AMCP Academy of Managed Care Pharmacy®

Drug Utilization Review

Drug utilization review (DUR) is defined as an authorized, structured, ongoing review of prescribing, dispensing and use of medication. DUR encompasses a drug review against predetermined criteria that results in changes to drug therapy when these criteria are not met. It involves a comprehensive review of patients' prescription and medication data before, during and after dispensing to ensure appropriate medication decision-making and positive patient outcomes. As a quality assurance measure, DUR programs provide corrective action, prescriber feedback and further evaluations.

DUR is classified in three categories:

- *Prospective* - evaluation of a patient's drug therapy before medication is dispensed
- *Concurrent* - ongoing monitoring of drug therapy during the course of treatment
- *Retrospective* - review of drug therapy after the patient has received the medication

Why DUR is important

DUR programs play a key role in helping managed health care systems understand, interpret, evaluate and improve the prescribing, administration and use of medications. Employers and health plans find DUR programs valuable since the results are used to foster more efficient use of scarce health care resources. Pharmacists play a key role in this process because of their expertise in the area of medication therapy management. DUR affords the managed care pharmacist the opportunity to identify trends in prescribing within groups of patients whether by disease-state such as those with asthma, diabetes or high blood pressure, or by drug-specific criteria. Pharmacists can then, in collaboration with prescribers and other members of the health care team, initiate action to improve drug therapy for patients.

Introduction

DUR is an ongoing, systematic process designed to maintain the appropriate and effective use of medications.[1] It involves a comprehensive review of a patient's medication and health history before, during, and after dispensing in order to attempt to achieve appropriate therapeutic decision-making and positive patient outcomes. Pharmacists participating in DUR programs can directly improve the quality of care for patients, individually and as populations, by striving to prevent the use of unnecessary or inappropriate drug therapy, prevent adverse drug reactions and improve overall drug effectiveness.

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[1] Navarro, Robert. Chapter 8: Drug Utilization Review Strategies. In *Managed Care Pharmacy Practice*, published 2008, pp. 215 – 229.

Other terms considered synonymous with DUR include drug use evaluation (DUE), medication use evaluation (MUE), and medication use management. American Society of Health System Pharmacists (ASHP) currently espouses the nomenclature medication use evaluation (MUE).[1] The National Committee for Quality Assurance (NCQA) currently refers to the process as Pharmaceutical Utilization Management with defined tenets.[2] For the Medicare Part D prescription drug benefit, the Centers for Medicare & Medicaid Services (CMS) use the term drug utilization review.[3] AMCP believes that DUR is the most common designation for processes of prospective, retrospective, and concurrent medication review in the health care marketplace and will use this term throughout the *Concepts in Managed Care Pharmacy* series.

Currently, NCQA, CMS and many other government agencies mandate that drug reviews be performed to ensure appropriate drug therapy.[4,5,6] Specifically, the Omnibus Budget Reconciliation Act of 1990 (OBRA 90) mandates that pharmacists conduct prospective and retrospective medication reviews whenever an outpatient prescription is dispensed to a Medicaid recipient.[7] Since the passage of OBRA 90, many states have enacted their own laws or regulations requiring pharmacists to conduct medication reviews for all outpatients.

Medication therapy management (MTM) is a similar mandate introduced in the Medicare Prescription Drug Improvement and Modernization Act (MMA) of 2003, which requires all prescription drug plan sponsors providing a drug benefit to offer medication reviews and appropriate interventions.[8] The MTM component of this legislation began in 2006 and plans are required to offer a medication therapy management program to target at-risk beneficiaries to optimize therapeutic outcomes by improving medication use and reducing risks of adverse events.

The CMS Medicare Part D 2010 Call Letter requires prescription drug plan sponsors to conduct concurrent and retrospective DUR for enrollees.[9]

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[1] American Society of Health-System Pharmacists. *ASHP Guidelines on Medication-Use Evaluation*, published 1996. Vol. 53: 1953-5.
[2] National Committee for Quality Assurance. NCQA Health Plan Accreditation, 2009. Available at www.ncqa.org.
[3] U.S. Department of Health & Human Services. Centers for Medicare & Medicaid Services. 2008. *Medicare Prescription Drug Benefit Manual*. Baltimore: Centers for Medicare & Medicaid Services. www.cms.hhs.gov/PrescriptionDrugCovContra/Downloads/R3PDBv2.pdf (accessed September 7, 2009)
[4] NCQA Health Plan Accrediation.
[5] U.S. Department of Health & Human Services. Centers for Medicare & Medicaid Services. 2008.
[6] Melissa Madigan and Ed Rickert. "Chapter 11: State Versus Federal Regulation of Pharmacy." In *Handbook of Pharmaceutical Public Policy*, 2007. pp. 171 – 190.
[7] U.S. Congress. H.R. 5385, Omnibus Budget Reconciliation Act of 1990, Public Law 101 - 508, 101st Congress (November 5, 2009). [section 1927, g. 2 A,B] Available from: http://thomas.loc.gov/cgi-bin/query/C?c101:./temp/~c101bQSjNM (accessed September 7, 2009)
[8] U.S. Congress. H.R. 1, Medicare Prescription Drug Improvement and Modernization Act of 2003, Public Law 108-173, 108th Congress (December 8, 2003). www.ustreas.gov/offices/public-affairs/hsa/pdf/pl108-173.pdf (accessed September 7, 2009)
[9] U.S. Department of Health & Human Services. Centers for Medicare & Medicaid Services. 2008.

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CMS continues to propose significant Medicare Part D program changes, which require plans to demonstrate that information obtained from drug utilization reviews is used to improve enrollees' quality of care.[10]

What is Drug Utilization Review?

DUR is an authorized and structured ongoing review of practitioner prescribing, pharmacist dispensing and patient use of medications. The purpose of DUR is to ensure drugs are used appropriately, safely and effectively to improve patient health status. Predetermined criteria for appropriate drug therapy are compared against a patient's or a population's records. Non-adherence to criteria results in drug therapy changes. In addition, continual improvement in the appropriate, safe and effective use of drugs has the potential to lower the overall cost of care.[11,12,13] DUR allows the pharmacist to document and evaluate the benefit of pharmacy intervention in improving therapeutic and economic outcomes while demonstrating the overall value of the pharmacist.[14]

DUR is typically classified in three different categories: prospective, concurrent and retrospective.

1. Prospective DUR: Prospective review involves evaluating a patient's planned drug therapy before a medication is dispensed. This process allows the pharmacist to identify and resolve problems before the patient has received the medication. Pharmacists routinely perform prospective reviews in their daily practice by assessing a prescription medications dosage and directions while reviewing patient information for possible drug interactions or duplicate therapy. When part of an online claims adjudication process, prospective DUR often relies on computerized algorithms to perform key checks including drug interactions, duplications or contraindications with the patient's disease state or condition.

Issues Commonly Addressed by Prospective DUR:

- Clinical abuse/misuse
- Drug-disease contraindications (when a prescribed drug should not be used with certain diseases)
- Drug dosage modification
- Drug-drug interactions (when two or more different drugs interact and alter their intended effects, often causing adverse events)
- Drug-patient precautions (due to age, allergies, gender, pregnancy, etc.)
- Formulary substitutions (e.g., therapeutic interchange, generic substitution)
- Inappropriate duration of drug treatment

Example: Identification of drug-drug interactions are a common outcome of a prospective DUR. For example, a patient being treated with warfarin to prevent blood clots may be prescribed a new drug by another specialist to treat arthritis. If taken together, the patient could experience internal bleeding.

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[10] U.S. Department of Health & Human Services. Centers for Medicare & Medicaid Services. 2009. *2010 Call Letter for Prescription Drug Plan Sponsors.* Centers for Medicare & Medicaid Services, 2009. www.cms.hhs.gov/PrescriptionDrugCovContra/Downloads/2010CallLetter.pdf (accessed September 7, 2009)

[11] Madigan and Rickert.

[12] World Health Organization Collaborating Centre for Drug Utilization Research and Clinical Pharmacological Services. *Introduction to Drug Utilization Research*, 2003. http://apps.who.int/medicinedocs/en/d/Js4876e/ (accessed September 7, 2009)

[13] Academy of Managed Care Pharmacy. *Concept in Managed Care Pharmacy Series: Pharmaceutical Care, 2003.* www.amcp.org/amcp.ark?p=AAAC630C (accessed September 7, 2009)

[14] Madigan and Rickert.

Upon reviewing the patient's prescriptions, the pharmacist would note the potential drug interaction and contact the prescriber to alert him/her to the problem.

2. Concurrent DUR: Concurrent review is performed during the course of treatment and involves the ongoing monitoring of drug therapy to foster positive patient outcomes. It presents pharmacists with the opportunity to alert prescribers to potential problems and intervene in areas such as drug-drug interactions, duplicate therapy, over or underutilization and excessive or insufficient dosing. This type of review allows therapy for a patient to be altered if necessary.

As electronic prescribing becomes more widely adopted, the concurrent DUR process may be performed by the prescriber at the time of prescription transmission to the pharmacy, allowing interventions before the drug is dispensed. An important component of DUR will require complete and current drug and allergy records for the patient, as well as knowledge of appropriate therapeutic interchanges for individuals. As a safety net, pharmacists will perform a similar role as prescribers on the dispensing side of these transactions.

Issues Commonly Addressed by Concurrent DUR:

- Drug-disease interactions
- Drug-drug interactions
- Drug dosage modifications
- Drug-patient precautions (age, gender, pregnancy, etc.)
- Over and underutilization
- Therapeutic Interchange

Example: Concurrent DUR often occurs in institutional settings, where patients often receive multiple medications. Periodic review of patient records can detect actual or potential drug-drug interactions or duplicate therapy. It can also alert the pharmacist to the need for changes in medications, such as antibiotics, or the need for dosage adjustments based on laboratory test results. The key prescriber(s) must then be alerted to the situation so corrective action can be taken.

3. Retrospective DUR: A retrospective DUR reviews drug therapy after the patient has received the medication. A retrospective review aims to detect patterns in prescribing, dispensing or administering drugs. Based on current patterns of medication use, prospective standards and target interventions can be developed to prevent recurrence of inappropriate medication use or abuse. Outcomes of this review may aid prescribers in improving the care of their patients, either individually or within a certain target population (e.g., patients with diabetes, asthma, or high blood pressure).

Issues Commonly Addressed by Retrospective DUR:

- Appropriate generic use
- Clinical abuse/misuse
- Drug-disease contraindications
- Drug-drug interactions
- Inappropriate duration of treatment
- Incorrect drug dosage
- Use of formulary medications whenever appropriate
- Over and underutilization
- Therapeutic appropriateness and/or duplication

Example: An example of a retrospective DUR may be the identification of a group of patients whose therapy does not meet approved guidelines. For example, a pharmacist may identify a group of patients with asthma, who according to their medical and pharmacy history, should be using orally inhaled steroids. Using this information, the pharmacist can then encourage prescribers to utilize the indicated drugs.

Steps in Conducting a Drug Use Evaluation

Most authorities agree the following five steps are essential when conducting any quality-related DUR program.[15,16]

1. **Identify or Determine Optimal Use.** An organization's established criteria are defined to compare optimal use with actual use. The criteria should focus on relevant outcomes within a delineated scope for DUR and identify the relevant drugs to be monitored for optimal use in advance. For example, if the use of a drug class prescribed to treat a patient with diabetes is being evaluated, then standards should be determined to identify all drugs within the drug class and to evaluate each drug's effectiveness, such as a decrease in blood glucose or A1c (glycosylated hemoglobin) levels to within normal limits.
2. **Measure Actual Use.** This step is where data are gathered to measure the actual use of medications. These data can be obtained from medical and prescription records or electronic claim forms. It may require the organization to build an algorithm to identify all members who fit the criteria.
3. **Evaluate.** Acceptable thresholds (percent of patients meeting the indicator) should be determined prior to the comparison. This step involves applying the algorithm, identifying members who meet the DUR criteria and the comparison between optimal or appropriate and actual use. During this process, the evaluator determines causes for any discrepancies and whether findings are expected. In this process, patterns or aberrations can be identified and interpreted.
4. **Intervene.** This is the step where corrective action is implemented. Action should be targeted to areas of concern such as prescribing patterns, medication misadventures, and quality of drug therapy or economic consideration.
5. **Evaluate the DUR Program.** This step assesses the effectiveness of the DUR program. Efforts should be made to evaluate the outcomes and document reasons for positive and negative results. Implementing appropriate changes to the DUR program and continued observation should be undertaken.
6. **Report the DUR findings.** The final step is to report these findings to the appropriate team within the organization (e.g., the pharmacy & therapeutics committee) and/or individual prescribers when appropriate.

Value of DUR Programs in Managed Care

Managed health care systems and pharmacy benefit management companies (PBMs) have the responsibility of managing the medication use of anywhere from a few hundred thousand to millions of patients. DUR programs play a key role in helping these organizations understand, interpret and improve the prescribing, administration and use of medications. This is often accomplished by using DUR programs to provide prescribers with feedback on their performance and prescribing behaviors as compared to pre-set criteria or treatment protocols.

[15] NCQA Health Plan Accreditation.
[16] U.S. Department of Health & Human Services. Centers for Medicare & Medicaid Services. 2008.

DUR information also allows prescribers to compare their approach to treating certain diseases with their peers. The benchmarking generated by these comparisons is useful in stimulating prescribers to change their prescribing habits in an effort to improve care. For example, many health plans use DUR to encourage prescribers to use more generic drugs and to comply with treatment guidelines established by national organizations such as the National Institutes of Health or the American Heart Association by reporting prescriber adherence rates.

DUR information also assists managed health care systems and PBMs in designing educational programs that improve rational prescribing, formulary compliance and patient compliance. These educational programs might take the form of face-to-face education of prescribers and patients by clinical pharmacists, telephone calls, letters, newsletters and educational symposia.

Role of the Health Care Practitioners

Prospective DUR: This process places responsibility on the health care practitioner to conduct a review of the drug order when it is presented for filling and proactively resolve potential drug-patient problems. It affords the pharmacist or other health care practitioner the opportunity to interact with patients and members of the health care team to work on a treatment plan for each patient. In the retail and institutional settings, a pharmacist can assess the prescription order at the time of dispensing and, using information from the patient's medical and/or pharmacy record, determine the appropriateness of the drug therapy prescribed. If the pharmacist identifies opportunities for improved patient care, he/she can contact the prescriber to discuss treatment alternatives.

Concurrent DUR: The pharmacist and other health care practitioners have the responsibility in the concurrent DUR process to assess the ongoing therapy of the patient and, when necessary, intervene to help modify the patient's treatment plan. When caring for those patients with multiple diseases, case managers may become actively involved in the management of the patient's condition. Through interaction with the prescriber, a health care practitioner within a managed care organization can better understand the care plan the prescriber would like to follow. Through patient counseling, health care practitioners can offer education on the proper use of medications and determine if there are specific patient needs.

Retrospective DUR: Due to their expertise in drug therapy management, health care practitioners play a leading role in describing the relationship between drug use and patient outcomes using retrospective DUR. When addressing population-based retrospective DUR issues rather than individual patient care, the managed care pharmacist has a primary role in planning, organizing and implementing DUR activities. Pharmacists can educate health care professionals regarding drug use, participate in decision making within the context of the pharmacy and therapeutics (P&T) committee, and serve as members of DUR and other committees where input concerning drug use and drug policy development is required.[17]

[17] American Society of Health-System Pharmacists. *ASHP Guidelines on Medication Cost Management Strategies for Hospitals and Health Systems*, 2008. Vol. 65: 1368-84.

Conclusion

The process of DUR is still evolving. Using DUR information, managed care pharmacists can identify prescribing trends in patient populations and initiate corrective action to improve drug therapy for groups of patients as well as individuals. As the variety of health care professionals (e.g., pharmacists, prescribers, nurses, optometrists, naturopaths, chiropractors) involved in the medication use process expands, DUR will require a more multidisciplinary approach to improving patient care. In addition, rapidly improving data systems will soon provide the methodology for marrying medical and pharmacy data with patient outcome data. This will lead to the next logical step, the evolution of DUR into a more comprehensive health care utilization evaluation.[18,19]

[18] Ibid.

[19] Navarro.