Preventing Home Medication Administration Errors

Implementation Resources

Supported by:

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Listing of resources does not imply an endorsement by the American Academy of Pediatrics (AAP). The AAP is not responsible for the content of external resources.

Recommended Provider Practices to Promote Safe Home Administration of Pediatric Medications

Recommended Practice	Explanation
Provide **straightforward and actionable instructions**	Medication counseling **conveys key instructions**, including: • Medication name • Medication purpose (indication) • Dose amount • Frequency • Duration • Route of administration • Side effects
	Provide dose amount using **milliliter units only**, using the abbreviation "**mL**" • **Avoid** spoon-based units (eg, teaspoon [tsp], tablespoon [TBSP]) • **Avoid** dosing in cubic centimeters (ie, cc) • Use mL units consistently in verbal and written communication
	Provide dose amounts that are easy to measure • **Avoid fraction or decimal amounts** when possible (use whole number amounts) • **Include leading zeroes** if decimal amounts are used (eg, **0**.X) • **Avoid trailing zeroes** (eg, X.**0**) • **Avoid confusing abbreviations**, such as U (unit) and QD (daily) (eg, for insulin dosing, spell out the word "Unit")
	Give **explicit instructions regarding timing** • Provide information on time of day (eg, in the morning and in the evening) instead of providing only frequency information (eg, 2 times a day) • Include information on explicit timing on prescriptions
Include weight and indications on all prescriptions	• **Include patient weight** so that pharmacists can double-check the dose ○ Use only kilograms (kg) for child weight to reduce inadvertent mix-ups (with pounds) and potential for error • **Include indications**, so that pharmacists can provide a second check on the dose (some medications are dosed differently based on indication or may be used off-label), except in cases that involve sensitive issues such as psychiatric or substance use disorders
Incorporate **health literacy-informed counseling strategies and educational materials** for caregivers as part of care provided in inpatient, outpatient, emergency care, and pharmacy settings	Use a **"universal precautions" approach** to counseling (perspective that all patients would benefit from receiving evidence-based health literacy-informed communication strategies[1]
	Use the following health literacy-informed verbal communication strategies: • **Plain, "living room" language** • **Demonstration** (eg, for liquid medications, consider using an oral syringe to demonstrate the amount of medication the caregivers should measure out; for asthma, consider having a staff member demonstrate how to use the spacer with inhaler)

	• **Teachback:** ask caregivers to say in their own words how they will give the medication (eg, "I want to make sure I did a good job explaining to you how much medication you should give. Can you tell me how much medication you will give to Jennifer each time?") • **Showback** (eg, have caregiver demonstrate how much medication they plan to give each time using an oral syringe)
	Provide **patient- and regimen-specific written instructions** that can be taken home and shared with family members • **Incorporate written instructions into verbal counseling** to reduce cognitive load • **Use pictures/drawings** to supplement counseling (eg, for liquid medications, **provide a pictographic dosing diagram** which visually shows the right amount of medication to give within a standard dosing tool) • **Provide a log** for caregivers to keep track of medications given, and help promote adherence to the full course of medication • Written information recommended to be at a 6th-8th grade reading level for the general population; ≤5th grade reading level for patients with low literacy

For liquid medications, **promote caregiver use of standard dosing tools**	• Counsel caregivers to **use standard dosing tools** (eg, tools with standard measurement markings such as oral syringes, cups, dosing spoons, droppers) and **avoid the use of nonstandard kitchen spoons**
	• For prescribed medications, it is recommended that health care providers or pharmacists **provide a standard dosing tool to caregivers to take home** if no tool is provided as part of packaging (in particular, providers dispensing the medication are responsible for making sure that families have an appropriate tool to use to measure the prescribed medication)
	  ○ **Provide oral syringes when dosing accuracy is important**, especially when smaller doses are recommended (eg, <5 mL)
	  ○ **Provide tool with the smallest size to fit the dose without the need to fill the tool multiple times** for a single dose
	• **Warn caregivers regarding potential known pitfalls of dosing cup use**
	  ○ **Avoid cups for smaller doses** (eg, <5 mL)
	  ○ **Place cups on a level surface** when measuring; look at markings at eye level when measuring
	• **Promote dosing tool best practices**
	  ○ For prescription medications: use tool provided by health care provider or pharmacy for specific medication prescribed
	  ○ For OTC medications: use dosing tool included in packaging
	  ○ Co-location of dosing tool with prescribed medication; store dosing tools with medications safely (eg, up, away, and out of sight)

Provide **language concordant care**	Verbal counseling and written information should be provided in the language of patient/family preference • **High-quality translations** should be provided • **Trained/certified professional interpreters** should be used
Empower caregivers to engage in care	• **Empower caregivers to ask questions** ○ Acknowledge that many caregivers have difficulty with administering medications and that questions are expected (eg, "I just gave you a lot of information. It is common

	for caregivers to have questions about how to give these medications. What questions do you have for me?") • Encourage caregivers to **request a dosing tool** if one is not provided
Reconcile medications at each relevant patient encounter	**Conduct regular reviews of medication lists** with patients/caregivers • Systematically review each medication taken (eg, name, strength, indication, dose, frequency, expected duration) • OTC medications and vitamins/supplements should be included
Providers should **access educational modules and other resources** to promote safe home medication administration practices	Modules and resources should focus on promoting safe home medication administration, including: • Safe prescribing practices (including mL-only dosing) • Health literacy-informed patient education and counseling • Safe storage and administration of home medications Professional organizations should make **educational modules and other resources to promote safe home medication administration available to providers** and incorporate them as part of continuing medical education and maintenance-of-certification opportunities
Promote **safe disposal of unused medications**	Common household OTC medications should be safely disposed of when expired
Encourage governmental agencies and industry to adopt measures to promote home medication safety	Measures to promote home medication safety include: • Standardization of dosing units • Ensuring that appropriate dosing tools are packaged with oral liquid medications • Optimization of medication labels and packaging to decrease caregiver confusion • Standardization of formulations to reduce confusion between infant versus children's formulations of medications • Provision of health literacy-informed patient information materials in the language of patient/family preference • Removal of "Ask your doctor" from OTC medication labels and replacement with more precise instructions when possible (eg, acetaminophen for children <2 years old) • Promotion of EHR functionality that supports safe pediatric medication use (eg, automatic rounding to whole numbers for liquid medications, limitation/default to mL-only dosing, limitation to one concentration of medication, default standard dosing based on weight, explicit standard dosing intervals [eg, morning and night vs. twice a day], hard stops to facilitate acquisition of a complete set of information [eg, dose, frequency, duration], prompts about drug interactions, and provision of information in the patient's preferred language) • Continued support for child-proof packaging
Encourage research funding for novel ways to support safe home medication administration	Includes **identifying strategies to evaluate and support appropriate dosing**, and **improve medication tracking and feedbac**k to support caregiver/patient adherence to instructions

Implementation Resources for Pediatricians

Ten-Step Guide to Establishing a Practice-Based Event Reporting System

Step	Tasks	Resources
Prepare	Educate staff and build safety culture • Descriptive epidemiology of preventable adverse events (PAEs) – frequent but often unrecognized, unreported • Confidential vs. anonymous reporting • Importance of both near misses (NM) and PAEs	Prevent medical errors in your practice. Daniel R Neuspiel, MD, MPH, FAAP and Andrew J Schuman, MD, FAAP. Contemporary PEDS Journal, Vol 35 No 7, Volume 35, Issue 7 Johns Hopkins Armstrong Institute for Patient Safety and Quality. The Comprehensive Unit-based Safety Program (CUSP). CUSP Tool: Culture Check-up Process
	Check with legal/risk management regarding disclosure policies; understand local mandatory reporting requirements	Disclosure of Adverse Events in Pediatrics. Committee on Medical Liability and Risk Management, Council on Quality Improvement and Patient Safety. Pediatrics Dec 2016, 138 (6) e20163215
Assemble team	Identify physician/provider champion(s)	
	Include representatives of all staff levels	
	Consider family representative	Institute for Patient- and Family-Centered Care: Partnering with patients and families to enhance safety and quality Institute for Patient- and Family-Centered Care: Advancing the practice and patient- and family-centered care in primary care and other ambulatory settings
Determine patient population	Focus on Children and Youth with Special Health Care Needs (CYSHCN) - specify definition	McPherson M, Arango P, Fox H, et al. A new definition of children with special health care needs. Pediatrics. 1998;102(1 pt 1):137–140pmid:9714637
Train team	Quality improvement, root cause analysis (RCA), system improvement	-IHI: Root Cause and Systems Analysis http://www.ihi.org/education/ihiopenschool/Courses/Documents/SummaryDocuments/PS%20104%20SummaryFINAL.pdf National Patient Safety Foundation. RCA2: Improving Root Cause Analyses and Actions to Prevent Harm. Boston, MA: National Patient Safety Foundation; 2015 Johns Hopkins Armstrong Institute for Patient Safety and Quality. The Comprehensive Unit-based Safety Program (CUSP). Learning from Defects

Choose reporting tool	Paper or electronic tool; not part of patient record	See provided sample tool AHRQ Common Formats for Event Reporting https://www.pso.ahrq.gov/common-formats/overview
	Key elements to report: • Description of event • Any harm to patient? • How/when discovered? • Patient demographics, medical conditions • Possible preventive actions	
Plan team meetings	Determine frequency, location, duration, leadership	
	Develop team norms	Johns Hopkins Armstrong Institute for Patient Safety and Quality. The Comprehensive Unit-based Safety Program (CUSP). Assembling a CUSP Team
	Determine which reports merit full RCA	
Keep records	Develop system to file reports, RCAs, recommendations	
Note local reportable events	Report qualified events to your institutional reporting system	Macrae C. The problem with incident reporting. BMJ Quality & Safety 2016;25:71-75. https://qualitysafety.bmj.com/content/25/2/71
Report to practice staff	Report to entire practice staff regularly on events and recommendations • Reinforce that more reports = good outcome • Recognize practice or individuals for reporting	Patient Safety Reporting Systems: Sustained Quality Improvement Using a Multidisciplinary Team and "Good Catch" Awards https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3888507/pdf/nihms-543885.pdf
Follow-up	Develop system of follow-up of interventions and monitoring for similar types of events	

NOT PART OF MEDICAL RECORD

DO NOT FILE IN CHART

CONFIDENTIAL, FOR INTERNAL USE ONLY

Events in Ambulatory Pediatrics: Reporting Form

Reportable event = *Any event in a patient's medical care which did not go as intended and either harmed or could have harmed the patient*

Patient Name:
MR#: Date of Report:

☐ ***Also reported to institutional system***

1. **Please describe the event and attach any additional information.**

2. **How long was it from when the event occurred to the time the event was recognized?**
   - ☐ Immediately
   - ☐ Same day
   - ☐ Not same day, but 1 week or less
   - ☐ Greater than 1 week; Specify # weeks:
   - ☐ Don't know

3. **How was the event discovered?**

My job position:
I am a pediatric resident: ☐ Yes ☐ No

4. **Who discovered the event? (Select all that apply)**
   - ☐ I did
   - ☐ An attending physician other than me
   - ☐ A resident physician other than me
   - ☐ Nurse or NCT other than me
   - ☐ Registrar other than me
   - ☐ Phlebotomist other than me
   - ☐ Parent or Patient
   - ☐ Other (please specify position):

5. **Did the event result in any harm or injury to the patient?**
   - ☐ Yes; Specify:
   - ☐ No ☐ Don't know

6. **Age of the patient at time of the event:**

7. **What do you think may have prevented this event?**

8. **Please add any additional information about this incident that you feel might be important or might clarify it, or suggestions to help improve this project (you may continue on the back):**

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Medication Reconciliation Key Considerations/ Key Concepts

Learn the basics of medication reconciliation here: Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Medication Reconciliation		
KEY CONSIDERATIONS	**TIPS/IDEAS**	**RESOURCES**
1. Assign Medication Reconciliation Roles to Clinic Staff	As a team, determine who will do the following tasks: • Remind families to bring all medications to the visit and write down any questions they have, including questions about medications. • Take medication history and verify medications, reconcile medication. • Provide education using teach back. • Print medication list.	AHRQ Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation, Chapter 2: Building the Project Foundation: Project Teams and Scope Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Appendix. Assembling a Medication Reconciliation Team
2. Standardize Medication History Interview / Medication Review	Look for ways to make medication reconciliation a value-added process to existing workflow. Conduct medication review at each visit. Consider integrating medication discussions with patients and their caregivers at a set point during provider visits so it is an expected part of the visit.	Video: How to Take the Best Possible Medication History courtesy of Vanderbilt University
	Create script to remind patients to bring their medications or a complete list to their visit.	Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Figure 10: Script for Patient Reminders to Bring Their Medications or a Complete Medication List to Their Procedure/Test
	Obtain and review all available sources of medication information. Document the following: • allergies. • medicine name, dose, frequency, route, length of therapy for each medication including vitamins, herbs, supplements, OTC medications.	Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Figure 9: Tips for Conducting a Patient Medication Interview
3. Verify/Maintain Accurate Medication List	Verify Medication List For patients who present prescription bottles and/or a medications list, each individual medication and corresponding dosing instructions should be verified whenever possible. A patient	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Conduct Brown Bag Medicine Reviews: Tool #8

	may be taking a medication differently than what is reflected on their prescription label. Also, a patient may have forgotten to update their personal list with newly prescribed medications. Develop a single medication list ("One Source of Truth") for documenting the patient's current medications. Sources of information for this medication list include: • Patient. • Family/caregiver. • Patient's medication bottles. • Patient's community pharmacy. • Patient's primary care or specialty physicians and their offices or clinics. • Past medical records. • Patient's own medication list. • Hospital discharge list.	Health Literacy Universal Precautions Toolkit, 2nd Edition. Medicine Review Form: Tool #8b Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Chapter 3. Developing Change: Designing the Medication Reconciliation Process
	Maintain Medication List This list should be shared and utilized by all physicians, nurses, pharmacists, and others caring for the patient. • All disciplines caring for the patient should be working from the same medication list, regardless of the format (electronic or paper-based). • The list should be centrally located and easily visible within the patient's medical record. • This list becomes the reference point for ordering decisions and reconciliation, screening medications to be administered during a procedure/episode of care, and determining the patient's medication regimen upon discharge. • Each discipline should have the ability to update the home medications as new or more reliable information becomes available. • In a paper-based format, old or modified information could be crossed out, new information can be added, and each change can be dated, timed, and signed. • In an electronic system, changes would be date and time stamped, and the prescriber's name automatically captured. If the patient's medication list requires changes at discharge, updated information will remain stored for review and modification for future admissions.	Medications at Transitions and Clinical Handoffs (MATCH) Toolkit for Medication Reconciliation. Chapter 3. Developing Change: Designing the Medication Reconciliation Process
4. Reconcile Discrepancies	Establish a location in the medical record where the current medication list is stored. This should	Medications at Transitions and Clinical Handoffs

	be accessed upon opening a medical record or on the encounter page in an electronic medical record (EMR). Ensure that any discrepancies identified (i.e., omissions, modifications, deletions, etc.) are appropriate and intentional based on the patient's care plan. Resolve unintended discrepancies with supporting documentation. Prompts to complete required steps for medication reconciliation are essential. To be effective, prompts or reminders need to occur during the appropriate time within the team member's workflow. Also, prompts or reminders decrease reliance on memory to perform required steps. Paper-Based Tips & Ideas If an organization has a paper-based system, medication reconciliation forms should be kept in the medical record in a highly visible, specified location to serve as a reminder to perform medication reconciliation during the episode of care. Regardless of practice settings, clinicians need effective reminders at the appropriate times within their workflow for consistent behavior if true forcing functions are not possible.	(MATCH) Toolkit for Medication Reconciliation Table 3: Critical Thinking Process to Identify and Clarify Discrepancies Marien S, Krug B, Spinewine A. Electronic tools to support medication reconciliation: a systematic review. J Am Med Inform Assoc. 2017 Jan;24(1):227-240.
5. Ensure Use of Patient and Family Centered Approach in Each Step	Empower the patient and family to take an active role in medication reconciliation. Medication reconciliation is a joint responsibility. Work with the patient/caregiver in partnership to make informed choices, agreeing a plan that respects patient preferences including their right to refuse or limit treatment. Use a patient-centered approach to medication teaching—teach patients to be their own advocate so they 'carry' an accurate list of medication and a list of their allergies.	AHRQ EvidenceNOW. Tools for Change. Key Driver 5: Engage with Patients and Families in Evidence-Based Care and Quality Improvement AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Communication Self-Assessment Tool #4b
6. Ensure Follow up	Consider offering a televisit/telephone call to make sure that what was discussed and agreed upon is still working. Use planned and documented phone monitoring as a follow up intervention. Ensure that the patient/caregiver knows what to do if there are any concerns about the management of their condition, if the condition deteriorates or if there is no improvement in a specific time frame.	Using telehealth to conduct medication reconciliation. Modern Healthcare. March 2, 2019 American Academy of Pediatrics. Telehealth Care and After Hours Care. Implementing Telephone Care

	Ensure the effectiveness of treatment and potential unwanted effects are monitored. Adapt the management plan in response to on-going monitoring and review of the patient's condition and preferences.	
OTHER IMPORTANT CONSIDERATIONS **Addressing Adherence**	Assess adherence to medications. Ask if taking or not taking medications. 1. During patient counseling or interview, look for pink or red flags. o Example Red Flag: I don't see why I have to take this anyway. I hate to have to take medicines. o Example Pink Flag: I'm supposed to take it three times a day. My doctor wants me to take it three times a day. The doctor says I should take it three times a day. 2. Use a direct probe or universal statement during visit interview. o Example Direct Probe: What kind of problems have you had remembering to take your medication? o Example Universal Statement: Most of my patients have some difficulty remembering to take their medications. What kind of problems have you had remembering to take your medication? 3. Look for different dose than labeled during 'show and tell' counseling on refills. Immediately probe for how the patient is actually taking their medication and why the difference from the label. 4. Look for controversy over accuracy of subjective information. -Recommend families utilize pharmacists as a partner in this process. Recommend pharmacy counseling when picking up medications and involvement in medication regimen compliance.	AACP-NCPA Medication Adherence Educators Toolkit Cincinnati Children's Center for Adherence and Self-Management. Helping your Child Manage Challenging Behaviors Chappell, F. (2015), Medication adherence in children remains a challenge. Prescriber, 26: 31-34 How Do You Improve Compliance? Sheldon Winnick, David O. Lucas, Adam L. Hartman, David Toll. Pediatrics Jun 2005, 115 (6) e718-e724 Gardiner P, Dvorkin L. Promoting medication adherence in children. Am Fam Physician. 2006 Sep 1;74(5):793-8
Disposal of Medicine	Recommend disposal of any expired or discontinued medications.	FDA: Where and How to Dispose of Unused Medicines
Addressing Language Differences/Use of Interpreter	Ensure that patients who do not speak English very well, including those who speak American or other sign language, get the health information they need.	Center for Culture, Ethnicity & Health. Health literacy - Using teach-back via an interpreter

	Ask patients about their religion, culture, and ethnic customs so that, together, you can devise treatment plans that are consistent with the patients' values.	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Address Language Differences: Tool #9 AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Consider Culture, Customs, and Beliefs: Tool #10
Screening for Social Determinants of Health	The AAP recommends surveillance for risk factors related to social determinants of health during all patient encounters. Practices can use a written screener or verbally ask family members questions about basic needs such as food, housing, and heat.	American Academy of Pediatrics. The Screening Technical Assistance & Resource Center (STAR Center). Screening Resources AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition Direct Patients to Medicine Resources: Tool #19 Poverty and Child Health in the United States. COUNCIL ON COMMUNITY PEDIATRICS. Pediatrics Mar 2016, peds.2016-0339
Educate Staff	Provide education and raise awareness about health literacy and medication reconciliation to practice/clinic staff.	Health Literacy Universal Precautions Toolkit, 2nd Edition. Toolkit, 2nd Edition. Raise Awareness: Tool #3
Educate Patients	Educate parents/caregivers on the importance of managing medication information at the time of discharge or at the end of an outpatient encounter. This education should include the importance of: • Giving a list to their primary care provider. • Updating their own list when medications are discontinued, doses are changed, or new medications (including OTC medications) are added. • Carrying their medication information at all times in case of an emergency: ○ This can help ensure patients are prepared to share an accurate medication list with their health care providers at each health care encounter.	AHRQ Motivational Interviewing Strategies to Engage Patients IHI What is Motivational Interviewing? AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Help Patients Remember How and When to Take Their Medicine: Tool #16 AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition Use the Teach-Back Method: Tool #5

	Give the patient/caregiver clear, understandable and accessible information about their medicines (e.g. what it is for, how to use it, possible unwanted effects and how to report them, expected duration of treatment). Teach patient to use reminder strategies (cueing strategies such as using alarm clock, location of medications, written notes). Use medication simplification strategies for patients taking multiple medications. Use Teach-Back to evaluate patient understanding of medications. • Ask patients to demonstrate how to use/take medication. • Ask patient to explain the purpose of medication. • Use probing questions such as 'What do you do if the child throws up their medicine? Encourage families to keep track of medications utilizing a medication administration record/log/tool and remind and ask them to bring this to their appointments. Provide each patient with copies of their medication lists. "Apps" will show a picture of the medication for patients with low health literacy. If available, encourage patients/caregivers to sign up for a patient portal where they can review and access their medication list.	AHRQ Teach-back: Interactive Module Slides

Ten Step Guide to Improving Provider Communication of Pediatric Medication Instructions

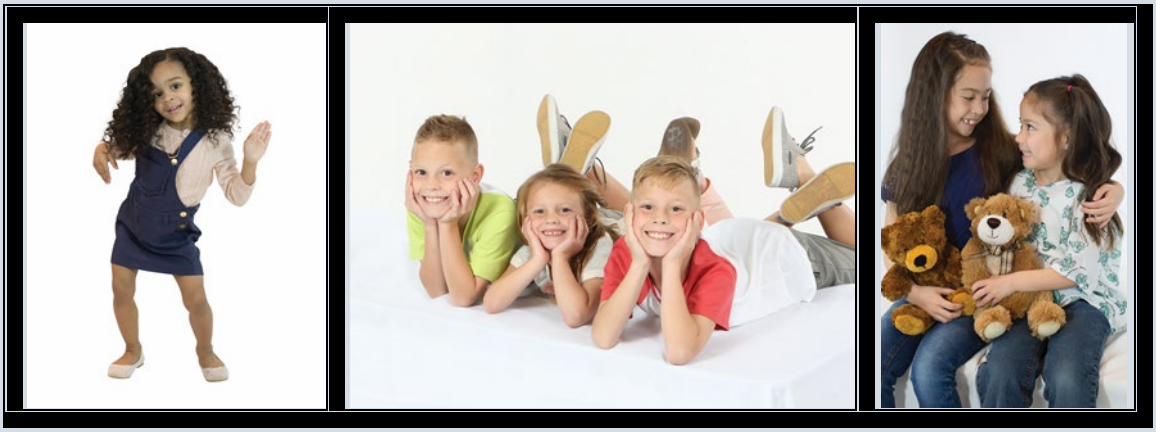
Step	Tasks	Resources
1. Assemble team	Identify and assemble interdisciplinary team members (iterative process with new team members added as needed) • Include representatives of all staff levels (best to include one motivated/respected representative from each area of practice - e.g. physician, nurse, medical assistant, practice manager) • Consider family/ caregiver/ patient representative (consider tapping into existing parent council if representative of your patient population) Establish SMART (Specific, Measurable, Achievable, Realistic, Timely) goal(s) for the team Clarify role and responsibilities of team members	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Form a Team: Tool #1 https://www.ahrq.gov/health-literacy/improve/precautions/tool1.html
2. Raise awareness	Engage and educate staff • Introduction to concept of health literacy / language access • Descriptive epidemiology of pediatric medication errors and intersection with health literacy/ health communication and language access	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Raise Awareness: Tool #3 https://www.ahrq.gov/health-literacy/improve/precautions/tool3.html "Engaging and empowering caregivers" and "optimizing interdisciplinary team communication". Canadian Pediatric Society. https://www.cps.ca/en/documents/position/medication-safety-for-children-with-medical-complexity#Table%202
3. Assess practice and readiness for change	Examine current state in the practice, and evaluate readiness for change	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Create a Health Literacy Improvement Plan: Tool #2 https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html
4. Determine patient population to target	Consider focusing on specific populations, e.g., Children and Youth with Special Health Care Needs (CYSHCN), or families with limited English proficiency, who are at increased risk for medication errors	
5. Train team	Introduce quality improvement and patient safety concepts and tools: quality measures that can help show	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Create a Health Literacy Improvement Plan: Tool #2

	impact of interventions, root cause analysis (RCA), system improvement	https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html IHI: Root Cause and Systems Analysis http://www.ihi.org/education/ihiopenschool/Courses/Documents/SummaryDocuments/PS%20104%20SummaryFINAL.pdf National Patient Safety Foundation. RCA2: Improving Root Cause Analyses and Actions to Prevent Harm. Boston, MA: National Patient Safety Foundation; 2015 Johns Hopkins Armstrong Institute for Patient Safety and Quality. The Comprehensive Unit-based Safety Program (CUSP). Learning from Defects
6. Create an improvement plan	Decide which aspects to focus on	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Create a Health Literacy Improvement Plan: Tool #2 https://www.ahrq.gov/health-literacy/improve/precautions/tool2.html
	• Clear communication / plain language	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Communicate Clearly: Tool #4 https://www.ahrq.gov/health-literacy/improve/precautions/tool4.html
	• Use written information, leveraging visuals / images/ graphics	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Assess, Select, and Create Easy-to-Understand Materials: Tool #11 https://www.ahrq.gov/health-literacy/improve/precautions/tool11.html AHRQ The Patient Education Materials Assessment Tool (PEMAT) and User's Guide https://www.ahrq.gov/health-literacy/patient-education/pemat.html
	• Teachback / showback	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Use the Teach-Back Method: Tool #5 https://www.ahrq.gov/health-literacy/improve/precautions/tool5.html AHRQ Teach-back: Interactive Module Slides Center for Culture, Ethnicity & Health - Using teachback using an interpreter https://www.ceh.org.au/resource-hub/health-literacy-using-teach-back-via-an-interpreter/

	• Encourage questions	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Encourage Questions: Tool #14 https://www.ahrq.gov/health-literacy/improve/precautions/tool14.html AHRQ "Questions Are The Answer" Video https://www.ahrq.gov/questions/videos/waiting-room.html
	• Medication reconciliation	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Conduct Brown Bag Medicine Reviews: Tool #8 https://www.ahrq.gov/health-literacy/improve/precautions/tool8.html See "Medication Reconciliation Key Considerations/ Key Concepts" section of toolkit.
	• Remembering how and when to take medicines	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Help Patients Remember How and When to Take Their Medicine: Tool #16 https://www.ahrq.gov/health-literacy/improve/precautions/tool16.html
	• Language access / use of interpreters	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Address Language Differences: Tool #9 https://www.ahrq.gov/health-literacy/improve/precautions/tool9.html Center for Culture, Ethnicity & Health - Using teachback using an interpreter https://www.ceh.org.au/resource-hub/health-literacy-using-teach-back-via-an-interpreter/
7. Choose reporting tool	Provider self-assessment: Medication Communication Self-assessment tool Provider observation: Medication Communication Observation Form Patient/Family/Caregiver assessment: Brief Patient/Family/Caregiver Feedback Form	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Communicate Clearly: Tool #4 Medication Communication Self-Assessment (Adapted from: https://www.ahrq.gov/health-literacy/improve/precautions/tool4b.html) Medication Communication Observation Form (Adapted from: https://www.ahrq.gov/health-literacy/improve/precautions/tool4c.html) Brief Patient/Family/Caregiver Feedback Form about Medication Instructions Given (Adapted from: https://www.ahrq.gov/health-literacy/improve/precautions/tool4d.html)

8. **Plan team meetings**	Determine frequency, focused agenda, location, duration, leadership to monitor and keep the momentum-till sustainability is achieved	AHRQ Health Literacy Universal Precautions Toolkit, 2nd Edition. Create a Health Literacy Improvement Plan: Tool #2 https://www.ahrq.gov/health-literacy/improve/precautions/tool2b.html
9. Report to practice staff / leadership	Report to practice staff and leadership regularly on progress - very important for accountability and engagement.	"Strategies and Approaches for Tracking Improvements in Patient Safety". Patient Safety Network. 2021. https://psnet.ahrq.gov/primer/strategies-and-approaches-tracking-improvements-patient-safety
10. Follow-up	Develop system of follow-up of strategies implemented and monitoring; continue regular meetings (Note: Sustainability is the most important but hardest to achieve and that can only happen till there is consistency among staff members until actions become second nature)	"4 Steps to Sustaining Improvement in Health Care". Harvard Business Review. 2016. https://hbr.org/2016/11/4-steps-to-sustaining-improvement-in-health-care

Implementation Resources for Patients & Families



Patient and Family Resources

KEY CONCEPT	DESCRIPTION	RESOURCES
How to Use Liquid Medications	Describes how to safely use liquid medicines with children, including how to measure out medicines correctly with tools like oral syringes, dosing spoons, and cups.	How to Use Liquid Medications. American Academy of Pediatrics - HealthyChildren.org https://www.healthychildren.org/English/safety-prevention/at-home/medication-safety/Pages/Using-Liquid-Medicines.aspx
	Gives tips about how to use medicines safely, including storing medicines out of reach, only giving medicine when your child needs it, and getting rid of medicine you no longer need.	Medication Safety Tips. American Academy of Pediatrics - HealthyChildren.org https://www.healthychildren.org/English/safety-prevention/at-home/medication-safety/Pages/Medication-Safety-Tips.aspx
	A **video** that talks about the top 5 safety tips for measuring out and giving liquid medicines.	The Healthy Children Show: Giving Liquid Medicine Safely **(Video)**. American Academy of Pediatrics - HealthyChildren.org https://www.healthychildren.org/English/safety-prevention/at-home/medication-safety/Pages/The-Healthy-Children-Show-Giving-Liquid-Medicine-Safely.aspx
How to Use Over the Counter Medications & Dosing	Talks about how to safely use medicines you can buy without a prescription, including questions to ask your doctor or pharmacist.	Using Over-the-Counter Medicines With Your Child. American Academy of Pediatrics - HealthyChildren.org https://www.healthychildren.org/English/safety-prevention/at-home/medication-safety/Pages/Using-Over-the-Counter-Medicines-With-Your-Child.aspx
	Gives information on the **right amount of acetaminophen** to give your child using your child's weight.	Acetaminophen Dosage Table for Fever and Pain. American Academy of Pediatrics-HealthyChildren.org https://www.healthychildren.org/English/safety-prevention/at-home/medication-safety/Pages/Acetaminophen-for-Fever-and-Pain.aspx
	Gives information on the **right amount of ibuprofen** to give your child using your child's weight.	Ibuprofen Dosage Table for Fever or Pain. American Academy of Pediatrics - HealthyChildren.org https://www.healthychildren.org/English/safety-prevention/at-home/medication-safety/Pages/Ibuprofen-for-Fever-and-Pain.aspx
	Gives information on the **right amount of diphenhydramine** to give your child using your child's weight.	Diphenhydramine Dosage Table (eg, Benadryl) (Antihistamine). American Academy of Pediatrics - HealthyChildren.org https://www.healthychildren.org/English/safety-prevention/at-home/medication-

		safety/Pages/Diphenhydramine-Benadryl-Antihistamine.aspx
Medication Dosing & Storage	Gives tips about safe dosing, including knowing the right dose, measuring the right amount, using the right tool, and asking questions. Also gives tips about safely storing medicines, including locking the safety cap, putting medicines away, and thinking about safety when there are guests and when traveling.	Protect Your Children: Store & Use Medicines Safety. Centers for Disease Control and Prevention https://www.cdc.gov/patientsafety/features/safe-medicine-children.html
	Information about how to store medicines safely away from children - up and away.	Up and Away and Out of Sight Educational Program https://www.upandaway.org
		Coloring book about safe storage. Up and Away and Out of Sight Educational Program https://www.upandaway.org/resource/coloring-book/
		Safe Medicine Storage for Parents **(Video)**. Up and Away and Out of Sight Educational Program https://youtu.be/zmVMJZL5who
Disposal of Medications	Talks about how to get rid of medicines that you no longer need.	How to Safely Dispose of Unused or Expired Medicine **(Video)** https://www.fda.gov/drugs/safe-disposal-medicines/disposal-unused-medicines-what-you-should-know
	Talks about how to safely get rid of medicines in the trash.	Drug Disposal: Dispose "Non-Flush List" Medicine in Trash https://www.fda.gov/drugs/disposal-unused-medicines-what-you-should-know/drug-disposal-dispose-non-flush-list-medicine-trash

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