

SURGICAL TECHNOLOGY

Purpose: To provide the Health Occupations Education student with an opportunity to develop and demonstrate knowledge and skills as a Surgical Technologist.

Description of Event: The competitive event will consist of a written evaluation of knowledge and performance of selected skill procedure(s) identified in a written scenario. The scenario will require the use of critical thinking skills. The performance will be timed and evaluated according to the event guidelines.

Dress Code: Competitors shall wear professional attire appropriate to the occupational area during the written exam and skill procedure(s). School identification or name pins must be removed or covered during competition.

- Rules and Procedures**
1. Competitors in this event must be or have been enrolled in a state-approved Health Occupations Education program at the appropriate level (postsecondary/collegiate) in which the competencies outlined in this event are taught. Competitors should compete in skill events at the highest level of their training.
 2. The selection of specific procedures and the development of the written exam shall be the responsibility of the National HOSA Competitive Events Program. The written exam will consist of fifty (50) multiple choice items. Competitors will be given one hour to complete the exam. Automatic scoring will be used.
 3. Each competitor will be evaluated on his/her performance on a written exam and selected procedure(s). The procedures approved for this event are:

| | | |
|--------------|--|-----|
| Procedure I: | Written Exam - Test Plan (Required) | |
| | Fundamental Knowledge | 30% |
| | Preoperative Preparation..... | 25% |
| | Intraoperative and Postoperative Procedures..... | 45% |

Procedure II: Scrubbing

- A. Preliminary
B. Major

Procedure III: Drying Hands

Procedure IV: Gowning (self)

Procedure V: Closed Gloving (self)

Procedure VI: Drape Backtable - Mayo Stand

Procedure VII: Basic setup, including basic instruments. Establish an organized, functional sterile field for a specified surgical procedure; i.e., femoral hernia, appendectomy, mastectomy (State), inguinal hernia, laparotomy, breast biopsy, mastectomy (National)

Procedure VIII: Gowning and Gloving Another Person

Procedure IX: Remove Gown and Gloves (self)

Procedure X: Identify Surgical Instruments

- A. Identify 25 instruments by name
- B. List instruments in correct category
- C. Spell names of instruments correctly
- D. Identify an acceptable surgical procedure use

National Level: advanced level demonstration includes entry level skills plus surgical specialty instruments and procedures.

- 4. All official references are used in the development of the written test. The specific reference selected for each procedure is listed in the Facilities, Equipment and Materials section of these guidelines.
 - Atkinson, Lucy Jo. Berry & Kohn's Operating Room Technique, latest edition. Mosby.
 - Meeker and Rothrock. Alexander's Care of the Patient in Surgery, latest edition. Mosby.
 - Wells, M.P. Surgical Instruments: A Pocket Guide, latest edition.
- 5. The selected procedure(s), in the form of a written scenario, will be presented to competitors two-three minutes prior to the actual skill(s) presentation. The scenario will be the same for each competitor and will include a challenging component that will require the competitor to apply critical thinking skills.
- 6. This event will NOT be open to observers.
- 7. Should a tie occur in the ranking of competitors, the selected procedure with the highest possible point value will be used as the tie breaker; others as necessary in descending order of total point value.
- 8. If a competitor jeopardizes the patient's or his/her own safety or fails to perform a critical step and does not take immediate action to correct the error, the total points for the procedure or specific subpart(s) of the procedure will be deducted by the judge(s).
- 9. Competitors must complete all steps of the procedure listed in the guidelines even if the steps must be simulated/verbalized. (Example: If guidelines call for washing hands but there isn't a sink, then handwashing must be simulated/verbalized.)
- 10. Competitors will be stopped at the end of the time allowed for a selected procedure(s).
- 11. Bonus points will be awarded by the Event Manager for proper attire. A score of 5 or 0 will be added once to the event tally sheet and become part of the composite score.

12. The Mastery Level for Category II skill events is considered to be a 70% composite score. NLC competitors will NOT be recognized if they did not achieve a mastery level in their event.
13. Competitors must bring all items noted with *** in the materials section of these guidelines to the event.
14. **Competitors must be familiar with and adhere to the "General Rules and Regulations of the National HOSA Competitive Events Program."**

Required Personnel

1. One Event Manager per event
2. One Section Leader per section
3. One-three judges per procedure selected per section (with expertise in the specific skill area)
 4. Proctors for testing
 5. One-two Courtesy Corps per section
 6. One-two patients as required by the scenario (per section)
 7. Holding room attendants(s)
 8. Timekeepers (if necessary)

Facilities, Equipment and Materials (Per Section)

- General**
1. Clinical and/or laboratory stations with ring stand in addition to back table for selected procedures
 2. Holding rooms or areas for competitors
 3. Written scenario (one copy per competitor and judge)
 4. Calculators, note pads, pencils for judges
 5. Certificates, event evaluations and pencils (per competitor)
 6. Stopwatch

Procedure I Written Exam

1. One test copy per competitor
2. Scantron forms and pencils
3. Paper for scratch paper/cover sheet
4. Sign/chalk board for time remaining at 30, 15, 5 and 1 minute(s)

Procedure II-V Scrub, Dry Hands, Gown/Glove Self (Reference: Atkinson)

- *** 1. Scrub suit/cap, mask and goggles or face shield, and shoe covers
- *** 2. Scrubbing equipment -- brush with detergent soap, soap impregnated sponge or brush, and a file -- metal or plastic
- *** 3. Sterile towel
4. Scrub sink with knee control
- *** 5. Sterile gown
- *** 6. Sterile gloves
7. Mayo table

Procedure VI Back Table and Mayo Stand (Reference: Atkinson)

- *** 1. Scrub suit/cap, mask and goggles or face shield, and shoe covers
2. Drape and set up backtable

- *** 3. Open basic pack containing a minimum of one Mayo stand cover, backtable cover, and a gown and towel for Procedure VII.

Procedure VII Establish Specified Basic Setup Up of Backtable and Mayo Stand (Reference: Atkinson)

- *** 1. Scrub suit/cap, mask and goggles or face shield, and shoe covers
2. Ring stand
3. Instrument pack (dependent upon scenario)

Procedure VIII Gowning and Gloving Another Person (Reference: Atkinson)

- *** 1. Scrub suit/cap, mask and goggles or face shield, and shoe covers
2. Gown and towel from Procedure V
*** 3. Gloves - Size 8 (for surgeon)

Procedure IX Remove Gown/Gloves (self) (Reference: Atkinson)

- *** 1. Scrub suit/cap, mask and goggles or face shield, and shoe covers

Procedure X Identify Surgical Instruments (References: Atkinson and Wells)

2. Two sets of 25 numbered instruments as selected by the Event Manager
3. Two large tables -- large enough to hold instruments

*** Must be provided by student competitor

SURGICAL TECHNOLOGY

Competitor #: _____

Judge's Signature: _____

| Procedure II Scrub) (Time for Procedures II-IX not to exceed 30 minutes) | Possible | Allocated |
|---|-----------------|------------------|
| II-A. Preliminary Surgical Scrub | | |
| 1. Opened basic pack on backtable | 3 | |
| 2. Opened gown pack on Mayo Stand | 3 | |
| 3. Checked hands and arms for cuts, infections, etc. | 1 | |
| 4. Checked fingernails -- clean, short, free of nail polish | 1 | |
| 5. Removed all jewelry | 1 | |
| 6. Adjusted cap or hood | 1 | |
| 7. Adjusted goggles or protective eyewear | 2 | |
| 8. Adjusted scrub shirt inside scrub pants | 1 | |
| 9. Turned on water and regulated temperature | 1 | |
| 10. Washed hands and forearms with antimicrobial soap for 30 seconds | 5 | |
| 11. Rinsed thoroughly -- hands higher than elbows | 5 | |
| 12. Cleaned fingernails under running water | 5 | |
| 13. Discarded nail file | 1 | |
| TOTAL POINTS -- PROCEDURE II-A | 30 | |

| Items Evaluated | Possible | Allocated |
|---|----------|-----------|
| II-B. Major Scrub - Five minutes - anatomical scrub using circular friction on all four surfaces of hands and arms | | |
| 1. Opened sterile brush/sponge -- held in hand during entire procedure | 5 | |
| 2. Held brush/sponge perpendicular to nails -- scrubbed 30 strokes in a back and forth motion | 2 | |
| 3. Brushed all four sides of each digit -- 10 strokes for each plane of each digit | 2 | |
| 4. Brushed hand 40 strokes | | |
| a. Back (10 strokes) | 2 | |
| b. Front (10 strokes) | 2 | |
| c. Inner side (10 strokes) | 2 | |
| d. Outer side (10 strokes) | 2 | |
| 5. Scrubbed forearm from wrist to 2" above elbow, each side of arm including elbow and antecubital space | | |
| a. Used light friction with circular motion | | |
| b. Scrubbed arm to 2" above elbow | 2 | |
| 6. Rinsed all visible lather from brush/sponge | 2 | |
| 7. Transferred brush/sponge to opposite hand | 2 | |
| 8. Holding brush/sponge perpendicular to nails of opposite hand, scrubbed 30 strokes -- each stroke was a back and forth motion | 2 | |
| 9. Brushed all four sides of each digit -- 10 strokes for each plane of each digit | 2 | |
| 10. Brushed hand 40 strokes | | |
| a. Back (10 strokes) | 2 | |
| b. Front (10 strokes) | 2 | |
| c. Inner side (10 strokes) | 2 | |
| d. Outer side (10 strokes) | 2 | |
| 11. Scrubbed forearm from wrist to 2" above elbow, each side of arm including elbow and antecubital space | | |
| a. Used light friction with circular motion | 4 | |
| b. Scrubbed arm to 2" above elbow | 2 | |

| Items Evaluated | Possible | Allocated |
|--|-----------|-----------|
| 12. Discarded brush | 2 | |
| 13. Rinsed arm scrubbed first thoroughly from fingertip to elbow, keeping hands higher than elbows | 3 | |
| 14. Rinsed arm scrubbed last thoroughly from fingertip to elbow, keeping hands higher than elbows | 3 | |
| 15. Turned off water and drained excess water from arms | 1 | |
| 16. Proceeded to operation room | | |
| a. held hands between waist and shoulder level | 1 | |
| b. held hands away from body | 5 | |
| TOTAL POINTS -- PROCEDURE II-B | 60 | |

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Competitor #: _____

Judge's Signature: _____

| Procedure III Drying Hands | Possible | Allocated |
|--|-----------------|------------------|
| 1. Picked up towel and held away from sterile field | 2 | |
| 2. Did not let towel touch the gown | 5 | |
| 3. Did not drop water onto gown or gowning table | 5 | |
| 4. Stepped away from sterile field to wipe hands and arms | 2 | |
| 5. Faced sterile field | 2 | |
| 6. Bent slightly at waist | 2 | |
| 7. Did not touch towel to unsterile scrub unit | 5 | |
| 8. Dried one hand, forearm and elbow with blotting, rotating motions | 5 | |
| 9. Did not return to an area already dried | 5 | |
| 10. Grasped the opposite end of towel with dried hand | 5 | |
| 11. Dried opposite hand, forearm and elbow with blotting, rotating motion | 5 | |
| 12. Did not return to an area already dried | 5 | |
| 13. Discarded towel | 2 | |
| 14. Kept hands in front and in view at all times | 3 | |
| TOTAL POINTS -- PROCEDURE III | 53 | |

SURGICAL TECHNOLOGY

Competitor #: _____

Judge's Signature: _____

| Procedure IV Gowning | Possible | Allocated |
|--|-----------------|------------------|
| 1. Picked up gown by lifting straight up and away from sterile field without contaminating sterile field | 2 | |
| 2. Stepped away from sterile field | 2 | |
| 3. Remained facing sterile field | 5 | |
| 4. Lifted gown to shoulder height | 2 | |
| 5. Held gown away from body and allowed to open | 2 | |
| 6. Put gown on by lacing hands in armholes | 2 | |
| 7. Guided arms into sleeves by raising and spreading arms | 2 | |
| 8. Kept hands inside cuff of gown | 5 | |
| 9. Did not shake gown | 2 | |
| TOTAL POINTS -- PROCEDURE IV | 24 | |

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Competitor #: _____

Judge's Signature: _____

| Procedure V | Closed Gloving (self) | Possible | Allocated |
|--------------------|---|-----------------|------------------|
| 1. | For right hand, kept hands inside gown sleeve | 5 | |
| 2. | Opened glove folder | 2 | |
| 3. | With left hand inside sleeve, picked up right glove by cuff | 2 | |
| 4. | Lifted glove up and away from sterile field | 1 | |
| 5. | Held right arm with palm upward hand inside sleeve | 2 | |
| 6. | Placed glove on right forearm | | |
| a. | Fingers toward elbow | 2 | |
| b. | Thumb downward | 2 | |
| c. | Glove cuff touching upper edge of cuff | 2 | |
| 7. | Grasped underside of glove cuff with the right hand | 2 | |
| 8. | Grasped upper side of glove cuff with the left sleeve-covered hand | 2 | |
| 9. | Pulled glove out and over cuff of sleeve | 5 | |
| 10. | Grasped the top of the right glove and/or underlying sleeve with cuff-covered left hand | 2 | |
| 11. | Pulled sleeve up and glove on | 2 | |
| 12. | Extended fingers into proper finger slots | 5 | |
| 13. | For left hand, picked up left glove with right gloved hand | 2 | |
| 14. | Lifted glove up and away from sterile field | 1 | |
| 15. | Held left arm with palm upward, hand inside sleeve | 2 | |
| 16. | Placed glove on left forearm | | |
| a. | Fingers toward elbow | 2 | |
| b. | Thumb downward | 2 | |
| c. | Glove cuff touching upper edge of gown cuff | 2 | |
| 17. | Grasped underside of glove cuff with the left hand | 2 | |
| 18. | Grasped upper side of glove with right gloved hand | 2 | |

| Items Evaluated | Possible | Allocated |
|---|-----------|-----------|
| 19. Pulled glove out and over cuff of sleeve | 2 | |
| 20. Grasped the top of the right glove and/or underlying sleeve with gloved right hand | 2 | |
| 21. Pulled glove out and over cuff of sleeve | 5 | |
| 22. Grasped the top of the right glove and/or underlying sleeve with cuff-covered left hand | 2 | |
| 23. Pulled sleeve up and glove on | 2 | |
| 24. Extended fingers into proper finger slots | 5 | |
| 25. Turned and tied own glove | 5 | |
| TOTAL POINTS -- PROCEDURE V | 74 | |

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Competitor #: _____

Judge's Signature: _____

| Procedure VI Backtable - Mayo Stand | Possible | Allocated |
|--|-----------------|------------------|
| 1. Arranged articles from basic pack in an organized manner on backtable | 2 | |
| 2. Draped Mayo Stand | | |
| a. Checked that stand was not too close to an unsterile field | 1 | |
| b. Checked cover for a wide cuff | 1 | |
| c. Kept hands under cuff at all times | 3 | |
| d. Slid covers over stand without contaminating hands or gown | 3 | |
| e. Prevented the folded end of cover from folding below backtable level | 5 | |
| f. Assured smoothness of cover on flat surface of tray | 2 | |
| TOTAL POINTS -- PROCEDURE VI | 17 | |

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Competitor #: _____

Judge's Signature: _____

| Procedure VII Establish a Functional, Organized Setup for a Basic Backtable and Mayo Stand for a Specified Procedure | Possible | Allocated |
|---|-----------------|------------------|
| TOTAL POINTS -- PROCEDURE VII | 100 | |

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Competitor #: _____

Judge's Signature: _____

| Procedure VIII Gowning and Gloving Another Person | Possible | Allocated |
|---|-----------------|------------------|
| 1. Gowning a. Opened hand towel and laid it on extended hand without contamination | 5 | |
| b. Handed gown to other person without contamination | 5 | |
| c. Released the gown without contamination | 5 | |
| 2. Gloving a. Obtained gloves from circulator without contamination | 5 | |
| b. Picked up right glove with fingers under the cuff | 2 | |
| c. Held the palm toward the person | 5 | |
| d. Stretched cuff for introduction of hand without contamination | 5 | |
| e. Held glove steady while hand was plunged in | 2 | |
| f. Unfolded cuff of glove over cuff of sleeve, covering the entire cuff | 5 | |
| g. Repeated steps 2 through 6 for left glove | 5 | |
| h. Tied surgeon's gown | 5 | |
| TOTAL POINTS -- PROCEDURE VIII | 49 | |

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Competitor #: _____

Judge's Signature: _____

| Procedure IX Remove Gown and Gloves (self) | Possible | Allocated |
|---|-----------------|------------------|
| 1. Removed gown first | 5 | |
| 2. Grasped gown at shoulders without touching self | 5 | |
| 3. Pulled downward, pulling sleeves inside out as pulled off arms | 5 | |
| 4. Disposed of gown properly | 3 | |
| 5. Removed gloves inside out using glove-to-glove then skin-to-skin technique | 5 | |
| TOTAL POINTS -- PROCEDURE IX | 23 | |

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Competitor #: _____

Judge's Signature: _____

| Procedure X | Identify Surgical Instruments | Possible | Allocated |
|---|-------------------------------|------------|-----------|
| 1. Identified by proper surgical name | | 25 | |
| 2. Spelled instrument name correctly | | 25 | |
| 3. Classified instrument in correct category by use | | 25 | |
| 4. Identified an acceptable surgical procedure | | 25 | |
| TOTAL POINTS -- PROCEDURE X | | 100 | |

NOTE: A clarification statement and function is provided in each instrument category to assist with instrument identification. Since nomenclature for surgical instrument is not standardized, instruments classification will be selected from the textbook, Berry & Kohn's Operating Room Techniques, latest edition, by Lucy Atkinson. Instruments for Procedure X will be selected from the textbook, Surgical Instrument: A Pocket Guide, by M.P. Wells.

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SOURCE LIST - SURGICAL INSTRUMENTS A SAMPLE LIST ONLY

Instrument selection will be 15 basic instruments plus 10 specialty instruments from orthopedics, cardiovascular, gynecology, or thoracic.

Cutting/Dissecting

Function: To use a sharp edge to incise, excise and dissect tissues.

Scalpel/knife handles #3-4-7 and blades #10, 11, 12, 15, 20

Mayo scissors, straight

Mayo scissors, curved

Metzenbaum scissors

Suture scissors

Uterine curette, sharp

Uterine curette, dull

Gaylor biopsy punch

Wire scissors

Iris scissors

Suturing/Stapling

Function: To grasp and hold a curved needle or a preassembled or unassembled stapling device.

Needle holder

Ligature carrier

Heaney needle holder

Castroviejo needle holder

Ligaclip applier (Ethicon-Weck)

GIA stapler

LDS stapler

EEA stapler

TA stapler

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SOURCE LIST - SURGICAL INSTRUMENTS

Clamping/Occluding

Function: To apply crushing or noncrushing pressure by occlusion and clamping to provide hemostasis

Crile, straight

Crile, curved

Rankin, Schmidt Rochester-Pean, curved or straight

Rochester-Ochsner or Kocher, curved or straight

Mosquito, curved or straight

Lahey gall duct forceps

Right angle gallbladder forceps

Heaney hysterectomy forceps

Cottle double end Lauer, Guthrie hook

Rochester-Ochsner hysterectomy forceps

Pennington

Payr pylorus clamp

Kelly

Schmidt, Tonsil, or Adson

Holding/Grasping

Function: To grasp and hold without injury to surrounding tissues.

Tissue forceps with teeth

Tissue forceps without teeth

Russian forceps

Adson with and without teeth

Sponge forceps

Towel clamp

Allis forceps

Babcock forceps

Kidney stone forceps

Jacobs vulsellum

Uterine tenaculum

Singley dressing forceps

Ferris-Smith tissue forceps

Allis-Adair forceps

Potts-Smith tissue forceps

Cushing bayonet forceps

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SOURCE LIST - SURGICAL INSTRUMENTS

Exposing/Retracting

Function: To pull aside muscles, tissues, and structures for operative exposure.

Malleable, Ribbon

- Cushing, Sach's Vein
- Parker, Parker-Bard
- Army-Navy
- Richardson
- Volkman
- Deaver
- Balfour, self retaining with blades
- Weitlander
- Harrington
- Auvard speculum
- Green
- O'Sullivan-O'Connor
- Hollman-Cobra
- Mouth gag
- Goelet
- Senn
- Sims
- Gelpi
- Duckbill, Pederson, Graves speculum

Dilating/Probing

Function: To dilate, enlarge, probe, or explore

Bake dilator

- Probe/Probe dilator
- Hanks dilator
- Hegar dilator
- Sim's uterine sound
- Bowman lacrimal probe

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SOURCE LIST - SURGICAL INSTRUMENTS

Accessory Equipment/Supplies

Function: To be used in conjunction with or in addition to basic or specialty equipment, instruments, or supplies.

Cherry dissectors
Screwdriver
Mallet
Groove director
Electrocautery handle (active electrode)
Electrocautery ground plate
Asepto syringe
Kitners
Cottonoids

Suctioning/Aspirating Drains/Catheters

Function: To mechanically or manually remove fluid or irrigation fluid.

Foley
Malecot
Mushroom or Pezzer
T-tube
Penrose
Cholangiography catheter
Jackson-Pratt
Hemovac drain
Urethral catheter
Poole abdominal tip suction
Ferguson-Frazier tip
Yankauer tonsil tip
Trocac
Cannula
Aspirating tube
Autotransfusion double lumen tip

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SURGICAL INSTRUMENT IDENTIFICATION (Procedure X)

| | Surgical Name of Instrument | Correct Spelling | Correct of Use | Category Procedure | Surgical Points | Total |
|-----|--------------------------------|---------------------|-------------------|-----------------------|--------------------|---------|
| 1. | | | | | | 1 2 3 4 |
| 2. | | | | | | 1 2 3 4 |
| 3. | | | | | | 1 2 3 4 |
| 4. | | | | | | 1 2 3 4 |
| 5. | | | | | | 1 2 3 4 |
| 6. | | | | | | 1 2 3 4 |
| 7. | | | | | | 1 2 3 4 |
| 8. | | | | | | 1 2 3 4 |
| 9. | | | | | | 1 2 3 4 |
| 10. | | | | | | 1 2 3 4 |
| 11. | | | | | | 1 2 3 4 |
| 12. | | | | | | 1 2 3 4 |
| 13. | | | | | | 1 2 3 4 |
| 14. | | | | | | 1 2 3 4 |
| 15. | | | | | | 1 2 3 4 |
| 16. | | | | | | 1 2 3 4 |
| 17. | | | | | | 1 2 3 4 |
| 18. | | | | | | 1 2 3 4 |
| 19. | | | | | | 1 2 3 4 |
| 20. | | | | | | 1 2 3 4 |
| 21. | | | | | | 1 2 3 4 |
| 22. | | | | | | 1 2 3 4 |
| 23. | | | | | | 1 2 3 4 |
| 24. | | | | | | 1 2 3 4 |
| 25. | | | | | | 1 2 3 4 |
| | | | | | TOTAL | |