

# Foundations of Pharmacy Science

Event Category: Health Professions.....

|                                          |                                                                                                         |                           |
|------------------------------------------|---------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Eligible Divisions:</b> Middle School | <b>Round One:</b> 35 Q test (60 minutes)<br>HOSA will provide a basic handheld calculator for the test. | <b>Digital Upload:</b> NO |
| <b>Solo Event:</b> 1 competitor          | <b>Round Two:</b> Skill(s) assessment                                                                   |                           |



## New for 2026-2027

NEW middle school event for 2026-2027.

### TEXAS HOSA

**Make sure to read TEXAS General Rules and Regulations for updated “Electronic Device Policies” and “Extended Stay Preparation”.**

#### Texas State Leadership Conference

A Round 1 written exam will be used to slate the top ten (10) competitors for Round 2. Both Round 1 and Round 2 for State will be in person in Irving, Texas.

The top three (3) scores from State will advance to ILC.

## Event Summary

Foundations of Pharmacy Science provides **Middle School Division** HOSA members with the opportunity to gain knowledge and skills required for a basic understanding of introductory pharmacy skills. This competitive event consists of two rounds. Round One is a written, multiple-choice test, and the top-scoring competitors will advance to Round Two for the skills assessment. This event aims to inspire members to learn more about the field of pharmacy care.

## Sponsorship

|                                                                                                                                                                                                        |                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| HOSA- Future Health Professionals appreciates the sponsorship of this event by the <a href="#">ASHP</a> . ASHP has developed a <a href="#">special landing page</a> for HOSA competitors and advisors. |  |
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## General Event Information

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General Rules</b>            | Competitors must be familiar with and adhere to the <a href="#">General Rules and Regulations</a> .                                                                                                                                                                                                                                                                                                                                      |
| <b>Dress Code</b>               | Proper business attire or official HOSA uniform. Bonus points will be awarded for <a href="#">proper dress</a> . <ul style="list-style-type: none"><li>Round One: Proper business attire, official HOSA uniform, or attire appropriate to the occupational area.</li><li>Round Two: Attire appropriate to the occupational area.</li></ul>                                                                                               |
| <b>Competitors Must Provide</b> | <ul style="list-style-type: none"><li><a href="#">Photo ID</a> for both rounds</li><li>Two #2 lead pencils (not mechanical) with an eraser for test</li><li>Neon colored foam earplugs, NOT earbuds, for noise control (Rd1-optional)</li><li>2 pairs of Non-Latex Exam Gloves (Rd2 skills) Gown, Gloves, Mask, Goggles (PPE)</li></ul> HOSA Conference Staff will provide equipment and supplies listed in <a href="#">Appendix I</a> . |
| <b>Official References</b>      | The references below are used in the development of the test questions and skill rating sheets:                                                                                                                                                                                                                                                                                                                                          |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><a href="http://www.ashp.org/hosa">http://www.ashp.org/hosa</a>. HOSA student discount code to purchase ASHP resources:<br/> <a href="http://www.ashp.org/hosa">http://www.ashp.org/hosa</a></p> <ul style="list-style-type: none"> <li>• <a href="#">Stuhan, Mary Ann. Understanding Pharmacology for Pharmacy Technicians. ashp. Latest edition.</a></li> <li>• <a href="#">Top 150 Prescription Abbreviations &amp; Medical Meanings</a></li> <li>• <a href="#">Marshal, Jacquelyn Rhine and Roe, Sue. Health Science Concept and Skills. G-W Publishers Latest edition.</a></li> </ul> <p>The following references are used in the development of the skill rating sheets only.</p> <p><a href="#">059 Medication History Simulation</a><br/> <a href="#">AHFS DI Drug Monographs for Healthcare Professionals</a></p> |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## ROUND ONE- Test

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Instructions</b>            | <p>All competitors will be given a test and test answer sheet. The written test will consist of 35 multiple-choice items in a maximum of 60 minutes. See test instructions <a href="#">here</a>.</p> <p>At the International Leadership Conference, HOSA will provide basic handheld calculators (no graphing calculators) for addition, subtraction, division, multiplication, and square root.</p> <p>USE OF ZERO: Decimal expressions of less than 1 should be preceded by a zero—a “leading zero.” A whole number should never be followed by a decimal point and a zero – “trailing zero.”</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Time Remaining Announcements</b> | <p>There will be NO verbal announcements for time remaining during ILC testing. All ILC testing will be completed in the Testing Center, and competitors are responsible for monitoring their own time.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Written Test Plan</b>            | <p>The written test for Foundations of Pharmacy Science is:</p> <ul style="list-style-type: none"> <li>• Pharmacy Practice History &amp; Practice Settings - 30%</li> <li>• Pharmacy Law &amp; Ethics and Safety &amp; Infection Control - 20%</li> <li>• Pharmacy Terminology &amp; Abbreviations - 20%</li> <li>• Dosage Formulations &amp; Administration Routes - 15%</li> <li>• Concentration &amp; Dilutions - 10%</li> <li>• Disorders &amp; Treatments - 5%</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Sample Test Questions</b>        | <ol style="list-style-type: none"> <li>1. What is the term for the study of the movement of a drug through body systems, including absorption, distribution, metabolism, and excretion? (Stuhan pp 19) <ul style="list-style-type: none"> <li>A. Pharmacology</li> <li><b>B. Pharmacokinetics</b></li> <li>C. Therapeutics</li> <li>D. Pharmacogenomics</li> </ul> </li> <li>2. What law was passed in 1938 which began to regulate drugs and prohibit false therapeutic claims? (Bachenheimer &amp; Phillips pp 53) <ul style="list-style-type: none"> <li>A. Durham-Humphrey Amendment</li> <li>B. Omnibus Budget Reconciliation Act</li> <li>C. Harris Narcotic Tax Act</li> <li><b>D. Food, Drug, and Cosmetic Act</b></li> </ul> </li> <li>3. If a patient is to receive 1 ounce of an over-the-counter medication, how many tablespoons should be given? (Bachenheimer &amp; Phillips pp 325) <ul style="list-style-type: none"> <li>A. 1 tablespoon</li> <li><b>B. 2 tablespoons</b></li> <li>C. 3 tablespoons</li> <li>D. 4 tablespoons</li> </ul> </li> </ol> |

## ROUND TWO- Skill Assessment

1. The top competitors from Round One will advance to Round Two. The number of advancing competitors will be determined by the scores obtained in Round One and the space and time available for Round Two. Round Two finalists will be announced on-site at ILC per the conference agenda.

2. Round Two is a selected skill(s) assessment. The skills approved for this event are:

|                                                                                                               |                  |
|---------------------------------------------------------------------------------------------------------------|------------------|
| <b>Skill I: Pill Identification</b> (see list of medications in chart below that will be used for this skill) | <b>8 minutes</b> |
| <b>Skill II: Performing Medication History</b>                                                                | <b>7 minutes</b> |
| <b>Skill III: Donning and Doffing Full Set of PPE</b>                                                         | <b>6 minutes</b> |
| <b>Skill IV: Handwashing</b>                                                                                  | <b>3 minutes</b> |

3. For all skills, medications and body fluids will be a simulated product.
4. The following medications will be included for the **Skill I: Pill Identification** skill. This skill may be administered with the Round One written test. If this skill is administered with the Round One test, the skill assessment allotted time (8 minutes) will be added to the test time (60 minutes) to equal 68 minutes.

| Over-the-Counter                       | Meds to treat Cardiovascular Disorders | Meds used in Respiratory Illness     | Meds used in Infection            |
|----------------------------------------|----------------------------------------|--------------------------------------|-----------------------------------|
| Acetaminophen (Tylenol)                | Atorvastatin (Lipitor)                 | Albuterol (Ventolin / ProAir)        | Amoxicillin (Amoxil)              |
| Ibuprofen (Advil / Motrin)             | Amlodipine (Norvasc)                   | Azithromycin (Zithromax / Z-Pak)     | Cephalexin (Keflex)               |
| Diphenhydramine (Benadryl)             | Metoprolol (Lopressor)                 | Tiotropium (Spiriva)                 | Doxycycline (Vibramycin)          |
| Loratadine (Claritin)                  | Lisinopril (Zestril)                   |                                      |                                   |
| Dextromethorphan (Robitussin / Delsym) |                                        |                                      |                                   |
| Meds used in Gastrointestinal Illness  | Meds used in Diabetes                  | Meds used to Tx Brain Health         | Meds used to Tx Allergic Reaction |
| Omeprazole (Prilosec)                  | Metformin (Glucophage)                 | Sertraline (Zoloft)                  | Prednisone (Deltasone)            |
| Ondansetron (Zofran)                   | Insulin Glargine (Lantus)              | Escitalopram (Lexapro)               | Epinephrine (Epipen)              |
| Promethazine (Phenergan)               |                                        | Methylphenidate (Ritalin / Concerta) |                                   |

5. The selected skill(s) will be presented to competitors as a written scenario at the beginning of the round. The scenario will be the same for each competitor. Some scenarios may involve the combination of multiple skills. In the event rating sheets are combined, it is not necessary to repeat a task a second time. An example would be that competitors would not need to identify the patient twice. A sample scenario is available [here](#).
6. Timing will begin when the scenario is presented to the competitors and will be stopped at the end of the time allowed. The scenario is a secret topic. Competitors MAY NOT discuss or reveal the secret topic until after the event has concluded or will face penalties per [the GRRs](#).
7. Competitors must complete all skill steps listed in the guidelines, even if the steps must be simulated/verbalized. (If the equipment is available, the competitors would complete all skill steps as the scenario warrants. The competitors will simulate/verbalize the steps if the equipment is unavailable.)
8. Judges will provide information to competitors as directed by the rating sheets. Competitors may ask questions of the judges while performing skills, if the questions relate to the patient's condition and will be included in the scenario or judge script.

9. Competitors must use all equipment correctly and safely. Judges will stop a student and not award points for a step if they see a competitor is about to cause a risk of harm or about to damage equipment or other supplies.

## Final Scoring

1. The competitor must earn a score of 70% or higher on the combined skill(s) of the event (excluding the test and ID of medications) in order to be recognized as an award winner at the ILC.
2. The final rank is determined by adding the round one test score plus the round two skill score. In the event of a tie, the highest test score will be used to determine the final placement.

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## Skill I: Pill Identification

Time: 8 minutes

\*\*Ten pills will be chosen to identify from the provided list

Competitor #: \_\_\_\_\_ Division: Middle School Judge's Signature: \_\_\_\_\_

|                                           | Pill Identification Generic Name (1 point) | Pill Identification Brand Name (1 point) |
|-------------------------------------------|--------------------------------------------|------------------------------------------|
| 1.                                        |                                            |                                          |
| 2.                                        |                                            |                                          |
| 3.                                        |                                            |                                          |
| 4.                                        |                                            |                                          |
| 5.                                        |                                            |                                          |
| 6.                                        |                                            |                                          |
| 7.                                        |                                            |                                          |
| 8.                                        |                                            |                                          |
| 9.                                        |                                            |                                          |
| 10.                                       |                                            |                                          |
|                                           | Total (10 possible): _____                 | Total(10 possible): _____                |
| Total Overall Points (20 possible): _____ |                                            |                                          |

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## Skill II: Performing Medication History

### Time: 7 minutes

**Competitor #:** \_\_\_\_\_ **Division:** Middle School **Judge's Signature:** \_\_\_\_\_

|                                                                | <b>Skill II: Performing Medication History</b>                                                  | <b>Possible</b> | <b>Awarded</b> |
|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------|----------------|
| 1.                                                             | Washed hands or used alcohol based hand-rub for hand hygiene.                                   | 2      0        |                |
| 2.                                                             | Greeted patient.                                                                                | 2      0        |                |
| 3.                                                             | Verified patient name, date of birth.                                                           | 2      0        |                |
| 4.                                                             | Identified patient's current pharmacy.                                                          | 2      0        |                |
| 5.                                                             | Obtained medication allergies.                                                                  | 2      0        |                |
| 6.                                                             | Obtained list of Prescription Medications, dosage, time, last took.                             | 2      0        |                |
| 7.                                                             | Document dosage of medications.                                                                 | 2      0        |                |
| 8.                                                             | Documented time when medications are usually taken.                                             | 2      0        |                |
| 9.                                                             | Documented last dose of medication taken.                                                       | 2      0        |                |
| 10.                                                            | Obtained a list of Over The Counter (OTC) medications.                                          | 2      0        |                |
| 11.                                                            | Inquired about other possible medication being used.                                            | 2      0        |                |
| 12.                                                            | Documented information related to medication and routine.                                       | 2      0        |                |
| 13.                                                            | Allowed the patient to share other medications not previously identified.                       | 2      0        |                |
| 14.                                                            | Verbalized to the patient the medication history will be shared with the pharmacist for review. | 2      0        |                |
| 15.                                                            | Used appropriate verbal and nonverbal communication with the patient and others present.        | 2      0        |                |
| <b>Total Points- Skill II:</b><br>70% Mastery for Skill II: 21 |                                                                                                 | <b>30</b>       |                |

# Foundations of Pharmacy Science

## HOSA Medication History Worksheet

Student Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Patient Interview Notes

|                |  |
|----------------|--|
| Patient Name:  |  |
| Date of Birth: |  |
| Pharmacy Name: |  |
| Allergies:     |  |

### Medication List

| Medication Name | Dose | Route | Frequency | Last Dose Taken | Notes |
|-----------------|------|-------|-----------|-----------------|-------|
|                 |      |       |           |                 |       |
|                 |      |       |           |                 |       |
|                 |      |       |           |                 |       |
|                 |      |       |           |                 |       |

# Foundations of Pharmacy Science

## Skill III: Donning & Doffing a Full Set of PPE

Time: 7 minutes

Competitor #: \_\_\_\_\_ Division: Middle School Judge's Signature: \_\_\_\_\_

|     | Skill III: Donning & Doffing a Full Set of PPE                                                    | Possible | Awarded |
|-----|---------------------------------------------------------------------------------------------------|----------|---------|
| 1.  | Assembled equipment and supplies.                                                                 | 1 0      |         |
| 2.  | Washed hands or used alcohol based hand-rub for hand hygiene.                                     | 2 0      |         |
| 3.  | Opened the gown by holding it in front of you & allowing it to unfold without shaking the gown.   | 2 0      |         |
| 4.  | Faced the back opening of the gown & placed arms through each sleeve.                             | 2 0      |         |
| 5.  | Fastened the neck opening.                                                                        | 2 0      |         |
| 6.  | Reached behind & pulled the gown until it completely covered all clothing & secured at the waist. | 2 0      |         |
| 7.  | Picked up mask by elastic strap or top strings not touching the inside                            | 2 0      |         |
| 8.  | Pulled elastic strap or tied top strings first & then tied bottom strings.                        | 2 0      |         |
| 9.  | Pinched the metal strip at the top of the mask to fit tightly around the nose.                    | 2 0      |         |
| 10. | Fitted mask snugly around face & below chin.                                                      | 2 0      |         |
| 11. | Placed goggles over your eyes or eyeglasses while making sure they fit snugly.                    | 2 0      |         |
| 12. | If right-handed slid one glove on left hand (reverse if left-handed).                             | 2 0      |         |
| 13. | Used the gloved hand to slide the other hand into the second glove.                               | 2 0      |         |
| 14. | Interlaced fingers to smooth out folds & created a comfortable fit.                               | 2 0      |         |
| 15. | Checked gloves for tears, holes, cracks, or discolored spots & replaced if needed.                | 2 0      |         |

|                                                   |                                                                                                                               |   |   |  |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---|---|--|
| 16.                                               | Adjusted gloves until they are pulled over the wrist fitting correctly & pulled cuffs of gloves over the sleeves of the gown. | 2 | 0 |  |
| * Judge states, "Skill is completed, remove PPE." |                                                                                                                               |   |   |  |
| 17.                                               | Removed gloves by touching only the outside of one gloved hand at the palm and pulled the glove off.                          | 2 | 0 |  |
| 18.                                               | With the fingertips of gloved hand, held removed glove.                                                                       | 2 | 0 |  |

| Skill III: Continued...                                     |                                                                                                                                 | Possible |   | Awarded |
|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------|---|---------|
| 19.                                                         | With the ungloved hand, slid two fingers under the remaining glove at the wrist without touching the outside of the glove.      | 2        | 0 |         |
| 20.                                                         | Pulled down, turning the glove inside out over the first glove as you removed it & dropped gloves in the appropriate container. | 2        | 0 |         |
| 21.                                                         | Removed goggles.                                                                                                                | 2        | 0 |         |
| 22.                                                         | Unfastened the gown at the neck & waist.                                                                                        | 2        | 0 |         |
| 23.                                                         | Removed gown without touching the outside of the gown by rolling dirty side in, while holding gown away from the body.          | 2        | 0 |         |
| 24.                                                         | Disposed of gown in appropriate container.                                                                                      | 2        | 0 |         |
| 25.                                                         | Untied mask and removed without touching mask.                                                                                  | 2        | 0 |         |
| 26.                                                         | Disposed of mask in appropriate container.                                                                                      | 2        | 0 |         |
| 27.                                                         | Washed hands or used alcohol based hand-rub for hand hygiene.                                                                   | 2        | 0 |         |
| Total Points- Skill III:<br>70% Mastery for Skill III: 37.1 |                                                                                                                                 | 53       |   |         |

# Foundations of Pharmacy Science

## Skill IV: Handwashing

Time: 3 minutes

Competitor #: \_\_\_\_\_ Division: Middle School Only Judge's Signature: \_\_\_\_\_

|     | Skill IV: Handwashing                                                                                                                           | Possible | Awarded |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|
| 1.  | Stand back from sink to avoid contamination of clothing.                                                                                        | 2 0      |         |
| 2.  | Removed rings and pushed wristwatch or long sleeves up above wrist using a paper towel.                                                         | 2 0      |         |
| 3.  | Turned faucet on with paper towel, adjusted temperature (water should be warm) and discarded towel in waste container.                          | 2 0      |         |
| 4.  | Wet hands, wrists, and the skin 1-2 inches above the wrist thoroughly with fingertips pointing down.                                            | 2 0      |         |
| 5.  | Removed hands from water stream and applied soap to create thick lather on hands.                                                               | 2 0      |         |
| 6.  | Rubbed palms together in a circular, counterclockwise motion.                                                                                   | 2 0      |         |
| 7.  | Pushed the fingers of the right hand between the fingers of the left hand and rubbed up and down.                                               | 2 0      |         |
| 8.  | Repeated Step #7 with left hand.                                                                                                                | 2 0      |         |
| 9.  | Interlaced fingers, rubbed the palms together from side to side.                                                                                | 2 0      |         |
| 10. | Bent fingers and interlocked them with backs of fingers touching the opposite palm. Rubbed side to side.                                        | 2 0      |         |
| 11. | Cleaned under fingernails by rubbing them against other palm and forcing soap underneath them. Continued rubbing to clean around tops of nails. | 2 0      |         |
| 12. | Reversed hands and repeated Step #11                                                                                                            | 2 0      |         |
| 13. | Held the left thumb in the palm of the right hand. Rubbed in a circular, counterclockwise motion.                                               | 2 0      |         |
| 14. | Reversed hands and repeated Step #13.                                                                                                           | 2 0      |         |

|                                                                  |                                                                                                                                                      |                 |   |                |
|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---|----------------|
| 15.                                                              | Held the fingers of the right hand together and placed them in the middle of the left palm. Rubbed in a circular, counterclockwise motion.           | 2               | 0 |                |
| 16.                                                              | Reversed hands and repeated Step #15.                                                                                                                | 2               | 0 |                |
| 17.                                                              | Washed hands for a minimum of 20 seconds.                                                                                                            | 2               | 0 |                |
| 18.                                                              | Held hands under running water with fingers pointed downward. Rinsed wrists and hands thoroughly.                                                    | 2               | 0 |                |
| <b>Skill IV Continued...</b>                                     |                                                                                                                                                      | <b>Possible</b> |   | <b>Awarded</b> |
| 19.                                                              | Dried hands thoroughly with a clean paper towel starting with hands and then the wrists. Did not shake hands or touch dispenser. Repeated if needed. | 2               | 0 |                |
| 20.                                                              | Used clean, dry paper towel to turn off faucet.                                                                                                      | 2               | 0 |                |
| 21.                                                              | Discarded paper towel in waste container without touching the container.                                                                             | 2               | 0 |                |
| <b>Total Points- Skill IV:</b><br>70% Mastery for Skill IV: 29.4 |                                                                                                                                                      | <b>42</b>       |   |                |