



NCCTO®

ISE

CANDIDATE GUIDE

Injections Skill Examination-August 2011-July 2012
(**Updated: July 18, 2011 changes in green; September 6, 2011 changes in blue**)

ISE will be conducted for all registered Candidates. Copy of the [Evaluation Form](#) used by the Examiners is provided for review.

Candidates are expected to carefully and thoroughly review the Candidate Orientation information contained in this document prior to arrival at the test center. Most of this information will not be repeated during the on-site Candidate Orientation.

AUGUST 2011-JULY 2012 ISE Candidate Orientation Information: General

The on-site Candidate Orientation complements the information contained in this document. If you have latex allergies, please inform staff at check-in.

The NCCTO staff serves as the Candidate advocate to assist with any problems that may arise. *There will not be any on-site training or familiarization with the simulated arm. As with CSE, Candidates will be expected to properly perform the skills based on the information in this guide and the evaluation form.*

Candidates are expected to wear professional attire. Use “business casual” as a reference, which the National Board interprets as excluding jeans, T-shirts, garments that could be viewed to be immodest (e.g. tank tops), tennis shoes, and/or flip flops. **Candidates must bring and wear white lab coats.**

Cell phones must remain turned off during the ISE and left with personal belongings in the Candidate’s Locker.

No notes or other written materials may be taken into the examination room, including materials that have been downloaded from the National Board website. All notes and written materials must also be left in the Candidate’s locker. Candidates may not refer to notes or written materials during the examination.

Additionally, since NCCTO is video recording skills, it is important that you know that a candidate determined to have falsified data/findings during the examination or abandoned a patient during a skill may receive a score of zero for that skill, station or entire examination.

It is likely that observer(s) may be present in the examination room. Observers are not there to watch a specific Candidate or Standardized Patient (SP); instead, they are there to watch the ISE and the examination process. Observers are instructed not to converse or interact with Candidates or SP in the examination rooms. Observers are not part of the evaluation process.

The ISE is comprised of 3 distinct procedures **that must be performed in order:**

- preparation of both medications (simulated fluorescein sodium and simulated epinephrine),
- performing an intravenous injection for fluorescein angiography, and
- performing an intramuscular injection of epinephrine.

Given the nature and criticality of the injections to be performed at this ISE, Candidates should assume that:

- an appropriate written Informed Consent has been discussed with and signed by the Patient prior to performing the injections.
- the Patient’s identity has been verified using 2 methods such as name, date of birth, last 4 digits of the SSN, and/or address prior to performing the injections.
- the nature of the injection procedure and the injection site have been verified by asking the Patient to verbalize his/her understanding of these issues.
- the Patient is male and has been found to have a normal BP measurement during the pre-procedure work-up.

Five minutes are allotted for the Candidate to be in the exam room prior to the start of the exam. Candidates may familiarize themselves with equipment in the exam room during any remaining rotation time after arriving at the station. No clinical procedures should be performed before the station officially begins, as indicated by the announcement. Thus, during the five minute interval, Candidates may adjust the arm, sharps container, and other equipment as desired but injections may not be performed.

The total testing time at the ISE is incorporated into Station 4. Candidates are responsible for monitoring their time. SP will not remind Candidates of the remaining time at the station. If time expires before a Candidate completes the station, the items not performed will be scored as incorrect.

An announcement will play that officially begins each station. The purpose of this formal beginning is to standardize the amount of examining time for all Candidates. Therefore, Examiners and/or SPs have been instructed to ignore any Candidate procedures that precede the announcement, including general station items such as greeting the SP. Candidates who begin before the announcement starting the station must repeat any task performed in order to be scored. Similarly, no notes are to be written before the announcement, since Examiners and/or SPs may be unable to distinguish notes created in the room from notes inappropriately brought into the room. **Writing notes in the room before the announcement starting the Station/cycle may be cause for disqualification from, dismissal from, and/or failure of the examination.** Candidates should remain in the examination room until the announcement indicating the end of that station.

The SP will answer questions such as **where** an equipment switch, room lighting control, or clinical material is located. However, questions such as **how** to use the equipment or clinical material are **not** appropriate and will **not** be answered by the SP. Candidates may ask the SP “where” questions about the equipment and/or room lighting control throughout the stations during the allocated station time. **No additional examination time will be provided for any questions and answers.**

Candidates may reread the instructions posted in the examination room before the station begins. The SP hands the Candidate a sheet of blank paper upon entering the room after the announcement that begins the station. This paper is for recording notes or data and is not scored. At the conclusion of each station, Candidates must leave behind any notes or data recorded during the station.

The skill evaluation form contains the criteria that Examiners use to assess Candidate performance. The criteria are in the form of yes-no checklists, and the numbered performance items are sequenced in the order in which they should be optimally conducted. Candidates must perform the procedures in the following order: preparation of both medications (fluorescein and epinephrine), performing an intravenous injection for fluorescein angiography, and performing an intramuscular injection of epinephrine.

Candidates may alter the sequencing of the numbered items performed within a procedure without loss of credit but are strongly discouraged from doing so. For example donning of protective gloves could occur earlier although this sequence may interfere with the Candidate’s dexterity. However, certain items must be performed in order to receive full credit (e.g., application of the tourniquet prior to injection.) Thus, following the sequence as indicated on the evaluation form helps ensure that Candidates will not forget to perform any required item and also facilitates Examiner scoring.

Candidates are randomly matched with Examiners.

SPs may appear to be neutral. Candidates should not regard this as a personal dislike or an indication of performance quality. SPs are instructed to conduct the examination in a personally neutral manner to promote uniform, equal treatment of Candidates. The SPs’ detachment produces a more objective, impartial evaluation. SPs are allowed to say very little other than what has been scripted.

SPs are responsible for ensuring safety. If a SP believes that the techniques or procedures used by a Candidate jeopardize safety, the SP has the responsibility to intervene or stop the injection procedure being assessed. If the SP intervenes, the Candidate will receive no credit for that item. If the SP stops the procedure, the Candidate will receive no credit for that item and any subsequent items in that procedure (e.g., Candidate was stopped on item 33, the Candidate would receive no credit for items 33-45 but would be allowed to perform items 46-62). *Note that this differs from CSE; in CSE, if a Candidate is stopped the Candidate will receive no credit for that item or the remaining items on that skill.*

Any open wound on a Candidate's finger or hand must be covered during the examination. This applies to pre-existing wounds and those that may develop during the examination. In the instance of the latter, a band-aid and gloves will be provided to protect the Candidate.

Candidates who wish to repeat one or more items within a procedure may do so at their discretion, **if** they have not begun the next procedure. However, Candidates who have begun the next procedure and wish to return to a prior procedure to repeat one or more items, or perform one or more omitted items, are expected to redo the **entire procedure** (*this is unlike CSE where Candidates who have left a skill must redo the entire skill*). These Candidates must announce this intent to the SP and return to the first item in the procedure (except for any general station procedures such as greeting the Patient). In repeating the procedure, **all** of the prior marks recorded by the Examiner are erased, and the Candidate proceeds and is evaluated as if performing the entire procedure for the first time. *Candidates are strongly discouraged from repeating Procedure 1: Preparation of Both Medications due to time constraints.*

Candidates are responsible for facilitating Video Recordings. Occasionally, the SP may ask a Candidate to repeat one or more items if the SP is not able to observe it.

Some items require the Candidate to give instructions to the Patient, who will be portrayed by the SP. Thus, some items are interactive between the Candidate and the SP.

Some items require the Candidate to state clinical findings to the SP. Candidates are reminded that specific performance items in each station, as indicated on the evaluation form, require that the obtained findings be **stated** to the SP verbally in the same manner as they should be entered into a patient record. Speaking clearly and audibly is important for these performance items, since these items also test communication skills.

Candidates should indicate to the SP when they have completed the station by stating “I am finished.”

Any procedural questions that Candidates have should be addressed directly to the NCCTO staff. **No other communication should occur between Candidates and SPs or among Candidates during the CSE, including rotation time before the station. “Communication” includes conversation, text messaging, and passing notes, as examples. In addition, no communication is to occur among Candidates before leaving the test center.**

Candidates must *not* leave the test center until dismissed nor re-enter the test center after dismissal. Candidates must return their badges, and Candidates must *not* remove any testing materials from the test center.

Candidate Orientation Information: Specific

When obtaining the Patient’s allergy history, the Candidate must inquire about all 4 allergies in order to receive credit for this item (Item 3).

This station integrates IV injection, as would be done for fluorescein angiography, with the intramuscular injection of epinephrine. This is clinically realistic since a needle/syringe filled with 1:1000 epinephrine could be prepared prior to performing fluorescein angiography in the event the patient experiences an anaphylactic reaction due to the injection of fluorescein sodium dye. Preparing the syringes for both procedures at the beginning of the station also results in appropriate streamlining of items pertaining to handwashing and the donning of protective gloves. The gloves that are donned in performing an intravenous injection for fluorescein angiography may be left on through performing an intramuscular injection of epinephrine. If desired, Candidates may wash their hands while wearing the protective gloves.

A standard multi-use medication vial will be provided labeled “25% fluorescein sodium” with an expiration date; however, the solution in the vial will be clear. The National Board recognizes that injectable fluorescein sodium is also commonly available in single-use glass ampules.

While the medication vials are labeled appropriately (“25% fluorescein sodium” for IV injection and “1:1000 epinephrine” for IM injection), the solutions in both vials are clear. Thus, after withdrawing the medications

into two separate syringes (using the 5mL syringe for fluorescein sodium and the 1mL syringe for epinephrine), the only distinguishing factors between the medications will be the volume contained in the syringes (3.0 mL of fluorescein sodium for IV injection and 0.4 mL of 1:1000 epinephrine for IM injection) as well as the size of the syringes. Thus, it will be important for the Candidate to ensure that the correct medication is being injected. The syringes may be marked with either cc or mL scales; .1 cc is equal to .1 mL.

For the preparation for intramuscular injection of epinephrine, a standard multi-use medication vial will be provided labeled “1:1000 epinephrine” with an expiration date. The National Board recognizes that that injectable epinephrine solution is also available in commercially available auto-injectors (e.g., EpiPen®).

For safety purposes, Candidates should not hold the vial with their other (“free”) hand when inserting the needle into the vial (Items 10 and 18).

IM injection of 1:1000 epinephrine solution is to be performed in the deltoid muscle pad on the simulated arm. The National Board recognizes that injection of epinephrine to treat an anaphylactic reaction is usually administered intramuscularly in the outer thigh of a patient. However, the Board views the skills needed to perform IM injection in the deltoid muscle pad of the simulated arm to be similar to the administration of epinephrine by injection at another anatomical site as performed clinically.

Candidate must verbalize “bevel up” when inserting the needle into the arm for the IV injection.

Candidates may assume that the Patient’s deltoid does not show any signs of any tenderness during palpation (Item 47).

Candidate Orientation Information: Scoring, Administrative Irregularities, and Appeals

The National Board uses quantitative and qualitative data analysis to evaluate examination uniformity and fairness in order to identify potentially poor measurement. Quantitative data are derived from a statistical composite Examiner analysis to assess interrater (i.e., inter-Examiner) reliability to detect possible harshness in grading. Qualitative data are based on Test Incident Reports completed by Candidates and Examiners that document any administrative irregularities (e.g., malfunctioning equipment). Candidates who feel that their performance may have been adversely affected by an administrative irregularity during CSE are responsible for completing, and strongly encouraged to complete, a Test Incident Report. The process for completing a Test Incident Report will be described during the Candidate Orientation at the beginning of the CSE session.

NCCTO Staff review all Test Incident Reports completed by Candidates at the conclusion of the CSE session. Examiners may also initiate a Test Incident Report if they feel it is warranted. Each completed Test Incident Report is reviewed by the NCCTO Staff for confirmation of its occurrence and assessment of its potential impact on Candidate performance. NBEO® retest policy dictates that repeat tests are provided only due to administrative irregularities (e.g., equipment failure, loss of electrical power, or an unacceptable patient) once the irregularity is corrected. NCCTO Staff are permitted to approve provisional retests on exam day because of the time-sensitive nature of the CSE process. However, only NBEO review of a retest and its accompanying documentation can determine if the retest was warranted or if the original test results should be accepted. This determination will be made by NBEO staff prior to scoring of the retest, to avoid any bias. Thus, if the need arises, Candidates are **strongly encouraged** to complete a Test Incident Report immediately after the final exam cycle and **before leaving** the test center. Test Incident Reports will **not** be accepted from Candidates once they have left the test center.

If the National Board concludes that potentially poor measurement may have contributed to a failing performance on CSE or ISE, the National Board will offer to re-examine that Candidate, free-of-charge. The occurrence of potentially poor measurement is not an indication of grading with prejudice, but rather a random or unexpected no-fault outcome. The National Board will contact Candidates if such a re-examination is appropriate.

Candidates may appeal their CSE or ISE results. All appeals should contain substantive issues to be considered and shall be filed in writing to the National Board office within 30 days from the date on which the CSE and/or ISE scores are posted on the National Board website. All appeals are reviewed first by the Board staff, the results of which will be communicated to the Candidate. If the initial appeal is denied, Candidates may appeal further to the Judicial Committee of the Board of Directors.

AUGUST 2011-JULY 2012 CANDIDATE INSTRUCTIONS FOR ISE INTRAVENOUS AND INTRAMUSCULAR INJECTIONS

Use any remaining rotation time before the station begins to inspect the equipment. If you have questions about the equipment, ask the SP after the bell sounds to begin the station. You may ask the SP “where” questions about the equipment and/or room lighting control throughout the station. Proceed with the items as if the simulated arm belongs to an actual patient.

Preparation of Both Medications—Procedure 1. Some items are interactive between the Candidate and the SP.

Prepare a 5mL syringe and needle appropriately for intravenous injection of 25% fluorescein sodium while maintaining aseptic technique. Properly withdraw slightly more than 3.0 mL of medication into the syringe. After withdrawing the medication, ejecting air from the syringe, and recapping the needle using the one-handed “scoop” technique, hold the syringe vertically (capped needle up) and show the syringe to the SP so that the volume of medication withdrawn can be verified.

Prepare a 1mL syringe and needle appropriately for intramuscular injection of 1:1000 epinephrine while maintaining aseptic technique. Properly withdraw slightly more than 0.4 mL of medication into the syringe. After withdrawing the medication, ejecting air from the syringe, and recapping the needle using the one-handed “scoop” technique, hold the syringe vertically (capped needle up) and show the syringe to the SP so that the volume of medication withdrawn can be verified.

Performing an Intravenous Injection for Fluorescein Angiography-Procedure 2. It is not necessary for the SP to open and close the fist in response to your instruction to do so. Using the winged infusion set, perform an intravenous injection of fluorescein sodium into an appropriate venous site of the simulated arm (hand, antecubital, or other site in the lower arm). Discard the needle and the winged infusion set with the attached syringe into the sharps container at the appropriate time. Other items that came in contact with the artificial blood (e.g., cotton balls, protective gloves) may be discarded into a wastebasket as non-biohazards. State verbally to the SP the injection elements that should be documented in a patient record (drug, dose, delivery method, location).

Performing an Intramuscular Injection of Epinephrine-Procedure 3. Some items are interactive between the Candidate and the SP.

Perform an intramuscular injection of 1:1000 epinephrine into the deltoid muscle pad on the simulated arm. When aspirating to ensure that the needle is not in a blood vessel, it is possible that bubbles may appear due to the nature of the simulated arm. After completing the injection, discard the syringe and the attached needle (without capping) into the sharps container. Other items that came in contact with the artificial blood (e.g., cotton balls, protective gloves) may be discarded into a wastebasket as non-biohazards. State verbally to the SP the injection elements that should be documented in a patient record (drug, dose, delivery method, location).

[Station Evaluation Form \(click here\)](#)