How to Design a Medication Use Evaluation

Busy Day Tool Kit Preceptor Instructions

Learner level: IPPE and APPE Students

Estimated time to complete: May take several hours/days and can be done intermittently while completing other assigned projects.

Preceptor Instructions: Select a medication use evaluation topic to address a clinical problem and/or ask the student to select a medication use evaluation topic relevant to your institution setting. Request that the student provide written completion of the module by answering the questions outlined in the module. Set up a time with your student to review the results of the completed module.

Student Instructions: Selection a medication use evaluation based on a clinical problem relevant to your institution setting. Complete the questions provided in the module and write up the review. Set up a time with your preceptor to review the results of the completed module. Provide feedback to your preceptor on the usefulness of the points analyzed.

Title – How to Design a Medication Use Evaluation

Medication Use Evaluation

What is it?

Medication-use evaluation (MUE) is a performance improvement method that focuses on evaluating and improving medication-use processes with the goal of optimal patient outcomes[1].

MUEs may be applied to a medication or therapeutic class, disease state or a medication-use process (prescribing, preparing and dispensing, administering, and monitoring), or specific clinical outcomes[1].

MUEs can be used to promote medication safety, evaluate if medication use is meeting internal and external quality standards, and to determine cost-effectiveness of therapy. MUEs can be completed at scale ranging from hospital-unit specific to institution or hospital system wide[1-3].

MUEs can be conducted in a retrospective manner, prospective manner, or concurrent manner. The most common type of MUE is the retrospective MUE[3].

- Retrospective MUE: This is the most common form of an MUE. In this type of MUE an evaluation is performed after a medication is prescribed for a patient's condition. This type of MUE seeks to find patterns and trends in prescribing, dispensing, monitoring, or

administration (e.g., Are long acting opiates being prescribed, dosed, and monitored in accordance with state regulations at specific institution?).

- Prospective MUE: This type of MUE seeks to evaluate medication use prior to the patient receiving the medication.
- Concurrent MUE: This type of MUE allows for monitoring and evaluation of medication use while it is actively being prescribed and administered to the patient.

What are MUE objectives?

Common objective of MUEs[1-3]

- Evaluating drug use to optimize patient outcomes and patient safety
- Evaluating the effectiveness of medication use
- Promote standardization in medication prescribing
- Promote standardization in medication dispensing and administration
- Minimizing procedural variation in medication use processes
- Evaluating medication choice between medications when benefit is unknown
- Evaluating and promoting compliance with government laws and regulations
- Promoting cost effective use of medications
- Establishing interdisciplinary consensus on medication-use processes
- Evaluation medication use as a method of formulary management
- Evaluation medication for research purposes (e.g., residency research, institutional research, etc.)

Why do we perform MUEs?

- MUE activities are required for accreditation by The Joint Commission (TJC)[1].
- MUEs are a tool utilized by institutions for formulary management.
- MUEs are utilized for quality improvement and quality assurance.
- MUEs can help ensure compliance with professional practice standards, accreditation standards, or government laws and regulations[1].
- MUEs can help assess inappropriate prescribing practices.
- MUEs evaluate medication use to prevent increased hospital costs[1-3].

Who performs MUEs? What is the role of the pharmacist?

The organizational body (e.g., quality management committee, pharmacy and therapeutics committee) responsible for the MUE process should have, at a minimum, prescriber, pharmacist, nurse, and administrator representation[1,2].

Pharmacists being medication expert are uniquely position in the MUE process. Pharmacists often lead or work collaboratively with team members to design, perform, and manage MUEs. Roles may vary depending on resources and practice settings[1,2].

What are steps to an MUE?

Design the MUE

- Determine setting for the MUE
- Decide on which type of MUE will be performed and select a study design
- Determine population and sample size
- Determine timeframe to capture in MUE
- Develop screening mechanisms for the MUE
- Determine data collecting capabilities and feasibility
- Develop a research question and identify endpoints to measure
- Determine patients to include and exclude
    - Which patients will be included? Why were these chosen?
    - What are criteria for exclusion? Why were these chosen?

- Determine appropriate data to collect (see below for examples)

    - Demographic information of the included patients
    - Appropriate indication for medication
    - Appropriate dosage
    - Appropriate duration of therapy
    - Appropriate labs or other monitoring parameters
    - No contraindication for use
    - Adverse effects found while on the drug
    - Known drug interaction with other drugs prescribed for the patient
    - Did the patient's treated condition respond as anticipated based on selected endpoints

- Determine what will be done with MUE results

Seek approval from appropriate boards and committees

- If an MUE is intended to serve as a quality improvement or quality assurance study, it will not require IRB approval[3]. The pharmacy and therapeutics committee may approve an MUE for local facility use[3].
- If the MUE is intended to contribute to the scientific knowledge, it may be considered research and would require IRB approval[3].

Investigate and conduct

- Collect data
- Analyze the data
- Formulate conclusions and recommendations
- Present completed MUE to appropriate audiences (e.g., P&T committee and key stakeholders)
- Disseminate results

Develop and implement plan

- Develop and implement plans for improvement of the medication-use process based on MUE findings if results warrant.

- Examples of changes implemented after an MUE include:
    - Restricted order entry
    - Establish guidelines and guidance for use
    - Adjusting medication use criteria
    - Addition or removal of medication from formulary
    - Education to promote compliance
    - Changes in medication monitoring processes
    - Changes in drug dispense processes

Assess effectiveness of implemented plan

- Document actions taken after the MUE and a plan for re-evaluation.
- Set timeline to assessing effectiveness of implemented plan. Repeat the cycle of designing, planning, and assessing plans from MUE results. Add needed improvements.

Follow up actions after an MUE

- Education to clinicians and providers. How will you disseminate information?
- Disseminate actions plans. What steps are taken after the MUE?
- Provide recognition to team members and key stake holders. Who will get recognized and how?

References

1. American Society of Health-Systems Pharmacists. ASHP guidelines on medication-use evaluation. *Am J Health-Syst Pharm*. 1996;53(16):1953–1955.
2. Fanikos J, Jenkins KL, Piazza G, et al. Medication use evaluation: pharmacist rubric for performance improvement. Pharmacotherapy. 2014;34:5S–13S.
3. *VA Center For Medication Safety (VA MedSAFE) - Pharmacy Benefits Management Services*. Available at: https://www.pbm.va.gov/vacenterformedicationsafety/vacenterformedicationsafetyresources.asp [Accessed 1 Feb. 2019].