

ePrescribing Workflow Scenarios

Clinicians are trained to think in terms of case-based analysis. As such, practical workflow scenarios can be helpful in assessing stage of advancement in prescribing workflow. Therefore, this tool makes use of examples of several familiar workflow tasks, to allow in-the-field consideration of how well a given ePrescribing system is performing relative to the expected functionality at different stages of advancing ePrescribing.

Each scenario listed below, tests a portion of the steps in the process of prescribing workflow. Cumulatively, the scenarios cover all of the workflow steps.

The assessor can lead a clinician through the scenarios, by asking “How would you...” and “What if...” questions about their prescribing workflow. Alternatively, a clinician can walk through the scenarios independently, or the scenarios can be used to drive “live” observation of a clinician’s workflow.

For each of the scenarios, a clinician should imagine that the scenario is occurring in their own office, using their existing medical records system.

Disclaimer

The following scenarios are meant to facilitate the assessment of workflow stage in the outpatient clinical settings. The scenarios are not in any way meant to assess or question a clinician’s skills or clinical acumen. The scenarios are solely intended to provide a framework for assessing how computerization is (or isn’t) affecting prescribing workflow.

A.1 Scenario 1 – Prescribing

This scenario assesses basic prescribing workflow.

In clinical practice, even the generation of a simple prescription is preceded by a consideration of patient-specific factors like allergies, drug-specific factors like contraindications, and non-clinical factors like insurer coverage for drug costs.

The scenario is as follows:

A 26 year-old patient of one of your colleagues presents to your office, reporting two days of dysuria and frequency. She is 10 weeks pregnant and her urine dip shows +3 WBC, positive nitrites and +3 RBC. You diagnose a UTI, and elect to treat the infection with antibiotics.

1. When she presented to your office, how would you confirm the identity of the patient?
2. How are your patient records stored? (e.g. paper files, free text in EMR, structured information in EMR)
3. Having made the decision to prescribe, physicians consider patient-specific clinical and non-clinical factors, plus available therapeutic choices. You need to know if she is pregnant, breast-feeding, has allergies, is on medications, etc.

Please describe how you would access the following information and include it in your prescribing decision in choosing an antibiotic. (As noted earlier, these questions are not intended to assess your clinical judgment, but to clarify the workflow steps necessary to do the following):

A. Evaluate patient-specific clinical factors

How is her pregnancy status included in the drug selection process? (In what form and level of detail is her pregnancy status documented in the chart?)

B. Evaluate patient-specific non-clinical factors

She has a busy schedule and often forgets medications. She prefers once a day dosing. How is this information about her preference included in selecting a medication?

C. Evaluate Medication-specific Factors

How are potential medication adverse effects assessed in the drug selection process?

D. Evaluate the options

Having considered the patient-specific factors, and medication-specific factors, how do you go about ranking the available therapeutic options and select a drug? Does your EMR provide a list of therapeutic options?

4. Having selected a medication, how would you document the fact in your patient's medical record?
5. How would the prescription be transmitted to the pharmacy?
6. What security mechanisms are in place to prevent tampering with the prescription?
7. If you wrote a prescription, and later that day realized that you had made a mistake in the dose, what means are available to contact the patient or pharmacy to intercept and revise the erroneous prescription?

8. If the patient had not filled their prescription in a timely manner, what mechanisms are in place to alert you to this fact?
9. If the medication lot were recalled, or the medication was withdrawn from the market, would you be able to identify that your patient was affected?
10. Having generated a prescription, how might the patient have the opportunity to review it?
11. How would you know if the pharmacist had substituted a generic version of the medication?
12. Having sent the prescription, how would you know that the patient had filled it (i.e. that the medication had been dispensed)?
13. Are there systems in place to reconcile the original prescription with the dispensed medication? I.e. when viewing the patient's chart, would you know that the prescription had been filled?
14. How would you know if the medication had been administered?
15. If your patient had an adverse reaction to the medication, what procedure would be entailed in flagging the fact to avoid future use of the medication?
16. A patient's medical condition can change over time. Assume you had given the patient a PRN prescription for use with her next UTI. Assume also, that she becomes pregnant two months later, and comes to the office for prenatal advice. What workflow processes in place to warn her to avoid filling or using the PRN prescription?

A.2 Scenario 2 – Dispensing

This scenario assesses workflow aspects of the prescribing process when samples are dispensed in the office. Clinicians often do not distinguish the act of prescribing from the act of dispensing. This example reflects this real-world reality. The decision to prescribe is implicit, with no actual prescription being written. After deciding to prescribe, the clinician moves directly to the stage of dispensing.

Here is the scenario:

A 74 year old South-East Asian female patient of yours has a history of hyperlipidemia and renal failure, and past CVA. Her medications include Coumadin and Lipidil. Since her stroke she often forgets to take her medications. Her nephrologist advises discontinuing her Lipidil, which can adversely affect her renal function. You call in the patient with the intent of switching her to a statin.

Assume that the patient record is in your patient record system, and that have already gone through the workflow steps of identifying the patient and accessing her chart.

1. As in the earlier scenarios, before prescribing a “statin”, you decide to check its suitability for your patient. Please describe and/or demonstrate the workflow steps that you would take to include information about the following in your drug selection process?:

A. Evaluate patient-specific clinical factors

- a) How would you access and use her age and race in drug selection?
- b) How would you access and use her history of renal failure in drug selection?
- c) How would you access and use her actual eGFR in drug dosage and selection?
- d) How is her history of reduced medication compliance recorded and included in drug selection?

B. Evaluate medication-specific Factors

Are there means in place to include following factors included in selecting a statin?:

- a) Contraindications (Crestor 40 mg would be contraindicated re age >70)
- b) Warnings (She is at higher risk of myopathy because of her age)
- c) Use in special populations (She is Asian, which puts her at higher risk of myopathy)
- d) Drug interactions (She is on Coumadin. Statins can elevate INR levels.)
- e) Pharmacokinetics (After stopping Lipidil, how long would you need to wait before starting a statin?)
- f) Dosage selection (Do you have a system that assists you in choosing a dosage tailored to this patient’s needs?)

2. After assessing the above, you decide to dispense samples of Crestor 2.5 mg, and go to your sample cupboard to get a few boxes. What systems are in place to assist you with the following?:

- a) Verifying that the drug samples had not expired?
- b) Verifying that the lot numbers had not been recalled?
- c) Documenting having dispensed the samples, including dose, quantity, lot number, and expiry date?
- d) Deciding what baseline and monitoring lab work to order? (E.g. INR, lipids, CK, and LFTs)
- e) Flagging that the medication should be renewed when it is due for refill?
- f) Notifying the nephrologist that the Lipidil was discontinued, and Crestor started in its place?
- g) Detecting if the patient does not receive a refill when the sample is expected to run out?

3. After dispensing medication samples, how do you review use and side effects of a medication with a patient?

4. After you have dispensed a medication sample, what mechanisms are in place to update any personal health records (PHRs) that your patient might have?

A.3 Scenario 3 – Medication administration

Clinicians are often called upon to administer medications like vaccines and other injectable drugs, in the office. This scenario evaluates the workflow steps taken in the process of drug administration.

Here is the scenario:

A nine year old boy is brought to your office by his mother who request Gardasil vaccination for her son. He is allergic to egg protein.

You are not sure whether Gardasil is approved for use in males, whether it's approved for nine year olds, whether it's safe with an allergy to egg protein, whether he has an extended benefits plan, and whether Gardasil would be covered by the plan.

Assume have already gone through the workflow steps of identifying the patient and accessing his chart.

1. Before making a decision on whether to prescribe, you decide to check several factors. Please describe and/or demonstrate the workflow steps that you would take to access the following information and include it in your prescribing decision:

A. Evaluate patient-specific clinical factors

- a) Age and Gender (Nine year old male)
- b) Weight (Dosage adjustment necessary?)
- c) Allergies (How would you incorporate his allergy to egg protein into your prescribing decision? I.e. what systems are in place to assist you in determining if egg allergy is a contraindication to giving Gardasil?)
- d) Current and past medications (Has he already had Gardasil?)

B. Evaluate patient-specific non-clinical factors

- a) Financial status (Does he have a drug plan?)
- b) Insurer coverage (Is Gardasil covered by the drug plan?)

C. Evaluate medication-specific factors

- a) Allergy information (Does Gardasil contain egg protein?)
- b) Use in special populations (Male children)
- c) Dosage selection (Dose modification necessary re age?)
- d) How much will it cost?

2. If he had a drug plan, by what means would you request insurer coverage for the Gardasil?

3. What mechanisms are in place to reconcile the insurer's response with the initial request?

4. Assume at this point that you have written a prescription, that it has been filled, and that the patient has returned to your office two weeks later for his first dose. Before administering the medication, how would you verify:

- a) That the injection was for the correct patient?
- b) That the patient had been dispensed the correct medication and dose?
- c) Whether the drug had expired or been recalled?
- d) If the patient had been started on Prednisone two days earlier for an asthma flare, what systems are in place to warn you to delay giving the Gardasil?

5. If he had already had a prior dose of Gardasil, what processes are in place to ensure that he is on-schedule for his booster dose?

6. After administering the medication:

- a) How would you document having administered the drug, including lot number, dose, and expiry date?
- b) How would you set a flag to be notified when the next dose of the series was due?

- c) If a consultant had made the original suggestion to prescribe Gardasil, what mechanisms are in place to do the following?:
 - i. Notify the consultant that the patient had received the medication
 - ii. Forward details about what was administered
 - iii. Associate the consultant's original letter with the event of medication administration
- d) As the prescriber, how would you reconcile the original prescription with the fact that the medication had been administered? (i.e. on viewing the patient's medication list, would there be an indication that the prescription for Gardasil has actually been administered?)

A.4 Residual workflow tasks

This section addresses several workflow tasks not covered by the above scenarios.

1. If a pharmacist contacted you requesting a medication refill, by what means would you potentially receive the pharmacist's request?
2. What processes are in place to assist you in evaluating the importance patient clinical metrics (E.g. blood pressure, cardiac ejection fraction, peak flow) in selecting a medication?
3. What processes are in place to assist you in selecting a medication when a patient is at risk of overdosing.
4. What processes in place to assist you in selecting a medication when there are discontinuation risks associated with the use of the drug?
5. What processes are in place to broadcast prescribing cautions to other care providers when a patient is drug-seeking or at risk of overdose?