CPOE EVALUATION TOOL (V3.6)

USER INSTRUCTIONS

(FOR ADULT AND GENERAL HOSPITALS ONLY)

TABLE OF CONTENTS

CHANGE SUMMARY

May 29, 2019 – Outdated instructions regarding the assignment of a normal INR and Platelet Count to all Test Patients have been removed.

If substantive changes are made to this section of the Survey after release after May 29, 2019, they will be documented in this Change Summary section.

IMPORTANT NOTES REGARDING VERSION 3.6

Print a hard copy of these instructions. Review the instructions **completely** before taking the Adult Inpatient Test and have them available while completing it.

In 2019, Leapfrog released version 3.6 of the CPOE Evaluation Tool, which has been updated to incorporate feedback received from hospitals in 2018. Updates reflected in this version include the following:

- Test Patients and Test Orders will render on the webpage in HTML, but hospitals will then download them as a PDF, eliminating any formatting issues. Previously, the Test Patients and Test Orders rendered on the webpage in an Adobe Acrobat viewer causing print issues for many hospitals.
- The Test Order library has been updated to resolve commonly reported formulary issues.
- The Orders and Observation Sheet has been updated to resolve the confusion between the Drug-Lab and Drug Monitoring Order Checking Categories.
- The Orders and Observation Sheet and Online Answer Form has been updated to incorporate feedback received from hospitals regarding how Drug-Age and Drug-Lab alerts are displayed to prescribers.

Because of the updates to Orders and Observation Sheet and the Online Answer Form, even hospitals that have previously taken a test should carefully review all of the instructions, and every hospital is strongly urged to complete a Sample Test before attempting an Adult Inpatient Test (which is used in public reporting). Failure to complete a Sample Test will restrict a hospital's opportunities for Help Desk support.

The CPOE Evaluation Tool version 3.6 tests hospitals on their use of two types of clinical decision support:

1. **Scenario-Specific Advice/Information**: Information related to the Test Order, which may include the medication's specific dose, route, and frequency, and the Test Patient, which includes specific patient demographics (e.g., age, gender) and clinical information such as problems/diagnoses, lab values, and allergies, as applicable. The scenario-specific advice/information may also involve the *combination* of two specific medication orders.

2. **Medication-Specific Advice/Information**: General information that might appear <u>any</u> time the medication is ordered for <u>any</u> patient and is not specifically related to the Test Patient (see the Drug Monitoring Order Checking Category description below).

The table below includes descriptions of each Order Checking Category included in the CPOE Evaluation Tool, as well as a description, example, and the type of clinical decision support (i.e. scenario-specific or medication-specific advise/information) being tested.

Order Checking Category	Description	Example	Type of Clinical Decision Support
Therapeutic Duplication	Medication combinations overlap therapeutically (same agent or same class)	Using clonazepam and lorazepam together	Scenario-specific advice/information
Drug Dose (Single)	Specified dose of medication exceeds safe range for single dose	Tenfold overdose of digoxin	Scenario-specific advice/information
Drug Dose (Daily)	Specified frequency of administration results in daily dose that exceeds safe range for daily dose	Ordering ibuprofen regular dose every three hours	Scenario-specific advice/information
Drug Allergy	Medication (or medication class) is one for which patient allergy has been documented	Penicillin prescribed for patient with documented penicillin allergy	Scenario-specific advice/information
Drug-Route	Specified route of administration is inappropriate and potentially harmful	Use of hydroxyzine intravenously	Scenario-specific advice/information
Drug-Drug Interaction	Medications in pair of orders result in known harmful interaction when used in combination	Concurrent sumatriptan and phenelzine	Scenario-specific advice/information
Drug Diagnosis	Medication dose inappropriate/contraindicated based on documented problem/diagnosis	Nonspecific beta-blocker in patient with asthma	Scenario-specific advice/information
Drug- Age	Medication dose inappropriate/contraindicated based on patient age	Prescribing diazepam for a patient over 65 years old	Scenario-specific advice/information
Drug Laboratory	Medication dose inappropriate/contraindicated based on documented laboratory test results (includes renal status)	Use of nitrofurantoin in patient with severe renal failure	Scenario-specific advice/information
Drug Monitoring	Medication for which the standard of care includes subsequent monitoring of the drug level or lab value to avoid harm	Prompt to monitor drug levels when ordering aminoglycosides or INR/PT when ordering warfarin	Medication-specification advice/information

The Tool also includes an "Alert Fatigue" test category, which checks if prescribers are receiving alerts or information for inconsequential medication interactions that clinicians typically ignore. An example would be alerting on the concurrent use of hydrochlorothiazide and captopril. This test category is not included in scoring.

The Tool also includes a "Deception Analysis" test category, which checks for "false positives" (e.g., orders that should not have generated any warning in the hospital's CPOE system). Hospital's that "fail" the Deception Analysis are scored as "incomplete evaluation" and will not be able to retake an Adult Inpatient Test for 120 days.

Browser Requirements

Version 3.6 of the CPOE Evaluation Tool is optimized for Chrome and Internet Explorer (IE11) browsers. Prior to initiating the Adult Inpatient Test, we recommend taking a Sample Test on the same computer using the same web browser that will be used to complete the Adult Inpatient Test. **Ignoring these instructions may result in an error and your hospital will not be able to retake an Adult Inpatient Test for 120 days.**

Deadlines

The Submission Deadline for the Leapfrog Hospital Survey is June 30. The CPOE Evaluation Tool is a core element of Leapfrog's CPOE Standard. Hospitals are urged to ensure that the Adult Inpatient CPOE Test is submitted along with the Survey (i.e. in the same month) in order to meet the deadlines for the Leapfrog Hospital Survey and Leapfrog's other programs such as Top Hospital and the Leapfrog Hospital Safety Grade. Hospitals that submit Section 2 via the Online Hospital Survey Tool, but do not submit an Adult Inpatient Test via the CPOE Evaluation Tool, are scored and publicly reported as "Willing to Report" on the CPOE measure.

Within a Survey Cycle (April 1 – November 30), a hospital cannot retake a CPOE Evaluation Tool until at least 120 days have passed since their last test.

INTRODUCTION AND OVERVIEW TO VERSION 3.6

Welcome to Version 3.6 of the Leapfrog Computerized Physician Order Entry (CPOE) Evaluation Tool

The CPOE Evaluation Tool was designed by medication safety experts and researchers at Brigham and Women's Hospital and the University of Utah to test the ability of inpatient CPOE systems to alert prescribers to frequent serious medication errors known to cause harm to patients. In addition, the Tool was designed to help hospitals improve on their use of clinical decision support to reduce adverse drug events and improve medication safety.

The CPOE Evaluation Tool includes two tests: a Sample Test and an Adult Inpatient Test. The Sample Test is an abbreviated version of the Adult Inpatient Test. Results from the Sample Test are not publicly reported.

The Adult Inpatient Test is scored and publicly reported. Once you begin an Adult Inpatient Test (referred to throughout this document as the "test"), you are committing to the public reporting of the overall score. Once an Adult Inpatient Test has been completed, another test can only be initiated after waiting 120 days *after* the date and time of the first test completion. Therefore, before beginning the Adult Inpatient Test, you are strongly encouraged to complete a Sample Test, which is designed to provide an opportunity for your team to practice completing the test process (e.g., time limits and steps, browser compatibility, lab and ADT links, etc.).

The term "**prescriber**" used throughout these instructions and the Leapfrog Hospital Survey materials refers to all licensed clinicians authorized by the state in which the hospital is located to order medications for patients. This includes residents and interns who are authorized to order medications under their own authority.

Please carefully review the Order Checking Categories and the CPOE Evaluation Tool FAQs before you begin a Sample Test or Adult Inpatient Test.

Hospitals do not obtain any rights in the CPOE Evaluation Tool ("Tool") by virtue of conducting, administering, or participating in the Leapfrog Hospital Survey ("Survey"). Hospitals are permitted to use the Tool solely for purposes of such Survey participation and only within their organization. Hospitals must obtain explicit written permission from The Brigham and Women's Hospital, Inc., The University of Utah, and The Leapfrog Group to use the Tool for any other purpose or to share the Tool with other entities or with persons other than their direct employees involved in the Survey. For clarity, the Tool includes software and content, including, but not limited to, patient profiles and medication order scenarios, and the restrictions and requirements stated above apply to the entire Tool and any of its components.

HOW IS THE TEST CONDUCTED?

To access the Sample or Adult Inpatient Test, log in to the Survey Dashboard with your hospital's 16-digit security code. Ensure that Sections 1 and 2 of the Online Survey Tool have been submitted. You can always return to complete and submit the rest of the Survey at a later date (Sections 3-10). More information is available in the CPOE Quick Start Guide.

Once you submit Sections 1 and 2 in the Online Survey Tool, the "CPOE Tool" button will appear on the Survey Dashboard. A brief demographics form will need to be completed before you continue on to the next screen to select a Sample or Adult Inpatient Test from the drop-down menu.

Time Limits and Steps
Both the Sample Test and the Adult Inpatient Test involve the same seven steps detailed below. Please note the time limits for each of the steps.

While the maximum amount of time a hospital has to complete Steps 1 - 2 is three hours and the maximum amount of time a hospital has to complete Steps 3 - 6 is three hours, most hospitals do not require the maximum amount of time. On average, hospitals complete the entire test in less than 3 hours. All steps must be completed back to back on the same day within the time limits described below.

Time Limits	Steps
Steps 1 - 2 must be completed within **3 hours**.	**Step 1:** (a) Print a list of Test Patients and (b) log out of the Tool. **Step 2:** (a) Enter the Test Patients in your hospital's production environment (or a test environment that mirrors your production environment exactly) and (b) log back into the Tool to confirm completion of Step 2 and proceed to Step 3 before the 3-hour time limit ends.
Steps 3 - 6 must be completed within **3 hours**. **Important Note 1:** Any remaining time from Steps 1 and 2 does **not** carry over to this portion of the test.	**Step 3:** (a) Print the Orders and Observation Sheet and (b) log out of the Tool. **Step 4:** (a) Have a prescriber who routinely orders medications through your inpatient CPOE system enter and sign the Test Order(s) assigned to each Test Patient, (b) the prescriber must record any advice or information he/she receives from the system onto the Orders and Observation Sheet, (c) discontinue the Test Order(s) before moving on to the next order, and then (d) log back in to the Tool to confirm completion of Step 4 and proceed to Step 5.

Important Note 2: We recommend leaving at least **45 minutes** to perform Step 5.	Note: Do not record any advice or information on the Orders and Observation Sheet that was sent directly to a pharmacist. **Step 5:** (a) Record the responses from the Orders and Observation Sheet onto the Online Answer Form (b) review the Online Answer Form for accuracy and completeness (c) submit the Online Answer Form and then proceed to Step 6. **Step 6:** Complete and submit the Affirmation. **IMPORTANT NOTICE:** If you close the browser before submitting the Affirmation, you will not be able to return to the Test for 120 days and your hospital will receive a score of "Incomplete Evaluation".
Step 7 has no time limit.	**Step 7:** View and print your results.

Important Notes:

1. Once you start a test, time runs continuously, 24 hours a day, 7 days a week, and is not interrupted or suspended during "non-business hours."

2. The test will display the time limit for completing the steps of the test (e.g., "You have until 1:11 PM ET to complete Steps 1 and 2."). All times appear in Eastern Time. Please note that your local time zone may be different and the official time is based on the Tool's server time. The time on your local machine (e.g., the time on your computer, phone, or watch) may not be synchronized exactly, so please note any differences.

3. The timer counts down even when you are not logged into the CPOE Evaluation Tool.

4. If you fail to complete the steps within the time limits (e.g., Steps 1 - 2 within 3 hours and Steps 3 - 6 within 3 hours), the test will be scored as "Incomplete Evaluation," and you will not be able to retake a test for 120 days.

AFFIRMATION

The Leapfrog Hospital Survey requires an individual from each participating hospital to complete an Affirmation of Accuracy at the end of each section of the Survey. Hospitals completing the Adult Inpatient Test will also need to complete an Affirmation of Accuracy once the responses have been submitted. The Affirmation signifies that the hospital has made a good faith effort to exercise the test consistent with the instructions provided and that the responses provided accurately reflect the performance of the hospital's CPOE system as currently used by prescribers to enter inpatient orders electronically. The individual completing the affirmation should be designated by the CEO and will need to provide their name and title.

If you fail to complete Step 6: Submit Affirmation, the test will be considered incomplete and the hospital will be scored as "Incomplete Evaluation."

Once you affirm and submit an Adult Inpatient Test (referred to throughout this document as the "test"), you are committing to the public reporting of the overall score.

PREPARING FOR THE TEST

Important Note: You cannot access the CPOE Evaluation Tool until you have submitted Sections 1 and 2 of the Online Survey Tool. You can always return to complete and submit the rest of the Survey at a later date (Sections 3-10).

1. Make sure you have a valid 16-digit security code and can access the CPOE Tool from the Survey Dashboard. Click the **Take CPOE Tool** button (this doesn't start any test; you'll be warned before the clock starts running on any test) to open the Tool in a new tab. Remember to go back to the Survey Dashboard and log out. If you don't go back and log out of the Survey Dashboard, you risk being locked out of the survey and unable to get back to advance through the test.

2. Assemble a team to help you set up the Test Patients in your hospital system(s) and enter Test Orders. Carefully review these instructions, including steps and time limits, with your team. Teams generally include the following expertise:

   a) **ADT/Registration** to admit/register Test Patients and assign them beds
   b) **Laboratory** to enter laboratory results – primarily chemistry and hematology, including INR values
   c) **Nursing** to enter in patient information, including allergy information and diagnosis, if that is the standard procedure
   d) **At least one prescriber** is required (though some hospitals have recommended having a backup prescriber on-call, just in case an emergency comes up) to enter the Test Orders. The minimum time required for the prescriber is 2 hours. The prescriber entering the Test Orders should be the "typical" prescriber who orders inpatient medications on a regular basis. Some hospitals set clinical decision support at different levels for residents, medical students, attending physicians, etc. Hospitals that have set different levels of clinical decision support should enter Test Orders and report the results using the minimum level of medication safety checking. This role cannot be completed by a pharmacist, nurse, or health informatics team member. Failure to ensure that a prescriber completes Step 4, will result in the hospital being scored as "Incomplete."
   e) A **coordinator**, typically an individual from clinical IS. Some hospitals find it useful to have a pharmacist familiar with medication-related clinical decision support present during the order entry. However, please note that alerts that bypass the prescriber and are sent directly to the pharmacist cannot be recorded during the test. In addition, neither the pharmacist nor the coordinator can complete Step 4.

3. Once you have assembled your team and reviewed the instructions with them, schedule your test:

a) Technical or other support persons responsible for setting up the Test Patients (Step 2) in the hospital's systems should be available for the full 3-hour period allotted for Steps 1 - 2.
b) The prescriber responsible for entering the Test Orders and recording advice or information received (Step 4) should be available for the full 3-hour period allotted for Steps 3 - 6 (though the order entry step may take less time).
c) As a reminder, all steps must be completed back to back on the same day, so plan accordingly.

4. Make sure the machine you are using has a compatible browser.

5. Make sure the user logged in to the machine has connected to a printer loaded with paper.

6. If you are not using your production system during the test, ensure that your test system mirrors order management and clinical decision support in the current production system BEFORE YOU START THE ADULT INPATIENT TEST. If the two are not in sync, either update the test system or plan to conduct the test in the production system. Taking a Sample Test can help identify discrepancies between your test and production CPOE System. If you opt to use your production system, be sure to notify the appropriate departments so that Test Orders are not filled and bills are not generated for Test Patients.

7. Complete a Sample Test (see detailed instructions below) as a dry run, preferably with the team that will participate in the Adult Inpatient Test. The Sample Test should only take about 30 minutes to complete.

Version 3.6 of the CPOE Evaluation Tool is optimized for Chrome and Internet Explorer (IE11) browsers. We recommend taking a Sample Test on the same computer using the same web browser prior to initiating the Adult Inpatient Test. **Ignoring these instructions may result in an error and your hospital will not be able to retake an Adult Inpatient Test for 120 days.**

COMPLETE THE HOSPITAL INFORMATION PAGE

Important Note: This section is not timed. All hospitals must complete this section before selecting a Sample or Adult Inpatient Test.

1. The first time that you log in to the Tool, you will need to complete the Hospital Information page (see example A). All fields in this section are required.

2. Completing the Hospital Information Page does not start a test or any of the timers. In addition, after your initial log in, unless a test is underway, you will be prompted to review and update this information as needed. *Once a test is underway or has been submitted, you cannot change the Hospital Information that will be submitted with that particular test.*

3. Some information on the page has been pre-populated from your hospital's Profile and cannot be edited. If any of this information is incorrect, it should be changed in the **Profile** on the **Survey Dashboard.**

To update your hospital's information in the Profile on the Survey Dashboard:
- Close out of the CPOE Evaluation Tool.
- Log in to the Survey Dashboard and select the **Edit Hospital Profile** button. Update the appropriate information and submit.
- Go back to the Survey Dashboard and select the **Take CPOE Tool** button. You should see your updated organization information.

4. Field Definitions:
- Q1-Q6 – Hospital Information: This information is pre-populated based on the Profile Section of the Leapfrog Hospital Survey. If you need to update any of these fields, please follow the steps above.
- Q7-Q10 – Contact Information: This should be the individual responsible for coordinating the test and reporting answers for the hospital's test.
- Q11 – EHR Application Source: Vendor App or Homegrown App.
  - If your hospital purchased a third-party vendor system and substantially altered it on implementation, select "Homegrown App."
- Q12 – Initially installed date: The month and year the EHR was installed at the hospital.
- Q13 – Medication Reference Database: Homegrown, First Databank (FDB), Gold Standard/Elsevier, Lexicomp, Medi – Span, Multum, or Other.
  - If your facility selects "Other", you will be prompted to enter the commercial vendor that is used at your institution.
- Q14 – Meaningful use stage achieved in inpatient EHR: None, Stage 1, Stage 2, or Stage 3.
  - Select which meaningful use stage has been achieved at your institution.

5. Once you entered your hospital's information on this page, select one of the following:
- **Save & Continue**: The page is saved and you can continue to the next screen where you will be able to select a test from a drop-down menu.
- **View Previous Results**: Once you complete an Adult Inpatient Test, anytime you want to view or print your test results, you can come back to the Tool from the button on the Survey Dashboard. You'll always be taken to the Hospital Information page and will need to select this button to view your previous test results.

TEST SELECTION AND PREVIOUS RESULTS PAGE

Important Note: You have the opportunity to take a Sample Test before taking the Adult Inpatient Test. Selecting a test does not start any timer. **We strongly recommend that you take the Sample Test before attempting an Adult Inpatient Test.**

1. Once you select the **Save & Continue** button at the bottom of the Hospital Information page, you will be taken to the "Start Test" page.

2. The test history will be displayed at the top of the page. If the test was completed, you can review the results by clicking on "View Results." If the test was started, but not completed (e.g., Timed Out

of Test), no results will be available.

3. You will be able to select a test from the drop-down menu at the bottom of the page: Adult Inpatient or Sample Adult Inpatient. Selecting a test from the drop-down menu does not start any timer.
   a) The Sample Test can be taken multiple times. Contact the Help Desk if you would like our Sample Test reset.
   b) Once you take an Adult Inpatient Test, it can only be taken again after 120 days has passed.

4. Once you select a test from the drop-down menu, you will be asked to confirm that you have reviewed and printed the instructions. If you are ready to move on, click **Continue**. Otherwise, click **Logout without testing**.

TAKE A SAMPLE TEST

The Sample Test is designed to give your team, including the prescriber, an opportunity to practice completing the test process (e.g., time limits and steps, browser compatibility, lab and ADT links, etc.). The Sample Test only takes about 30 minutes.

The Sample Test is an abridged version of the Adult Inpatient Test, is not fully representative of the Test Patients and Test Orders that will appear in the Adult Inpatient Test, and is not meant to predict your hospital's score on the Adult Inpatient Test. Sample Test materials consist of only two Test Patients and four Test Orders.

The Sample Test is subject to the same time limits as the Adult Inpatient Test and will "time out" if those time limits are exceeded (3 hours for Steps 1 - 2 and 3 hours for Steps 3 - 6).

You can use the instructions for the Adult Inpatient Test to complete Steps 1 - 6 of the Sample Test. Following the completion of the Sample Test, meet with your team to decide if you are ready to schedule the Adult Inpatient Test. If you encounter browser, printer, or other technical problem during the Sample Test, make sure these issues are resolved before attempting an Adult Inpatient Test.

TAKE AN ADULT INPATIENT TEST

STEP 1: PRINT TEST PATIENTS

Time Limit: All times and time limit warnings appear in Eastern Time. You have 3 hours to complete Steps 1 - 2, and log back into the Tool to begin Step 3. Step 2 takes up most of that time.

1. Once you select "Adult Inpatient Test" from the drop-down menu and continue, you will be asked to review the Time Limits and Steps one more time and then confirm that you are ready to start the timed portion of the test. Once you select **Continue to Step 1**, you have 3 hours to complete Steps 1 - 2, and log back in to begin Step 3.

2. If you have not already done so, remember to go back to the Survey Dashboard and log out. If you don't go back and log out of the Survey Dashboard, you risk being locked out of the Survey and unable to get back to advance through the test.

3. Take note of the time-out time (e.g., "You have until 1:13 PM EST to complete Steps 1 and 2) at the top of the page. Please note that your local time zone may be different and the official time is based on the Tool's server time. The time on your local machine (e.g., the time on your computer, phone, or watch) may not be synchronized exactly, so please note any differences.

4. Once the Test Patients have fully loaded on the screen (this may take up to a minute), print the list of Test Patients (see example B). Confirm immediately that the entire list has printed successfully for ALL patients and ALL data columns shown on the screen. You will not be able to return to this page again and will be advanced to the next step without the information you need if you log out or close your browser before you print the Test Patients.

    DO NOT:
    (X) Close the browser or window
    (X) Navigate elsewhere
    (X) Logout until you have successfully printed the Test Patients

5. When you are ready, confirm that the Test Patients have been successfully printed and log out at the bottom of the screen. Now you are ready to start Step 2.

6. Note the time stamp on the page that appears after you log out. This is the deadline for completing Step 2 (which includes **both** entering the Test Patients into your system(s) and logging back into the Tool to proceed to Step 3). If you do not log back in and begin Step 3 before this time, the test will be scored as "Incomplete Evaluation," and you will not be able to retake the test for 120 days.

STEP 2: SET UP PATIENTS IN YOUR HOSPITAL SYSTEM(S)

Time Limit: All times and time limit warnings appear in Eastern Time. You have 3 hours to complete Steps 1 - 2, and log back into the Tool to begin Step 3. Step 2 takes up most of that time.

The procedure for setting up Test Patients is the same for the Sample and the Adult Inpatient versions of the test.

1. The Test Patients printed in Step 1 are each numbered. Assign your own unique patient identifiers so that the Test Patients can be set up in your various hospital system(s) in anticipation of entering Test Orders (e.g., Test Patient 1, Test Patient 2). You can record the unique patient identifier in the "Local ID" column of the printout. The Orders and Observation Sheet in Step 3 will reference the same patient numbers as those printed in Step 1, so any patient identifiers you assign in this step will need to be mapped to the Test Orders.

2. Each Test Patient has information about patient age, sex, weight, height, known allergies (or no known allergies), lab results, and problem/diagnosis. Set up Test Patients in your hospital's appropriate system(s). For example, lab results may need to be initially entered in your hospital's laboratory information system (LIS) and transmitted or initially captured directly in your hospital's EHR or CPOE system. Similarly, problem/diagnosis, age, sex, and allergy information may be initially captured in your ADT system, or initially captured in your EHR system. Enter problems/diagnoses into an electronic problem list or as admission diagnosis in accordance with standard practice; ICD-10 codes are provided.

   Note regarding serum creatinine
   All Test Patients have a serum creatinine result. Note that some results may be normal as many hospitals require normal creatinine levels prior to ordering renally cleared medications.

   Note regarding Anaphylaxis reaction to penicillin
   Your test may include a Test Patient with a documented anaphylaxis reaction to penicillin. This allergic reaction should be documented using the customary practice in your hospital.

3. Test Patients may be entered into the hospital's test environment. The test environment MUST BE identical to or "mirror" the hospital's production environment, including clinical decision support rules. If using your production system to ensure that clinical decision support, laboratory interfaces, and other areas are turned on, it may be necessary to alert ancillary departments so that bills will not be generated.

4. Once confident that the Test Patients have been accurately set up in the appropriate hospital system(s), log back into the CPOE Evaluation Tool via the Survey Dashboard to continue on to Step 3: Print Orders and Observation Sheet.

5. Once you check the box to confirm you are ready to move on and select **Continue to Step 3**, the 3-hour time limit for Steps 3 - 6 begins. Any remaining time from Steps 1 - 2 does not carry over to this portion of the test.

STEP 3: PRINT ORDERS AND OBSERVATION SHEET

Time Limit: All times and time limit warnings appear in Eastern Time. You have 3 hours to complete Steps 3 - 6. You are advised to save about 45 minutes to complete Step 5.

1. Take note of the time-out time (e.g., "You have until 4:13 PM EST to complete Steps 3-6) at the top of the page. All times appear in Eastern Time. Please note that your local time zone may be different and the official time is based on the Tool's server time. The time on your local machine (e.g., the time on your computer, phone, or watch) may not be synchronized exactly, so please note any differences.

2. If you have not already done so, remember to go back to the Survey Dashboard and log out. If you don't go back and log out of the Survey Dashboard, you risk being locked out of the Survey and unable to get back to advance through the test.

3. Once the Orders and Observation Sheet has fully loaded on the screen (this may take up to a minute), print this document (see example C). Confirm immediately that the entire list has printed successfully for ALL orders and ALL data columns shown online. The document will be 25 pages for the Adult Inpatient Test and is formatted so the prescriber can record the relevant advice and/or information they received while entering the Test Orders. You will not be able to return to this page again and will be advanced to the next step without the information you need if you log out or close your browser before you successfully print.

   DO NOT:
   (X) Close the browser or window
   (X) Navigate elsewhere
   (X) Log out until you have successfully printed the Orders and Observation Sheet

4. When you are ready, confirm that the Orders and Observation Sheet has successfully printed and log out. Now you are ready to start Step 4 (Order Entry).

5. Note the time stamp on the page that appears after you log out. This is the deadline for completing Steps 4 - 6 (which includes submitting and affirming your responses). If you do not log back in and complete Steps 4 - 6 before this time, the test will be scored as "Incomplete Evaluation" and you will not be able to retake the test for 120 days.

STEP 4: ENTER ORDERS AND COMPLETE THE OBSERVATION SHEET

Time Limit: All times and time limit warnings appear in Eastern Time. You have 3 hours to complete Steps 3 - 6. You are advised to save about 45 minutes to complete Step 5. Therefore, hospitals should aim to complete Step 4 in 2 hours.

The procedure for entering orders and recording the advice and information is the same for the Sample and the Adult Inpatient versions of the test.

1. The Test Orders included on the Orders and Observation Sheet printed in Step 3 are assigned to one of the Test Patients set up in Step 2. **Note that a single Test Patient may have multiple Test Orders assigned to them. Be sure to note the patient and order number as you complete this step.**

2. Test Orders are numbered and may include more than one medication. For example, a Test Order may be made of a pair of medications or a single medication.

3. The prescriber should carefully review the Order Checking Categories in this document so that he/she understands the specific types of clinical decision support the Tool is designed to test for.

4. The prescriber should enter the Test Orders for each Test Patient in the manner that is customary practice in your hospital. This includes using structured orders (e.g., order strings, order sentences, etc.) and medication order sets if that is the practice. The prescriber should sign every order as some clinical decision support may not appear until orders are electronically signed.

5. The prescriber should record any advice or information received during or after entering each numbered Test Order with the specific dose/route/frequency on the Orders and Observation Sheet. The Orders and Observation Sheet must be used to record relevant information that will be used to complete the Online Answer Form in Step 5.

6. The checkbox options are organized according to the types of information conveyed by decision support (e.g., dose, route, type of contraindication, etc.). The terminology corresponds to the terminology used when submitting results via the Online Answer Form in Step 5. Only record advice or information received by the prescriber entering orders (i.e., do not record any advice or information sent to a pharmacist or other type of user).

Note regarding Using Structured Fields or Standard Orders (e.g., pick-lists, and drop-down menus)
If the prescriber enters the Test Order and the dose, route, and frequency are available on a pick-list or a drop-down menu as a standard dose/route/frequency, and there are no warnings or alerts, then the prescriber would **NOT** record receiving any advice or information on the Orders and Observation Sheet.

If the prescriber attempts to enter the Test Order and either the dose, route **or** frequency is not available on a pick-list or drop-down menu as a standard dose/route/frequency, the prescriber should attempt to enter the order manually.

If at any point, the prescriber is not able to enter the complete order, he/she should record the point at which they were stopped from moving on (i.e., could not enter dose, route or frequency).

Note regarding Anticoagulants and INRs
When ordering anticoagulants that have drug-drug interactions, we understand that some systems may not display a specific drug-drug interaction alert, but may instead suggest a repeat INR. In that specific situation, we consider the suggestion to order a new INR a type of drug-drug interaction alert if displayed to the prescriber, which should be recorded as such on the Orders and Observation Sheet.

Note regarding Dose per Protocol or Pharmacy
If the prescriber is only able to enter a dose for the Test Orders as "per protocol" or "per pharmacy" and is not able to enter the specific test dose at all, even manually (e.g., vancomycin), the prescriber should select "Test Order not electronically orderable with the specified dose."

Note regarding Generic and Brand Names
With the exception of Bactrim and Aspirin, medications are specified as generics except for cases where we are testing for therapeutic duplication using the brand name and their generic

bioequivalent. If the generic is not available, it is acceptable to choose the brand name and continue with the order. Similarly, if the brand name is specified but not available, the generic bioequivalent is acceptable.

Note regarding Substitutions
With the exception of generic and brand names, the CPOE Evaluation Tool is not designed to recognize substitutions. If a particular medication is not available in your hospital's formulary, do not substitute a similar medication, even if your system generates an automatic substitution. If a medication is not available in your hospital's formulary, choose "Medication not electronically orderable in any formulation."

If the prescriber is able to enter the Test Order, even though the medication is not on the hospital's formulary, then the prescriber should do so and proceed with ordering.

If the prescriber tries to enter the Test Order and the system automatically substitutes the medication for another (i.e., there is no way to enter the Test Order), then the prescriber should mark on the Orders and Observation Sheet in Step 4 that the medication was not electronically orderable in any formulation.

If the prescriber receives a suggested substitution but can enter the Test Order, the prescriber should enter the specified Test Order (i.e., not the suggested substitution) and proceed with signing the order.

7. If the medication is not available to be ordered in any formulation, choose "Medication not electronically orderable in any formulation." If the medication can be ordered, but not with the dose, frequency, or route in the Test Order, choose "Test Order not electronically orderable with the specified..." and "Dose," "Frequency," and/or "Route" as appropriate.

    a) If the Test Order includes two orders (i.e., an order pair), and one of the two medications is not electronically orderable in any formulation, record "Medication not electronically orderable in any formulation."
    b) If the Test Order includes two orders (i.e., an order pair), and one of the two medications can be ordered, but not with the dose, frequency, or route in the Test Order, choose "Test Order not electronically orderable with the specified..." and "Dose," "Frequency," and/or "Route" as appropriate.

8. Record all relevant advice or information presented to the prescriber during or after entering the complete Test Order with the specified dose/route/frequency.

This includes interruptive decision support (e.g., an alert or warning requiring a response) and non-interruptive decision support (e.g., a flag or side display). Advice may in some cases be delivered in more than one way (e.g., message to monitor via labs via a drug level or chemistry test) as well as an actual monitoring order displayed for selection.

9. After recording the advice or information presented to the prescriber on the Orders and Observation Sheet, select the Test Order and discontinue it. Signed orders must be DISCONTINUED before moving to the next Test Order for the same patient. If the prescriber is receiving an alert for a medication that is not in the order (because he/she is getting alerts for medications that were ordered and then discontinued), then the prescriber should only record the alerts for the current Test Order.

10. Not every Test Order should generate advice or information from the CPOE system. If no advice or information was received, "Order entered and signed, no advice or information received" should be noted on the Orders and Observation Sheet.

11. Once confident that the Orders and Observation Sheet has been completed, log back into the CPOE Evaluation Tool via the Survey Dashboard and continue on to Step 5: Record Responses and Step 6: Submit Affirmation.

    Please note:
    a) If you have not returned to the test within the 3-hour time limit for Steps 3 - 6, you will be informed that the time limit has expired and the test will be scored as "Incomplete Evaluation." You will not be able to retake the test for 120 days.
    b) If you return within the 3-hour time limit, you will be informed that the test is still underway. You will be asked to confirm that you are ready to proceed to Step 5 to submit your responses and then to Step 6 to complete the affirmation.

12. Note the time stamp on the page that appears after you log back in. This is the deadline for completing Steps 5 and 6. If you do not complete Steps 5 and 6 before this time, the test will be scored as "Incomplete Evaluation" and you will not be able to retake the test for 120 days.

STEP 5: RECORD RESPONSES ONTO THE ONLINE ANSWER FORM

Time Limit: All times and time limit warnings appear in Eastern Time. You have 3-hours to complete Steps 3 - 6. You are advised to save about 45 minutes to complete Steps 5 and 6.

The procedure for entering recorded response onto the Online Answer Form is the same for the Sample and the Adult Inpatient versions of the test.

1. Take note of the time-out time (e.g., you have until 4:13 PM EST to complete Steps 3-6) at the top of the page. All times appear in Eastern Time. Please note that your local time zone may be different and the official time is based on the Tool's server time. The time on your local machine (e.g., the time on your computer, phone, or watch) may not be synchronized exactly, so please note any differences.

2. If you have not already done so, remember to go back to the Survey Dashboard and log out. If you don't go back and log out of the Survey Dashboard, you risk being locked out of the Survey and unable to get back to advance through the test.

3. Each Test Order from the Orders and Observation Sheet appears in the same numbered order on the Online Answer Form.

4. For each of the Test Orders, select the radio button that corresponds to the advice or information recorded by the prescriber on the Orders and Observation Sheet. Note that the specific radio button response options may differ from order to order. You may only select one radio button for each Test Order.

5. If the Test Order could not be entered as specified (i.e., "Medication not electronically orderable in any formulation" or with the specified dose, frequency, or route), select the appropriate radio button.

6. Otherwise, select the radio button which best describes the advice or information received by the prescriber (e.g., "Received advice/information concerning allergy to medication") or the absence of advice or information provided by clinical decision support. If the prescriber did not receive the specific advice or information noted on the Online Answer Form for the Test Order, select the appropriate radio button (e.g., "No advice/information received concerning allergy to medication").

7. As a reminder, not every Test Order should generate advice or information from the CPOE system.

8. Once confident that the Online Answer Form is complete and accurate, submit the Online Answer Form and move on to Step 6: Affirmation.

9. **Do not close your browser window or navigate elsewhere until you complete and submit the Affirmation in Step 6. If you close your browser window or navigate elsewhere before submitting the Affirmation in Step 6, your test will be scored as "Incomplete Evaluation" and you will not be able to retake the test for 120 days.**

STEP 6: SUBMIT AFFIRMATION

Time Limit: All times and time limit warnings appear in Eastern Time. You have 3 hours to complete Steps 3 - 6.

The procedure for completing and submitting the Affirmation of Accuracy is the same for the Sample and the Adult Inpatient versions of the test.

After submitting your responses in Step 5, you will immediately be taken to the affirmation page. Your responses have not been submitted and will not be scored until the affirmation has been submitted. Enter your name and title in the fields below the affirmation statement and click **Affirm & Submit**.

Your responses will be scored immediately and you will be taken to a results page that should be viewed and printed for your records.

STEP 7: VIEW AND PRINT RESULTS

Results of the test are immediately scored and displayed. You can print those results now or retrieve them later using the **View Previous Results** button at the bottom of the Hospital Information page of the CPOE Evaluation Tool. To get to this page from the Survey Dashboard, select the "View Results" button next to Section 2.

For a detailed explanation of your hospital's scored results, download the 2019 Leapfrog Hospital Survey Scoring Algorithm on the Scoring and Results webpage. As a reminder, the score from your Adult Inpatient Test will be combined with the percentage of inpatient medication orders reported in Section 2 in the Online Survey Tool to determine an overall score for Leapfrog's CPOE Standard.

In addition, for specific guidance related to improving your clinical decision support functionality based on the results of the Adult Inpatient Test, please download the CPOE Tool Guidance for Leapfrog Reporting Hospitals.

DISCLAIMER

The Leapfrog CPOE Evaluation Tool is intended only to provide hospitals with guidance about its implementation of Computerized Physician Order Entry systems. It is not intended nor should it be considered by hospitals, consumers, or any other users of any test results as a comprehensive audit or verification of any CPOE system.

The Tool is offered on an as-is basis and The Leapfrog Group, The Brigham and Women's Hospital, Inc., and The University of Utah do not warrant or guarantee the accuracy or rigor of the test protocols or implementation of the Tool or its use by hospitals and testers.

APPENDIX A: ORDER CHECKING CATEGORIES

Each category included in the CPOE Evaluation Tool represents an area where a serious adverse drug event (ADE) could occur if the CPOE system's clinical decision support fails to alert the prescriber. The intent of the test is to measure and improve hospitals' use of clinical decision support to reduce ADEs and improve medication safety. The CPOE Evaluation Tool is designed to test for two types of clinical decision support:

The CPOE Evaluation Tool is designed to test for two types of clinical decision support:

1. **Scenario-Specific Advice/Information**: Information related to the Test Order, which may include the medication's specific dose, route, and frequency, and the Test Patient, which includes specific patient demographics (e.g., age, gender) and clinical information such as problems/diagnoses, lab values, and allergies, as applicable. The scenario-specific advice/information may also involve the *combination* of two specific medication orders.

2. **Medication-Specific Advice/Information**: General information that might appear <u>any</u> time the medication is ordered for <u>any</u> patient and is not specifically related to the Test Patient (see the Drug Monitoring Order Checking Category).

The table below includes descriptions of each Order Checking Category included in the CPOE Evaluation Tool, as well as a description, example, and the type of clinical decision support (i.e. scenario-specific or medication-specific advise/information) being tested.

Order Checking Category	Description	Example	Type of Clinical Decision Support
Therapeutic Duplication	Medication combinations overlap therapeutically (same agent or same class)	Using clonazepam and lorazepam together	Scenario-specific advice/information
Drug Dose (Single)	Specified dose of medication exceeds safe range for single dose	Tenfold overdose of digoxin	Scenario-specific advice/information
Drug Dose (Daily)	Specified frequency of administration results in daily dose that exceeds safe range for daily dose	Ordering ibuprofen regular dose every three hours	Scenario-specific advice/information
Drug Allergy	Medication (or medication class) is one for which patient allergy has been documented	Penicillin prescribed for patient with documented penicillin allergy	Scenario-specific advice/information
Drug-Route	Specified route of administration is inappropriate and potentially harmful	Use of hydroxyzine intravenously	Scenario-specific advice/information
Drug-Drug Interaction	Medications in pair of orders result in known harmful interaction when used in combination	Concurrent sumatriptan and phenelzine	Scenario-specific advice/information

Order Checking Category	Description	Example	Type of Clinical Decision Support
Drug Diagnosis	Medication dose inappropriate/contraindicated based on documented problem/diagnosis	Nonspecific beta-blocker in patient with asthma	Scenario-specific advice/information
Drug- Age	Medication dose inappropriate/contraindicated based on patient age	Prescribing diazepam for a patient over 65 years old	Scenario-specific advice/information
Drug Laboratory	Medication dose inappropriate/contraindicated based on documented laboratory test results (includes renal status)	Use of nitrofurantoin in patient with severe renal failure	Scenario-specific advice/information
Drug Monitoring	Medication for which the standard of care includes subsequent monitoring of the drug level or lab value to avoid harm	Prompt to monitor drug levels when ordering aminoglycosides or INR/PT when ordering warfarin	Medication-specification advice/information

The Tool also includes an "Alert Fatigue" test category, which checks if prescribers are receiving alerts or information for inconsequential medication interactions that clinicians typically ignore. An example would be alerting on the concurrent use of hydrochlorothiazide and captopril. This test category is not included in scoring.

The Tool also includes a "Deception Analysis" test category, which checks for "false positives" (e.g., orders that should not have generated any warning in the hospital's CPOE system). Hospital's that "fail" the Deception Analysis are scored as "incomplete evaluation" and will not be able to retake an Adult Inpatient Test for 120 days.

APPENDIX B: CPOE FAQS

1. **Can we take one test for our entire hospital system if all our hospitals use the same CPOE system?**
   No. Because of differences in implementation and usage between separate hospital locations, the test must be taken by each hospital consistent with Leapfrog's policy on multi-campus hospital systems.

2. **Can a central team conduct tests for multiple hospitals from a central site?**
   Yes, a central team can conduct a test for each hospital in the system, but hospitals must be sure that the clinical decision support and other CPOE settings being used mirror the local hospital's instance exactly. In addition, a local prescriber who regularly orders inpatient medications must complete the order entry part of the test (Step 4).

3. **Can our pharmacist enter the Test Orders during the test?**
   No. The Test Orders should be entered by a prescriber who routinely write inpatient medication orders. Nurses, health informatics team members, and test coordinators are also prohibited from completing the Step 4 Order Entry.

4. **Our CPOE system is designed so that certain alerts go to the pharmacist, not the prescriber. Can we use these alerts in reporting on the CPOE Evaluation Tool?**
   No, hospitals should only report on those alerts that were received at the point of order entry by the prescriber.

5. **When should we take the CPOE Evaluation Tool?**
   The CPOE Evaluation Tool is a core element of Leapfrog's CPOE Standard. Hospitals are urged to ensure that the Adult Inpatient CPOE Test is submitted along with the Survey (i.e. in the same month) in order to meet the deadlines for Leapfrog Hospital Survey and Leapfrog's other programs such as Top Hospital and the Leapfrog Hospital Safety Grade.

   Hospitals that submit Section 2 via the Online Hospital Survey Tool, but do not submit an Adult Inpatient Test via the CPOE Evaluation Tool, are scored and publicly reported as "Willing to Report" on the CPOE measure.

   Within a Survey Cycle (April 1 – November 30), a hospital cannot retake a CPOE Evaluation Tool until at least 120 days have passed since their last test.

6. **What level of feedback will the CPOE Evaluation Tool provide our hospital about our CPOE system?**
   Hospitals that complete the CPOE Evaluation Tool will be provided with feedback on those scenarios that include a potentially fatal order that their CPOE system did not correctly alert the prescriber and alert fatigue orders. Due to the costs associated with developing the patients and orders for the

tool, the database of orders and patients is limited. Therefore, revealing all of the incorrect or missed alerts would provide hospitals that have taken the tool before a potential advantage over hospitals with recent CPOE implementations.

For specific guidance related to improving your clinical decision support functionality based on the results of the Adult Inpatient Test, please download the CPOE Tool Guidance for Leapfrog Reporting Hospitals.

7. **If we update our responses to questions #3 and #4, do we need to re-take the CPOE Test?**
No. Hospitals are not required to retake the CPOE Evaluation Tool if making updates to Section 2 Medication Safety - CPOE. Retaking a test is only recommended if a hospital has made changes to their CPOE system and would like to try to improve their score.

8. **If my hospital experiences technical issues during the either the Sample Test or Adult Inpatient Test, who can we contact?**
If you experience any issues during the test, you can contact the Leapfrog Help Desk between 9 AM and 5 PM EST M-F by submitting a ticket via https://leapfroghelpdesk.zendesk.com. Make sure to state that you are currently in a CPOE Test, describe the issue you are experiencing, provide any applicable screen shots, and provide a contact phone number.

EXAMPLE A HOSPITAL INFORMATION

Hospital Information

All fields are required.

HOSPITAL INFORMATION		
1.	Hospital ID:	31-7824
2.	Hospital Name:	2017 Test Hospital 12
3.	Physical Address:	123 Test St
4.	City:	Test
5.	State:	NJ
6.	Zip Code:	12121

CONTACT INFORMATION		
7.	Name of Contact Person:	
8.	Contact's title:	
9.	Contact's phone:	xxx-xxx-xxxx xxx-xxx-xxxx
10.	Contact's email:	

EHR APPLICATION INFORMATION		
11.	EHR Application Source:	--Select One--
	Vendor Name:	--Select One--
	Application Version:	
	Product Name:	
12.	Initially installed date:	March 2018
13.	Medication Reference Database:	--Select One--
14.	Meaningful use stage achieved in inpatient EHR:	--Select One--

[View Previous Results] [Save & Continue]

EXAMPLE B TEST PATIENTS SCREENSHOT

THELEAPFROGGROUP

CPOE Evaluation Tool

Instructions

Step 1: Print Test Patients

| STEP 1: Print Patients | STEP 2: Enter Patients | STEP 3: Print Orders | STEP 4: Enter Orders | STEP 5: Record Responses | STEP 6: Submit Affirmation | STEP 7: View Results |

You have until **9:16 PM EDT** to complete Steps 1 and 2.

Please wait for the Test Patients to fully load below before printing (this may take up to a minute). DO NOT close this window or browser, navigate elsewhere, or log out of the screen until you have printed these Test Patients.

CLICK HERE TO DOWNLOAD TEST PATIENTS

Test Patients

Sample Adult Inpatient Test
You have until 03/18/2019 09:16 PM EDT to complete Step 1, Step 2, and then log-in to the CPOE Tool to start Step 3.
Generated for: Test at 2019 CPOE Test 2
Number of patients: 2

Instructions for the test are available at: http://www.leapfroggroup.org/survey-materials/survey-and-cpoe-materials

Review the instructions and requirements completely before taking the test and have them available while completing each step.

EXAMPLE C ORDERS AND OBSERVATION SHEET SCREENSHOT

THELEAPFROGGROUP
CPOE Evaluation Tool

Instructions

Step 3: Print Orders

| STEP 1: Print Patients | STEP 2: Enter Patients | **STEP 3: Print Orders** | STEP 4: Enter Orders | STEP 5: Record Responses | STEP 6: Submit Affirmation | STEP 7: View Results |

You have until **9:17 PM EDT** to complete Steps 3-6.

Please wait for the Orders and Observation Sheet to fully load below before printing (this may take up to a minute). DO NOT close this window or browser, navigate elsewhere, or log out of the screen until you have printed the Orders and Observation Sheet.

You must log back in to submit and affirm your responses by **9:17 PM EDT**. If you fail to complete **Steps 3-6** within the time limits, the Test will be scored as "Incomplete Evaluation" and you will not be able to take this test again for 120 days. Once you have started the Test, the timer counts down even when you are not logged into the Tool.

CLICK HERE TO DOWNLOAD THE ORDERS AND OBSERVATION SHEET

Orders and Observation Sheet

Sample Adult Inpatient Test
You have until 03/18/2019 09:17 PM EDT to complete Steps 3 - 6.
Generated for: Test at 2019 CPOE Test 2
This document is 3 pages long.