibuprofen for the past 3 days.

Evaluate the Following Parameters: Indication, Effectiveness, Safety and Adherence

Drug therapy should always be assessed in the same systematic order.

- First, determine if the ***Indication*** is appropriate for the drug therapy (or if the patient has an untreated indication).
- Second, evaluate the ***Effectiveness*** of the drug therapy for the indication.
- Third, determine the level of ***Safety*** of the drug regimen.
- Only after determining that the drug therapy selected or being used is indicated, effective, and safe, do you logically evaluate the patient's ability to ***Adhere*** to the medication.

See **Patient Care Process Tools** for the Pathway to Identify and Resolve Drug Therapy Problems.

Consider:

- If the purpose of the assessment is a new health issue/concern/symptom:
  - Is the symptom caused by drug therapy?
  - Can the symptom be treated by drug therapy and/or non-pharmacological therapy?
  - Can adverse effects be avoided or minimized with new drug therapy?
- If the purpose of the assessment is related to ongoing chronic condition(s):
  - Is each current medication needed and appropriate?
  - Are all health concerns/goals being optimally managed?
  - Are all potential complications from chronic condition(s) being optimally prevented?
  - Is the patient experiencing bothersome and/or intolerable side effects?

INDICATION

ASSESSMENT	Formulate DTP(s)
Review the data collected (patient database/record) and assess the following: ● For a new concern (symptom/issue), assess if new drug therapy is needed (indicated) and/or if non-drug interventions are appropriate ● For each medical condition/health concern, assess if drug therapy is indicated and if already initiated to manage issue(s) ● For each current medication, assess if it has an appropriate purpose (indication) based on evidence, practice standards, patient factors, or reasonable rationale. ● Assess the need for prophylactic/preventative drug therapies (including immunizations) and/or non-drug interventions based on history and BPMH Considerations should include patient preferences, factors, and goals: ● Does the patient want drug therapy? ● What is patient readiness, importance, confidence, and knowledge in taking medication? ● Do the patient's goals align with the purpose of each medication? ● Are there SDoH related considerations? ● Does the patient have specific factors, disease characteristics that might warrant choice of one	**For each component of the assessment** **Is drug therapy (including preventative) indicated?** **NO but initiated: Unnecessary Drug** ● Resolve DTP through appropriate deprescribing (or recommending discontinuation) within the plan. **YES and NOT initiated: Drug therapy required** ● Evaluate alternatives and resolve DTP within the plan ● YES and initiated - No indication related DTP exists *Proceed to Effectiveness evaluation*

medication over another?	

EFFECTIVENESS

ASSESSMENT	Formulate DTP(s)
Review the data collected (patient database/record and patient's medication experience) to assess effectiveness to achieve person centred health goals: ● For each medical condition and noted problem/concern, is the current drug therapy and dose achieving the intended health goal within an appropriate time frame? ● For each medication, is the minimally effective dose prescribed OR are the results of therapeutic drug monitoring above the minimum threshold for the therapeutic range? ○ Consider whether first line or alternate therapy or additional therapies are needed ○ Consider factors that may be contributing, including non-adherence, low dose/dosing frequency/titration, delayed onset of action, malabsorption, incorrect formulation, expired drug ● Assess for potential or actual drug interactions. If they exist, have steps been taken (like dose adjustments) to ensure drug effectiveness is maintained? Health goal considerations should include: ● evidence-informed health targets (e.g. blood pressure, lipid panel results) ● successfully eliminating disease, when appropriate (e.g. urinary tract infection) ● successfully controlling symptoms of disease, when appropriate (e.g. asthma) ● successfully preventing disease, when appropriate (e.g. prophylactic antibiotics) ● patient preferred goals, values, beliefs, and priorities	**For each component of the assessment, is drug therapy effective?** **No, due to inadequate drug exposure - Dose Too Low** ● Evaluate dose escalation or interval change or duration and resolve DTP within the plan **No, and appropriate dose prescribed - Ineffective Drug** ● Evaluate alternatives for replacing or adding pharmacotherapy, and resolve DTP within the plan **Yes - no actual effectiveness DTP exists** ● For potential effectiveness DTPs, ensure appropriate monitoring parameters are incorporated into the plan to ensure effectiveness is maintained and that any reductions in effectiveness are detected for reassessment. *Proceed to Safety evaluation*

SAFETY

ASSESSMENT	Formulate DTPs
Review the data collected (patient database/record and patient's medication experience) to assess presence or risk of adverse effects (potential harm, safety concerns, unwanted side effects, deterrents to adherence): ● For each medical condition, noted health problem/concern, or lab data abnormality, could a current drug therapy be causing or exacerbating the issue? ● For each medication, is there potential to cause an unwanted adverse effect with unacceptable severity or toxicity? ○ important patient considerations include allergies, past adverse effects or intolerances, contraindications, drug interactions, organ function impacting drug elimination, patient's willingness or ability to tolerate adverse effects ○ important drug considerations include therapeutic window, adverse effect profile, risk of severe toxicity ● For each medication, does the dose exceed the maximum recommendation OR what the individual may be able to tolerate OR the upper limit of the therapeutic range (for therapeutic drug monitoring)? ● Do any drug interactions exist that could lead to an adverse drug event or excessive dose of another medication? Patient medication experience considerations should include: ● patient's past experiences with medications ● patient preferences regarding side effect profile and ability to manage them ● patient values and beliefs ● individual tolerance for adverse effects	**For each component of the assessment, is drug therapy posing a safety concern?** **NO: No actual safety DTP exists - Proceed to Adherence** ● For potential safety DTPs: Ensure appropriate monitoring parameters are incorporated into the plan to detect and manage any future adverse effects or physiologic changes (e.g. weight, organ function, fasting) or environmental factors (e.g. heat wave) that may increase the risk of adverse effects. **YES: Adverse Effect is Present or Highly Likely** ● Explore the adverse effect further and resolve DTP within the plan. o Consider causality (onset, timeframe, dose, and type of reaction) (i.e. is the AE dose-related, idiosyncratic, or a hypersensitivity?) o Consider drug interactions (drug-drug, drug-food, drug-disease, drug-laboratory test value interactions) o Consider patient goals, values, and experience. Is the adverse effect bothersome to the patient (e.g. intolerable sleep disturbances)? Is the patient willing to tolerate the adverse effects given the potential benefits (e.g. chemotherapy)? Is the likely duration minimal (e.g. short-lived/quick offset)? Is the adverse effect impactful to adherence (e.g. disrupts productivity at work)? o Consider risk of harm to the patient (e.g. falls, cognition changes, organ function) ● **Yes - Due to excessive drug exposure - Dose too high** o Evaluate for dose reduction and resolve DTP within the plan ● **Yes - Unrelated to dose - Adverse Drug Reaction** o Evaluate alternative therapy(ies) within the plan to replace the offending drug or interacting agent o Manage the adverse effect (symptom or new medical condition) within the plan. *Proceed to Adherence evaluation*

ADHERENCE

Assess	Formulate DTPs
Review the data collected (patient database/record, patient's medication experience, refill history) to assess barriers to accessing or taking drug therapy as prescribed. For each drug therapy prescribed/recommended, consider: Is the patient able to…. ● afford the medication (consider cost, formulary inclusion/insurance, potential copay)? ● access the medication (consider patient geography (e.g. rural/remote, displaced in disaster), patient mobility, access restrictions such as special access or special authorization approvals)? ● ingest the medication as prescribed (consider challenges with memory, mental health, motivation, dexterity, swallowing, intravenous access)? Does the patient… ● want to take the medication (consider past medication experience, patient values, patient autonomy, readiness for pharmacotherapy) ● understand the pros/cons of the medication (consider past education regarding the medication, health literacy, and shared decision making) ● have other barriers to adherence/access related to social determinants of health Is there a mismatch between what the patient states regarding their pharmacotherapy and their refill history or blister pack completion (if so, why)?	**Is the patient able and/or willing to take drug therapy as prescribed?** **NO: Actual or potential non-/over-adherence** Explore the barrier to adherence further and address the DTP within the plan ● Can the medication adherence be improved? o Consider appropriateness of education, adherence aids, changes in dosage form, changes in drug scheduling, need for supports (caregiver, other), assessing and addressing patient's readiness, importance, confidence and knowledge , strategies to reduce out-of-pocket expense, and addressing patient specific barriers ● Are barriers to adherence difficult to overcome? o Consider appropriateness/interest for alternative therapies, substitutions, or postponing pharmacotherapy. **YES for existing therapies:** Patient seems to be managing existing therapy well, continue with monitoring within the plan and follow-up at appropriate intervals **YES when initiating a new pharmacotherapy:** Proceed to next steps in plan development.

Goals of Therapy

- Establishing the goals of therapy involves identifying important clinical outcomes that can be achieved with therapy and are relevant and important to the patient's overall health needs, goals, priorities, and expectations. A helpful way to think about goals of therapy is to think of the desired "big-picture" outcomes from the patient's perspective.
- In some cases, it is appropriate to include a specified parameter, desired value(s), and a timeframe for achieving a goal of therapy (for example, setting a goal of smoking abstinence or achieving a blood pressure target by a particular date). In other cases, the goal is a large health outcome where these details are not required (for example, preventing a cardiovascular event or death).

Therapeutic Alternatives

- When listing the therapeutic alternatives, identify possible (reasonable) choices for therapy (pharm and/or non-pharm) and evaluate the advantages and disadvantages of each based on evidence, patient preference and medication experience, and merits for adherence/access. The IESA strategy used in identifying DTPs can be used to evaluate alternatives as well. In the case where drug therapy is not indicated or an ADR DTP has been identified, a therapeutic alternative could be stopping a pharmacotherapy (deprescribing).
- This step facilitates critical thinking and application of evidence based medicine to justify what will be implemented in the plan.
    - PRACTICAL TIP: Don't list a therapeutic alternative that is obviously a poor option (i.e. contraindicated or not available) for your patient. For example, listing amoxicillin as an

alternative for a person with a well documented anaphylactic allergy to penicillin and then reciting evidence to support it but ultimately stating the disadvantage is a "contraindication due to allergy" is a waste of time. Debate the alternatives that are truly reasonable alternatives for your patient.

Introduction

- A plan includes recommendations along with a monitoring and follow up plan to achieve the goals of therapy.
- In developing a plan, the pharmacist collaborates with the patient (and/or their agent/caregiver) as well as other health care professionals (as appropriate) to address the DTPs.
- After determining DTPs and completing your assessment, summarize the findings of your assessment back to the patient/family in a way that is meaningful to them.
- Assess and build health literacy by checking the patient's knowledge and understanding of the clinical issues/condition/symptoms, what can be done to address them (pharmacological and non-pharmacological categories), why it may benefit them personally and fill in any knowledge gaps the patient may have.
- Engage the patient in shared decision making and collaborative goal setting by developing a plan in partnership with the patient (and/or their agent/caregiver) considering their priorities and goals while balancing duty of care with the patient's informed decisions.

Recommendation(s)

- In collaboration with the patient/agent and other health care providers (as applicable), decide on a course of action and follow up plan. The decision may be a recommendation for adding, changing, or removing a pharmacotherapy (prescribe/deprescribe, recommend, or refer) and/or non-pharmacotherapy.
    - Ensure pharmacologic considerations are made for safe deprescribing (e.g. taper vs immediate withdrawal).
- Assess and address the patient/agent's readiness, importance, and confidence to take proposed actions/decisions.
- Explore any barriers to the action plan and collaboratively problem solve together.
- The recommendation should be accompanied by patient education to address knowledge gaps and support self-management skill development.
    - The recommendation is largely informed by a debate of the therapeutic alternatives in the previous step and engaging the patient through principles of shared decision making and collaborative goal setting.
- Consider any referrals or other supports that are needed

Monitoring Plan and Follow-Up

- A critical component of the plan is the monitoring and follow up plan.
- The last step of the Patient Care Process is to reassess the patient, using the data collected through monitoring and follow-up to inform the ongoing plan and next steps based on efficacy and safety. If not achieved include options for a different strategy/decision that could be considered.
- The following table outlines details regarding selecting appropriate monitoring parameters and determining how to best follow them up.

Components of the Plan for Monitoring and Follow-up

Monitoring Parameter	Responsibility	Target/Goal Threshold of Concern	Time Frame and/or Frequency	Action Required
Should be specific • For example "side effects" is too vague and does not communicate what is specifically being monitored. For example, the patient would monitor for muscle weakness or palpitations with hyperkalemia. **Should be measurable** • Consider if it parameter can be measured with numbers, a percentage, a description, or is absolute (present/not present) **Should be a parameter (and not an outcome)** • For example, you may monitor potassium to watch for hyperkalemia. State the parameter here (potassium level) and not the outcome (hyperkalemia)	**Be clear on who will monitor the parameter** • Will it be the patient, you as the pharmacist, or a different health care provider? • If the patient is responsible, they must be educated to monitor and have an action plan if there are concerns and who to report the outcomes to.	**Choose a value** • Whenever possible, the target/goal or threshold should be a specific VALUE to align with the measurable parameter • Examples are a numerical value, a degree of change, a specific description, or an absolute (present/not present) **Effectiveness** • Remember how a parameter from column one should be specific, measurable, and stated as a parameter (not an outcome)? Here is where you can state the desired target or goal that you are looking to achieve with pharmacotherapy. • For example, if a parameter is blood pressure after starting a new antihypertensive, here you could state a target of systolic BP < 120 mmHg • Sometimes effectiveness targets/goals can be thought of as disease-specific parameters **Safety** • Remember how the parameter in column one should be specific, measurable, and stated as the parameter (instead of the outcome)? Here is where you state the actual measurement/value that would indicate an outcome of concern. • For example, if monitoring potassium after starting an ACE inhibitor, the threshold of concern may be a potassium level of >5 mmol/L. • Sometimes, safety thresholds can be thought of as drug-specific parameters.	**When will the parameter be monitored?** • Consider how soon the outcome of interest may occur • Consider how frequently the parameter measurement may change • Consider the length of time until the parameter measurement will fully reflect the impact of the pharmacotherapy • Avoid vague terms like "ongoing" or "indefinitely" • In the example of potassium as a monitoring parameter, when is it most appropriate (based on the effectiveness and safety of the pharmacotherapy) to have the patient repeat their electrolytes? • In the example of blood pressure, how frequently should the BP be measured, when will the target be reached, and when would it be best for the pharmacist to review the BP readings?	**Consider the next steps for reassessment if the target/goal is not met or the threshold of concern is crossed:** **Effectiveness** • If the target or goal is not reached in the time frame specified, what would be the reasonable next step(s)? Continue to monitor or adjust the pharmacotherapy or something else? **Safety** • If the threshold of concern occurs, what would be the reasonable next step(s)? Continue to monitor, discontinue therapy, replace therapy, something else?

Documentation

Collected patient data, assessment, and plan including goals, alternatives, recommendations and plans for monitoring and follow-up should be documented. See DOCUMENTATION for more information on how to document.

Pharmacy Care Plan Worksheet

CREATE PATIENT DATABASE: Consider what data are relevant for each specific patient care scenario (timeliness, relevance to the reason for assessment and/or impacted medical condition/therapy, whether the patient is known or new, practice setting)

PATIENT ASSESSMENT: DETERMINE DTPs: List each medical condition and/or medication first (matching by indication where able), followed by any DTPs identified for a given condition. Although some medical conditions or medications may not have a DTP, a plan is still necessary for ongoing patient monitoring.
DTP Categories: unnecessary drug ● drug therapy required● ineffective drug ● dose too low ● adverse drug reaction ● dose too high ● non/over-adherence

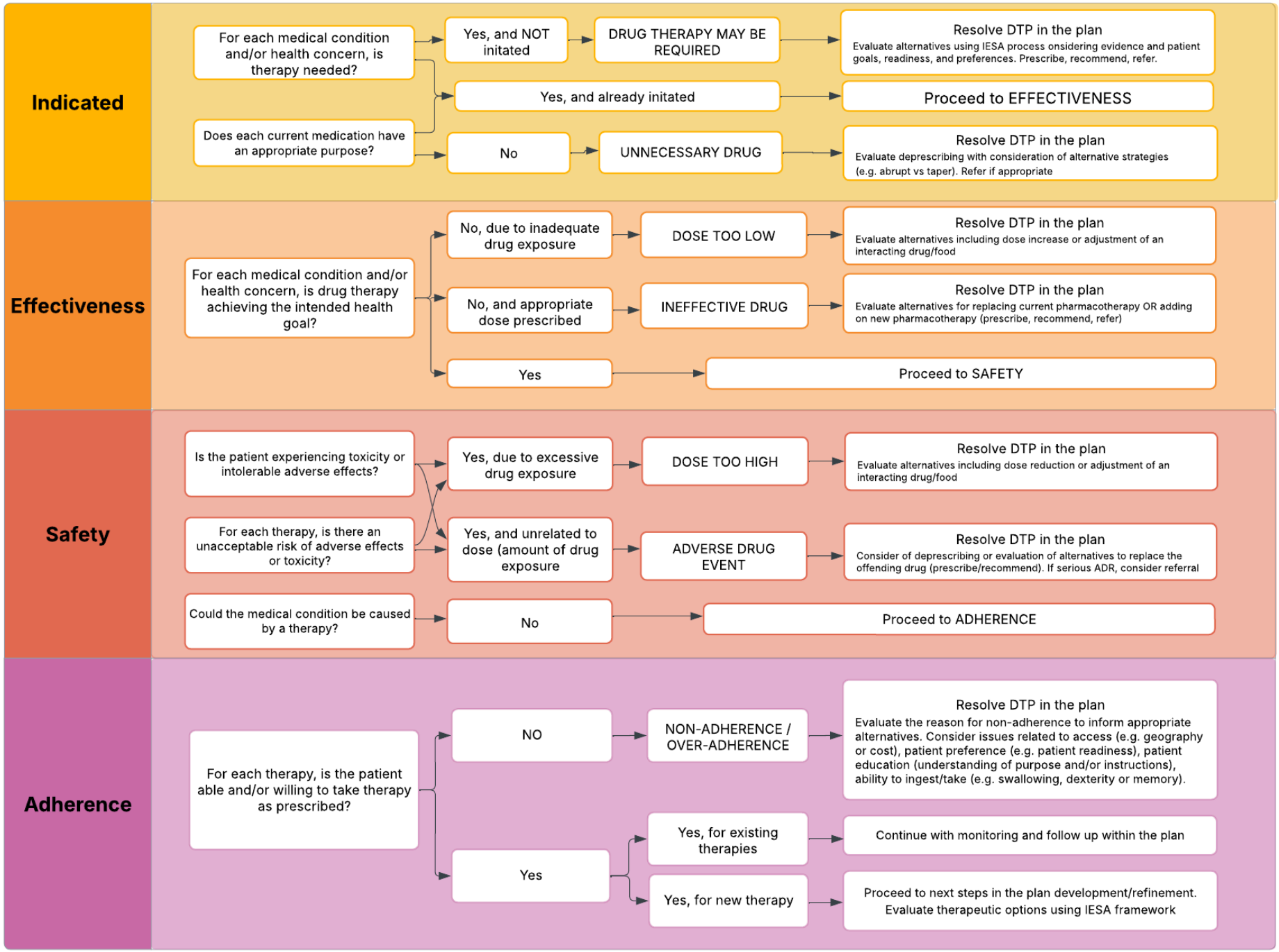
PATIENT ASSESSMENT: GOALS OF THERAPY: State desired goals of therapy +/- timeframe (as appropriate) that outline key outcomes important to the patient's health. Goals: cure, prevent, slow/stop progression, reduce/eliminate symptoms, achieve target.
Consider realistic goals determined through patient discussion. Goals of therapy are measurable or observable outcomes to evaluate the effectiveness and safety of therapy.

PATIENT ASSESSMENT: THERAPEUTIC ALTERNATIVES: Compare relevant drug and non-drug therapies that will produce desired goals. List the *pros* and *cons* of each therapy as well as the rationale for each being included.
Consider: Indication ● Effectiveness ● Safety ● Adherence (including cost and access)

PLAN: MAKE A DECISION: In collaboration with the patient and other health care providers (as applicable), select the best alternative and implement the plan (prescribe/deprescribe, recommend, or refer). Provide a rationale for the chosen plan relative to the other alternatives considered. Address the patient/agent's readiness, importance, confidence. Explore any barriers to the action plan and collaboratively solve. *Consider: Drugs: correct drug, formulation, route, dose, frequency, schedule, duration, medication management. Non-drug: non-drug measures, education, patient referral.*
PLAN: MONITORING: Determine the specific parameters for monitoring effectiveness and *safety* for each therapy, who is responsible for monitoring, what the target/goal (effectiveness) or threshold for concern (safety) are, when the parameter will be monitored and what the next step might be if the target/goal is not met (effectiveness) or the threshold for concern is crossed (safety).
PLAN: FOLLOW-UP: Document what, *who, how* and *when* follow-up will occur.

Adapted with permission from the Division of Pharmacy Practice, Leslie Dan Faculty of Pharmacy, University of Toronto, 2011

Pathway to Identifying and Resolving Drug Therapy Problems



Created May 2025 (original design by Deon Druteika, AHS Pharmacy Services)

Glossary of Terms

- **Acute Care** provides short-term, immediate medical treatment for patients experiencing sudden illnesses, injuries, or complications from chronic diseases; typically delivered in a hospital/institutional setting (Hospital unit, Emergency Department)
- **Best Possible Medication History** (BPMH) is a comprehensive approach to gathering a patient's medication information, both prescribed and non-prescribed, using multiple sources of information to ensure a complete and accurate list. A BPMH is necessary to perform medication reconciliation.
- **Care Plans** include interventions to achieve goals of therapy for each medical condition the patient has or is at risk of, to resolve identified drug therapy problems and prevent new problems, and to monitor and follow up at appropriate time points.
- **Circle of Care**[1] means the group of regulated health professionals, patient caregivers, and other individuals identified by a patient who work in collaboration with the patient and who are responsible for elements of providing or supporting the patient's care.
- **Comprehensive Annual Care Plan** (CACP) is a service remunerated by Alberta Health through payments to pharmacies for patients with specific complex needs.
- **Clinical problem** means any issue that a patient may have related to their health, which may or may not involve drug therapy
- **Deprescribing**[1] means the planned process of reducing or stopping drugs that may no longer be of benefit or may be causing harm
- **Drug interactions** occur when the effect of a medication is altered by the presence of another substance (drug, food, medical condition, laboratory tests, or blood products)
- **Drug therapy problem statement** means a formal statement describing an undesirable event or risk of an event experienced by the patient, the drug therapy involved, and the evidence that supports the problem.
- **Electronic Medical Record** is a digital version of a patient's paper chart maintained by a healthcare provider or organization. It contains the medical and treatment history of patients within that specific practice or clinic and is used primarily for diagnosis, treatment, and ongoing care.
- **Goals of Therapy** are important clinical outcomes that can be achieved with therapy and are relevant to the patient's overall health needs, goals, and expectations
- **Health Literacy** is the ability of individuals to find, understand, evaluate, and use health information and services to make informed decisions about their health and the health of others.
- **Inpatient care** involves the patient being admitted to a hospital or other care facility, where they stay overnight for medical treatment.
- **Medication Reconciliation** involves using a best possible medication history (BPMH) and comparing it to the admission, transfer, and/or discharge medication orders to identify and resolve discrepancies, to prevent medication errors.
- **Outpatient care**, also known as ambulatory or day patient care, involves receiving medical treatment at a hospital or clinic, without staying overnight
- **Patient/client** means any person to whom a pharmacist provides a professional service.
- **Patient agenda** refers to the set of concerns, expectations, needs, and/or goals that a patient brings to a healthcare encounter.
- **Patient's agent**[1] means a person who acts on behalf of a patient (e.g. family member, caregiver, public guardian)

- **Patient Goals** are the desired health outcomes or life objectives that a patient identifies as important in the context of their healthcare.
- **Patient Preferences** are the personal values, cultural beliefs, and choices about how care is delivered
- **Patient Record** (also known as a medical record or health record) is a comprehensive, confidential document (electronic or paper) that contains detailed information about a patient's health history, medical care, and treatment over time. It serves as a central communication tool among healthcare professionals involved in the patient's care
- **Person-centred**[1] means care approaches and practices that see a patient as a whole with many levels of needs and goals, with these needs coming from their own personal social determinants of health
- **Prescribe** means taking responsibility to write a prescription at initial access or to manage ongoing therapy.
- **Prescriber** means a regulated health professional who is authorized to prescribe Schedule 1 drugs under the *Health Professions Act*
- **Primary care** involves all services patients receive for their basic, everyday health needs from any primary health care provider (family physician, pharmacist, physiotherapist, psychologist)
- **Red Flags** are clinical signs or symptoms that may indicate the presence of a serious or potentially life-threatening condition in a patient.
- **Self Care** refers to the activities individuals undertake to maintain health, prevent illness, and manage minor ailments - often with the support of healthcare professionals, including pharmacist. It encompasses informed and responsible use of non-prescription medications, natural health products, and health monitoring tools, along with lifestyle modifications such as nutrition, physical activity, and stress management.
- **Shared decision making (SDM)** in healthcare is a collaborative process that involves both healthcare professionals and patients working together to make informed decisions about the patient's care. SDM ensures that patients are actively engaged in their healthcare decisions, leading to choices that align with their personal goals and improve satisfaction with care.
- **Signs** are objective findings that can be observed or measured by a healthcare professional (e.g. blood pressure, rash)
- **Standard Medication Management Assessment (SMMA)** criteria are services remunerated by Alberta Health through payments to pharmacies for patients who meet specific criteria
- **Symptoms** are subjective experiences reported by the patient (e.g. pain, fatigue)
- **Virtual Care**[2] is any interaction between patients and regulated members that includes the provision of a professional service and occurs remotely using an enabling technology

[1]Alberta College of Pharmacy Standards of Practice for Pharmacists and Pharmacy Technicians. February 2025.
[2]Alberta College of Pharmacy Standards of Practice for Virtual Care. January 2025.

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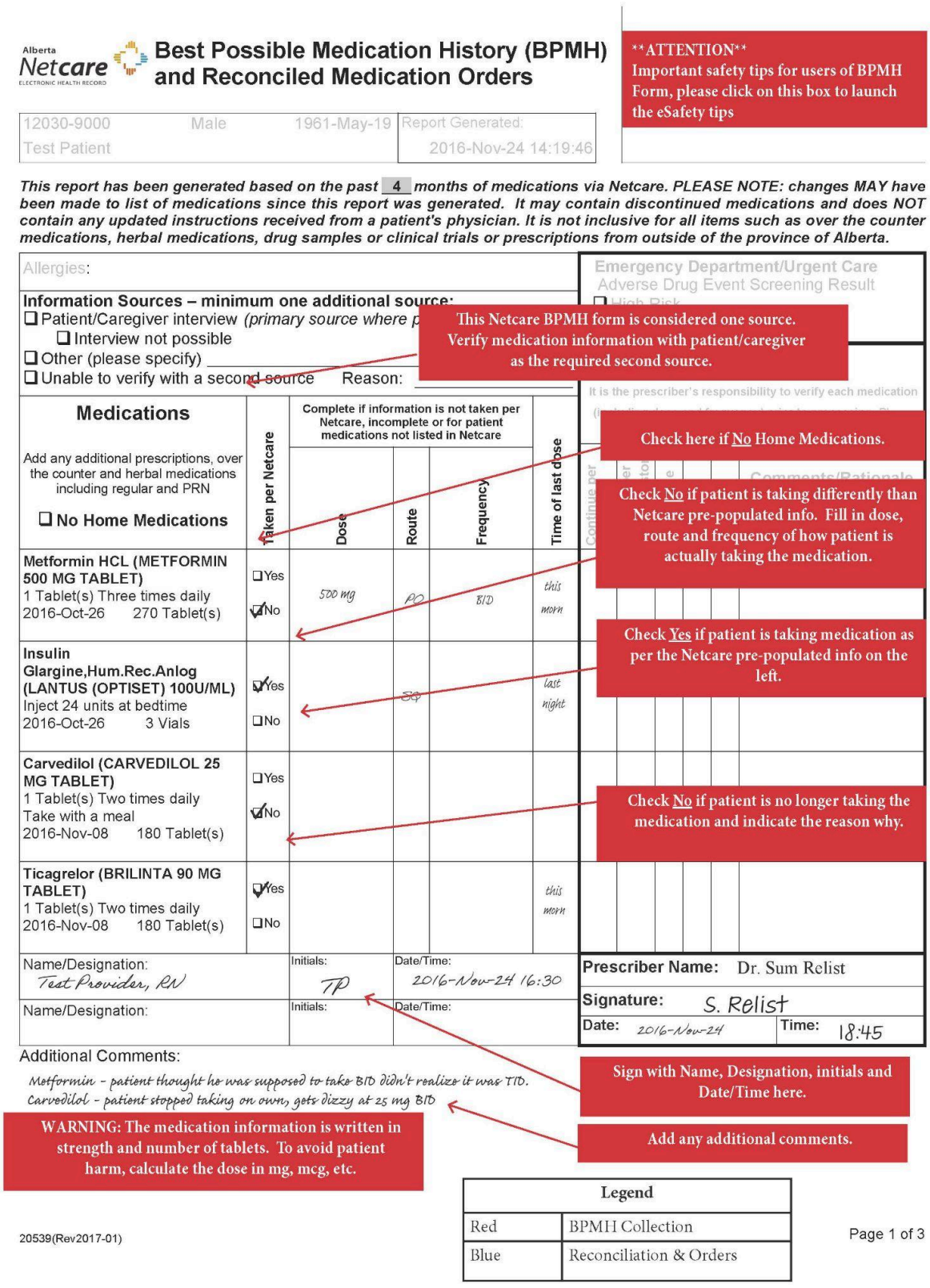
Annotated BPMH and Medication Reconciliation



Alberta Netcare ELECTRONIC HEALTH RECORD

Best Possible Medication History (BPMH) and Reconciled Medication Orders

ATTENTION
Important safety tips for users of BPMH Form, please click on this box to launch the eSafety tips

12030-9000 Male 1961-May-19 | Report Generated: 2016-Nov-24 14:19:46
Test Patient

This report has been generated based on the past 4 months of medications via Netcare. PLEASE NOTE: changes MAY have been made to list of medications since this report was generated. It may contain discontinued medications and does NOT contain any updated instructions received from a patient's physician. It is not inclusive for all items such as over the counter medications, herbal medications, drug samples or clinical trials or prescriptions from outside of the province of Alberta.

Allergies:

Emergency Department/Urgent Care
Adverse Drug Event Screening Result
☐ High Risk

Information Sources – minimum one additional source:
☐ Patient/Caregiver interview *(primary source where p*
☐ Interview not possible
☐ Other (please specify) _____
☐ Unable to verify with a second source Reason: _____

It is the prescriber's responsibility to verify each medication

This Netcare BPMH form is considered one source. Verify medication information with patient/caregiver as the required second source.

Check here if No Home Medications.

Check No if patient is taking differently than Netcare pre-populated info. Fill in dose, route and frequency of how patient is actually taking the medication.

Check Yes if patient is taking medication as per the Netcare pre-populated info on the left.

Check No if patient is no longer taking the medication and indicate the reason why.

Medications Add any additional prescriptions, over the counter and herbal medications including regular and PRN ☐ No Home Medications	Taken per Netcare	Complete if information is not taken per Netcare, incomplete or for patient medications not listed in Netcare Dose	Route	Frequency	Time of last dose
Metformin HCL (METFORMIN 500 MG TABLET) 1 Tablet(s) Three times daily 2016-Oct-26 270 Tablet(s)	☐Yes ☑No	500 mg	PO	BID	this morn
Insulin Glargine,Hum.Rec.Anlog (LANTUS (OPTISET) 100U/ML) Inject 24 units at bedtime 2016-Oct-26 3 Vials	☑Yes ☐No	Sig			last night
Carvedilol (CARVEDILOL 25 MG TABLET) 1 Tablet(s) Two times daily Take with a meal 2016-Nov-08 180 Tablet(s)	☐Yes ☑No				
Ticagrelor (BRILINTA 90 MG TABLET) 1 Tablet(s) Two times daily 2016-Nov-08 180 Tablet(s)	☑Yes ☐No				this morn

Name/Designation:	Initials:	Date/Time:
Test Provider, RN	TP	2016-Nov-24 16:30
Name/Designation:	Initials:	Date/Time:

Prescriber Name: Dr. Sum Relist
Signature: S. Relist
Date: 2016-Nov-24 **Time:** 18:45

Additional Comments:
Metformin - patient thought he was supposed to take BID didn't realize it was TID.
Carvedilol - patient stopped taking on own, gets dizzy at 25 mg BID

Sign with Name, Designation, initials and Date/Time here.

Add any additional comments.

WARNING: The medication information is written in strength and number of tablets. To avoid patient harm, calculate the dose in mg, mcg, etc.

Legend	
Red	BPMH Collection
Blue	Reconciliation & Orders

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Page 1 of 3

Alberta Netcare ELECTRONIC HEALTH RECORD

Best Possible Medication History (BPMH) and Reconciled Medication Orders

Affix patient label

12030-9000	Male	1961-May-19	Report Generated:
Test Patient			2016-Nov-24 14:19:46

It is the prescriber's responsibility to review each medication on the list and check the appropriate order box.

This report has been generated based on the ___ months of medications via Netcare.4 PLEASE NOTE: changes MA have been made to list of medications since this contain all items trials or

Continue per Netcare column - Check this box if you want to continue what has been pre-populated from Netcare as the left hand side of the form indicates.

Continue per verified history column - Check this box if you want to continue what has been handwritten in the dose, route, and frequency columns.

Include comments and/or rationale for any meds to be discontinued, held, or changed.

Prescriber Orders

It is the prescriber's responsibility to verify each medication (including dose and frequency) prior to processing.

Please enter into electronic order entry system where applicable

Medications Add any additional prescriptions, over the counter and herbal medications	er Netcare	Complete if information is not taken per Netcare, incomplete or for patient medications not listed in Netcare		cy	Time of last dose	Continue per Netcare	Continue per verified history	Discontinue	Hold	Change	Comments/Rationale for Discontinuations, Holds and Changes
(ALTACE HCT 10-12.5 MG TABLET) 1 Tablet(s) once a day 2016-Nov-08 90 Tablet(s)	☑Yes ☐No									✓	ramipril 10 mg PO daily hydrochlorothiazide 25 mg PO daily BP not controlled
Rosuvastatin Calcium (ROSUVASTATIN 20 MG TABLET) 1 Tablet(s) once a day 2016-Nov-08 90 Tablet(s)	☑Yes ☐No				this morn	✓					
Insulin Aspart (NOVORAPID 2016-Oct-26 45 Cartridge(s)											
Colchicine (COLCHICINE 0.6 MG TABLET) 1 Tablet(s) twice daily x3 days 2016-Oct-26 6 Tablet(s)	☐Yes ☑No	only when gout attack			3 mos ago			✓			Not required at this time

Name/Designation:	Initials:	Date/Time:
Test Provider, RN	TP	2016-Nov-24 16:30
Name/Designation:	Initials:	Date/Time:

Prescriber Name: Dr. Sum Relist

Signature: S. Relist

Date: 2016-Nov-24 **Time:** 18:45

Prescriber to print Name, Sign, Date and Time here.

Orders/Copies sent to:
- ☐ Pharmacy or Entered into electronic order entry system Time: _____
- ☐ Primary Care Provider
- ☐ Community Pharmacy
- ☐ Home Care
- ☐ Updated medication list provided to patient or caregiver

Additional Comments:

Legend	
Red	BPMH Collection
Blue	Reconciliation & Orders

20539(Rev2017-01)

Alberta Netcare ELECTRONIC HEALTH RECORD

Best Possible Medication History (BPMH) and Reconciled Medication Orders

Affix patient label

12030-9000	Male	1961-May-19	Report Generated:
Test Patient			2016-Nov-24 14:19:46

4

Don't forget to reconcile other medications not pre-populated on this form.

Prescriber Orders

It is the prescriber's responsibility to verify each medication (including dose and frequency) prior to processing.

Please enter into electronic order entry system where applicable

Medications Add any additional prescriptions, over the counter and herbal medications including regular and PRN	Dose	Route	Frequency	Time of last dose	Continue per Netcare	Continue per verified history	Discontinue	Hold	Change	Comments/Rationale for Discontinuations, Holds and Changes
Aspirin	81 mg	PO	Daily			✓				
Multivitamin	1 tab	PO	Daily					✓		not required while in hosp
Nitro Spray 0.4 mg per spray	1 spray	SL	Q5 min repeat x3			✓				
has not needed to use in last 8-9 months										

List other over-the-counter (OTC) medications such as vitamins, herbals and supplements or other prescribed medications not listed on the Netcare form in the blank spaces provided.

Name/Designation:	Initials:	Date/Time:
Test Provider, RN	TP	2016-Nov-24 16:30
Name/Designation:	Initials:	Date/Time:

Prescriber Name: Dr. Sum Relist

Signature: S. Relist

Date: 2016-Nov-24 **Time:** 18:45

Orders/Copies sent to:

- ☑ Pharmacy or Entered into electronic order entry system — Time: 19:00
- ☐ Primary Care Provider
- ☐ Community Pharmacy
- ☐ Home Care
- ☐ Updated medication list provided to patient or caregiver

Additional Comments:

Process orders as per usual practice (e.g. send to Pharmacy or enter orders into electronic system).

If applicable, document and communicate to the patient and/or next healthcare provider. Check off the box(es) as appropriate.

Legend	
Red	BPMH Collection
Blue	Reconciliation & Orders