

Strategies for Avoiding E-Prescribing Errors

There are many potential benefits of e-prescribing: increased efficiency, improved communication between the prescriber and pharmacist, increased safety, and increased adherence.⁸ In the U.S., e-prescribing can help prescribers meet benchmarks for financial incentives or avoid financial penalties.⁸ However, e-prescribing introduces new types of prescription errors. The chart below reviews many of these potential errors and provides strategies to avoid them. Toolkits for implementation of e-prescribing for U.S. prescribers and pharmacies 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>.

Action	Information and Strategies
<p>Avoid errors by using good communication.</p> <p><i>Continued...</i></p>	<ul style="list-style-type: none"> • Communicate the need for “silent computer use” while e-prescribing.³ Ask team members not to interrupt.³ • To avoid interruptions by patients while you are prescribing: <ul style="list-style-type: none"> • 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.” <ul style="list-style-type: none"> • This step also helps ensure that you have sent the prescription to the correct pharmacy, that the drug was prescribed for the right patient, and that the prescription was transmitted. Patients sometimes arrive at the pharmacy only to learn that the prescription was not successfully transmitted.⁴ • Give the patient a pertinent patient education handout to review while you are e-prescribing.³ • Use the free text “notes” field for information that cannot fit elsewhere (e.g., steroid taper). Avoid splitting the directions between the “sig” and the “notes” field. • Some systems (e.g., <i>PrescribeIT</i> [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, if switching a patient from simvastatin to atorvastatin, “replaces simvastatin” could be typed into the notes field of the atorvastatin prescription.⁵ • Use of the notes field in e-prescriptions is a potential source of miscommunication, leading to dispensing delays or errors.⁵ <ul style="list-style-type: none"> • 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; the information is 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

More...

Action	Information and Strategies
Avoid errors by using good communication , continued	<ul style="list-style-type: none"> • Errors could occur if the pharmacy technician or pharmacist does not read the note and important information is missed. • Make sure any old text that is no longer applicable is cleared out of the notes field before the prescription is transmitted. • Consider sending prescriptions for compounded medications via fax, or writing a hard copy for the patient.⁶ • Pharmacists should request that patients bring an updated med list from their office visit so that the pharmacist can double check meds with their indications to help catch any errors, such as drug selection errors from preference lists.⁶ • Pharmacists should use patient counseling and open-ended questions as final checks to identify problems before the patient leaves the pharmacy.
Ensure that the right patient is prescribed the right medication .	<ul style="list-style-type: none"> • Ensure that you have selected the correct patient by verifying the date of birth and checking for alternate spellings such as the presence/absence of apostrophes (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 • Pay particular attention when using systems with “auto-complete”; this increases the risk of selecting the wrong drug.⁴ • Including the indication in the e-prescription can help catch “wrong patient errors” and other errors.⁴ • Avoid “adjacency” errors when choosing a drug from a list. These include:⁴ <ul style="list-style-type: none"> • “Target acquisition errors” occur when the prescriber intends to click the correct drug, but accidentally clicks on the adjacent one.⁴ • “Knowledge errors” occur when the prescriber does not understand the difference between the drugs and chooses the wrong one.⁴ • “Truncation errors” occur when the prescriber chooses the wrong item because distinguishing details about the drug have been left off of the screen.⁴ • Be vigilant when ordering drugs with look-alike names.⁴ A list of confused drug names is available here: https://www.ismp.org/recommendations/confused-drug-names-list. • 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) may not work.⁴ • 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 patient, drug, dose, quantity, instructions, notes, days’ supply, and pharmacy.

More . . .

Action	Information and Strategies
Be alert for sources of duplicate prescriptions.	<ul style="list-style-type: none">• Duplication can occur when the drug is ordered by the brand name, and also by the generic name.⁴• What looks like a duplication could be intentional; the prescriber might order multiple doses if:<ul style="list-style-type: none">• The desired strength is unavailable (e.g., using terazosin 2 mg and 1 mg capsules to achieve a 5 mg dose).⁴• The patient needs to take different doses on different days of the week (e.g., as is common with warfarin or levothyroxine).⁴• Be aware that some pharmacy systems generate duplicate refill requests if a request is not responded to in a timely manner.¹⁰• Prescribers should watch for duplicate refill requests, such as from the patient and pharmacy, or via different media (e.g., fax, electronic request, phone).¹⁰<ul style="list-style-type: none">• Prescribers should advise pharmacies of any preferences for how refills are requested.• Pharmacists should try to request refills the same way the prescription was originally generated, if possible.• When refills are electronically requested, refill the e-prescription rather than write a new e-prescription in order to close the refill request. Pharmacists should check if the new e-prescription matches the refill request, and turn off any automatic refill request once the new prescription is received.• Prescribers should transmit prescriptions at the end of the patient visit to avoid duplication if a new dose is needed.• Pharmacists should check for notes on seemingly duplicate prescriptions for explanations.• Prescribers should avoid sending the same prescription in multiple formats (e.g., fax, e-prescription, paper).⁶
Review orders for appropriateness.	<ul style="list-style-type: none">• Pharmacists should be particularly attentive of resident prescribing, especially when dispensing medications not typically prescribed by residents.¹• 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• 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 can encourage techs to help catch errors, and provide positive feedback when they do so.²
Educate new prescribers (e.g., medical students, residents).	<ul style="list-style-type: none">• 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 from vendors.^{6,9}

More . . .

Action	Information and Strategies
Share e-prescribing problems to prevent future errors.	<ul style="list-style-type: none">• Share examples of identified errors with your entire team so that everyone is aware of common errors and system approaches can be created to prevent them. Pharmacy staff can 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.• Pharmacists can provide feedback to prescribers about problems that they are seeing.⁶ Use our fax letter, <i>A Note from Your Pharmacist: Optimizing the Use of E-Prescribing</i>, when patient-specific problems pop up and need to be clarified, or to start discussions to uncover root causes of general problems with e-Rxs from a prescriber’s office.• Prescribers and pharmacists can report problems or ideas for improvement to software vendors.^{6,8}• Healthcare professionals and consumers can report errors or potential errors to ISMP (Institute for Safe Medication Practices) at https://www.ismp.org/report-medication-error, or ISMP Canada https://www.ismp-canada.org/err_index.htm.• U.S.: vendors such as Quantros sell software through which health systems can capture errors and report them to a Patient Safety Organization (PSO). More information about PSOs is available at http://www.pso.ahrq.gov/faq#WhatisaPSO.

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

More . . .

Project Leader in preparation of this clinical resource (350516): *Melanie Cupp, Pharm.D., BCPS*

References

1. ISMP. Highlights from a study of residents' electronic medication prescribing errors. January 31, 2019. <https://www.ismp.org/resources/highlights-study-residents-electronic-medication-prescribing-errors>. (Accessed April 11, 2019).
2. Odukoya OK, Schleiden LJ, Chui MA. The hidden role of community pharmacy technicians in ensuring patient safety with the use of e-prescribing. *Pharmacy (Basel)* 2015;3:330-43.
3. Ratanawongsa N, Matta GY, Bohsali FB, Chisolm MS. Reducing misses and near misses related to multitasking on the electronic health record: observational study and qualitative analysis. *JMIR Hum Factors* 2018;5:e4.
4. Schiff G, Wright A, Bates DW, et al. Computerized prescriber order entry medication safety (CPOEMS). Uncovering and learning from issues and errors. <https://www.fda.gov/downloads/Drugs/DrugSafety/MedicationErrors/UCM477419.pdf>. (Accessed April 11, 2019).
5. Dhavle AA, Yang Y Rupp MT, et al. Analysis of prescribers' notes in electronic prescriptions in ambulatory practice. *JAMA Intern Med* 2016;176:463-70.
6. Hincapie AL, Warholak T, Altyar A, et al. Electronic prescribing problems reported to the Pharmacy and Provider ePrescribing Experience Reporting (PEER) portal. *Res Social Adm Pharm* 2014;10:647-55.
7. Molitor R, Friedman S. Electronic prescription errors in ambulatory pharmacy. *J Manag Care Pharm* 2011;17:714-5.
8. Practice Fusion. E-prescribing benefits. <https://www.practicefusion.com/e-prescribing/benefits/>. (Accessed April 14, 2019).
9. Gilligan AM, Miller K, Mohny A, et al. Analysis of pharmacists' interventions on electronic versus traditional prescriptions in 2 community pharmacies. *Res Social Adm Pharm* 2012;8:523-32.
10. Grossman JM, Cross DA, Boukus ER, Cohen GR. Transmitting and processing electronic prescriptions: experiences of physician practices and pharmacies. *J Am Med Inform Assoc* 2012;19:353-9.

Cite this document as follows: *Clinical Resource, Strategies for Avoiding E-Prescribing Errors. Pharmacist's Letter/Prescriber's Letter. May 2019.*

	<i>Evidence and Recommendations You Can Trust...</i>	
		
3120 West March Lane, Stockton, CA 95219 ~ TEL (209) 472-2240 ~ FAX (209) 472-2249 Copyright © 2019 by Therapeutic Research Center		

Subscribers to the *Letter* can get clinical resources, like this one,
on any topic covered in any issue by going to
pharmacist.therapeuticresearch.com ~ prescriber.therapeuticresearch.com ~
pharmacytech.therapeuticresearch.com ~ nursesletter.therapeuticresearch.com