



National Center of Clinical Testing in Optometry®

# Injections Skill Exam

## CANDIDATE GUIDE

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Part III – Injections Skill Examination  
August 2020 - July 2021

**FOR COVID-19 POLICY/PROCEDURE CHANGES PLEASE**

**[CLICK HERE](#)**

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

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**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 appropriate examination room for review during the examination.

***Candidates are expected to thoroughly review this manual in preparation for the ISE.  
This manual contains all relevant information a Candidate would need 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.***

The ISE Evaluation Forms, Equipment Lists and other helpful resources are available on the NBEO's website at:  
[www.optometry.org/ise.cfm](http://www.optometry.org/ise.cfm)

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 ISE 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.

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**

## OVERVIEW OF EXAMINATION STRUCTURE AND TERMS

- **NBEO:** National Board of Examiners in Optometry
- **NCCTO®:** National Center of Clinical Testing in Optometry
- **Candidate:** an individual taking the Injections Skill Exam
- **NCCTO Staff:** the personnel responsible for executing the exam and serving as a Candidate advocate and liaison to the NBEO. Referred to as "Staff" throughout this guide.
- **Remote Examiner:** the individual responsible for scoring the Candidate's performance remotely
- **Proctor:** the individual who will interact with the Candidate during the Injections Exam
- **Station:** an exam room that contains required skills to be assessed during a delineated time period; ISE has one Station.
- **Examination Cycle:** the 15-minute time allocation for the exam
- **Observation Time:** the time before the exam when Candidates can familiarize themselves with the Station
- **Skill:** a substantive component of a patient examination related to a particular technique or well-defined process
- **Procedure:** The individual procedures within the Injections Skill. ISE has 4 separate procedures that make up the overall skill.
- **Item:** a numbered procedural element within each procedure
- **Evaluation Form:** the yes-no checklist an Examiner uses to evaluate the Candidate
- **Candidate Performance:** when the Candidate is actually performing the procedures/skills
- **STOP:** When a Candidate's performance is stopped for either safety purposes or because they have used all available attempts to complete a procedure. See Procedure Attempts information in guide.
- **Repeat:** When a Candidate wishes to repeat a Procedure or Item. See Repeat Information in guide.
- **Finished:** When a Candidate has completed their performance and will no longer be scored on any exam items. See Candidate completion of a Station information in guide.

## EXAM PREPARATION

### PREPARATION:

In addition to reviewing this Candidate Guide, the following information should be reviewed by Candidates in preparing for their exam (these resources can be found at: [www.optometry.org/ise.cfm](http://www.optometry.org/ise.cfm)):

- ISE Evaluation Form
- Candidate ISE Orientation Video
- NCCTO ISE Site Information and Equipment List
- Information regarding traveling to Charlotte, hotels, etc.
- COVID-19 policy and procedure changes

### **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.
  - The 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 NCCTO Staff **and may not be permitted to take the exam.**

### **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 your exam. This is the same Password the Candidate created and used to register for NBEO® exams and/or view scores on the NBEO website.

## **ARRIVAL TO TEST CENTER**

### **REPORTING LOCATION:**

- The reporting location is: 200 S. College St, Suite 2020 (20<sup>th</sup> floor of the BB+T Building), Charlotte, NC 28202

### **REPORTING TIME:**

- **Candidates must report to the test center on the date and at the time for which they registered online.**
  - The registration/check-in process begins at the time reflected on the registration. You can review your registration here: [check registration time](#).
- Candidates should anticipate being on-site for approximately 1 hour. This time includes the registration, orientation, exam process and check-out.
- Please arrive no earlier than 5 minutes prior to your scheduled report time.
- In the event a Candidate finds they have arrived to the BB&T center 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 registration time.**
- **We recommend scheduling flights to depart no earlier than 3 hours after your report time.**
- Candidates who are late for registration may be disqualified from the examination session.
- Space and time constraints may prevent a Candidate from being rescheduled to a later session, and, in that event, the Candidate then forfeits his/her right to being tested (and his/her examination fee) for that date's administration of ISE.

## **ON-SITE EXAM DAY REGISTRATION**

### **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 ID issued by the government of the state or province where you reside.
  - A valid passport.
  - A valid student identification card from an accredited school or college of optometry is acceptable, provided this ID 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 your NBEO Profile (<https://www.optometry.org/profile/>)
      - If the name does not match, a Candidate may be denied access to the exam.
      - To submit a name change, click here: <https://www.optometry.org/pdf/namechange.pdf>.  
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 exam).

## **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 your arm.
- The front of the Arm Bands identifies your Candidate ID #. All other information noted on the arm bands can be disregarded as this is information that relates to the Clinical Skills Exam.
- On the back of the **right** arm badge will be each respective Candidate's name and OE Tracker number.

## **PHOTOGRAPH**

- A staff member will be taking a picture of each Candidate during the registration process to assist in ensuring the correct Candidate is being evaluated in the correct Station.
- 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 have your glasses on during the photo; if you plan on having your hair pulled up in a ponytail, you should do so in your 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 into the lockers.
  - **Candidates will be turned away if luggage is brought to the NCCTO and this could impact the amount of time a Candidate has for orientation.**
- Lockers are provided for Candidates to store small personal items that are not allowed in the testing area. The NCCTO considers the following to be examples of personal items: cell phones, watches, wallets, purses, back packs, 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, which will be reported to the NBEO, and may be subject to the consequences associated with cheating.
- Please use the provided restrooms to change clothing if needed.

## **ORIENTATION**

- Following registration, 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 may have.
- Candidates can view the Orientation video online at [www.optometry.org/ise.cfm](http://www.optometry.org/ise.cfm)

## **EQUIPMENT OVERVIEW IN ORIENTATION ROOM**

- Following Candidate Orientation, Candidates will be provided with ample time to view all of 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 and if there are any issues with equipment to 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 can also be reviewed online in the NCCTO ISE Site Information and Equipment Guide at [www.optometry.org/ise.cfm](http://www.optometry.org/ise.cfm)

## **PERSONAL NOTES, EVALUATION FORMS, ETC.**

- Candidates may keep personal notes during the Orientation time only.
- **No notes or other written materials may be taken into any examination room at any time.**
- All notes and written materials must be left in the Candidate locker.
- 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 EXAM

### REASONABLE ITEMS:

- Candidates are allowed to take “reasonable” items through the exam.
- All items must be provided to Staff for inspection and approval
- Examples of reasonable items are:
  - Bottles of water/Gatorade/etc (any labels must be removed, must contain a lid)
  - Tissues
  - Cough Drops, Mints, Gum
  - Granola Bar, other individual wrapped snack item
  - Chap Stick, Hair Ties/Hair Clips, Sanitary items, etc.
- Pens and Pencils will be provided in each Station for Candidate use.

### CANDIDATE IDENTIFICATION & INTRODUCTION

- During the exam, do not refer to yourself by name, but by your OE Tracker # (or at least the last 3 of your OE Tracker #).
- For instance, if your OE Tracker # is 700000 you may introduce yourself as: **“I am Candidate 700000”** or **“I am Dr. 000”**

### CLOCKS & 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, to the right of the Exam Chair.
- Additionally, a countdown clock will be 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.**
- Additional information about the countdown clock can be found in the NCCTO ISE Site Information and Equipment Guide.
- 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: The first announcement **“Patients and Examiners, please report to your designated exam rooms”** signals test center personnel to prepare for the exam to start. *This announcement is not relative to Candidates.*
- #2: Once Candidates are in the hallway, the second announcement **“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 third announcement **“The exam cycle has begun”** signals the official start of the first 15-minute exam cycle.
  - The Proctor will enter the room at this point.
- #4: The fourth announcement **“The Exam cycle has ended, please proceed to your next exam room”** will indicate the official end of the examination cycle, at which point the Candidate will exit the exam room.

**As mentioned above, these announcements are the “official” timers for the exam.**

### EXAM STRUCTURE

- Following Orientation and Equipment Review, Candidates will be escorted to the test center and will stand outside of their assigned Station.
- Once Announcement #2 plays, Candidates may enter the exam room and begin their observation time.

### **CANDIDATE OBSERVATION TIME:**

- Candidates are provided with approximately 3 minutes of observation time in the Station before the exam cycle begins.
- Information for the specific Station is posted on the computer monitors for Candidates to review.
- Exam room computers are only for viewing the Station Instructions and using the countdown timer, 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 of the Station
  - Set-out supplies that will be used (do not open packages)
  - Review Station Instructions on the computer monitor
  - Review Repeat Policy (posted on back of the exam room door)
  
- 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 examination ends with Announcement #4, or by the Candidates 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 to the Proctor, the Candidate may be asked to clarify whether or not they are finished with the station.

### **END OF EXAM**

- After the Candidate states they are finished or announcement #4 plays, whichever is first, the Candidate will exit the room and sit at the computer desk to the left of the exam room where they will fill out an Incident Report and complete an optional survey.
- Candidates should remain at the workstation until dismissed by Staff.

### **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**

*All repeat information is posted in each Exam Room for Candidate review during the exam.*

#### **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 a 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.

#### **REPEAT 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 of 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 ½ sheet of blank green paper.
- If for some reason you do not receive a piece of green paper, simply ask the Proctor and they will provide it to you.
- Nothing written on this green paper will be scored and it must remain 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 affect 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., asking about 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; "how to" questions 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 and PROCEDURE ATTEMPTS**

#### **Hand-Washing**

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

#### **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 4 attempts at obtaining blood in Procedure 3 of ISE. 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 are allowed to 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 there is not a standardized response.
- If asked, Proctors will not provide you guidance on how and/or what to perform and if you should repeat a procedure. Candidates must use their best judgement in these situations.

### PROCTOR INTERACTIONS:

#### PROCTOR TITLES:

- Candidates may refer to the Proctor and Arm 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 potential wound needs to be covered, you can show the wound to Staff during the registration process.
- When a Candidate experiences a needle prick or any other injury in which the potential for blood borne pathogen 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 the use of: hand washing, appropriate personal protective equipment such as gloves, gowns, masks, whenever touching or exposure to patients' body fluids is anticipated.
- Should a Candidate become injured during the exam (e.g.: a needle prick during Injections), a band-aid and glove will be provided.
  - If a Candidate believes they have injured themselves, they must notify personnel in the exam room.
  - 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 regards to blood contaminating 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.
- The process for needle pricks also applies if it occurs in the orientation room.
- 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 sessions. 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 principals for restroom use apply to using the water fountain.

## POST EXAM INFORMATION

### CANDIDATE INCIDENT REPORTS & SURVEYS

At the conclusion of the exam, all Candidates will sit at the workstation to the left of their final exam room.

- At the workstation will be a computer that will be used by Candidates to answer whether or not they have 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 in 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 Candidates have completed the Incident Report, they will be offered the opportunity to complete an optional survey. The survey is a basic set of questions that allow you to review your experience at the test center.

Once all Incident Reports have been submitted, they will be reviewed by Staff. **Staff will be reviewing videos and interviewing the Proctor for more information regarding your Incident Report.** Additionally, staff will inspect any reported equipment malfunction. This process may take some time so completing the Candidate Survey will provide you with something to occupy your time.

- During the Incident Reports Review, since videos are available to view any issues, 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.
- Once all Incident Reports have been reviewed and it is determined there are no administrative issues or all issues have been resolved, Staff will dismiss Candidates from the exam hall.

### **RETEST POLICY**

- The NBEO retest policy dictates that repeat tests are provided only due to administrative irregularities (e.g., equipment failure, loss of electrical power, etc) which negatively affected the Candidate's performance.

## **ADDITIONAL EXAM INFORMATION**

### **CANDIDATE TO CANDIDATE INTERACTION**

- Candidates may engage in conversation during the registration and orientation process only.
- **Once Candidates are escorted to the test center hall, no communication should occur between Candidates at any time during the exam or post-exam 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.
  - **Violation of this policy will not be tolerated and may be cause for disqualification from, dismissal from, and/or failure of the examination.**

### **VIDEO SCORE REVIEW**

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

### **SCORING PRACTICES**

- The 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.
- Additional information regarding scoring practices, score breakdowns and reports is available online.

## Injections Skill Exam Overview

During the Injection Skills 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 4 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, and
- 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 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.

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 put on 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 to 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 4 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. After 4 attempts, this is an automatic stop and **will not continue to be scored** by the Remote Examiner. Candidates have 4 attempts total. Once the 4<sup>th</sup> attempt has been reached, no other attempts will be scored. 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 any reminder of the number of attempts taken or remaining nor will the Proctor stop the Candidate after the 4<sup>th</sup> 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.

To provide 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).

Often Candidates will assume that because they saw *some* blood, 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. Now 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 the 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. The NBEO recognizes that injection of epinephrine to treat an anaphylactic reaction is usually administered intramuscularly in the outer thigh of a patient. However, the 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 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 4 attempts on the IV injection, it is considered a stop and should not be repeated.

**AUGUST 2020-JULY 2021 CANDIDATE INSTRUCTIONS FOR ISE**  
**(posted in exam room)**

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 other 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 absolutely 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.

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