Strategies for Avoiding E-Prescribing Errors

E-prescribing can increase efficiency and safety.[8] However, e-prescribing also introduces new types of prescription errors. Use the checklist below to review some of these potential errors and see strategies to avoid them. Toolkits for implementing e-prescribing (U.S.) are available at https://healthit.ahrq.gov/health-it-tools-and-resources/implementation-toolsets-e-prescribing. For FAQs on Canada's electronic prescription service, *PrescribeIT*, see https://www.prescribeit.ca/component/edocman/195-prescribeit-health-care-practitioner-faq/view-document?Itemid=106.

Goal	Suggested Action
Avoid errors by **minimizing interruptions**.	☐ Let team members know you'd like "silent computer use" while e-prescribing or inputting e-prescriptions.[3] Ask team members not to interrupt.[3] Defer answering colleague or patient questions until you're done typing. **Prescribers**: ☐ To **avoid interruptions** by patients while you are prescribing: ☐ Narrate while you are e-prescribing.[3] For example, "I am sending in your atorvastatin prescription. You will take 80 mg once daily for your cholesterol. I am sending a ninety-day supply to Hometown Pharmacy on Main Street. I just received confirmation that the prescription was successfully transmitted." ☐ This also provides a "double check" of the details.[4] ☐ Give the patient a pertinent patient education handout to review while you are e-presribing.[3]
Ensure prescription directions are **clear, correct, and complete**.	☐ Look for additional directions, indications, and duration of therapy in the "sig" and "notes" fields. ☐ Put **all** Rx information on the Rx label to avoid errors (e.g., duration, indication). ☐ Double-check all auto-populated sigs for completeness and accuracy. If necessary, add in details or enter the sig manually. ☐ Call the prescriber if there are different sigs or conflicting information. ☐ Use your final review of the prescription to make sure the sig is clear, accurate, and complete.
Avoid errors by using **good communication.**	**Prescribers**: ☐ Some systems (e.g., *PrescribeIT* [Canada]) allow prescribers to **cancel an existing prescription**. If this feature is not available on your system, call the pharmacy, or use the notes field in the e-prescription.[4,5] For example, "replaces simvastatin" could be typed into the notes field to signal the switch to a new atorvastatin prescription.[5] ☐ Consider sending complicated prescriptions (e.g., compounded medications, long and specific tapering instructions) via fax or writing a hard copy for the patient.[6] **Pharmacists**: ☐ Request an updated med list from a patient's office visit to help catch errors (e.g., drug selection errors from preference lists).[6] ☐ Use patient counseling and open-ended questions as final checks to identify problems with the patient.

Goal	Suggested Action
Use the **notes field** effectively to avoid errors.	☐ Use of the notes field is a potential source of miscommunication, leading to errors or dispensing delays.[5] When prescribing: ☐ Do not use these fields for information that could otherwise be communicated using a standard field.[5] ☐ Ensure information in the free text fields does not contradict information in a standard field.[5] ☐ **Be aware of limitations** of the free text fields in your system. For example, in some systems, a field might only be enabled for internal communication and NOT transmitted to the pharmacy. In such a circumstance, using this field could lead to errors (e.g., if used for important additional "sig" information). Also, in some systems, this information does not carry over to refills.[4] ☐ Make sure any old text that is no longer applicable is cleared out of the notes field before the prescription is transmitted. ☐ Do not select something incorrect for a standard field and try to add notes to "correct" it. For example, do not choose a tablet and then put instructions in the notes to dispense a compounded solution made with that tablet. ☐ Use the free text "notes" field for information that cannot fit elsewhere (e.g., steroid taper). But avoid splitting the directions between the "sig" and the "notes" field. Instead, use "as directed" (if available) in the "sig" field and then put the detailed directions in the "notes" field. ☐ Create an internal checklist for yourself that includes checking for notes on **every** prescription. Errors can occur if the pharmacy technician or pharmacist does not read the notes and important information is missed.
Ensure that the prescription is for the **right patient**.	☐ Verify the patient's date of birth and check for alternate name spellings (e.g., the presence/absence of apostrophes or spaces [e.g., D'Angelo]).[6] ☐ **Limit the number of open charts**. Having multiple charts open in the electronic medical record at the same time can increase the risk of prescribing a drug for the wrong patient.[4] ☐ Include the indication in the e-prescription to help catch "wrong patient" and other errors.[4]
Ensure that the **right medication** is prescribed. *Continued…*	☐ Pay particular attention when using "auto-complete" functions; they can increase the risk of selecting the wrong drug.[4] ☐ Avoid "adjacency" errors when choosing a drug from a list. These include:[4] ☐ Intending to click the correct drug, but accidentally clicking on the adjacent one. ☐ Not understanding the difference between the drugs and choosing the wrong one. ☐ Choosing the wrong drug because distinguishing details have been left off of the screen. ☐ Be vigilant when ordering drugs with **look-alike names**.[4] ☐ A list of confused drug names is available at: https://www.ismp.org/recommendations/confused-drug-names-list. ☐ Contact your system administrators to discuss adding "TALL man" lettering if it is not already there. ☐ Choose the **correct dosage form** (e.g., immediate release [IR], extended release [ER], oral solution) or **correct salt form** (e.g., doxycycline hyclate vs doxycycline monohydrate).[6] ☐ Be aware that if a drug is ordered as "free text," alerts (e.g., allergies, drug interactions) may not be triggered.[4]

Goal	Suggested Action
Ensure that the **right medication** is prescribed, continued	☐ Don't assume that default values, such as dose, quantities, or frequencies are preferred or accurate. ☐ **Proofread every prescription** before transmitting.[6,9] Double-check the patient, drug, dose, quantity, instructions, notes, days' supply, and pharmacy.
Be alert for **sources of duplicate prescriptions**.	☐ Be aware that some pharmacy systems generate duplicate refill requests if a request is not responded to in a timely manner.[2] **Prescribers**: ☐ **Be consistent** in ordering meds. Duplication can occur when meds are ordered by the brand name and also by the generic name.[4] ☐ Watch for duplicate refill requests, such as from the patient and the pharmacy, or via different media (e.g., fax, electronic request, phone).[2] ☐ Advise pharmacies of any preferences for how refills are requested. ☐ Transmit prescriptions at the end of the patient visit to avoid duplication if a new dose is needed. ☐ Avoid sending the same prescription in multiple formats (e.g., fax, e-prescription, paper).[6] **Pharmacies**: ☐ Consider intentional duplication. For example, the prescriber might order multiple doses if: o The desired strength is unavailable (e.g., using terazosin 2 mg and 5 mg capsules to achieve a 7 mg dose).[4] o The patient needs to take different doses on different days of the week (e.g., common with warfarin, levothyroxine).[4] ☐ Check for notes on seemingly duplicate prescriptions for explanations. ☐ Try to request refills the same way the prescription was originally generated. ☐ Refill the e-prescription request rather than write a new e-prescription so that the refill request is closed. Check if the new e-prescription matches the refill request. Turn off any automatic refill request once the new prescription is received.
Review orders for **appropriateness**.	☐ **Avoid alert fatigue**. Do not automatically bypass error alerts.[1] ☐ Establish institutional procedures to ensure appropriate renal dosing, such as pharmacy renal dosing protocols for anticoagulants and antimicrobials.[1] **Prescribers**: ☐ When ordering inhalers, oral liquids, eye/ear drops, and topicals, make sure that the quantity ordered makes sense given available product sizes and days' supply that the patient needs.[7] **Pharmacists**: ☐ Be particularly attentive of **resident prescribing**, especially when dispensing meds not typically prescribed by residents.[1]

Goal	Suggested Action
Educate new prescribers (e.g., medical students, residents).	☐ Closely **supervise resident prescribing** in the first three months of training (e.g., July through September).[1] ☐ Advise residents to take special care when prescribing antimicrobials, anticoagulants, antidotes, biologics, and colony-stimulating factors. These medication classes are most commonly involved in resident e-prescribing errors.[1] ☐ Encourage communication with pharmacists and more senior prescribers when prescribing for complex patients or prescribing unfamiliar medications.[1] ☐ **Make sure staff are properly trained on your EHR system**. Take advantage of educational opportunities such as webinars or in-person training from vendors.[6,9]
Share e-prescribing problems to **prevent future errors**.	☐ **Share examples of identified and potential errors** with your entire team so that everyone is aware of common errors and system approaches can be created to prevent them. ☐ Work together to anticipate problems and put policies and procedures into place to check for and avoid these errors.[6] ☐ Consider appointing an "e-prescribing champion" to collect examples of problems and facilitate strategies to prevent them. ☐ Pharmacies can **provide feedback to prescribers** about problems that they are seeing.[6] ☐ Prescribers and pharmacies can **report problems or improvement ideas** to system administrators or vendors.[6,8] ☐ Healthcare professionals and patients can report errors or potential errors to **ISMP** at https://www.ismp.org/report-medication-error, or **ISMP Canada** at https://www.ismp-canada.org/err_index.htm. ☐ U.S.: software (e.g., Quantros) allows health systems to capture errors and report them to a PSO. More information about PSOs is available at http://www.pso.ahrq.gov/faq#WhatisaPSO.

Abbreviations: EHR = electronic health record, ISMP = Institute for Safe Medication Practices, PSO = patient safety organization, Rx = prescription.

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