



# CPOE EVALUATION TOOL (V3.5)

USER INSTRUCTIONS

(FOR ADULT AND GENERAL HOSPITALS ONLY)



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## CHANGE SUMMARY

June 4, 2018 – Instructions regarding compatible browsers have been updated. Hospitals should use Firefox, Safari, or Internet Explorer version 11 on a Windows 7 operating system. The Tool is currently experiencing technical issues with Google Chrome so this browser should not be used at this time.

If substantive changes are made to this section of the Survey after release on June 4, 2018, they will be documented in this Change Summary section.

## IMPORTANT NOTES REGARDING VERSION 3.5

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

In 2018, Leapfrog released version 3.5 of the CPOE Evaluation Tool. The updated Tool includes changes to the content of the Test Patients and Test Orders, the instructions, and content of the Orders and Observation Sheet, and the options available on the Online Answer Form. Lastly, the [scoring algorithm](#) has been updated and should be carefully reviewed.

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.

### **Browser Requirements**

Version 3.5 of the CPOE Evaluation Tool is optimized for Firefox and Safari desktop web browsers. While we recommend using one of these browsers, the test is also functional in Internet Explorer 11 (IE11) on a Windows 7 operating system. To confirm compatibility with IE11 in your environment and settings, we recommend taking a Sample Test on the same computer prior to initiating the Adult Inpatient Test and reviewing the browser instructions available in the [CPOE Quick Start Guide](#). **In addition, if your hospital is using IE, you must remember to clear your browsing history as described in the [CPOE Quick Start Guide](#) before taking a test for the first time in 2018. Ignoring these instructions will result in an error and your hospital will not be able to retake an Adult Inpatient Test for 120 days.**

**Please do not attempt the CPOE Evaluation using Chrome, as we are currently experiencing technical issues in this browser.**

**Hospitals have until December 31 to complete an Adult Inpatient Test. The CPOE Evaluation Tool goes offline at midnight ET on December 31.**

*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.*

## INTRODUCTION AND OVERVIEW TO VERSION 3.5

### **Welcome to Version 3.5 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 licensed prescribers to common, serious medication errors. 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, and as such, 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, the test can only be repeated after waiting 120 days *after* the date and time of the first test completion (e.g., if a hospital completed a test on April 17 at 12:16 PM EST, then the hospital will be able to retake the test in the online tool on August 16 at 12:16 PM EST.). 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 pharmaceuticals for patients.

A description of the [Order Checking Categories](#) is available at the end of this document. Please carefully review this information, as well as the [CPOE Evaluation Tool FAQs](#) before you begin a Sample Test or Adult Inpatient Test. If you have any questions prior to or after the test please contact the [Help Desk](#).

### **Browser Requirements**

Version 3.5 of the CPOE Evaluation Tool is optimized for Firefox and Safari desktop web browsers. While we recommend using one of these browsers, the test is also functional in Internet Explorer 11 (IE11) on a Windows 7 operating system. To confirm compatibility with IE11 in your environment and settings, we recommend taking a Sample Test on the same computer prior to initiating the Adult Inpatient Test and reviewing the browser instructions available in the [CPOE Quick Start Guide](#). **In addition, if your hospital**



is using IE, you must remember to clear your browsing history as described in the [CPOE Quick Start Guide](#) before taking a test for the first time in 2018. Ignoring these instructions will result in an error and your hospital will not be able to retake an Adult Inpatient Test for 120 days.

**Please do not attempt the CPOE Evaluation using Chrome, as we are currently experiencing technical issues in this browser.**

## 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 3-9). 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.

Time Limits	Steps
Steps 1 - 2 must be completed within <b>3 hours</b> .	<p><b>Step 1:</b> (a) Print a list of Test Patients and (b) log out of the Tool.</p> <p><b>Step 2:</b> (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.</p>
Steps 3 - 6 must be completed within <b>3 hours</b> .	<p><b>Step 3:</b> (a) Print the Orders and Observation Sheet and (b) log out of the Tool.</p> <p><b>Step 4:</b> (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</p>
<b>Important Note 1:</b>	



<p>Any remaining time from Steps 1 and 2 does <b>not</b> carry over to this portion of the test.</p> <p><b>Important Note 2:</b> We recommend leaving at least <b>45 minutes</b> to perform Step 5.</p>	<p>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.</p> <p>Note: Do not record any advice or information on the Orders and Observation Sheet that was sent directly to a pharmacist.</p> <p><b>Step 5:</b> (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.</p> <p><b>Step 6:</b> Complete and submit the Affirmation.</p> <p><b>IMPORTANT NOTICE:</b> 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.”</p>
<p>Step 7 has no time limit.</p>	<p><b>Step 7:</b> View and print your results.</p>

**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.
5. Version 3.5 of the CPOE Evaluation Tool is optimized for Firefox and Safari desktop web browsers. While we recommend using one of these browsers, the test is also functional in Internet Explorer 11 (IE11) on a Windows 7 operating system. To confirm compatibility with IE11 in your environment and settings, we recommend taking a Sample Test on the same computer prior to initiating the Adult Inpatient Test and reviewing the browser instructions available in the [CPOE Quick Start Guide](#). **In addition, if your hospital is using IE, you must remember to clear your browsing history as described in the [CPOE Quick Start Guide](#) before taking a test for the first time in 2018. Ignoring**



these instructions will result in an error and your hospital will not be able to retake an Adult Inpatient Test for 120 days.

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## 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 licensed 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."

## 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 3-9).

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 licensed 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 licensed 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 licensed prescriber completes Step 4 Order Entry, can 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 Order Entry.
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 licensed 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).
  4. Make sure the machine you are using has a compatible browser. If you are using IE11, verify that you are using a Windows 7 operating system and that you have reviewed the browser clearing instructions in the [CPOE Quick Start Guide](#).
- Please do not attempt the CPOE Evaluation using Chrome, as we are currently experiencing technical issues in this 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. 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.
  8. Version 3.5 of the CPOE Evaluation Tool is optimized for Firefox and Safari desktop web browsers. While we recommend using one of these browsers, the test is also functional in Internet Explorer 11 (IE11) on a Windows 7 operating system. To confirm compatibility with IE11 in your environment and settings, we recommend taking a Sample Test on the same computer prior to initiating the Adult Inpatient Test and reviewing the browser instructions available in the [CPOE Quick Start Guide](#).





In addition, if your hospital is using IE, you must remember to clear your browsing history as described in the [CPOE Quick Start Guide](#) before taking a test for the first time in 2018. Ignoring these instructions will result in an error and your hospital will not be able to retake an Adult Inpatient Test for 120 days.

**Please do not attempt the CPOE Evaluation using Chrome, as we are currently experiencing technical issues in this browser.**

## 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 – 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 info: This should be the individual responsible for coordinating the test and reporting answers for the hospital's test.
    - Q11 – EHR Application Source: 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: Select either "Homegrown" or one of the commercial vendors listed that are used at your institution.
    - Q14 – Meaningful use stage achieved in inpatient EHR: Select which meaningful use stage has been achieved at your institution.



6. 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 2018 test results. *Please note that results from CPOE tests completed in 2017 will also be available.*

## 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. If a test was completed in 2017, 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**.
5. If your hospital is using IE, you must remember to clear your browsing history as described in the [CPOE Quick Start Guide](#) before taking a test for the first time in 2018. Ignoring these instructions will result in an error and your hospital will not be able to retake an Adult Inpatient Test for 120 days.

## TAKE A SAMPLE TEST

The Sample Test is designed to give your team, including the licensed 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 30-45 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

**Important Note:** If your hospital is using IE, you must remember to clear your browsing history as described in the [CPOE Quick Start Guide](#) before taking a test for the first time in 2018.

### 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 PDF has 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 International Normalized Ratios (INR) and Platelet Counts**

For anticoagulant orders (which appear in the Test Orders), many hospital systems now require normal INRs and platelet counts in the patient record. Given this requirement, we have added a normal INR (1.5) and Platelet Count (200,000 cells/microliter) to any Test Patient that may be involved in an anticoagulant order.

### **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 PDF has fully loaded on the screen (this may take up to a minute), print the list of Test Orders (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 print the Test Orders.



**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 were randomly selected and 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. A licensed prescriber who regularly orders medications through your inpatient CPOE system 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.
4. The licensed prescriber should have already reviewed the [Order Checking Categories](#) in this document so that he/she understands the specific types of advice or information the Tool is designed to test for.
5. The licensed 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. Licensed prescribers should only record scenario-specific advice/information they receive. They should not record medication-specific advice/information.

**Scenario-Specific Advice/Information:** Information related to the Test Order, which includes a specific dose, route, and frequency, and the Test Patient, which includes specific patient demographics including diagnosis, lab values, and allergy, as applicable. (e.g., pregnancy warning that appears *because* the Test Patient has a diagnosis of pregnancy).

**Medication-Specific Advice/Information:** General information that might appear any time the medication is ordered for any patient and is not specifically related to Test Order or Test Patient (e.g., pregnancy warning that appears *regardless* of whether or not the Test Patient has a diagnosis of pregnancy).

7. 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 licensed prescriber entering orders (i.e., do not record any advice or information sent to a pharmacist or other type of user).

**Note about Drug-Laboratory vs Drug Monitoring Advice**

Drug-laboratory alerts should occur when drug combinations are contraindicated based on documented laboratory test results, which includes renal status. Drug Monitoring alerts should occur for drug combinations where the standard of care includes subsequent monitoring to avoid harm. For Drug-Monitoring alerts, the prescriber should receive information about ordering a lab test or the system should automatically generate a lab order.

**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 which should be recorded as such on the Orders and Observation Sheet.

**Note regarding Dosing Advice Received during Ordering**

If the licensed 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, the licensed prescriber would NOT record receiving any advice or information about dose the Orders and Observation Sheet.

If the licensed 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 licensed prescriber should attempt to enter the order manually. If there is a hard stop at any point and the licensed prescriber is not able to enter the complete order, the licensed prescriber should record the point at which they were stopped from moving on (i.e. could not enter dose or route or frequency) on the Orders and Observation Sheet.



If the licensed prescriber attempts to enter the Test Order and 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 the prescriber is able to enter the Test Order completely using the specified dose/route/frequency and (a) there is no hard stop and (b) there are no warnings or alerts, the licensed prescriber should **NOT** record receiving any advice or information on the Orders and Observation Sheet.

**Note regarding Dose per Protocol or Pharmacy**

If the licensed 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 licensed 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.”

8. 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.
9. Record all relevant advice or information presented to the licensed 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.

10. After recording the advice or information presented to the licensed 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.
11. 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.
12. 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.
13. 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., “During ordering received advice or 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., “Received no advice or information 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 2018 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 [GUIDANCE FOR LEAPFROG HOSPITAL SURVEY PARTICIPATING HOSPITALS: CLINICAL DECISION SUPPORT RELATED TO THE CPOE EVALUATION TOOL](#).

#### 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.

Order Checking Category	Description	Example
<b>Therapeutic Duplication</b>	Medication combinations overlap therapeutically (same agent or same class)	Using clonazepam and lorazepam together
<b>Drug-Dose (Single)</b>	Specified dose of medication exceeds safe range for single dose	Tenfold overdose of digoxin
<b>Drug-Dose (Daily)</b>	Specified frequency of administration results in daily dose that exceeds safe range for daily dose	Ordering ibuprofen regular dose every three hours
<b>Drug-Allergy</b>	Medication (or medication class) is one for which patient allergy has been documented	Penicillin prescribed for patient with documented penicillin allergy
<b>Drug-Route</b>	Specified route of administration is inappropriate and potentially harmful	Use of vitamin K intramuscular injection
<b>Drug-Drug</b>	Medications in pair of orders result in known harmful interaction when used in combination	Concurrent linezolid and sumatriptan
<b>Drug-Diagnosis</b>	Medication contraindicated based on documented problem/diagnosis	Nonspecific beta-blocker in patient with asthma
<b>Drug-Age</b>	Medication contraindicated based on patient age	Prescribing diazepam for a patient over 65 years old
<b>Drug-Lab</b>	Medication contraindicated based on documented laboratory test results (includes renal status)	Use of enalapril in patient with severe renal failure
<b>Drug Monitoring</b>	Medication for which the standard of care includes subsequent monitoring to avoid harm	Prompt to monitor drug levels when ordering aminoglycoside

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 a test for multiple hospitals from a central site?**

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 licensed prescriber who regularly orders inpatient medications must complete the order entry part of the test (Step 4).

**3. Can our pharmacist enter the medication orders during the test?**

No. The Test Orders should be entered by a licensed 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. How often should a hospital take a CPOE Evaluation Tool?**

In order to be included in a hospital's scoring for the CPOE standard, the CPOE Evaluation Tool needs to be taken at least once per Survey cycle (April 1 – December 31). Within a Survey cycle, a hospital cannot retake a CPOE Evaluation Tool until at least 120 days have passed since their last test was taken.

**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.



## 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: | <input type="text"/>  |
| 8. Contact's title:        | <input type="text"/>  |
| 9. Contact's phone:        | <input type="text" value="xxx-xxx-xxxx"/> <input type="text" value="xxx-xxx-xxxx"/> |
| 10. Contact's email:       | <input type="text"/>  |

#### EHR APPLICATION INFORMATION

- |   |  |
|---|--|
| 11. EHR Application Source:                         | <input type="text" value="--Select One--"/>                          |
| Vendor Name:  | <input type="text" value="--Select One--"/>                          |
| Application Version:                                | <input type="text"/>   |
| Product Name:                                       | <input type="text"/>   |
| 12. Initially installed date:                       | <input type="text" value="March"/> <input type="text" value="2018"/> |
| 13. Medication Reference Database:                  | <input type="text" value="--Select One--"/>                          |
| 14. Meaningful use stage achieved in inpatient EHR: | <input type="text" value="--Select One--"/>                          |

[View Previous Results](#)

[Save & Continue](#)



## EXAMPLE B TEST PATIENTS SCREENSHOT

THE LEAPFROGGROUP Instructions  
CPOE Evaluation Tool

### Step 1: Print Test Patients

<b>STEP 1:</b> 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
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You have until **6:49 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](#)

Page: 1 of 3    - +    Automatic Zoom

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**Test Patients**

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**Adult Inpatient Test**  
You have until 05/21/2018 06:49 PM EDT to complete Steps 1 and 2.  
Generated for: 1 at 2017 Test Hospital 12  
Number of patients: 13

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

### 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 **6:50 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 **6:50 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.

[CLICK HERE TO DOWNLOAD THE ORDERS AND OBSERVATION SHEET](#)

Page: 1 of 25    - +    Automatic Zoom

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## Orders and Observation Sheet

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**Adult Inpatient Test**  
You have until 03/21/2018 06:50 PM EDT to complete Steps 3 - 6.  
Generated for: 1 at 2017 Test Hospital 12  
This document is 25 pages long.