



# Injections Skill Examination (ISE<sup>®</sup>)

## CANDIDATE GUIDE

**FOR COVID-19 POLICY/PROCEDURE CHANGES PLEASE [CLICK HERE](#).**

(Candidates are expected to review these changes prior to arrival to the test center.)

**EXAM DATES:  
August 2021 – July 2022**

The Injections Skill Examination (ISE®) is composed of one clinical skill, which candidates will demonstrate in a 15-minute time period. The clinical skill to be assessed is the same for all ISE test sessions and utilizes the same scoring criteria.

ISE will be audio and video recorded for review during the scoring process by a remote examiner.

The following are the required procedures to be completed within the skill:

- **Procedure 1: Preparation for Intravenous (IV) Injection for Fluorescein Angiography**
- **Procedure 2: Preparation for Intramuscular (IM) Injection of Epinephrine**
- **Procedure 3: Performing an Intravenous Injection for Fluorescein Angiography**
- **Procedure 4: Performing an Intramuscular Injection of Epinephrine**

**This guide is to be used for preparation of the ISE exam only.**

Described in this document are the ISE clinical assessments that are to be performed. The candidate instructions included at the end of this document will be posted in the exam room for review during the examination.

The evaluation form, equipment list, and other helpful resources are available on our website at <https://www.optometry.org/exams/ise>.

**Candidates are expected to thoroughly review this manual in preparation for ISE. This manual contains all relevant information a candidate needs to adequately prepare for the Injections Skill Exam.**

**Candidates should be aware that the majority of the information in this manual will not be reviewed again during the candidate orientation process.**

## OVERVIEW OF TERMS

- **Candidate:** An individual taking the Injections Skill Exam.
- **Candidate Performance:** When the candidate is actually performing the procedures/skill.
- **Evaluation Form:** The yes-no checklist an examiner uses to evaluate the candidate.
- **Examination Cycle:** The 15-minute time allocation for the exam.
- **Finished:** When a candidate has completed their performance and will no longer be scored on any exam items.
- **Item:** A numbered procedural element within each procedure.
- **NBEO:** National Board of Examiners in Optometry®
- **NCCTO®:** National Center of Clinical Testing in Optometry
- **NCCTO Staff:** The personnel responsible for executing the exam and serving as a candidate advocate and liaison to NBEO. Referred to as “staff” throughout this guide.
- **Observation Time:** The time before the exam when candidates can familiarize themselves with the station.

- **Procedure:** The individual procedures within the injections skill. ISE has four separate procedures that make up the overall skill.
- **Proctor:** The individual who will interact with the candidate during ISE.
- **Remote Examiner (RE):** The individual responsible for scoring the candidate's performance remotely.
- **Repeat:** When a candidate wishes to repeat a procedure or item.
- **Skill:** A substantive component of a patient examination related to a particular technique or well-defined process.
- **Station:** An exam room in which required skills will be assessed during a delineated time period; ISE has one station.
- **STOP:** When a candidate's performance is stopped for either safety purposes or because they have used all available attempts to complete a procedure.

## EXAM PREPARATION

### PREPARATION

In addition to reviewing this candidate guide, the following information should be reviewed by candidates in preparing for their exam:

- Evaluation Form
  - The evaluation form contains the items examiners use to assess a candidate's performance. The exam items are in the form of yes-no checklists and items must be completed **in their entirety** to receive credit.
- Candidate Orientation Video
- ISE Site Information & Equipment List
- Information regarding traveling to Charlotte, hotels, etc.
- COVID-19 policy and procedure changes

These resources can be found at <https://www.optometry.org/exams/ise>.

### EQUIPMENT

- All necessary equipment used during the exam will be provided by the NCCTO.
- Candidates should not bring any equipment with them to the test center.

### ATTIRE

- Candidates are expected to wear *professional attire*.
- NBEO interprets professional attire as attire that **EXCLUDES** jeans, shorts, athletic pants, T-shirts, scrubs, garments that could be viewed to be immodest (e.g. tank tops, sheer clothing), tennis shoes, sneakers, and/or flip flops.
- Candidates must bring and wear white lab coats throughout the exam.
- Candidates reporting to the test center in attire deemed to be inappropriate will be addressed by the NCCTO staff **and may not be permitted to take the exam**.
- Please use the provided restrooms to change clothing if needed.

## NBEO ACCOUNT INFORMATION

Candidates must know their OE TRACKER® and NBEO password, which will be used to complete a required incident report and optional survey at the end of their exam. This is the same password the candidate created and used to register for the NBEO exam and/or view scores on the NBEO website.

## ARRIVAL TO TEST CENTER

### REPORTING LOCATION

The reporting location is:

200 South College Street  
Suite 2020  
Charlotte, NC 28202  
(20<sup>th</sup> floor of the BB&T Building)

### REPORTING TIME

**Candidates must report to the test center on the date and time for which they registered online.**

- The check-in process begins at the time reflected on the registration. You can review your registration here: [https://www.nbeo.org/check\\_registration.cfm](https://www.nbeo.org/check_registration.cfm).
- Candidates should arrive no earlier than five minutes prior to their listed report time.
  - In the event a candidate finds they have arrived to the BB&T building early, the 3<sup>rd</sup> floor of the building contains an indoor mall with restaurants, shops, and cafes. Candidates are welcome to spend time on the 3<sup>rd</sup> floor while waiting for their check-in time.
  - Candidates who arrive late for check-in may be disqualified from the examination session.
  - Space and time constraints may prevent the candidate from being rescheduled to a later session on the same day. In that event, the candidate then forfeits his/her right to being tested (and his/her exam fee) for that date's administration of ISE.
- Candidates should anticipate being on-site for approximately one hour. This time includes check-in, orientation, exam process, and check-out.
- Candidates should schedule return flights not sooner than three hours after their report time.

### PHOTO IDENTIFICATION

To be admitted to the test center, you must present **one** acceptable form of photo identification that includes **both an embedded photograph and signature**.

The only acceptable forms of identification are:

- A valid driver's license or an official photo identification card (ID) by the government of the state or province where you reside
- A valid passport
- A valid student identification card from an accredited school/college of optometry is acceptable, provided this identification card includes **both a photograph and signature embedded in the card**.

In order to be considered valid, **the ID must:**

- Match the name listed on the NBEO profile (<https://www.nbeo.org/profile/>)
  - If the name does not match, a candidate may be denied access to the exam.

- To submit a name change, please complete and submit the form found [here](#). Your online profile will be updated once the NBEO records are updated internally.
- Be current and not expired (if the ID is expired, a candidate may be denied access to the examination).

## ON-SITE EXAM DAY CHECK-IN

### ARM BANDS / CANDIDATE IDENTIFICATION

- All candidates will be provided with two arm bands. These arm bands should be worn at all times during the exam, with the number displayed on the side of the arm.
- The front of the arm bands contains your candidate ID number.
- The back of the **right** arm badge contains your candidate's name and OE TRACKER®. These are provided for verification purposes.

### PHOTOGRAPH

- A staff member will take a picture of each candidate during the check-in process to assist in ensuring the correct candidate is being evaluated.
- For identification purposes, you should appear in the photo as you will during the exam. For instance, if you plan to wear glasses during the exam, you should wear them in the photo; if you plan on having your hair pulled up in a ponytail, you should do so in the photo.

### PERSONAL ITEMS & LOCKER USE

- **Candidates will not be permitted to enter the NCCTO with any item considered luggage and must plan accordingly.**
  - Luggage items are considered suitcases, roller bags (larger than backpack size), and any item not able to fit in the lockers.
  - **Candidates will be turned away if luggage is brought to the NCCTO. This could impact the amount of time a candidate has for orientation.**
- Lockers will be provided for candidates to store small personal items that are not allowed in the testing area. NCCTO considers personal items to be cell phones, watches, wallets, purses, backpacks, briefcases, etc.
  - Locker dimensions: 13 1/2 inches deep, 11 7/8 inches wide, and 31 1/2 inches tall. The opening is 9 inches wide.
- Non-compliance with any aspect of this policy is an irregularity and will be reported to NBEO. Irregularities may be subject to consequences associated with cheating.

## ORIENTATION

Following check-in, the candidates will be seated in the candidate orientation room in which a slideshow presentation will be shown. This presentation is only intended to provide a brief overview of the expectations of the exam as well as to remind candidates about the highlights of the exam process. Following orientation, staff will be available to address any questions. Candidates can view the orientation video on our website at <https://www.optometry.org/exams/ise>.

## EQUIPMENT OVERVIEW IN ORIENTATION ROOM

- Following candidate orientation, candidates will be provided time to view all the individual station equipment and supplies. During this time, candidates are encouraged to become familiar with the equipment. Candidates are requested to treat the equipment with care. If there are any issues with the equipment or supplies, please inform a staff member.
- The orientation room's injections arms will not have fake red blood but will have water instead. Candidates are encouraged to spend time with the simulated arm to familiarize themselves with the layout.

Information regarding specific equipment and supplies should be reviewed online in the ISE Site Information & Equipment Guide at <https://www.optometry.org/exams/ise>.

## PERSONAL NOTES, EVALUATION FORMS, ETC.

- Candidates may keep personal notes during the orientation time only. These notes should be placed in the candidate's locker prior to the start of the exam.
- **No notes or other written materials may be taken into any exam room at any time.**
- Any notes and written materials discovered during the exam will be subject to confiscation.
- All notes taken during the exam on NCCTO-provided materials must remain in the exam room.
- **Violation of these policies may be cause for disqualification from, dismissal from, and/or failure of the examination.**

## DURING THE EXAMINATION

### REASONABLE ITEMS

- Candidates are allowed to take reasonable items to the exam.
- All items must be provided to staff for inspection and approval.
- Examples of reasonable items are:
  - Bottles of water/Gatorade, etc. (Labels must be removed, and bottles must contain a lid.)
  - Tissues
  - Cough drops, mints, gum
  - Granola bars, other individually wrapped snack items
  - Lip balm, hair ties, hair clips, sanitary items, etc.
  - Eye patch
- Pens and pencils will be provided for candidate use.

## CANDIDATE IDENTIFICATION & INTRODUCTION

During the exam, candidates should refer to themselves by their OE TRACKER® (or at least the last three digits of the OE TRACKER®). For example, if your OE TRACKER® is 700000, you may introduce yourself saying, "I am Candidate 700000" or "I am Dr. 000."

## CLOCK & TIME KEEPING

- Candidates are responsible for monitoring their time.
- No watches are allowed in the exam rooms.
- There is a synchronized wall clock in each exam room.
- Additionally, a countdown clock is available on the exam-room computer monitor for candidates to use. **Use of the countdown clock is optional. It is not the official timer for the exam; announcements are the official timers.**

- Proctors will not remind candidates of the remaining time.
- If time expires before a candidate completes the station, the items not performed will be scored as “no.” Because of this, candidates are urged to carefully monitor their time.

## ANNOUNCEMENTS

There are four announcements that play throughout an exam session:

1. **“Patients and examiners, please report to your designated exam rooms”** signals the test center personnel to prepare for the exam to start. *This announcement is not relevant for candidates.*
2. **“Candidates, please enter the exam room”** signals candidates to enter their station and begin their observation time while the door remains open.
  - There will be an announcement indicating there are 30 seconds remaining in the observation time.
3. **“The exam cycle has begun”** signals the official start of the 15-minute exam cycle.
4. **“The exam cycle has ended, please proceed to your next exam room”** signals the official end of the examination cycle, at which point the candidate will exit the room.

## EXAM STRUCTURE

Following orientation and equipment review, candidates will be escorted to the exam hallway and will stand outside their assigned station. Once the second announcement plays, candidates may enter the exam room and begin their observation time.

### CANDIDATE OBSERVATION TIME

- Candidates are provided with approximately three minutes of observation time in the station before the exam cycle begins.
- Information for the specific station is posted on the computer monitor for the candidate to review.
  - Exam-room computers are only for viewing the station instructions and using the countdown clock. Candidates are prohibited from using these computers for anything else.
- Any items performed before the exam begins (e.g., washing hands) will not be scored and must be repeated once the exam begins.

During the observation time, candidates are encouraged to:

- Become familiar with the layout
- Set out supplies that will be used (do not open packages)
- Review station instructions on the computer monitor
- Review the posted Repeat Policy

During the observation time, candidates cannot:

- Perform any scoreable items on the simulated arm
- Write on any pieces of paper
- Open any sealed packages

## CANDIDATE COMPLETION OF A STATION

- The exam ends with the fourth announcement, or by the candidate stating they are finished, whichever occurs first.
- Candidates who finish the exam before the ending announcement plays and wish to end the scoring portion of the station may make the following statement to the proctor: “I am finished with this exam station.” At this time, the candidate **will not be allowed to perform any additional items** and will be escorted out of the exam room. It is up to the candidate whether or not to make this statement.
- If the candidate makes a confusing statement or begins any causal conversation, the proctor will remind the candidate that it is the candidate’s responsibility to let them know if they are finished.

## PERFORMANCE OF PROCEDURES / ITEMS

- Items are sequenced in the order in which they should be optimally conducted.
- Candidates may alter the sequencing of certain items performed within a procedure, **as long as the candidate’s sequence makes logical sense.**

## REPEATING ITEMS / PROCEDURES

Repeat information is posted in each exam room for candidate review during the examination.

### Repeating Items

- Candidates who wish to repeat items may do so as long as it is still within logical sequence. For instance, if during Procedure 1, a candidate was not confident in the amount of medication they withdrew from the vial, they could draw additional medication.

### Repeating Procedures

- Candidates **must announce** their intention to repeat before repeating the procedure and include the procedure number by stating, for example, “I am going to repeat Procedure 3, IV Injection.” At this point the candidate should return to the first item in the procedure and continue on.
- Once the candidate makes the repeat statement, all scores recorded by the examiner are erased, and the candidate proceeds and is evaluated as if performing the entire procedure for the first time.
- A stopped procedure cannot be repeated.

### Repeating Cautions

- While repeating can be a positive option, candidates are strongly encouraged to ensure they can repeat the procedure within the time limitation and that they are confident they can repeat all the items within the procedure. It has been noted that candidates who have not monitored their time sufficiently and try to repeat an entire procedure for one missed item often run out of time.
- Additionally, it has often been noted that candidates repeating a procedure tend to focus so much on the missed items, that they ultimately miss other items, resulting in a lower score than initially obtained.

## NOTE-TAKING

Once the exam cycle begins, candidates will be provided with a half sheet of blank green paper. If you do not receive a piece of green paper, simply tell the proctor and they will provide it to you. Nothing written on this green paper will be scored and must be left in the exam room.

## PROCTORS

Proctors are present during the exam and will respond to all questions relating to the exam. Proctors are not responsible for scoring the exam.



## OBSERVERS

Occasionally, additional personnel may be on-site observing the exam. Observers will not have any effect on a candidate's score and should be ignored by the candidate. These personnel have been instructed not to converse with candidates or proctors in the examination rooms.

## CANDIDATE QUESTIONS DURING THE EXAM

- Outside of regular exam questions (e.g., allergies, etc.) during the exam, proctors will only answer "where" questions, such as where the room lighting control is or where supplies/clinical materials are located.
- Candidates may ask "where" questions at any time during the observation time and exam time.
- Questions on **how** to do things, **how** to use equipment, or other instructional questions are not appropriate and will not be answered.
- **No additional examination time will be provided for any time used to ask and answer candidate questions.**

## STATING FINDINGS

- Candidates are strongly encouraged to talk through their exam process.
- Candidates are encouraged to speak **clearly** and **audibly**.

## SAFETY & PROCEDURE ATTEMPTS

### Handwashing

- Candidates are expected to follow the CDC's guideline for handwashing.

### Intervenes/Corrective Actions

- Proctors may request candidates to wash hands, appropriately handle a needle prick if additional contamination may occur or cap a needle when presented uncapped.

### Safety and STOPS

- Keep in mind that a remote examiner may deem an action as grossly endangering a proctor or potential patient (represented by the simulated arm) and stop scoring a procedure even though the proctor in the room allowed the candidate to continue.
- If a candidate is stopped, they will be scored "no" on any remaining items in the stopped procedure and cannot repeat a stopped procedure.

### Procedure Attempts

- Candidates are only scored on the first four attempts at obtaining blood in Procedure 3. Any further attempts will not be scored, and it will be treated as a **stop**, however, the proctor **will not** verbally stop a candidate as it is up to the candidate to **monitor their own attempts**.

## STAFF INTERACTIONS

### Neutrality

- Proctors and staff may appear to be neutral or show little emotion during the exam. Candidates should not regard this as a personal dislike or an indication of performance quality.

### Staff Interaction during Exam

- During the exam, proctors may say very little other than what has been scripted.
- If a candidate asks a question that cannot be answered, proctors or staff may respond with "I do not have that information," "I can't answer that," or "It is up to you." These comments are not indicators

of a candidate's performance or decisions, but simply an answer for a situation where the proctor/staff cannot provide guidance.

- If asked, proctors will not provide guidance on how or what to perform. Candidates must use their best judgement in these situations.

## PROCTOR INTERACTIONS

### Proctor Titles

- Candidates may refer to the proctor as "Mr. or Ms. Lee." Lee is the fictitious family name assigned to all proctors and arms.

## CANDIDATE WOUNDS / INJURIES / MEDICAL EMERGENCIES

- Any open wounds on a candidate's finger or hand must be covered.
- If you have questions or concerns about whether a wound needs to be covered, you can show the wound to staff during the check-in process.
- Should a candidate become injured during the exam, a Band-Aid® and glove will be provided.
- If a candidate believes they have injured themselves, they must notify personnel in the exam room (or front desk if injury occurs in the orientation room).
- When a candidate experiences an injury (e.g. needle prick) in which the potential for blood-borne pathogens exposure is possible, candidates must use Universal Precautions. The CDC recommends Universal Precautions for the care of all patients, regardless of their diagnosis or presumed infection status.
  - **Universal Precautions** apply to 1) blood; 2) all body fluids, secretions, and excretions, except sweat, regardless of whether or not they contain visible blood; 3) non-intact skin; and 4) mucous membranes. Standard precautions are designed to reduce the risk of transmission of microorganisms from both recognized and unrecognized sources of infection in hospitals.
  - **Universal Precautions** include use of handwashing, appropriate personal protective equipment such as gloves, gowns, masks, whenever touching or exposure to patients' body fluids is anticipated.
- Candidates should not assume that they are not bleeding. Often an incident like a needle prick will take several minutes to produce any blood.
- Candidates should bandage any potential wounds that occur to ensure overall safety of personnel.
- Bandaging the wound early ultimately saves candidate's time during the process and prevents further issues from occurring in regard to blood contamination of materials and equipment.
- Out of concern for proctor safety and to prevent contamination of exam equipment, **any bleeding must be stopped prior to continuing the exam.**
- No additional time will be given during the exam for injuries that occur as a result of candidate error.
- In the event a medical emergency should occur during the exam, candidates should remain calm and a staff member will be there to assist and assess the situation.

## RESTROOM / DRINKING FOUNTAIN USE

It is advisable for candidates to use the restroom before the examination begins. No time allowance is given for restroom use during the examination session. In the event a candidate needs to use the restroom during the exam, they should inform the proctor who will escort them to the restroom. The same principles for restroom use apply to using the water fountain.

## POST-EXAMINATION INFORMATION

### CANDIDATE INCIDENT REPORTS & SURVEYS

At the conclusion of the examination, all candidates will exit the exam room and sit at a workstation that contains a computer that will be used by candidates to submit an incident report and to complete the optional survey.

- Candidates will log in using their OE TRACKER® and the same password (created by the candidate) used to register for the exam or view scores on the NBEO website.
- Candidates are encouraged to think through their exam and use this opportunity to document any irregularity that may have occurred which a candidate feels may have negatively impacted their performance. Incident reports **will not be accepted** from candidates once they have left the testing area.
- Candidates can document any concerns involving the equipment, proctors, or the candidate's individual performance.

Once all incident reports have been submitted, they will be reviewed by staff. **Staff may review videos and/or interview the proctor for more information regarding the incident report.** Additionally, staff will inspect any reported equipment malfunction.

- Staff will only discuss incidents with candidates if clarification or further information is needed. If staff discusses an incident report with a candidate in the exam room, the candidate should assume the discussion is being recorded.
- Candidates should remain at the workstation until dismissed by staff. Once all incident reports have been reviewed and it is determined there are no administrative issues or that all issues have been resolved, staff will dismiss candidates from the exam hall.

### RETEST POLICY

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 proctor) which negatively affected the candidate's performance.

## ADDITIONAL EXAM INFORMATION

### CANDIDATE-TO-CANDIDATE INTERACTION

- Candidates may engage in conversation during the check-in and orientation process only. **Once candidates are escorted to the exam hallway, no communication should occur among candidates at any time during the examination or post-examination process.**
  - "Communication" includes conversation, verbal statements, non-verbal cues/expressions (e.g., thumbs up/down, shaking head, high-fives, etc.), and passing notes, as examples.
  - **Violations of this policy will not be tolerated and may be cause of disqualification from, dismissal from, and/or failure of the examination.**

### VIDEO SCORE REVIEW

If a candidate believes their scores are not accurate, they may submit a score review. All score review requests should contain substantive issues to be considered and should be filed online within 30 days from the date on which the exam scores were posted. Additional information regarding the score-review process can be found on the NBEO website.

## SCORING PRACTICES

NBEO uses quantitative and qualitative data analysis to evaluate examination uniformity and fairness in order to identify potentially poor measurement. Candidates who achieve scores above the overall cut-off requirement receive a passing score. A score below the cut-off requirement will result in a failing score.

## ISE OVERVIEW

During the Injections Skill Exam, a proctor will serve as the “patient.” All questions and inquiries should be directed to the proctor for confirmation.

**The Injections Skill is comprised of four distinct procedures that must be performed in order:**

- Procedure 1: Preparation for Intravenous (IV) Injection for Fluorescein Angiography
- Procedure 2: Preparation for Intramuscular (IM) Injection of Epinephrine
- Procedure 3: Performing an Intravenous Injection for Fluorescein Angiography
- Procedure 4: Performing an Intramuscular Injection of Epinephrine

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 would be prepared prior to performing fluorescein angiography in the event the patient experiences an anaphylactic reaction due to the injection of fluorescein sodium dye.

Given the nature and criticality of the injections to be performed, 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 two methods such as name, date of birth, last four 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 their understanding of these issues.
- the patient is male and has been found to have a normal BP measurement during the pre-procedure work-up.

Whatever materials are placed on the drape initially will be considered aseptic. Materials NOT initially placed on the drape are not considered aseptic. Candidates are advised to be cautious and ensure they are maintaining aseptic technique throughout the injections exam. The gloves that are used in performing an intravenous injection for fluorescein angiography may be left on while 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 and labeled “25% fluorescein sodium” with an expiration date; however, the solution in the vial will be clear as it is simulated medication.

Candidates are strongly encouraged to thoroughly palpate the arm by actually feeling for a vein and pressing on the arm. Do not choose injection sites based on a visual inspection of the arm. Palpation is essential. Clean any injection site prior to inserting the needle.

Regarding the four intravenous injection attempts, an “attempt” is viewed as piercing the skin of the arm and removing the needle from the skin or excessive manipulation of the needle within the simulated arm. An automatic stop occurs after four attempts and **scoring** by the remote examiner will stop. Candidates have four attempts total. This includes any repeats. For instance, if you complete two attempts then perform IM and decide to repeat the procedure, you would have two attempts remaining. The proctor will not initiate a reminder of the number of attempts taken or remaining, nor will the proctor stop the candidate after the fourth attempt.

It should also be noted that **excessive manipulation** of the needle within the arm is not acceptable. Excessive manipulation will be counted as an additional attempt or possibly multiple attempts if the

manipulation of the needle within the arm is egregious. Candidates should treat the simulation arm as they would a human arm during the injections procedures.

Additional information regarding the simulated injections arm:

The simulated arms are designed to replicate an adult human arm. Veins that would be reasonable veins to draw blood from on a human arm are replicated in the simulated arm. When completing an IV injection, if the tubing is not filling **solidly** with blood, the candidate is not appropriately in a vein. Any “splatter” of blood or intermittent blood flow is an indication that the candidate has not appropriately entered and remained in a vein (see the orientation video for pictures).

Candidates will often assume that seeing some blood indicates they are appropriately in a vein and will pull the plunger of their syringe back so far that the plunger reaches the end of the syringe. In this case, the candidate has no room to pull back on the syringe for “suction” on any other attempts. In these situations, due to the nature of the exam, before completing any additional attempts, it is to the candidate’s benefit to safely express any air aspirated into the syringe, so there will be “suction” for future attempts. Again, if a candidate is pulling on the plunger and the tubing is not filling **solidly** and **consistently** with blood, the candidate is not appropriately in a vein.

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

#### **WHEN REPEATING INJECTIONS:**

Candidates who wish to repeat one or more items may do so at their discretion **if** it can be logically performed at that time.

In the event the candidate wishes to repeat a procedure, it is necessary to clearly announce which **specific** procedure (Procedure 1, 2, 3 and/or 4) you wish to repeat **before** repeating the procedure. When a candidate wishes to repeat either Procedure 3 (IV injection) or Procedure 4 (IM injection), a needle and syringe can be quickly assembled with fluid (not for scoring purposes) to complete the procedure. It is not necessary to repeat preparation items unless you are specifically repeating Procedures 1 and/or 2. Instead, you are only obtaining the supplies you will need to perform Procedures 3 and/or 4.

When repeating an entire procedure, candidates must announce their intent and return to the first item in the procedure. In repeating the procedure, **all** of the prior scores recorded by the examiner are erased, and the candidate is evaluated as if performing the entire procedure for the first time. Specific injections repeat policies are posted on the back of the exam-room doors for reference during the exam. As a reminder, a stopped skill cannot be repeated. As such, if a candidate has completed four attempts on the IV injection, it is considered a stop and should not be repeated.

***Everyone involved in the preparation of these examinations extends their collective best wishes for your success.***

# INJECTIONS SKILL EXAM INSTRUCTIONS TO CANDIDATE

August 2021-July 2022  
(posted on the exam room computer)

All injections questions/communications should be directed to the proctor.

## **Procedure 1: Preparation for Intravenous (IV) Injection for Fluorescein Angiography**

You are to prepare a 5mL syringe and needle appropriately for intravenous injection with 3.0 mL 25% fluorescein sodium while maintaining aseptic technique.

## **Procedure 2: Preparation for Intramuscular (IM) Injection of Epinephrine**

You are to prepare a 1mL syringe and needle appropriately for intramuscular injection with 0.4 mL 1:1000 epinephrine while maintaining aseptic technique.

## **Procedure 3: Performing an Intravenous Injection for Fluorescein Angiography**

You are to perform an intravenous injection of fluorescein sodium into an appropriate venous site of the simulated arm (hand, antecubital, or another site in the lower arm). State the injection elements that should be documented in a patient record (drug, dose, delivery method, location). Discard all items into a wastebasket as non-biohazards except for needles, which should be discarded in the Sharps container.

## **Procedure 4: Performing an Intramuscular Injection of Epinephrine**

You are to perform an intramuscular injection of 1:1000 epinephrine into the **center** of the deltoid muscle on the simulated arm. State the injection elements that should be documented in a patient record (drug, dose, delivery method, location). Discard all items into a wastebasket as non-biohazards except for needles, which should be discarded in the Sharps container.

### **WHEN REPEATING INJECTIONS**

- In the event the candidate wishes to repeat a procedure, it is necessary to clearly announce which specific procedure (Procedure 1, 2, 3, and/or 4) you wish to repeat before repeating the procedure.
- When a candidate wishes to repeat either Procedure 3 (IV injection) and/or Procedure 4 (IM injection), a needle and syringe can be quickly assembled with fluid (not for scoring purposes) to complete the procedure.
- It is not necessary to repeat preparation items unless you are specifically repeating Procedures 1 and/or 2.

**THIS IS A 15-MINUTE STATION**

**Candidates are encouraged to review the ISE evaluation form for detailed information on the items required to be completed during the examination.**