LONGITUDINAL ASSESSMENT OF THE PHARMACY RESIDENT

THE SASKATOON HEALTH REGION EXPERIENCE

Barb Evans, BSP, ACPR, MSc, FCSHP

May 11, 2017

OBJECTIVES

At the conclusion of the webinar, the participant shall:

- Describe the role of formative and competency based assessments in longitudinal learning
- Appreciate the process used to develop forms and processes to support longitudinal learning in the SHR
- Understand the longitudinal assessment process employed in the SHR
- Understand the role of self-assessment by pharmacy residents

DEFINITIONS

- Assessment:
  - Measurement for the purpose of improving
  - Focuses on learning, teaching, and outcomes
  - Diagnostic – identify areas for improvement; focus is on how the learning is going
    - Formative feedback: goal is to monitor learning by providing ongoing, immediate feedback
    - Midpoint assessments
- Evaluation:
  - Observing and measuring for the purpose of judging and determining its value
  - Arrive at an overall grade or score
  - Focus – what has been learned
    - Final evaluation for each rotation
    - Summative: evaluate resident learning at the end of an instructional unit by comparing to a standard or benchmark

QUESTION 1

Think back to 2007. CHPRB (now CPRB) is planning to introduce competency based standards. You and your team review the draft standards. Your initial reaction is:

a) No problem. We have one of the best programs in Canada. No changes to our program will be required.
b) What is the Residency Board talking about? What is competency based standards and how will this affect our program?
c) OMG! Is the Residency Board crazy? We don't have time to convert our program to competency based.
d) All of the above.

BACK IN TIME

- Its 2007 and we are exposed to our first look at the draft 2010 CHPRB accreditation standards

Shock

DENIAL

FRUSTRATION

DEPRESSION

- Decision to let go

EXPERIMENT

- Engagement with a new situation
- Search for the new
- Focused exploration

DECISION

- Feeling more positive
- Refine purpose
- Learn how to work in a new situation
- Commitment
- Team work

INTEGRATION

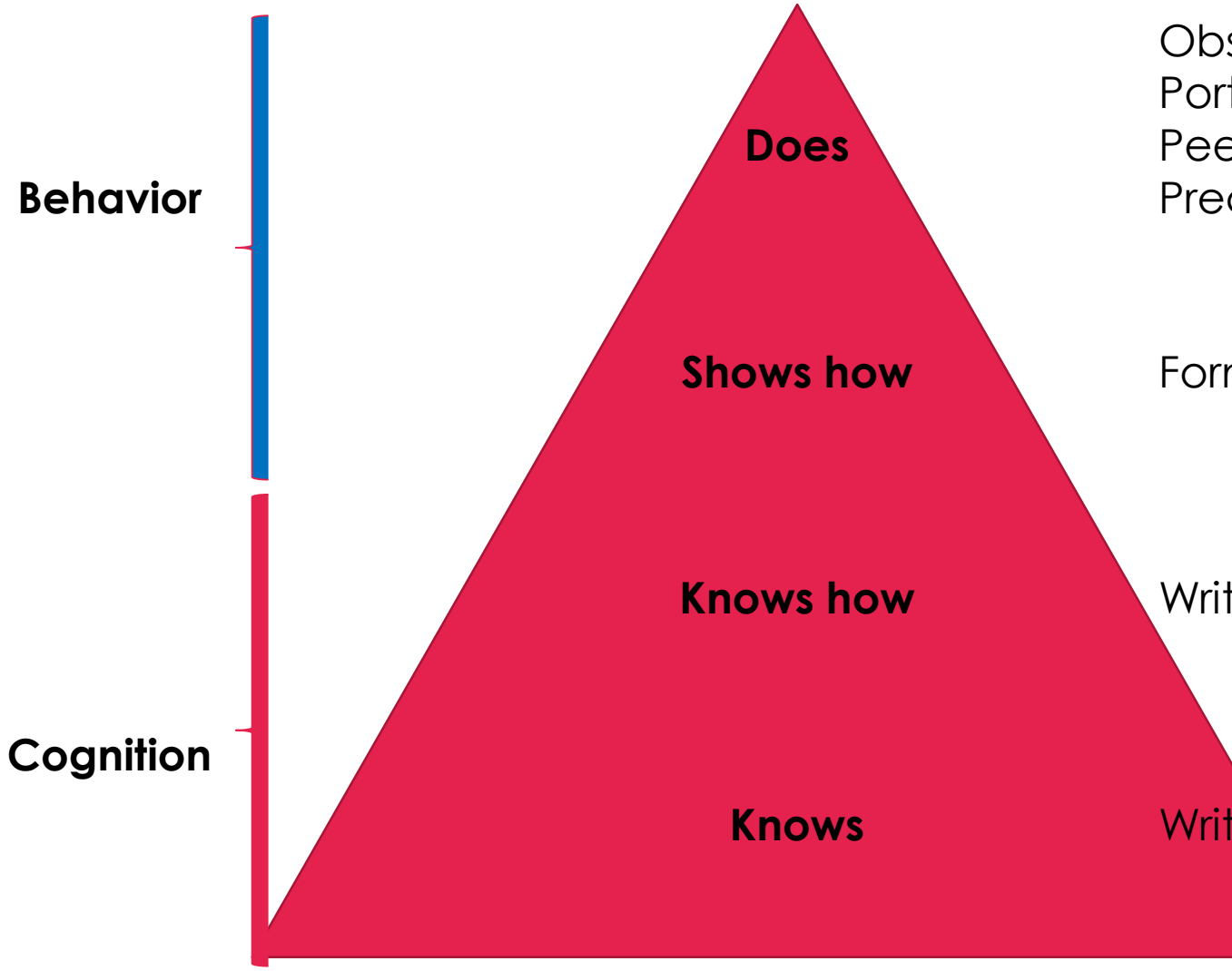
- Excitement
- Test and refine

QUESTION 2

Reflect on your residency program. It focuses on development of:

a) Knowledge
b) Skills
c) Process
d) All of the above

ASSESSING LEVELS OF COMPETENCE



Observation
Portfolios – self-reflection
Peer assessment
Preceptorship

Formative assessments

Written, verbal assessment

Written , verbal assessment

Miller GE. Academic Medicine 1990
Shumway JM. Medical Teacher 2003.

ROAD TO A COMPETENCY BASED PROGRAM

- Education – Director, Residency Coordinator, Preceptors, Residents
  - Self-study
  - CPRB sponsored events
  - Networking opportunities
  - Consulted with experts in adult education, locally and nationally
  - Experience below the 49th parallel
- Gap analysis
  - Compared current program to 2010 standards

EARLY DECISIONS

- Rotations
  - 2 immersions, 6-8 weeks in length
    - Focus: Process, skills
  - Excursions
    - Focus: Knowledge in specific clinical area, reaffirmation of process/skills specific to clinical area
- Recognition of the need for a greater emphasis on longitudinal learning

QUESTION 3

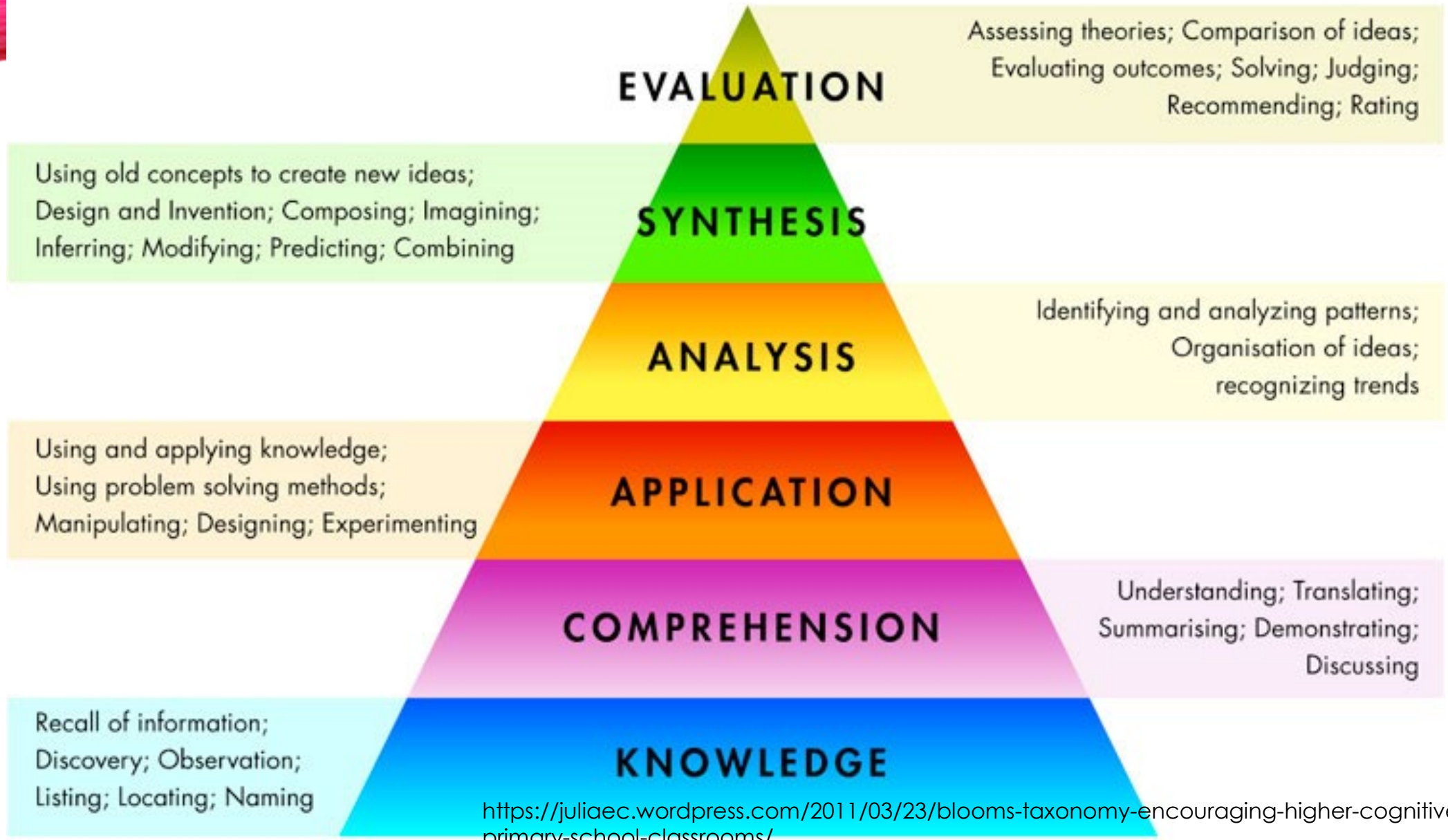
Our program has adopted the following taxonomy of learning domains to support development of objectives for all rotations:

a) Bloom's
b) SOLO
c) Krathwohl
d) Other
e) Taxonomy? We don't use one

EARLY DECISIONS

- Adoption of bloom's taxonomy of learning domains for statement of objectives
  - Recognition of need to move away from knowledge and exposure to as many areas as possible to development of a competency
  - Preceptor responsible for creating objectives for rotation
    - Core set of objectives developed for:
      - Immersion rotations
      - Excursion rotations
  - Reviewed and approved at RAC

BLOOMS TAXONOMY



https://juliaec.wordpress.com/2011/03/23/blooms-taxonomy-encouraging-higher-cognitive-thinking-in-primary-school-classrooms/

OBJECTIVE EXAMPLE

Link to standards met

3. **Develops a patient database from the health record, the patient, family members, other caregivers, and other healthcare professionals (CHPRB 3.1.4.A, 3.1.4.C, 3.1.4.D)**

   Collects and organizes required patient-specific information to facilitate identification, prevention, and resolution of drug-related problems and makes appropriate evidence-based, patient-centered recommendations **[Analysis]**

Taxonomy goal

   Establishes collaborative, respectful, professional relationships with the patient, family members, and/or caregivers **[Synthesis]**

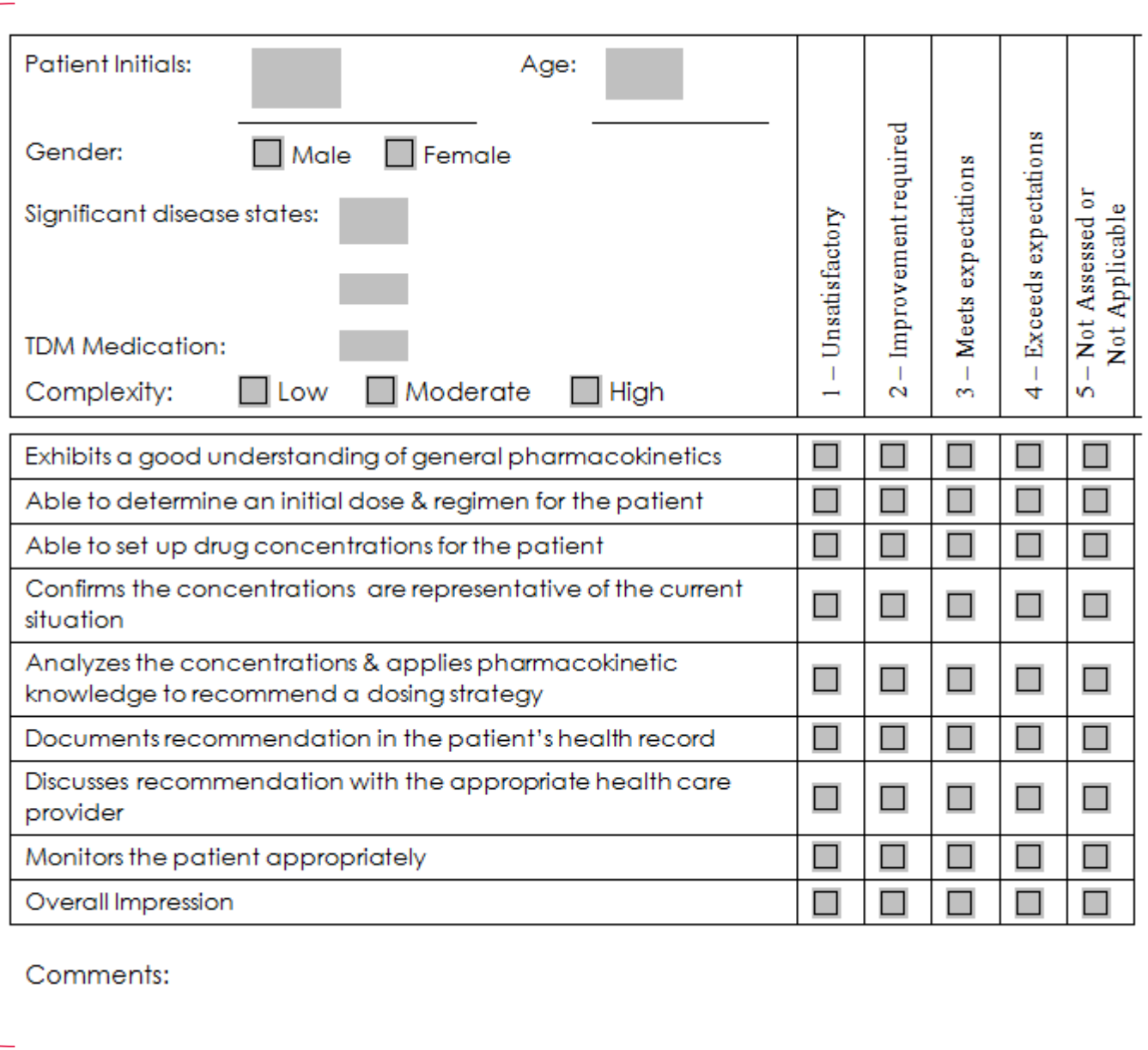
   - Interviews patient and/or their caregivers, in an organized, thorough, and timely manner **[Comprehension]**

EARLY DECISIONS

- Decision to incorporate component of formative and summative feedback
- Identification of 'key skills' for formative assessments
  - Care plan, documentation, TDM, education, drug information, admission medication reconciliation, medication education, written assignment
  - Creation of rubrics for each core skill
  - Reviewed and approved at RAC
- Preceptor observes, provides immediate verbal feedback followed by written summary
  - Written summary is saved to resident's file

Formative feedback example
For TDM

- Comments to support findings located beneath the table



Patient Initials:	Age:	1 – Unsatisfactory	2 – Improvement required	3 – Meets expectations	4 – Exceeds expectations	5 – Not Assessed or Not Applicable
Gender: ☐ Male ☐ Female						
Significant disease states:						
TDM Medication:						
Complexity: ☐ Low ☐ Moderate ☐ High						
Exhibits a good understanding of general pharmacokinetics		☐	☐	☐	☐	☐
Able to determine an initial dose & regimen for the patient		☐	☐	☐	☐	☐
Able to set up drug concentrations for the patient		☐	☐	☐	☐	☐
Confirms the concentrations are representative of the current situation		☐	☐	☐	☐	☐
Analyzes the concentrations & applies pharmacokinetic knowledge to recommend a dosing strategy		☐	☐	☐	☐	☐
Documents recommendation in the patient's health record		☐	☐	☐	☐	☐
Discusses recommendation with the appropriate health care provider		☐	☐	☐	☐	☐
Monitors the patient appropriately		☐	☐	☐	☐	☐
Overall Impression		☐	☐	☐	☐	☐

Comments:

Rubric

Key:

1 – Unsatisfactory: An unacceptable resident performance.

2 – Improvement required
- Poor understanding of general pharmacokinetics
- Does not set up levels consistent with SHR Pharmacy Department policy
- Sets up levels at inappropriate times or too frequently
- Does not establish minimum monitoring parameters

3 – Meets expectations
- Good understanding of general pharmacokinetics
- Aware of the guidelines surrounding levels (e.g., phlebotomy hours)
- Levels are set up at appropriate times & communicated to nursing staff
- Levels are added to the levels list, when appropriate
- Patient's health record & MAR are checked to ensure there were no problems with drug administration
- Ensures minimum monitoring parameters are met (e.g., SCr thrice weekly)
- Clearly communicates recommendation to health care providers

4 – Exceeds expectations
- Excellent understanding of general pharmacokinetics
- Ability to theorize/apply pharmacokinetic knowledge to come up with a recommendation in situations where there is a problem with the drug levels

Created: July 2011
Revised: June 2013, May 2016

EVALUATION OF BEHAVIOR & SKILLS

- Creation of in-house rubric for summative evaluation of behavior and skills
  - Sub-group of RAC
  - Categories
    - Approachability
    - Attitude
    - Composure
    - Conflict management
    - Dealing with ambiguity
    - Patient focused
    - Plan & prioritize daily activities
    - Privacy
    - Professionalism
    - Problem solving skills
    - Perception of context

EXAMPLE – PLAN & PRIORITIZE ACTIVITIES

Plan & prioritize daily activities	Midpoint	1 ☐	2 ☒	3 ☐	4 ☐	5 ☐
	Final	1 ☐	2 ☐	3 ☒	4 ☐	5 ☐
		Assignments/tasks frequently delayed or poor quality. Unable to prioritize activities. Needs close supervision or instruction.		Satisfactorily completes assignments/tasks with minimal to no delay & using own judgment. Able to prioritize activities/tasks (i.e., what must be completed today & what can wait).		Independently works proactively to complete multiple assignments/tasks beyond expectation without delay. Takes responsibility to go beyond existing standards; creates own interpretation.
Evidence to Support	Midpoin[redacted] currently requires a significant amount of guidance and continued prompting to complete certain tasks. To assist with conquering this challenge[redacted] has created a standardized process which he will apply to each patient. Final: Less guidance required during second half of rotation. For next rotation (i.e. primary care) needs to start increasing the number of patients monitored at any given time and the efficiency of providing care. Met all the deadlines set in the rotation.					

EARLY DECISIONS

- Adoption of Dreyfus and Dreyfus for competency assessments of patient care competencies
  - Novice, beginner, competent, proficient, expert
  - Identification of methods to confirm attainment of competency
    - Post test
    - Demonstration/observation
    - Case studies/discussion group
    - Exemplar
    - Peer review
    - Presentation
  - Story to support

DREYFUS & DREYFUS

	Knowledge	Standard of work	Autonomy	Coping with complexity	Perception of context
1. **Novice**	Minimal, or 'textbook' knowledge without connecting it to practice	Unlikely to be satisfactory unless closely supervised	Needs close supervision or instruction	Little or no conception of dealing with complexity	Tends to see actions in isolation
2. **Beginner**	Working knowledge of key aspects of practice	Straightforward tasks likely to be completed to an acceptable standard	Able to achieve some steps using own judgement, but supervision needed for overall task	Appreciates complex situations but only able to achieve partial resolution	Sees actions as a series of steps
3. **Competent**	Good working and background knowledge of area of practice	Fit for purpose, though may lack refinement	Able to achieve most tasks using own judgement	Copes with complex situations through deliberate analysis and planning	Sees actions at least partly in terms of longer-term goals
4. **Proficient**	Depth of understanding of discipline and area of practice	Fully acceptable standard achieved routinely	Able to take full responsibility for own work (and that of others where applicable)	Deals with complex situations holistically, decision-making more confident	Sees overall 'picture' and how individual actions fit within it
5. **Expert**	Authoritative knowledge of discipline and deep tacit understanding across area of practice	Excellence achieved with relative ease	Able to take responsibility for going beyond existing standards and creating own interpretations	Holistic grasp of complex situations, moves between intuitive and analytical approaches with ease	Sees overall 'picture' and alternative approaches; vision of what may be possible

From the professional standards for conservation, Institute of Conservation (London) 2003 based on the Dreyfus model of skill acquisition.

Competency

Method of Validation

Evidence

Example of Self-assessment

D. Competency Assessment

	Objective Assessment					Validation Method* (✓)								Evidence	
Core Competency	Novice	Beginner	Competent	Proficient	Expert	Attended educational event	Drug information question	Monitored patient	Self-study (e.g. reading)	Therapeutic Discussion	Presentation	Written Summary	N/A	Formative	Comments Below
Establishes collaborative professional relationships with HC team															
Midpoint	☐	☐	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒
Final	☐	☐	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒
Demonstrates good verbal communication skills															
Midpoint	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒
Final	☐	☐	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒
Evidence to support attainment of competency (if no formative feedback)	Midpoint:--introduced self to nursing and to MDs in order to improve patient care. Willing to page MDs to clarify orders, and solve DTPS. --Clear and concise written communication. Oral communication can have improvement (tendency to say ummm when thinking --> should replace with I just need 10s to think about this, Or I'll phone you back shortly with an answer. Final: Introduced self to other HCPs. Became familiar with some staff (knew some MDs by name and face, and they knew who I was). Dicussed issues with doctors and nurses where applicable. Opinion was valued as changes were often made in accordance with my suggestions. --Worked on preparing SBAR format prior to phoning physicians so I could clearly communicate my suggestions. (lots of suggestions made: corrections of home medications for C.H., B.G, etc). Suggestions made for D.O on insulin and restarting ramipril.														

Evidence to support attainment of competency

CURRICULUM MAP

- Map all CHPRB competencies to program
- Ensure all competencies met
- Offers a snapshot of the program

CPRB Competencies

Rotations where competency is met

CURRICULUM MAP

Objectives	Rotation	Drug Distribution	Clinical Skills	Administration	Adult Medicine	Cardiology	Geriatrics	Primary Care	Nephrology	Pediatrics	Preceptorship	Project	Rx Files	Critical Care	Infectious Diseases	Psychiatry
	Type	M	M	M	M	M	M	M	M	M	M	M	E	E	E	E
	Length (weeks)	5	2		8-10	8	3	3	3	3	5	8	3	3	3	3
3.1 Provide Direct Patient Care as a Member of Interprofessional Teams																
The resident shall be <u>proficient</u> in providing evidence-based direct patient care as a member of interprofessional teams																
Work respectfully, cooperatively & collaboratively with other HCPs in the provision of direct patient care																
Advocate for the patient & be governed by the patient's desired outcome of therapy																
Place a high priority on, & be accountable for, selecting & providing care to patients who are most likely to experience DRPs.																
The resident shall:																

INCORPORATING A LONGITUDINAL ASSESSMENT

- Set goals for competency based program
  - What is the end product we wish to achieve?
  - How will we progress the resident through the stages of the program?

- *At the end of the program, the resident should have the required knowledge, skills, and attitudes to function as a staff pharmacist within the Saskatoon Health Region*

INCORPORATING A LONGITUDINAL ASSESSMENT

- *Milestones:*
  - *1st Quarter: Beginner for at least 50% of competencies*
  - *2nd Quarter: Beginner*
  - *3rd Quarter: Competent*
  - *4th Quarter: Competent – increased # & complexity of patients*
    - *Introduction of capstone*

ROLE OF THE PRECEPTOR

- Reaffirmation of importance of preceptor-preceptor communication
  - Assist with longitudinal development of resident
    - Aware of strengths and opportunities for growth
  - Verbal/written hand-off
  - Sign-off required for hand-off on final preceptor evaluation for each rotation
  - Access to all written evaluations

BUMPS ALONG THE WAY

- Dreyfus and Dreyfus not specific enough to assess level of competency
  - Variability noted between residents and between preceptors
- Next step
  - Subcommittee of RAC formed
  - Task: develop a rubric for patient care and 4 roles of teaching competencies

SHR RESIDENCY PROGRAM RUBRIC

Novice	Beginner	Competent	Proficient	Expert
Patient Focussed Care				
Collaborative Professional Relationships				
Works in isolation. Does not engage other members of the health care team to optimize patient care. Does not introduce self. Does not attend rounds or is distracted at rounds. Unclear of role.	Gaining an understanding of each members role on the team. Hesitant to introduce self. Attends rounds but is quiet/does not participate. Does not volunteer to look into pharmacy related issues that arise.	Demonstrates skills required for collaboration. Participates on rounds & investigates any drug-related issues & brings back to the team.	Works respectfully, cooperatively, & collaboratively with other members of the health care team (e.g., RN, MD, pharmacy technicians, PT, OT, etc.). Understands everyone's role. Listens & participates on rounds.	Fully integrated member of the team. Well known, respected, & sought out for opinion. Actively participates in team discussions. Attends those sections of rounds pertinent to care; input sought out by team.

SHR RESIDENCY PROGRAM RUBRIC

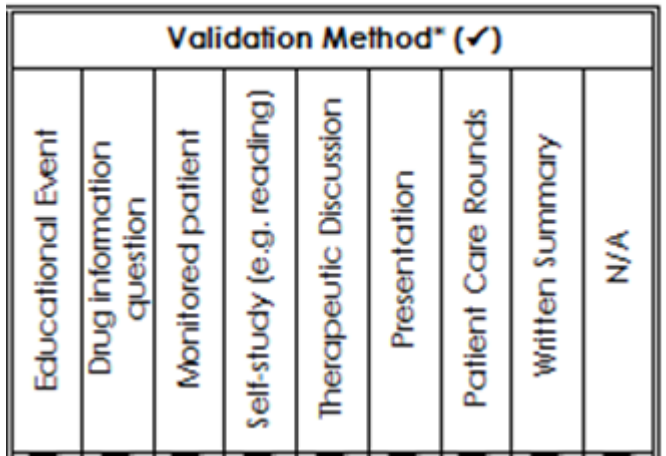
Modeling				
Still learning the skill or process. Uncomfortable/ not confident modeling skill or behaviour to another individual.	Beginner skills, knowledge & process. Models behaviour.	Sound skills, knowledge & process to perform the task. Models behaviour & clearly articulates expected steps.	Sound skills, knowledge & process. Models behaviour & articulates details of each step in the task.	Exemplary skills, knowledge & process. Breaks the task into small segments. Models behaviour & thinks aloud. Checks for understanding & re-models step causing confusion. Pace allows for learning. Points out common mistakes or misunderstandings.

CONTINUOUS QUALITY IMPROVEMENT

- Addition of goal disease state competencies
  - Core disease states
    - Expose the resident in multiple rotations
  - Disease states with high readmission rates/provincial government focus
- Forms are too long, redundant
  - Sub-committee of RAC revised
- Midpoint assessment and final evaluations on separate documents
  - Discussed completing one rolling document for all clinical rotations
  - Decision made to incorporate midpoint and final into one document

CONTINUOUS QUALITY IMPROVEMENT

- Reassess rubric for formative assessments
- Recognition that method to confirm achievement of competency was not universally understood
  - Despite definition key, preceptors/residents struggled to understand certain terms
  - Subcommittee of RAC formed to review methods to confirm achievement of competency
- Greater emphasis on alignment of clinical rotations with competency achieved
  - Some rotations are better suited to process/skill development
  - Some rotations are better suited to third/fourth quarter where the emphasis is on increased depth and volume



QUESTION 4

What type of summative assessments/evaluations does your program currently employ?

a) Capstone rotation
b) Written documentation and regular meetings between resident and residency coordinator to review resident program
c) End of residency program exam
d) All of the above
e) None of the above

CAPSTONE ROTATION

- Goal: The resident will demonstrate the skills, knowledge, behaviors, and attitudes required to function as the primary provider of pharmacy services in a patient care area
- Must have completed an immersion or excursion rotation in the assigned area
- Evaluations
  - Standard CHPRB accreditation standard requirements plus
  - Two healthcare professionals
  - Workload documentation (KPIs)

RESIDENT SELF ASSESSMENT

- Quarterly resident self-assessment
  - Reflect on progress towards attaining competency for the 6 CHPRB accreditation standard
  - Establish goals and learning plan for next quarter

  - Meet with residency coordinator to review

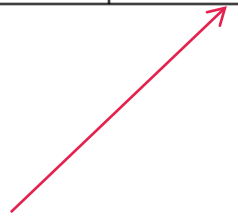
A. Summary of the disease state knowledge and understanding acquired in this residency:

Core Disease State Competency	Objective Assessment					Validation Method* (✓)								
	Novice	Beginner	Competent	Proficient	Expert	Educational Event	Drug information question	Monitored patient	Self-study (e.g. reading)	Therapeutic Discussion	Presentation	Patient Care Rounds	Written Summary	N/A
Anemia	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Atrial fibrillation	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Chronic kidney disease	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Chronic Obstructive Pulmonary Disease	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Coronary Heart Disease & associated risk factors (e.g., hypertension, hyperlipidemia)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Diabetes mellitus	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Heart failure	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Pneumonia	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Venous thromboembolic disease (prophylaxis)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Venous thromboembolic disease (treatment)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other, specify: ___	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

C. Evaluate your ability to perform in your role as a pharmacist compared to your most recent quarterly evaluation. If this is your first quarter review, compare your ability to perform to your baseline level at the start of the residency program. Please provide specific examples/evidence to support your assessment.

Competency	Competency Assessment				
	Novice	Beginner	Competent	Proficient	Expert
Establish collaborative relationships with members of the health care team (CHPRB 3.1.1, 3.3.3)	☐	☐	☐	☐	☐
Evidence to support					
Identify patients most likely to experience drug-related problems (CHPRB 3.1.3)	☐	☐	☐	☐	☐
Evidence to support					
Develop a patient database (CHPRB 3.1.4.A, 3.1.4.C, 3.1.4.D)	☐	☐	☐	☐	☐
Evidence to support					
Identify and prioritize a patient's drug-related problems (CHPRB 3.1.4.B, 3.1.4.E, 3.1.4.G)	☐	☐	☐	☐	☐
Evidence to support					
Prevent drug-related problems (CHPRB 3.1.4.E, 3.1.4.G)	☐	☐	☐	☐	☐
Evidence to support					
Resolve drug-related problems (CHPRB 3.1.4.E, 3.1.4.F, 3.1.4.G)	☐	☐	☐	☐	☐
Evidence to support					
Develop and implement a pharmacy care plan (CHPRB 3.1.2, 3.1.4.E, 3.1.4.F, 3.1.4.I)	☐	☐	☐	☐	☐
Evidence to support					

Competency		Competency Assessment				
		Novice	Beginner	Competent	Proficient	Expert
Document direct patient care activities in the patient's health record (CHPRB 3.1.4.I)		☐	☒	☒	☐	☐
Evidence to support	Documentation of patient care in residency occurred primary in my pediatrics rotation. I wrote several pharmacy suggests, orders, and progress notes outlining the care I had provided to patients. For example, if I educated a patient regarding their medications, I ensured that I documented this interaction and the key points that were discussed -Internal med rotation has helped with this skill, I understand when I should be writing a note and what information I should include. One area I would like to work on is efficiency. I would like writing notes to become natural and not something I have to think about - which will come with practice MARCH- I am becoming more comfortable writing documentation. The more I continue to write notes, the more comfortable I become. During primary care, the documentation I completed was much longer than the notes I write in acute care. ASP rotation has been very helpful in writing a variety of different notes as I was already comfortable writing notes about medications on admission, levels, etc. In the last quarter of residency, I will work to become 100% confident in writing notes.					



Evolving quarterly log containing evidence to support attainment of competency

D. Project Status:

Title:

Status:

E. Goals & Learning Plan for the Next Quarter:

EDUCATION

- Competency based assessment introduced into core clinical curriculum at start of program
  - Two half-days for residents
  - Preceptors mentor residents as they progress through program
- Training package developed for new and experienced preceptors
  - Reading package
  - On-line training
  - Meetings with residency coordinator
  - Feedback provided

COMPLETION OF RESIDENCY

- Standard evaluations – Director, Coordinator, Program
- Last quarterly self-assessment
- 6 month follow-up survey
  - Survey monkey
  - Competency assessment of
    - Core disease states
    - Six CHPRB competencies (e.g. direct patient care, ability to manage one's own practice, leadership, project, etc.)
    - Preparation for role as staff pharmacist
    - Strengths and opportunities for growth of the program

LONGITUDINAL ASSESSMENT SUMMARY

Key Components:

- Education
  - Competency based program
  - Writing objectives
  - Application of rubric – formative and summative assessments
- Preceptor-preceptor hand-offs
- Quarterly assessments
- Capstone rotation
- 6 month exit survey

LESSONS LEARNED

- This is a continuous journey with a defined start date and no end
  - Continuous quality improvement
- Education of new preceptors and residents is critical to the success
- Takes a strong, engaged, committed team
  - Early adopters
  - Open, respectful communication
  - Preceptors and residents very comfortable identifying opportunities for improvement
    - RAC
    - Month-end reports
    - Mid-point and Final rotation assessments
    - Quarterly assessments
    - 6 month exit survey

NEXT STEPS

- Critically review rubric after utilized for a couple of years and with first graduating class of Pharm D students
- Continue to work on midpoint assessments and final evaluations
  - Eliminate redundancies
- Continue to evaluate placement of rotations
  - Immersion: process, skill focus
  - Certain rotations are not well suited to 3rd and 4th quarter of the program where we are working on patient volumes and efficiencies