MEDICATION SAFETY TOOLKIT

What’s in Your Toolkit?

804.289.5320 | 301.744.8472 | http://qin.hqi.solutions
Medication Safety Toolkit

Purpose

This kit was developed by Health Quality Innovators (HQI) and provides tools to help you improve medication safety and reduce adverse drug events (ADEs). It serves as a medication safety resource for patients, practitioners, and stakeholders in all settings across the continuum of care and supports improved patient and family engagement.

The kit focuses on promoting interventions that would benefit patients who are:
- Taking multiple medications or high-risk medications (including anticoagulants, hypoglycemics and opioids).
- In high-risk populations including behavioral health, Alzheimer’s and dementia, and those facing disparities in care, such as low socioeconomic status.

Overview

The goal of healthcare delivery is to improve the health of the individual served. Each time we make an effort to reach this goal, undesired consequences are possible. When medications are prescribed, patients are at risk of an adverse drug event. ADEs are defined as an injury resulting from medical intervention related to a drug. Judicious attention to the safe use of medications helps reduce the inherent risk. This toolkit provides multiple resources to support safe medication use. Key factors include observance of best practices, use of successful tools for developing, utilizing, measuring, and maintaining best practices, and awareness of common barriers to delivery of the best possible care.

About HQI

As the Quality Innovation Network - Quality Improvement Organization for Maryland and Virginia, HQI convenes patients, families, providers and partners to rapidly improve health quality. For more information about our ADE or Care Transitions initiatives, please contact HQI’s Pharmacist Consultants Cindy Warriner, RPh, CDE, at cwarriner@hqi.solutions or Tosin David, PharmD, at t david@hqi.solutions.
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Five Pillars to Dispensing Medication Safely

Safe medication use helps prevent adverse drug events (ADEs), defined as “an injury resulting from medical intervention related to a drug.” Drug-related injury can include medication errors, adverse drug reactions, allergic reactions, and incorrect dosing. A reference document titled “When Medication Hurts Instead of Helps” is available here. In addition, the Institute for Safe Medication Practices developed a document targeted toward community practice.

Pillar 1: Assuring Clinically Accurate Medication Orders

The pharmacist patient care process has basic tenets outlined by national pharmacy associations. This process ensures that medication orders are clinically accurate. Many different terms exist to describe elements of the Pharmacists’ Patient Care Process; some aspects are described below.

The Medication Management Checklist is a great tool that provides resources and assists in developing a patient specific medication management plan.

The Healthcare Provider Medication Checklist is a easy to use tool that provides resources and assists in developing a patient specific medication management plan.

A. Medication Therapy Management (MTM)

Medication Therapy Management is defined by the Centers for Medicare & Medicaid Services (CMS) as a program of drug therapy management designed to assure that covered part D drugs under the prescription drug plan are appropriately used to optimize therapeutic outcomes through improved medication use, and to reduce the risk of adverse events. MTM services are covered for beneficiaries who take multiple medications, have multiple chronic conditions and incur drug costs that exceed a designated amount per year.

A wide range of MTM resources are available through major pharmacy organizations:

- American Pharmacists Association MTM Central
- Pharmacists Provide Care
- MTM Guidelines for Long-Term Care Facilities have been developed by the American Society of Consultant Pharmacists
- HealthMart Pharmacy MTM Guide
- APhA Medication Therapy Management Services
- CDC Community Pharmacists and Medication Therapy Management
- MTM Pharmacists Improving Care for Patients by Optimizing Medication Use
- Health Literacy Tools for Providers of Medication Therapy Management
B. Comprehensive Medication Reviews

Comprehensive Medication Reviews are performed by pharmacists to assess a patient’s current list of medications. A review of all patient medications should be conducted regularly by a pharmacist as well as when patients move from one setting to another. Medicare beneficiaries qualify for an annual review of their medications with their pharmacists.

In the long-term care setting, more frequent medication regimen reviews are conducted to assure that medication is appropriate, safe and effective.

HQI has developed a tool that allows clinicians to turn the brown bag blue. Find more information here. The Agency for Healthcare Research and Quality (AHRQ) developed a brown bag session toolkit and checklist. The Ohio Patient Safety Institute has also published a brown bag toolkit that helps practices plan a brown bag event with pharmacies.

C. Beer’s Criteria

The American Geriatric Society publishes “Beer’s Criteria for Potentially Inappropriate Medications for Use in Older Adults.” Below are four links associated with Beer’s criteria:

• 2015 Beer’s Criteria
• 2015 How to Use Beer’s Criteria
• 2015 Beer’s Alternate List
• 2015 AGS Beers Update 2015 Evidence
• STOPP/START Criteria
• American Geriatrics Society’s Beer’s Criteria Pocket Guide

D. High-Risk Medications

1) Anticoagulants

Anticoagulant-associated adverse events can be minimized when evidence-based, safe practices are implemented. The Institute for Healthcare Improvement (IHI) offers many useful tools for evaluating and preventing adverse events from anticoagulants. A getting started kit entitled “Prevent Harm from High Alert Medications: How to Guide” lists safe practices specific to Heparin and Warfarin use in inpatient and outpatient settings. Access to resources from IHI requires registration via login but free resources are available.
For comprehensive resources on anticoagulation, go to the Anticoagulation Forum. The Forum is run by leaders in anticoagulation therapy across the country. This group published a clinical guidance document on management of venous thromboembolism and made it available on the forum.

A gap analysis of anticoagulation agent adverse drug events is described here.

Anticoagulant Management Toolkits are found at:
- IHI anticoagulant toolkit
- The Michigan anticoagulant toolkit
- ASHP’s Direct Oral Anticoagulants: Resources for Managing and Reversing Therapy
- MagMutal Anticoagulant Resources
- Anticoagulant Flow-sheet 1
- Anticoagulant Flow-sheet 2
- Sample Anticoagulant Patient Contract

2) Hypoglycemics
Practice guidelines for management of diabetes and use of hypoglycemics are at the American Diabetes Association and The American Association of Clinical Endocrinologist (AACE). A gap analysis of hypoglycemic medication adverse events is described here.

Toolkits:
- Society of Hospital Medicine
- Alert Day
- Working Together to Manage Diabetes-CDC
- National Diabetes Education Program
- University of Illinois at Chicago Department of Psychiatry

A description of how to reduce Adverse Drug Events Involving Insulin, is available from the Institute for Healthcare Improvement.

An article in the American Journal of Health-System Pharmacy describes a hypoglycemia event analysis tool (HEAT). A copy of the Dr. Milligan’s approach and the HEAT tool can be accessed here.
3) Opioids

In October 2016, the opioid epidemic became a national health emergency. Opioid-related adverse events are a critical patient safety issue with added attention to preventing overuse. HQI created a summary of resources to support safe prescribing and education.

National Guidelines:
- The Centers for Disease Control and Prevention
- 2016 – CDC guideline for Prescribing Opioids for Chronic Pain
- Quick Tool Guide
- Combatting the Opioid Overdose Epidemic
- Guidelines for Prescribing Opioids
- Applying CDC’s Guideline for Prescribing Opioids
- FDA issued an opioid action plan
- The U.S. Department of Health and Human Services
- Substance Abuse and Mental Health Service Administration (SAMHSA)
- SAMHSA
- TIP 63
- Society of Hospital Medicine
- Pain Management Implementation Guide
- Improving Pain Management for Hospitalized Medical Patients
- Reducing Adverse Drug Events Related to Opioids (RADEO)
- American Hospital Association
- Addressing the Opioid Epidemic
Maryland and Virginia State Specific Protocols and Resources to Combat the Opioid Epidemic:

- Maryland Hospital Association: Opioid Resources for Hospitals
- Maryland Overdose Response Program
- Maryland Board of Physicians Guidance for Prescribing opioids
- Medicaid Opioid Prescribing Guidelines
- Maryland naloxone standing order
- Pharmacy guidance document
- MD Narcan brochure
- Virginia Hospital Emergency Department Opioid Prescribing Guidelines: VA naloxone standing order
- Medicaid Opioid Prescribing Guidelines
- Allied Against Opioid Abuse is a national program that hopes to bring awareness of the abuse and misuse of prescription opioids.

Additional Guidelines for aiding with opioid use disorders:
- SAMHSA: Medication-Assisted Treatment of Opioid Use Disorders
- Federation of State Medical Boards: Model Policy on the Use of Opioids in the Treatment of Chronic Pain
- Federal Guidelines for Opioid Treatment
- Group Health Cooperative Chronic Opioid Therapy (COT) Safety Guideline for Patients with Chronic Non-Cancer Pain
- The Society of Post-Acute and Long-Term Care Medicine Pain Management Clinical Practice Guideline (CPG) and implementation manual. You may order a hard or electronic copy here.

Toolkits:
- Evaluation tool of provider knowledge about opioid use
- American Academy of Family Physicians toolkit
- AAFP
- Opioid Epidemic Practical Toolkit: Helping Faith and Community Leaders Bring Hope and Healing to Our Communities
- The Opioid Epidemic Practical Toolkit: Helping Faith-based and Community Leaders Bring Hope & Healing to Our Communities
- Optum Labs - Key Performance Indicators (KPI)
- Opioid Prescription Overdose Prevention At Work: Opioid resources for employers
- The Johns Hopkins Bloomberg School of Public Health, and the Clinton Foundation, Clinton Health Matters Initiative Provides a Public Health Perspective to the Opioid Epidemic
- Safe and Competent Opioid Prescribing Education (SCOPE) of Pain
- Prescribe to Prevent Videos
- The National Safety Council a Prescription Drug Employer Kit

Clinical Resources:
- ER/LA Opioid Analgesics REMS Program
- FDA Opioid Blueprint
E. Resources to Support Antibiotic Stewardship

- Be Antibiotics Aware (a campaign developed by the Centers for Disease Control and Prevention)
- Know core elements of antibiotic stewardship in different settings
  - Core Elements for Hospitals
  - Core Elements for Nursing Homes
  - Core Elements for Outpatient Settings
- Review CARB – Call to Action
- National Strategy and Action Plan for Combating Antibiotic-Resistant Bacteria (CARB)
- Review available resources, documents, webinars on CDC (not inclusive)
  - Checklist for Core Elements of ABS in Hospitals
  - Hospital Antibiotic Stewardship Checklist
  - Checklist for Core Elements of ABS in Nursing Homes
  - Core Elements of Outpatient Antibiotic Stewardship
  - Outpatient Antibiotic Stewardship
  - Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care
- Other resources (not inclusive)
  - ABS Playbook
  - ABS in Outpatient Settings – The PEW Charitable Trusts

What resources are available for providers, patients and families?

- For all:
  - Antibiotic resources for patients
  - Public messaging and social media materials and references
- For providers and pharmacists
  - Adult Treatment Recommendations for Outpatient Healthcare Professionals
  - Pediatric Treatment Recommendations for Outpatient Healthcare Professionals
  - How to Prescribe Fewer Unnecessary Antibiotics
  - How to talk to patients about antibiotics: A guide
  - IDSA and SHEA guidelines on key ABS components
  - ABS online course tailored to medical students
  - ABS online course tailored to pharmacists
  - Setting Goals for Antibiotic Prescribing in U.S. Outpatient Settings (video)
  - Stanford CME course: To Prescribe or Not to Prescribe? Antibiotics and Outpatient Infections
  - Joint Commission R3 Report on New Antimicrobial Stewardship Standard
  - APIC Implementation Guide to Preventing Clostridium difficile Infections, 2013
  - Combating Antibiotic-Resistant Bacteria
  - Antibiotic Stewardship Programs in U.S. Acute Care Hospitals, 2014
Pillar 2: Medication Reconciliation

Patients are at the highest risk for medication-related problems when they transition from one health care environment to another. Care transitions require coordination among team members. The result of poor coordination is reduced quality of care and higher health care costs.

Medication Reconciliation is an integral part of the care transitions process in which health care professionals collaborate to improve patient safety and clinical outcomes, specifically related to medications, as the patient transitions between patient care settings or levels of care.

It includes obtaining a complete and accurate list of each patient’s current medications (including name, dosage, route and frequency) as well as comparing the list with current orders and reviewing for potential drug interactions, prescribing errors, and other discrepancies.

A. Best Practice Strategies

Best practices for all aspects of care transitions, including medication reconciliation, are included in a program called INTERACT (Interventions to Reduce Acute Care Transfers) that are targeted towards long-term care facilities. Multiple worksheets and best practice papers are available on this website. The toolkit was supported by CMS as well as The Commonwealth Fund.

A best practice document on medication management during transitions in care was collaboratively developed by two national pharmacy organizations, the American Society of Health-System Pharmacists and the American Pharmacists Association.
The Society of Hospital Medicine created the MARQUIS Implementation Manual for practitioners. Additional resources including training slides, pocket guides, and simulation cases here.

Transitions from different types of environments require very different approaches to medication reconciliation, thus several tools are available to address specific nuances of care transitions by location.

B. Tools for Practice Settings

- Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation
- This article explores the hospital to home transition process using discharge telephone calls
- Reconciling medications from hospital to nursing homes - a white paper offers ideas for understanding and improving medication reconciliation between hospitals and nursing homes
- Reconciling medications in the outpatient setting
- An article in a 2011 issue of the Home Healthcare Nurse Journal describes the medication reconciliation process for home health providers at discharge
- Hospital Practice published an article in 2015 which focuses on inpatient medication reconciliation: The National Community Pharmacists Association - Guide for Transitions of Care: An opportunity for Community
- HQI’s Blue Bag Initiative is a user-friendly, measurable way to offer medication reconciliation.
Pillar 3: Access and Adherence to Medication Plans

The miracle of modern prescription medication can only happen if medications can be obtained and taken. While this statement seems obvious, it is not quite as apparent as it may seem. Adherence is a huge medication related problem which takes artful patient communication and the ability to overcome barriers.

Multiple resources are available to aid the provider in managing adherence issues. The World Health Organization (WHO) call to action on adherence is available here. Other helpful documents include a resource article from WHO and a resource website on adherence. A good overview of the problem of adherence is available here.

Measuring Adherence
Multiple tools exist to measure the level of adherence. A concise summary of the tools, including the gold standard, the Morisky Scale, can be found here. An updated version called Medication Adherence Rating Scale (MARS), can be found here.

Prescription for Health is a comprehensive program developed by Pfizer to help improve patient adherence to medication instructions. The Pfizer Prescription for Health Survey consists of seven questions about medication received the past six months.

The Adherence Estimator®, a one-minute, evidence-based survey designed by Merck categorizes patients into three groups – low, medium or high risk for not adhering to a newly-prescribed medicine. After patients answer three simple questions, the tool provides easy to understand, personalized information to address patient’s concerns about taking that medication.

Improving Adherence
The FDA offers resources for improving medication adherence.
Pillar 4: Measuring, Reducing and Reporting Adverse Events

A. Systems Approach to Measuring Adverse Drug Events
Adverse drug events occur across the spectrum of health care. A common-sense approach includes narrowing the focus to the most common medication categories and patient groups who experience them. These most common, costly and preventable adverse drug events fall into three medication categories: anticoagulants, hypoglycemics and opioids. Each health care setting should measure their effect on the rate of adverse events.

The National Action Plan for Adverse Drug Event Prevention is a consensus document developed by multiple government agencies aimed at aligning efforts to reduce patient harm from adverse drug events. This comprehensive document covers the most common adverse drug event categories, how they are measured, and proposed methods of reducing them.

Hospitals should consider an initial approach of using a change package to guide the step-by-step process of measuring and improving these events. The American Hospital Association developed a change package that presents an orderly, effective process for reducing adverse drug events.

A report from the Office of the Inspector General examines the incidence of adverse events among the Medicare population in skilled nursing facilities. Approximately 22% of Medicare beneficiaries who stayed in a skilled nursing facility experienced an adverse event, and more than half of the same percentage were readmitted to the hospital. The report outlines recommendations, such as raising awareness of safety concerns and offering instruction to surveyors who inspect nursing homes to evaluate patient safety practices. Another article by AHRQ addressed issues unique to patient safety in the nursing home population.
Measuring Adverse Drug Events
Several methods for measuring adverse drug events have been published and used by health systems. The trigger tool method is described on the IHI website. While this is the most widely used tool, other methods which use EHR searches and claims database approaches to measuring adverse events are being implemented in health systems across the country.

In addition to measurement tools, learn more about adverse event reporting mechanisms and vaccine adverse events. Additional reporting programs are used within health systems and other large entities such as VA Medical Centers. A good overview of other reporting mechanisms can be found in the National Action Plan for Adverse Drug Event Prevention, referenced on previous page.

The Institute of Safe Medication Practices (ISMP) provides a list of Alert Medications in various healthcare settings:
- ISMP – Acute
- ISMP – Ambulatory Care
- ISMP – LTC

Reducing Adverse Drug Events
Resources for aiding in reducing adverse drug events include:
- IHI How to Guide: Prevent Adverse Drug Events
- Military Health System Sustainment Guide for Adverse Drug Events
- Road Map to a Medication Safety Program
- HQI Blue Bag Initiative

B. High-Risk Populations
Behavioral health and mental illnesses pose special problems during care transitions.

Recommendations for improved care transitions in patients with mental illness and/or substance use disorders can be found on the reducing avoidable readmissions effectively (RARE) summary and report.

Alzheimer’s and dementia:
As the population ages, reducing adverse events in older adults becomes increasingly important. The American Academy of Family Physicians provide advice on this subject. The Alzheimer’s Association has vast resources including a patient resource on Alzheimer’s medications.
Pillar 5: Patient Education

To use medication properly, patients must understand why they are taking various medications and how to take them safely. Unfortunately, providers may not know when patients do not understand or misinterpret medication instructions. Technology has opened opportunities to bridge the gap between provider instruction and patient comprehension. Education about medications and illnesses is readily available online:

• Clinical Teach-Back Cards
• National Council on Patient Information and Education
• The Mayo Clinic
• Guidelines for choosing effective patient education materials

Anticoagulants
• AHRQ – Blood Thinner Pills: Your Guide to Using Them Safely
• Heart health – following instructions
• AHRQ – patient
  • Spanish
• Spectrum Health
• Fairview Warfarin Patient Education
• American Heart Association Guide to Warfarin
Diabetes Management
- HQI Diabetes Dashboard
- Everyone with Diabetes Counts – from Quality Insights
- Lilly Diabetes Handouts
- NovoNordisk Handouts
- AADE How to manage hypoglycemia
- 42 Factors that Affect BG-diaTribe

Opioid
- HQI Opioid Resources
- Save a Life With Naloxone
- What is Narcan
- Narcan Nasal Spray Brochure
- Injectable Drugs
- Eight Safety Practices
- Allied Against Opioid Abuse
- Pt. Counseling Points
- Pt. Counseling Points – drug interactions
- Pt. Counseling Card
- The Gift & Curse Opioids - Two Ends of the Spectrum:
- Dispose of Unused Medications

A. Barriers to Safe Medication Use

1) Health literacy:
An example of the teach-back method and demonstration videos can be found here. Ask Me 3 helps empower patients to ask questions. A toolkit on health literacy and a Health Literacy Universal Precautions Toolkit was developed by Agency for Healthcare Research & Quality (AHRQ) and offers several resources for pharmacists. Additional Agency for Healthcare Research and Quality (AHRQ) tools include the Short Assessment of Health Literacy: Spanish and English and they also have a Pharmacy Health Literacy Center. The Adult MEDucation website offers many resources for improving medication adherence.


2) Cost/access to care:
The Kaiser Family Foundation recently released a study that analyzed the trends in prescription drug costs. The skyrocketing costs often prevent people from taking medications regularly. Patients who need help paying for medications can find it through the following organizations:
3) Cultural differences:
Video vignettes relating to cultural competency resources can be found on the American Academy on Communication in Healthcare

Health Research and Educational Trust Disparities Toolkit

B. Medication Safety Resources
The following are reputable resources about patient medication safety:

• The Institute for Safe Medication Practices (ISMP) is a bountiful resource for medication safety including the ISMP Guidelines for Safe Order Sets. You can also find multiple patient-focused tips about how to take medication safely here.
• The Food and Drug Administration (FDA) offers information for consumers about drug safety and disposal in easy to understand terminology.
• The National Association of Boards of Pharmacy educates consumers about medication safety. Also, you can find a new resource for drug disposal education and locating legitimate online pharmacy domains.
• AHRQ’s Advances in Patient Safety: New Directions and Alternative Approaches provides a practical guide to improving medication safety through Technology.
• The AHRQ has also developed a web-based resource, the Patient Safety Network (PSNet) featuring news and resources on patient safety, including medication safety.
• The Center for Improving Medication Management (The CIMM) and the National Council on Patient Information and Education (NCPIE) developed a website for consumers which includes educational resources to promote safe and appropriate medicine use.
• A broader resource on health-related safety, the national patient safety goals, can be found here.