Section 2: Medication Safety During Transitions of Care: Clinical Implications

A collection of tools for use by pharmacists in any care setting. These tools are intended to assist in identifying and focusing on key medication classes and disease states to optimize medication safety during transitions of care.
Clinical Implications

The clinical implications content is divided into 6 sections and includes tools to:

1. Identify key disease states
2. Identify high risk medications
3. Identify potentially inappropriate medications
4. Classify medication-related problems & medication errors
5. Manage medications safely
6. Improve transitions of care processes
Section 2.1: Tools to Identify Key Disease States
Centers for Medicare & Medicaid Services (CMS) Hospital Readmission Reduction Program (HRRP)

- CMS establishes hospital readmission measures under the HRRP
- Key disease states included in the measurement for excess readmissions are:
  - Pneumonia (including aspiration pneumonia & sepsis)
  - Congestive heart failure (CHF)
  - Acute myocardial infarction (MI)
  - Chronic obstructive pulmonary disease (COPD)
  - Elective total hip arthroplasty
  - Elective total knee arthroplasty
  - Coronary artery bypass graft (CABG)

Link to CMS HRRP:
Section 2.2: Tools to Identify High Risk Medications
Office of Inspector General (OIG) Report: Adverse Events (AEs) in SNFs

- Landmark 2014 OIG report identifying incidence of AE in nursing homes
- 37% of identified AEs were related to medication
- Most commonly caused by 3 drug classes:
  - Hypoglycemics
  - Anticoagulants
  - Opioids

CMS Response to OIG Report: Recommendations

• CMS compiled information on their QAPI site
• Addresses AEs in nursing homes with information to help providers:
  • Identify, track and systematically investigate AEs that occur
  • Develop and implement systemic interventions that help prevent AEs

Link to CMS QAPI site on AEs in nursing homes:
https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/Adverse-Events-NHs.html
CMS & Agency for Healthcare Research and Quality (AHRQ) Collaboration

- OIG Recommendation 1: Identify potentially preventable AEs in nursing homes
- CMS & AHRQ list potentially preventable AEs related to:
  - Medications
  - Resident care
  - Infections

Link to lists of potentially preventable AEs (within CMS QAPI site):
CMS Adverse Drug Event (ADE) Trigger Tool

• OIG Recommendation 2: Develop and implement systems to minimize ADEs associated with high risk medications (HRMs)

• CMS developed resource document listing:
  • Common potentially preventable ADEs
  • Risk factors related to those events
  • Triggers (signs, symptoms, interventions) which could indicate that an ADE occurred
  • Probes to assist evaluation of HRM systems

Link to ADE trigger tool (within CMS QAPI site):
CMS Medication Safety Systems Focused Survey

• In 2015, CMS began pilot testing a Focused Survey to:
  • Review nursing home HRM safety systems using the ADE trigger tool
  • Identify preventable ADEs
  • Mitigate ADE risk factors
• Pilot continues with likely future incorporation into Annual Survey process

Link to CMS announcement about focused survey pilot:
Institute for Healthcare Improvement (IHI) High-Alert Medication Safety Resources

• Collection of resources for safe practices to reduce potential harm from HRMs
• Focus on anticoagulants, opioids, narcotics, sedatives and insulin
• Multiple how-to guides and tools housed in one site
• Requires free registration

Link to high-alert medication safety section of IHI site:
http://www.ihi.org/topics/highalertmedicationsafety/pages/default.aspx
Institute for Safe Medication Practices (ISMP) High Alert Medication Lists

- Defines “high alert” medications as “drugs that bear a heightened risk of causing significant patient harm when they are used in error”
- Identifies high alert medications in community/ambulatory and acute care settings

Link to printable pdf list of high-alert medications in community/ambulatory healthcare:
http://ismp.org/communityRx/tools/highAlert-community.pdf
Link to printable pdf list of high-alert medications in acute care settings:
CMS and the National Committee for Quality Assurance (NCQA)

- NCQA’s Healthcare Effectiveness Data and Information Set (HEDIS) sets specific healthcare performance measures for physicians, PPOs and other organizations.
- Addresses standardized performance measures for care for people with:
  - Asthma
  - Diabetes
  - Chronic obstructive pulmonary disease (COPD)
  - Heart failure (HF)
  - Ischemic vascular disease (IVD)
- Identifies HRMs for the elderly by National Drug Code (NDC) through work with Part D Medicare.

Link to HEDIS 2017 final NDC lists:
Section 2.3: Tools to Identify Potentially Inappropriate Medications
American Geriatrics Society (AGS) Beers Criteria 2015

- List potentially inappropriate medications (PIMs) for seniors
- New companion resources include:
  - How-to-use guide
  - Alternative therapies for PIMs
  - Guidance for drug-drug interactions and renal dose adjustments
  - Pocketcards
  - Patient education materials
- Does NOT apply to palliative or hospice care

Link to 2015 Beers Criteria:
Zhan Criteria for PIM Use in Community-Dwelling Elderly

- Modified 1997 Beers Criteria to identify PIM use in community-dwelling elderly
- Expert panel classified 33 drugs into 3 categories:
  - Should always be avoided
  - Are rarely appropriate
  - Have some indications but are often misused
- Identified risk factors for PIM use:
  - Poor health
  - Polypharmacy

Citation for Zhan criteria:
Screening Tool of Older People's Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START) Criteria: Version 2

• Criteria for potentially inappropriate prescribing and potential prescribing omissions in older adults
• 2015 update to the 2008 STOPP/START criteria
• New evidence-based criteria added & obsolete criteria removed

Citation for 2015 STOPP/START criteria:
AGS Work with American Board of Internal Medicine (ABIM) Foundation's Choosing Wisely® Campaign

- List of “Ten Things Clinicians and Patients Should Question” includes:
  - Potentially inappropriate prescribing of: antipsychotics, hypoglycemics, sedative/hypnotics, antimicrobials, cholinesterase inhibitors, appetite stimulants
  - “Don’t prescribe a medication without conducting a drug regimen review”

Link to all the AGS recommendations on the Choosing Wisely® site:
http://www.choosingwisely.org/societies/american-geriatrics-society/
Medication Appropriateness Index (MAI)

- Detects potentially inappropriate prescribing with a set of 10 explicit questions
- Predicts adverse health outcomes
- Demonstrates the positive impact of pharmacist interventions to improve potentially inappropriate prescribing in older adults

Citation for MAI:
Assess, Review, Minimize, Optimize, Reassess (ARMOR) Tool

• Functional, interactive evidence-based tool to improve functional status and mobility and change or discontinue medications

• Designed for use in SNF residents:
  • Receiving 9 or more medications
  • Initial assessment
  • With falls or behavioral disturbance
  • Admitted for rehabilitation

Citation for ARMOR tool:
Section 2.4: Tools to Classify Medication-Related Problems & Medication Errors
Food & Drug Administration (FDA) MedWatch

- Safety Information and Adverse Event Reporting Program
- Voluntary online reporting form to report observed or suspected adverse events (AEs)
  - i.e. serious drug side effects, medication errors, product use errors, product quality problems, or therapeutic failures
- AEs may involve any human medical product:
  - Prescription or over-the-counter medicines, biologics, medical devices, combination products, special nutritional products, cosmetics, or foods/beverages
- May be completed by healthcare professionals or consumers

Link to FDA MedWatch:
https://www.fda.gov/safety/medwatch/default.htm
National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) Index

- Created to standardize characterization of errors
- Tracks errors in consistent systematic manner
- Medication Error Index considers:
  - If error actually occurred
  - If error reached patient
  - If patient was harmed and, if so, to what degree
- NCC encourages use of index in all care settings and for medication error tracking software

Link to NCC MERP index:
http://www.nccmerp.org/types-medication-errors
Institute for Safe Medication Practices (ISMP) Medication Error Reporting Program (MERP)

- Confidential, voluntary reporting program
- Incorporates NCC MERP medication error index
- Purpose: to learn and disseminate information about the causes and factors that contribute to medication errors
- Linked to FDA MedWatch

Link to ISMP MERP:
https://www.ismp.org/errorReporting/reportErrortoISMP.aspx
Medication Error and Adverse Drug Event Reporting System (MEADERS)

• Used by AHRQ to report medication errors and adverse drug events (ADEs)
• Stand-alone electronic system of reporting:
  • ADEs
  • Potential ADEs (pADEs)
• Created for ambulatory care setting
• Linked to FDA MedWatch

Link to AHRQ’s MEADERS:
Veterans Affairs Drug Event Reporting System (VADERS)

• Veterans Affairs (VA) Health System’s electronic system of reporting ADEs
• Does not report pADEs
• Linked to FDA MedWatch

Link to VA’s VADERS:
University of Southern California (USC) Medication Therapy Intervention & Safety Documentation Program

- Process for documenting medication-related problems (MRPs) that require pharmacist intervention
- Identifies and rates ADEs and pADEs
- Intended to quantify impact of pharmacy services on quality and safety of medication use
- Created for outpatient setting
- Not linked to FDA MedWatch

Link to USC’s medication safety program user manual:
Section 2.5: Tools to Manage Medications Safely
**Section 2.5:**
**Tools to Manage Medications Safely**

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Part 2.5.1: Anticoagulants
Anticoagulant Tools

• University of Michigan Anticoagulation Toolkit
  • considerations when selecting between warfarin vs. DOACs
  • updated to reflect 2016 CHEST Guidelines

• MAQI2 Anticoagulation Toolkit iPhone App (FREE)
  • Includes CHADS-VASc and HAS-BLED calculators, warfarin dose adjustment calculator (based on RE-LY Trial algorithm), and above University of Michigan Anticoagulation Toolkit

• ISMP: Improving Medication Safety with Anticoagulation Therapy
  Link: http://www.ismp.org/tools/anticoagulantTherapy.asp

• IHI: Reduce Adverse Drug Events Involving Anticoagulants
  Link: http://www.ihi.org/resources/Pages/Changes/ReduceAdverseDrugEventsInvolvingAnticoagulants.aspx
Part 2.5.2: Hypoglycemics
Hypoglycemics

• 2016 ADA Standards of Care:
  • Avoid insulin sliding scale
  • Have higher clinical targets in older adults
  • Diabetes Management in long-term care and skilled nursing facilities
    Link: http://care.diabetesjournals.org/content/39/2/308
  • Glycemic control in older adults:
    Link: http://care.diabetesjournals.org/content/diacare/39/Supplement_1/S81.full.pdf

• Society of Hospital Medicine: The Glycemic Control Implementation Guide

• Treating the Elderly Diabetic Patient: Special Considerations
Part 2.5.3: Opioids
Opioid Prescribing

- Nonpharmacologic therapy and nonopioid pharmacologic therapy preferred for chronic pain
- Only use opioids if expected benefits outweigh risks
  - When starting, use immediate-release at lowest effective dose at no greater quantity than expected duration of pain
  - Continue only if clinically meaningful improvement in pain and function
- Discuss known risks with patient, evaluate risk factors and incorporate strategies to mitigate risk
  - Refer to state prescription drug monitoring program (PDMP)
  - Consider urine drug testing before starting therapy and annually to assess for opioid misuse
  - Establish realistic goals with patient
- Avoid concurrent opioids and benzodiazepines
Opioid Prescribing Resources

- Interagency Guideline on Prescribing Opioids for Pain by Washington State Medical Directors Group 2015

- Managing Pain in the Geriatric Patient, Journal of the American Osteopathic Association
  Link: http://jaoa.org/article.aspx?articleid=2093506

- CDC Guidelines for Prescribing Opioids in Chronic Pain

  Summary of above CDC guidelines:
  Link: http://dx.doi.org/10.15585/mmwr.rr6501e1

- AMDA Clinical Practice Guidelines for Pain (Members only)
  Link: http://www.paltc.org/topic/pain-management
Opioid Dosing

• Medscape Opioids Equivalents and Conversions
  Link: http://emedicine.medscape.com/article/2138678-overview

• An 8 step approach to exchanging one opioid agent or rout of administration for another (copyright)
  Link: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1069064/

• Opioid Dose calculator (both opioid naïve and conversion calculator)
  Link: http://opioidcalculator.practicalpainmanagement.com

• Opioids converter program Global RPh
  Link: http://www.globalrph.com/narcoticonv.htm
Pain Assessment

• University of Iowa Assessing Geriatric Pain
  • Tools for assessing and treating pain in cognitively intact and cognitively impaired
  Link: https://geriatricpain.org/pain-assessment

• AMDA guidelines Pain assessment in Assisted Living
  Link: http://www.assistedlivingconsult.com/issues/01-03/ALC1-3_AMDAPain.pdf
Cancer Pain Treatment


  - Proposed new adaptation of WHO analgesic ladder
Part 2.5.4: Psychotropics
Psychotropics and Dementia Overview

- Assess patient for potentially modifiable contributors to symptoms
- Non-pharmacologic interventions are preferred
- Non-emergent antipsychotics should only be used for treatment of agitation in patients with dementia when symptoms are severe, dangerous, and/or cause significant distress to patient
  - Discuss potential benefits and risks with patient, surrogate decision maker, and/or family as appropriate
- When starting antipsychotic, use lowest effective dose as tolerated
  - If patient experiences clinically significant side effect, review potential risks vs. benefits to determine if tapering and discontinuing is indicated
  - If no clinically significant response after a 4-week trial of an adequate dose of antipsychotic, taper and discontinue
  - If adequate response, attempt to taper and discontinue should be made within 4 months unless patient experienced recurrence of symptoms with prior attempts at tapering
- Do not use haloperidol as first-line agent in absence of delirium
- Do not use long-acting injectable antipsychotic in absence of chronic psychotic disorder
Psychotropics Resources

• The American Psychiatric Association Practice Guideline on the Use of Antipsychotics to Treat Agitation or Psychosis in Patients with Dementia
  Link: http://psychiatryonline.org/doi/pdf/10.1176/appi.books.9780890426807

• IA- ADAPT – Improving Antipsychotic Appropriateness in Dementia Patients: Training videos and pocket guides on topics including antipsychotic prescribing guide, antipsychotic monitoring, delirium assessment and management, drugs that cause delirium, and algorithms for behavioral and psychological symptoms of dementia (BPSD).
  Link: https://www.healthcare.uiowa.edu/IGEC/IAAdapt/pharmacist

• Colorado Health Care Association and Center for Assisted Living: Guidelines for appropriate use of antipsychotics, monitoring parameters for patients currently receiving psychotropic medications, tips for a successful gradual dose reduction (GDR), and resources for compliance with CMS, and non-pharmacologic management of common behavioral disturbances in the elderly.
Dementia: Cognitive Assessment Tools

• Mini-Mental Status Examination

• Citation: Folstein, M., Folstein, S.E., McHugh, P.R. (1975). “Mini-Mental State” a Practical Method for Grading the Cognitive State of Patients for the Clinician. Journal of Psychiatric Research, 12(3); 189-198.

• Montreal Cognitive Assessment (MoCA) Test
  Link: http://www.mocatest.org/

• Alzheimer’s Association Cognitive Assessment Toolkit
Part 2.5.5: Antimicrobials
Antibiotic Stewardship Program (ASP)

- ASP includes preauthorization and/or prospective review and feedback
  - Do not rely solely on didactic educational materials
  - Target patients with specific infectious diseases
- Reduce the use of antibiotics associated with a high risk of c. difficile infection
- Do not use antibiotic cycling
- Use strategies that encourage prescribers to routinely review antibiotic regimens
  - Incorporate computerized clinical decision support
  - Develop stratified antibiograms
  - Timely transition patients from IV to oral antibiotics
  - Reduce antibiotic therapy to shortest effective duration
- In SNF, implement ASP to decrease unnecessary use of antibiotics
- Implement pharmacokinetic monitoring and adjustment programs for vancomycin
- Use alternative dosing strategies for broad-spectrum beta-lactams
- Monitor antibiotic use by days of therapy
  - Measure cost based on prescriptions and administration (not purchasing data)
- Provide clinical decision support for antibiotic use in terminally ill patients
- Address fever and neutropenia management in hematology-oncology patients
- Address prescribing of antifungals in immunocompromised patients
ASCP Antibiotic Stewardship Resources

• Antibiotic Stewardship in Long-Term and Post-Acute Care Toolkit for facilitating programs in LTPAC facilities
• Provides guidance to initiate and sustain program
• Incorporating into facility Quality Assurance Improvement Program (QAPI)
• Ensures compliance with infection prevention regulations in CMS Requirements of Participation for Long-Term Care

Link:  http://www.ascp.com/amstoolkit
Antibiotic Stewardship Resources


Link to article: [http://cid.oxfordjournals.org/content/62/10/1197.long](http://cid.oxfordjournals.org/content/62/10/1197.long)
Antibiotic Stewardship Resources

- Practical Advice for Implementation

- Algorithms promoting Antibiotic Stewardship in Long Term Care setting
  Link to article: [http://www.jamda.com/article/S1525-8610(15)00728-8/abstract](http://www.jamda.com/article/S1525-8610(15)00728-8/abstract)

- CDC Core Elements for Antibiotic Stewardship in Long Term Care

- Action Steps and Strategies to implementing antibiotic stewardship program in long term care
Assessing Antibiotic Therapy

- Global RPh Infectious Disease Empiric Therapy
  Link: [http://www.globalrph.com/antibiotic.htm](http://www.globalrph.com/antibiotic.htm)

- Global RPh Pathogenic Bacteria Resource

- Global RPh Aminoglycoside/Vancomycin Dosing by levels calculator
  Link: [http://www.globalrph.com/dosebylevels.htm](http://www.globalrph.com/dosebylevels.htm)
Part 2.5.6: Narrow Therapeutic Index Medications
Narrow Therapeutic Index (NTI) Medications

• General information about therapeutic drug monitoring
  Link:  http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2687654/

• Pharmacist letter lab monitoring chart
  Citation:  Pl Detail-Document, Lab Monitoring for Common Medications. Pharmacist’s Letter/ Prescriber’s Letter. June 2014. (requires login)
A Partial List of NTI Medications and Their Therapeutic Ranges:

Amikacin: 15 to 25 mcg/mL
Aminophylline: 10 to 20 mcg/mL
Amitriptyline: 120 to 150 ng/mL
Carbamazepine: 5 to 12 mcg/mL
Cyclosporine: 100 to 400 ng/mL (12 hours after dose)
Desipramine: 150 to 300 ng/mL
Digoxin: 0.8 to 2.0 ng/mL
Disopyramide: 2 to 5 mcg/mL
Ethosuximide: 40 to 100 mcg/mL
Flecainide: 0.2 to 1.0 mcg/mL
Gentamicin: 5 to 10 mcg/mL
Imipramine: 150 to 300 ng/mL
Kanamycin: 20 to 25 mcg/mL
Lidocaine: 1.5 to 5.0 mcg/mL
Lithium: 0.8 to 1.2 mEq/L
Methotrexate: varies with use
Nortriptyline: 50 to 150 ng/mL
Phenobarbital: 10 to 30 mcg/mL
Phenytoin: 10 to 20 mcg/mL
Primidone: 5 to 12 mcg/mL
Procainamide: 4 to 10 mcg/mL
Quinidine: 2 to 5 mcg/mL
Sirolimus: 4 to 20 ng/mL (12 hours after dose; varies with use)
Tacrolimus: 5 to 15 ng/mL (12 hours after dose)
Theophylline: 10 to 20 mcg/mL
Tobramycin: 5 to 10 mcg/mL
Valproic acid: 50 to 100 mcg/mL
Warfarin: monitor INR for effect
Part 2.5.7:
Anticholinergic/Sedation/Fall Risk Medications
Anticholinergics

• Anticholinergic medication list for patients
  • Pocket reference card in lay language, including common questions patients may have
    Link: http://www.publichealth.uiowa.edu/cert/education/AnticholinergicBrochure.pdf

• Anticholinergic cognitive burden scale
  • Developed by the Aging Brain Program of the Indiana University Center for Aging Research

• Anticholinergic Risk Scale
  • Tool to assess anticholinergic load
Tools to Assess Sedation

• Drug Burden Index

Tools for Fall Risk Assessment

• Timed Up and Go Test (TUG) Assessment Tool

• Tinetti Balance Assessment Tool
  Citation: Tinetti ME, Williams TF, Mayewski R, Fall Risk Index for elderly patients based on number of chronic disabilities. *Am J Med* 1986:80:429-434
  
  • Gait score-12, balance score-16, combined score <18-high risk, 19-23-mod risk, 24=low risk

• Berg Balance Scale
Part 2.5.8: Pharmacogenomics
Pharmacogenomics

• Research on how specific genes for proteins affect individuals’ response to medications
  • May impact medication safety and/or effectiveness

• Genetic testing is a one-time test
  • Once genotype is known, prescribing can be adjusted to maximize therapeutic benefit

• National Institutes of Health (NIH) pharmacogenomic dosing guidelines
  • Collation of dosing guidelines based on genotype
    Link: https://www.pharmgkb.org/view/dosing-guidelines.do

• Frequently asked questions:
  Link: https://www.nigms.nih.gov/education/Pages/factsheet-pharmacogenomics.aspx
Section 2.6: Tools to Improve Transitions of Care Processes
Section 2.6: Tools to Improve Transitions of Care Processes

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Part 2.6.1: Care Transitions Tools
National Transitions of Care Coalition (NTCC)

- Describes negative impact of poor transitions on care delivery
- Created tools to improve care transitions including:
  - Patient medication list
  - Bill of Rights during transitions of care
  - Transitions of care checklist
  - Importance of health information technology
  - Medication reconciliation essential elements
  - Policy paper

Link to downloadable NTCC tools:
http://ntocc.org/WhoWeServe/HealthCareProfessionals.aspx
Interventions to Reduce Acute Care Transfers (INTERACT®)

• Currently available for Nursing Homes, Assisted Living, and Home Health Care
  • Coming soon: for ACOs Health Systems and Bundled Payment

• Site-specific clinical and education tools include:
  • Quality improvement tools
  • Communication tools
  • Decision-support tools for change in condition
  • Advance care planning tools

Link to INTERACT tools:
http://www.pathway-interact.com/interact-tools/
Atlantic Quality Improvement Network (AQIN) Care Coordination Initiative

• Helpful tools for patients and caregivers include:
  • Personal Health Record (also available in Spanish)
  • Medication Management Golden Rules
  • Ask Me 3
  • Hospital Discharge Planning Golden Rules
  • Managing Your Congestive Heart Failure

Link to AQIN Care Coordination Initiative patient tools:
http://atlanticquality.org/initiatives/care-coordination/care-coordination-ny/
IHI STate Action on Avoidable Rehospitalizations (STAAR) Initiative

• Goal: to improve transitions of care and reduce avoidable rehospitalizations
• Helpful tools include:
  • STAAR overview documents
  • How-to guides customized for hospital to community settings, hospital to SNF, hospital to home health care, and hospital to clinical office practice
  • Diagnostic worksheets
  • State policy maker checklist
  • Issue briefs, webinars, presentations, and videos

Link to IHI STAAR Initiative tools:
Re-Engineered Discharge (RED) Toolkit

• By Boston University Medical Center and AHRQ
• Goal: to improve transitions of care and reduce avoidable rehospitalizations and emergency department visits
• Includes exhaustive how-to guides:
  • 11 steps for hospitals to implement RED
  • The After Hospital Care Plan
  • Delivering RED for diverse populations
  • Post-discharge follow-up
  • Monitoring implementation and outcome measures
  • Enhance the role of family caregivers

Link to the AHRQ RED tools:
Part 2.6.2: Medication Reconciliation Tools
Institute for Healthcare Improvement (IHI) Medication Reconciliation Content

- IHI collected many tools intended to improve medication reconciliation:
  - At all transitions (i.e. into hospital, between care units, and back to community)
  - In outpatient settings and hospital-based clinics
- Each page has links to featured content including:
  - Medication reconciliation toolkits and flowsheets
  - Medication lists for patients and families

Link to the IHI “Reconcile Medications at All Transition Points” page: http://www.ihi.org/resources/Pages/Changes/ReconcileMedicationsatAllTransitionPoints.aspx
Link to the IHI “Reconcile Medications in Outpatient Settings” page: http://www.ihi.org/resources/Pages/Changes/ReconcileMedicationsinOutpatientSettings.aspx
HealthIT.gov Medication Reconciliation
EHR Meaningful Use Measure

• HealthIT.gov sets meaningful use measures to help providers implement electronic health records (EHRs)
• Collected resources and tools to help perform medication reconciliation at care transitions
  • From CMS and the National Learning Consortium
• To help healthcare professionals meet the Medication Reconciliation meaningful use measure

Link to HealthIT.gov medication reconciliation meaningful use resources:
https://www.healthit.gov/providers-professionals/achieve-meaningful-use/menu-measures/medication-reconciliation
North Carolina Center for Hospital Quality and Patient Safety Medication Safety Reconciliation Tool Kit

- Included as a resource on both the IHI and HealthIT.gov references above
- Includes introduction detailing scope of problem
- Outlines process steps to establish and implement a medication reconciliation process
- Includes sample process maps, algorithms, and forms which can be used to develop performance improvement model
- Cite references, websites, and example processes

Link to Medication Safety Reconciliation Tool Kit:
Part 2.6.3: Medication Management Tools
American Medical Association (AMA) Medication Adherence Module

- Outlines 8 steps to improve medication adherence
- Tips to involve staff and patients in identifying nonadherence and changing behaviors
- Online module and downloadable tools

Citation for STEPS forward Medication Adherence module:
https://www.stepsforward.org/modules/medication-adherence
Healthcare Compliance Packaging Council (HCPC)

• Promotes benefits of unit dose packaging with compliance-prompting features to help people take their medications properly

• Wrote a White Paper on Improving Medication Adherence Through Packaging
  • Shares results of 9 studies

Citation for HCPC White Paper:
Guide for Identifying and Resolving Discharge Medication Accessibility Problems in New York State

• Outlines potential problems and guidance for resolution to help identify potential drug therapy and community pharmacy problems

• Prepared by the Atlantic Quality Improvement Network (AQIN) Quality Improvement Organization (QIN) for New York State, South Carolina, and the District of Columbia

Link for AQIN medication accessibility problems guide:
Optimizing Discharge Medication Lists

- Needs assessment performed by care transitions pharmacist identified opportunities to optimize discharge medication lists

- Goal: to increase patient safety, reduce medication errors, and prevent medication-related hospital readmissions

Citation for pilot study:

Table 1. Ideal Components of a Skilled Nursing Facility Discharge Medication List

- Generate an electronic medication list to minimize human error.
- List both brand and generic medication names.
- Avoid using sig codes and medical abbreviations.
- Include indications for all medications.
- Provide indications in layperson terms.
- Ensure appropriate medication indications.
- Determine if holding parameters are appropriate and assess if patient and/or caregiver is able to understand parameters.
- Eliminate unnecessary protocol medications such as bowel regimens.
- Only specify times of administration if relevant to the patient’s lifestyle.
- Maximize readability by considering the font size and layout of medication list.
- Remove irrelevant information.
Part 2.6.4: Deprescribing Tools
Canadian Deprescribing Network (CaDeN) Deprescribing Tools

• Deprescribing guidelines for reducing or stopping potentially unnecessary or harmful medications:
  • Antipsychotics
  • Benzodiazepines and Z-drugs
  • Proton pump inhibitors
  • Antihyperglycemics

Link to CaDeN deprescribing guides:
http://deprescribing.org/resources/
MedStopper

- Input medications and treated conditions onto this interactive website to generate a list of potentially inappropriate medications to deprescribe (RED highest priority, GREEN lowest priority)

- Recommendations for drugs to stop consider:
  - Frail elderly scale
  - Potential for improving symptoms or reducing risk for future illness or causing harm
  - Whether on Beers or STOPP criteria
  - Whether tapering is suggested

Link to interactive MedStopper website:

http://medstopper.com/
Good Palliative-Geriatric Practice Algorithm

• Series of 5 questions determine whether drugs should be continued at the same dose, switch to another drug, stopped, or dose reduced:
  • Indication is valid and relevant
  • Possible adverse reactions outweigh possible benefits
  • Drug causing adverse signs or symptoms
  • Another drug is superior
  • Dose can be reduced without significant risk

Citation for the Good Palliative-Geriatric Practice Algorithm:

Prioritization & Stopping Medications

• Outlines opportunities for prioritization or discontinuation of medications based on degree of uncertainty (none or minimal, moderate, high)

• Reasons for action include:
  • To correct a medical error, to simplify regimen, benefit is unlikely, when safe for as-needed use, benefit has been achieved, behavioral intervention can be substituted, benefit is unlikely to be realized

Citation for prioritization and stopping medications article:
Medication Appropriateness for Patients Late in Life

- Proposed model for appropriate prescribing for patients late in life considers:
  - Remaining life expectancy
  - Time until benefit will be achieved
  - Goals of care
  - Treatment targets
- Goal: guide discontinuation or withholding of treatments otherwise indicated, appropriate, and recommended according to current guidelines

Citation for medication appropriateness late in life article:
Part 2.6.5: Risk Screening Tools
The LACE Index

• Scoring tool that identifies patients at high risk for readmission or death within 30 days of discharge from hospital
• “L” = length of stay; “A” = acuity of admission; “C” = co-morbidities; “E” = Emergency Department visits within the last 6 months
• Can help pharmacists target and prioritize patients who would benefit most from medication reconciliation and education on transition

Link to LACE index:
http://www.besler.com/lace-risk-score/