New York State Education Department
Career and Technical Education

Health Sciences Program
Facilities and Equipment Guide
April 1, 2021

FOREWORD

The basic goals of career and technical education (CTE) stress broad, transferable skills that focus on problem solving and decision making, while maintaining traditional elements of hands-on learning, connections with business and industry, and preparation for post-secondary education or employment. Successful career and technical education programs depend on facilities and equipment related to that which is currently used in business and industry.

Consideration should be given to new and emerging technologies when planning and delivering high quality programs. Facilities and equipment are needed that will assist in teaching both broad transferable skills and required industry specific competencies to best prepare students for employment or pursuit of further education in health sciences careers.

The following pages present recommendations concerning the type of equipment and facilities that will support instruction in Health Sciences Education programs.

Table of Contents

Page

Introduction 4

Health Sciences Education Core 5

Dental Chairside Assisting 6

Dental Laboratory Technology 8

Emergency Medical Services (EMS) 10

Home Health Aide 11

Medical Assisting 13

Medical Laboratory Technology 15

Nurse Assisting (Nurse Aide) 17

Pharmacy Assisting 19

Physical Therapy Aide 21

Sterile Processing Technician 22

Vision Care Technology 23

Introduction

Administrators, supervisors, and teachers using this guide for program planning and development must consider the new technologies, which may require some adjustment of the materials and equipment listed, in order to meet the diverse needs of the students as they prepare for the requirements of future health sciences careers.

Upon acquiring new equipment and facilities, program planners should review and incorporate installation and program operation procedures to meet all requirements and regulations relating to the safe use of equipment and facilities by students and staff. Sources such as the Federal Occupational Safety and Health Act (OSHA), local fire codes, and room occupancy limits should be consulted for detailed information. Equipment must be modified for students with disabilities as required by the Americans with Disabilities Act (ADA).

In consideration of program budget and enrollment, the following are recommendations for minimum space and equipment needed in the Health Sciences Education classroom and laboratory settings:

- Required classroom and laboratory areas for various health sciences education programs should be physically situated to allow effective instruction and efficient utilization of space, while providing adequate storage and sharing of equipment and resources.
- Health sciences education programs inclusive of health sciences core require a conveniently located sink with running hot and cold water with hand controls for turning water on and off for the purpose of handwashing and other procedures.

Health Sciences Education Core

Classroom and Laboratory:

The facility space must be appropriate and have a training area which has:

- access to fire extinguisher and automated external defibrillator (AED)
- adequate room size for the reported class size
- educational technology tools (e.g., computers, audiovisual equipment)
- lighting and ventilation
- privacy shades, blinds/curtains
- sink with running hot and cold water with hand controls for turning water on and off
- storage for equipment, supplies and records
- sufficient number and placement of electrical outlets
- tables, desks, and chairs
- wall clock (24 hour/military time with second hand)

Equipment and Supplies:

- Anatomical mannequins (baby, child, adult)
- Anatomical models of skeletons, body parts and organs
- Bandages, slings and first aid supplies
- Computer software resources (e.g., Electronic Health Records/Electronic Medical Records)
- Oxygen cylinder (simulated is appropriate), transport carrier, and supplies (e.g., nasal cannula, mask)
- Personal Protective Equipment (PPE):
    - Face shields
    - Gloves (latex-free, all sizes)
    - Goggles
    - Gowns/caps/booties
    - Masks
- Resuscitation mannequins (baby, child, adult)
- Soap and towels
- Sphygmomanometers
- Splints and backboards
- Stethoscopes (including a teaching stethoscope)
- Thermometers (non-mercury, oral and rectal)
- Waste receptacle

Dental Chairside Assisting

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

- Air compressor with vacuum system
- Dental chairs and lights
- Dental units with sink and operatory cabinets
- Doctor and assistant stools
- Emergency oxygen unit (simulated is appropriate)
- Multiple 110-volt and 220-volt electrical outlets

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Absorbent tissues
- Amalgam alloy capsules, powder, and dispensers
- Amalgam carriers
- Anesthetic syringes and assorted needles
- Assorted amalgam accessories (wells, wedges)
- Assorted burs and diamond stones with accessories
- Assorted cements
- Autoclave, dry heat sterilizer, and ultrasonic cleaner
- Burnishers
- Cartridges and miscellaneous anesthetic supplies
- Carvers
- Client aprons and towel clips
- Composite accessories
- Complete composite kit (light cured) and composite instruments
- Condensers
- Contra and trophy angles
- Cotton applicators
- First aide and emergency kits
- Glass slabs
- Hand pick (high-speed and straight air drive)
- Headrest covers
- Hydrocolloid conditioner and assorted hydrocolloid accessories and materials
- Light curing unit
- Matrix retainers and bands
- Mixing pads
- Paper cups
- Portable pulp tester
- Tray covers
- Ultrasonic prophylaxis unit
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

X-ray Additional Equipment and Supplies:

- Automatic processing unit with daylight loader
- Dark room safelight and illuminator
- Dark room accessories
- Desktop x-ray viewer
- Film duplicator
- Film hangars
- Head and torso mannequin
- Intensifying screen and cassette
- Intra-oral x-ray unit
- Lead-lined client apron with collar
- Lead-lined film dispenser and receptacle
- Lead shield
- Manual processing tank
- Thermostatic controls
- Timer
- X-ray chair
- X-ray film and accessories

Dental Reception Area:

- Computer system
- Computer billing and scheduling software
- Copy machine
- Filing system
- Office desk and chair
- Telephone system
- Waiting room chairs

Dental Laboratory Technology

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

- Chairs/stools
- Casting, plaster, processing, and polishing benches
- Eye wash station, goggles, and safety gloves (heat, chemical and fire resistant)
- Glazer and porcelain vacuum furnaces
- Hot and cold running water sinks with stone and chemical resistant traps
- Individual workstation benches with; lighting, air, gas, and electrical outlets
- Inlay furnace
- Master shut-off valve and switches for gases and/or electricity
- Multiple 110-volt and 220-volt electrical outlets
- Non-porous and chemical/heat resistant bench tops and flooring
- Porcelain area for oven
- Rubberized floor mats
- Secured and temperature-controlled cabinets
- Shower
- Splash hood with shield

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Abrasive and polishing materials (mandrels, discs, and stones)
- Acrylic tray (powder and liquid)
- Air compressor
- Alginate spatulas
- Articulators
- Assorted broaches
- Assorted gutta percha points
- Assorted laboratory burs
- Assorted resin materials
- Assorted waxes and carvers (double ended)
- Auto chucks
- Boley gauge
- Bunsen burners
- Casting machines
- Chucks with accessories
- Curing units
- Denstone/model stone
- Dust collector
- Electronic microscope
- Endodontic organizer
- Endodontic gauges
- Files and reamers
- Flask press
- Glass bead sterilizer
- Glass measuring graduates

- Gloves (utility)
- Gram weight scale
- Grinders
- Handpiece with foot control
- Irrigation syringes
- Laboratory bench handpiece with a foot rheostat
- Laboratory saw frame with saw
- Laboratory work pans
- Lamps with adjustable arms
- Lathes
- Model formers and model trimmers with shields
- Model plaster
- Paper points
- Paper towels with dispenser
- Plaster and stone bin
- Plaster knives and spatulas
- Plaster trap
- Pluggers and spreaders
- RCT cements
- Restoration/articulation system
- Rubber dam instruments, materials, and accessories (assorted)
- Rubber mixing bowls (assorted)
- Sable hairbrushes (assorted)
- Sandblaster
- Torches
- Ultrasonic cleaner
- Utility cart
- Vacuum forming machine
- Vacuum mixers
- Vacuum spats
- Vacuum pump
- Vibrators (platform and standard types)
- Water bath
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Emergency Medical Services (EMS)

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and that which would be found in acute care/ambulance environment:

- AED (automated External Defibrillator)
- Wheeled stretcher with patient safety straps

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Backboard
- Blood pressure cuff and teaching stethoscope
- Dressing supplies (e.g., hemostatic, open chest seal, gauze, tape, and trauma shears)
- Emesis basin
- Forceps and tweezers
- Gloves (latex-free, sterile, and non-sterile, all sizes)
- IV infusion pumps, supplies and syringes
- Medication (simulated)
- Oxygen supplies and airway equipment – oxygen cylinders (simulated), suction devices, oxygen masks of various sizes, ambu bags and nasopharyngeal airways
- Pen light
- Splinting and immobilization – cervical and other collars, splints, traction devices, and ace wraps
- Suction device and tubing
- Tracheostomy supplies - cannula, inner cannula, trach straps
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Home Health Aide

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

Client Homecare Environment:

- Bed
- Blood pressure cuff and teaching stethoscope
- Cane, walker, and wheelchair
- Hydraulic/mechanical lift
- Kitchen facility (refrigerator, stove, and sink)
- Washer and dryer

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Alcohol wipes
- Bed pan, fracture pan and bedside commode
- Clothing for dressing demonstration
- Comb and brush
- Condom catheter
- Dentures and denture cup
- Doll for baby care and bottle
- Dressing supplies (e.g., gauze, tape, and scissors)
- Drinking Cups (6-8 oz cups and 3-oz cups)
- Elastic compression stockings (TEDS)
- Electric razor, disposable razors, and shaving cream
- Emesis basin
- Empty medication bottle with label
- Eyeglasses
- Gait belt
- Incontinence pads
- Laundry detergent
- Linens - pillows, sheets, towels, and washcloths
- Measuring pitcher/graduate container (not to be urinals, measuring-style cooking cups or metal containers)
- Orange stick/nail file
- Ostomy supplies - skin barrier, sealant, pouch with fastener, adhesive, disc/wafer, and deodorizer
- Paper towels
- Scale for weights - balance, digital
- Slide board
- Snack-size containers of Jell-O-type gelatin, pudding, or applesauce - not expired (for feeding)
- Soap, shampoo, and lotion
- Specimen collection supplies - for urine, sputum, and stool collection
- Straws (individually wrapped), plastic spoons and forks
- Toothbrush and toothpaste
- Tracheostomy care - cannula, inner cannula, trach straps, trach cleaning kit/supplies
- Urinal, urinary catheter, and urinary drainage bag

- Wash basin
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Medical Assisting

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

Medical office reception area:

- Computer billing and scheduling software
- Copy machine
- Filing system
- Office desk and chair
- Telephone system
- Waiting room chairs

Medical office laboratory/utility/examination area:

- Autoclave
- Balanced scales (infant and adult)
- Cautery machine with grounding unit
- Centrifuge (large test tube)
- Gooseneck lamp
- Hemoglobimeter
- Hemolet
- Hematocrit centrifuge and reader
- Incubator (bacteriology)
- Laboratory table with storage drawers and chair/stool
- Laboratory timer or clock
- Linen hamper and utility cart
- Medication cabinet
- Microhematocrit centrifuge and reader
- Microscope with oil immersion lens
- Patient exam table
- Phlebotomy chair
- Portable electrocardiograph (EKG) machine
- Refrigerator
- Storage furniture

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Blood collection tubes and supplies
- Electronic thermometers (oral and rectal)
- Examination instruments
- Forceps
- Glass slides
- Glass beakers
- Glucometer
- Instrument and dressing jars
- Instrument and dressing trays
- Magnifying light
- Moist and dry heat sterilizers
- Otoscope-ophthalmoscope set
- Sedimentation tubes

- Snellen chart
- Specimen collection supplies (e.g., blood, sputum, stool, urine)
- Staining rack and tray
- Suture removal kits
- Syringes and assorted needle sizes
- Urinometer
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Medical Laboratory Technology

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

- Eye wash station, goggles, and safety gloves (heat, chemical and fire resistant)
- Explosion proof cabinet
- Fume hood and exhaust
- Hot air oven
- Individual workstation benches with; lighting, air, gas, and electrical outlets
- Laboratory chairs or stools
- Master shut-off valve and switches for gases and/or electricity
- Multiple 110-volt and 220-volt electrical outlets
- Non-porous and chemical/heat resistant bench tops and flooring
- Phlebotomy chair
- Refrigerator (explosion proof)
- Rubberized floor mats
- Shower
- Storage furniture and utility cart

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Analytical balance
- Assorted pipettes
- Autoclave for pro-time
- Automatic pipet washer
- Blood collection tubes and supplies
- Bunsen burner and striker
- CPR stand
- Centrifuge (large test tube)
- Ceramic ring slide
- Chloride titrator
- Coulter counter
- Erlenmeyer flask
- ESR rack
- Eye dropper
- Flame photometer
- Funnel
- Graduated cylinders and beakers
- Hematocrit centrifuge and reader
- Hemoglobimeter
- Hemolet
- Hot plate
- Incubator (bacteriology)
- Inoculating loops and needles
- Lab coats or aprons
- Laboratory timer or clock
- Laboratory stand and ring clamps

- Magnetic stirrs
- Metric ruler
- Microhematocrit centrifuge and reader
- Microscopes with oil immersion lens
- Microurinometer
- Oxygen supplies –portable tank (simulated) with carrier, nasal cannula, and mask
- PH meter
- Refractometer
- Slide rotator
- Slide viewing box
- Spectrophotometer
- Staining rack
- Tally counter
- Technician autoanalyzer
- Test tubes and stand
- Tongs
- Torsion balance
- Triple beam balance
- Westergren rack
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Nurse Assisting (Nurse Aide)

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

Resident Room Environment:

- Bed - working hospital style:
  - regular mattress (no air mattresses, etc.)
  - height of bed and head of bed must both be able to raise and lower
  - side rails on bed are optional, but preferred
- Bedside cabinet (night stand) - must have 3-drawers or one drawer and 2-shelves (Rubbermaid style/plastic style drawer set suffices if the 2 bottom drawers are of sufficient size to hold basins in middle drawer, and bed pan, graduate container and toilet paper in lower drawer)
- Call light device (designated device does not need to be operational; must be corded but not built into side rail; prefer if cord end secured against back of headboard. Suggested devices to simulate call lights include jump ropes or an old computer mouse.)
- Cane and walker
- Commode chair or toilet
- Hydraulic/mechanical lift
- Liquid soap dispenser and paper towel dispenser at sink for handwashing
- Overbed table – working controls to raise and lower with level surface and wheels to move (minimum of 1 per bed)
- Privacy curtain
- Scale for weight and height measurement
- Side chair
- Soiled linen hamper
- Wheelchair (working and assembled wheelchair with footrests and brakes – standard size; model with swinging and/or removable footrests)

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Basic Supplies:
  - Bath Basin-rectangular (shape necessary for foot care)
  - Bedpans (fracture and regular)
  - Denture and denture container/cup with lid
  - Electric razor, disposable razors, and shaving cream
  - Emesis basin
  - Lotion
  - Shampoo
  - Soap for bathing (liquid soap preferred); soap dish if bar soap used
  - Urinal
- Single Use and Disposable Supplies:
  - Adult briefs
  - Alcohol pads/wipes (individually wrapped)
  - Comb and brush
  - Drinking Cups (6-8 oz cups and 3-oz cups)
  - Emery Boards and orangewood sticks
  - Hand wipes

  - Snack-size containers of Jell-O-type gelatin, pudding, or applesauce - not expired (for resident feeding)
  - Sponge-tip applicators (e.g., Toothettes - individually wrapped)
  - Straws (individually wrapped), plastic spoons and forks
  - Toothbrushes (individually wrapped) and toothpaste
  - Toilet paper, tissues, and napkins
- Linens:
  - Bath blanket or similar item
  - Clothing protectors (bibs)
  - Flat and fitted sheets (must fit mattress size)
  - Hand towels, bath towels and washcloths (washcloths may be disposable)
  - Hospital-style gowns (x-large size)
  - Pillows (minimum 5) and pillowcases
  - Under pads/chux (disposable or reusable protective barriers)
- Clothing: to fit mannequin
  - Long-legged pants (sweatpants) with elastic waist, 2 pair (sized extra-large)
  - Long-sleeved button or snap front shirts, 2 shirts (sized extra-large)
  - Socks (4 pair of **non**-tube socks; socks should have defined/formed heel area)
- Additional items:
  - Clear graduate container marked with cc's/ml's for measuring urine; markings for measurements should display in black for ease of reading (not to be urinals, measuring-style cooking cups or metal containers)
  - Condom catheter
  - Disinfectant spray or wipes (bleach based)
  - Eyeglasses
  - Full-size Mannequin – with female genitalia that allows for catheter insertion; must have moveable joints; mannequins should weigh less than 45 lbs.
  - Gait or transfer belt (2 large)
  - Indwelling catheter, and urinary drainage bag (with irrigation syringe to facilitate filling of urinary drainage bag and small syringe to inflate catheter balloon)
  - Ostomy supplies - skin barrier, sealant, pouch with fastener, adhesive, disc/wafer, and deodorizer
  - Post-mortem kit
  - Specimen collection supplies (for urine, sputum, and stool collection)
  - Yellow food coloring and funnel (for simulated urine)
- Additional supplies and equipment:
  - As would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Pharmacy Assisting

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

- Automatic bottle filling machines and supplies
- Carts and cabinets
- Computer operated dispensing equipment
- Laminar flow hood
- Specific simulation software as related to local industry need

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Alcohol pads
- Beakers
- Blank prescription pads
- Bunny suit for IV rooms
- Cash register
- Compounding slab
- Counting trays
- Forceps
- Funnels
- Glass plates
- Graduate cylinders
- Lab balances (precision and analytical)
- Lab blender
- Lab emulsifier
- Labels
- Measuring cups
- Medication (simulated):
    - Ampules
    - Baking powder
    - Blister packaging
    - Capsules and tablets
    - IV bags
    - Petroleum product
    - Simple syrup
    - Unit dose containers
    - Vials (2 Gram powdered)
    - Vials (13 dram and 16 dram)
- Mortar and pestle
- Mini scale
- Ointment jars
- Oral syringes
- Parchment paper
- Petri dish with agar
- Pharmacy Compounding log book
- Pharmacy dispensing Pseudoephedrine log book
- Prescription bottles
- Reconstitution bottles

- Repackaging labels
- Sharp containers
- Spatula
- Syringes (5 mL and 10 mL)
- Test tubes and stand
- Tube filling machines and supplies
- Tube filling machine counting device, cleaning mechanisms, and tube transfer devices are optional accessories with a tube filling machine
- Weighing boat and paper
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Physical Therapy Aide

Classroom and Laboratory:

The facility space must be adequate for the reported class size and have a training area as per Health Sciences Core (page 5), and:

Office reception area:

- Computer billing and scheduling software
- Copy machine
- Filing system
- Office desk and chair
- Telephone system
- Waiting room chairs

Equipment and Supplies: As per Health Sciences Core (see page 5), and:

- Student exposure to equipment would occur in the clinical setting; hands-on equipment use and patient contact is limited by scope of professional licensure practice
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Sterile Processing Technician

Classroom and Laboratory:

The facility space must be appropriate and have a training area which has:

- access to fire extinguisher and automated external defibrillator (AED)
- adequate room size for the reported class size
- educational technology tools (e.g., computers, audiovisual equipment)
- lighting and ventilation
- sink with running hot and cold water with hand controls for turning water on and off
- storage for equipment, supplies and records
- sufficient number and placement of electrical outlets
- tables, desks, and chairs
- wall clock (24 hour/military time with second hand)

Equipment and Supplies:

- Autoclave
- Decontamination equipment and supplies
- Disposable packaging
- Endoscopy tubing and supplies
- Medical instruments (various samples of reusable items)
- PPE:
  - Gloves
  - Goggles/face shields
  - Gowns
  - Mask
- Sterilization products
- Storage and distribution system for sterilized items
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study

Vision Care Technology

Classroom and Laboratory:

The facility space must be appropriate and have a training area which has:

- access to fire extinguisher and automated external defibrillator (AED)
- adequate room size for the reported class size
- educational technology tools (e.g., computers, audiovisual equipment)
- lighting and ventilation
- sink with running hot and cold water with hand controls for turning water on and off
- storage for equipment, supplies and records
- sufficient number and placement of electrical outlets
- tables, desks, and chairs
- wall clock (24 hour/military time with second hand)

Equipment and Supplies:

- Student exposure to hands-on equipment use and patient contact is limited by scope of professional licensure practice
- Auto groover
- Blocker and mini blocker
- Diamond hand stone
- Digital frame warmer
- Lens Tinting Chemicals
- Lens tint unit
- Manual Lensometers
- Tracer
- Additional supplies and equipment, as would be found in a health care industry and necessary to deliver the skills instruction required by the content specific health sciences programs of study