Students with Documented Learning Disabilities
Reasonable Accommodations: Students with disabilities who require accommodations (academic adjustments and / or auxiliary aids or services) for this course MUST provide documentation for accommodations from the RVCC office of disability Services, C143.
No accommodations will be made without this documentation.
For additional information, go to the Disabilities Services website at http://www.raritanval.edu/studentserv/disabilityhome.html
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<th>Role</th>
<th>Name</th>
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<tbody>
<tr>
<td>Site Coordinator</td>
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<td><a href="https://www.raritanval.edu/academic-programs/academic-departments/health-science">https://www.raritanval.edu/academic-programs/academic-departments/health-science</a></td>
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</table>
| Site Coordinator | Barbara McShane  
bmcshane@ccm.edu  
(973) 328-5735 |
|------------------|------------------|
| Job Developer    | David Choe       
dchoe@ccm.edu    
(973) 328-5189  |
<p>| Health Care Training | <a href="http://catalog.ccm.edu/noncredit/fall/career-professional-programs/health-occupations/tuition-free-healthcare-training/">http://catalog.ccm.edu/noncredit/fall/career-professional-programs/health-occupations/tuition-free-healthcare-training/</a> |
| Healthgrant      | <a href="http://www.ccm.edu/healthgrant">www.ccm.edu/healthgrant</a> |
| EdReady Link:    | <a href="http://www.ccm.edready.org">www.ccm.edready.org</a> |</p>
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<tr>
<td>Site Coordinator</td>
<td>Martha Redondo</td>
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<tr>
<td>Site Coordinator</td>
<td>Scott Shanes</td>
<td><a href="mailto:sshanes@brookdalecc.edu">sshanes@brookdalecc.edu</a></td>
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<td>Greg Menza</td>
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<tr>
<td>Advisor</td>
<td>Danielle Propert</td>
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<tr>
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# Passaic County Community College

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<tbody>
<tr>
<td>Site Coordinator</td>
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<tr>
<td>Passaic County Community College</td>
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<td><a href="http://www.pccc.edu/ce">www.pccc.edu/ce</a></td>
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</table>
### Site Coordinator

**Martin E. Schamberger**  
mschamberger@middlesexcc.edu  
(732) 548-6000 x3813

### Job Developer

**Lina Berman**  
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(732) 548-6000 x3817

### Advisor

**Elliot Fishman**  
efishman@middlesexcc.edu  
(732) 548-6000 x3816

### Continuing Education

https://www.middlesexcc.edu/continuing-education/free-allied-health-training/

### EdReady Link

https://middlesexcc.edready.org/login
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<tbody>
<tr>
<td>Site Coordinator</td>
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Insert an image of front and back of the Career Map – this can be found on Skills Commons

Link for Career Map

https://www.skillscommons.org/handle/taaccct/10349
If doing on line Add screenshots and information for accessing online learning platform that you will use to deploy course.
I AM A FUTURE HEALTH CARE PROFESSIONAL

SMART START AT RVCC – INTRODUCTION TO HEALTH CARE CAREER OPPORTUNITIES
SMART START CLASSES

• INTRODUCTION TO HEALTH CARE CAREERS

• WHO IS THIS CLASS FOR:
  HIGH SCHOOL STUDENT OVER 18 YEARS OF AGE
  UNEMPLOYED INDIVIDUALS
  UNDEREMPLOYED INDIVIDUALS
  INDIVIDUALS INTERESTED IN FIRST AND SECOND CAREERS
PURPOSE OF COURSE

• To provide information on the Health Care arena in the 21st century
• Introduce students to different Health Care careers
• Help student determine if they are interested in a Health Care career path
• Identify required preparation and education for several Health Care professions
• Identify where information on job locations, salary range can be found.
SMART START AT RVCC (DAY ONE)

DAY ONE – WHY SHOULD YOU BECOME A HEALTH CARE PROFESSIONAL?
DAY ONE OBJECTIVES

• Define health care in the 21st century
• Discuss ethical and legal issues in health care
• Define HIPPA
• Discuss specific health care professions
• Discuss how to get started in a health care career
• Discuss search of career opportunities, salaries and probable locations
• Preparation for required education
• Assessment of individual learning style
HEALTH CARE IN THE 21ST CENTURY

• 4.2 MILLION INCREASE IN HEALTH CARE JOBS IS EXPECTED BETWEEN 2010 AND 2020

• 63% OF THOSE INCREASED JOBS WILL BE IN AMBULATORY SETTINGS

LEGAL AND ETHICAL ISSUES

ETHICAL ISSUES

• ACCESS TO CARE

• END OF LIFE ISSUES

• DECISION-MAKING FOR PEDIATRIC AND GERIATRIC PATIENTS

• PATIENT WELFARE

LEGAL ISSUES

• MALPRACTICE

• INFORMED CONSENT

• PATIENT CONFIDENTIALITY

• HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT - HIPAA
WHAT IS HIPAA?

HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT (HIPAA)

- Protects patient confidentiality
- Helps patients maintain health insurance
- Protects the confidentiality of patient health information
HEALTH CARE PROFESSIONS

- ATHLETIC TRAINER*
- CARDIOVASCULAR TECHNOLOGIST
- CERTIFIED NURSING ASSISTANT*
- CLINICAL CODER/MEDICAL CODER*
- DENTAL ASSISTANT*/HYGIENIST
- EKG TECHNICIAN*
- EMT/PARAMEDIC
- HEALTH INFORMATION TECHNOLOGIST*
- LANGUAGE INTERPRETOR
- MEDICAL ASSISTANT*

- NURSE – RN*/LPN
- NUTRITIONIST
- OCCUPATIONAL/PHYSICAL THERAPIST
- OPHTHALMIC TECHNICIAN*
- PHARMACY TECHNICIAN*
- PHLEBOTOMIST*
- RADIOGRAPHER
- RESPIRATORY THERAPIST
- SONOGRAPHER
- SURGICAL TECHNICIAN
- THERAPIST

* COURSES/PROGRAMS CURRENTLY OFFERED AT RVCC
PROFESSIONAL ASSOCIATIONS AND WEBSITES

• Dental Hygienist - http://www.adha.org
• EKG Technician – http://www.CAAHEP.org
• EMT - http://www.nremt.org
• EMT/Paramedic - http://www.paramedicemttraining.com
• Language Interpretation - http://ccie-accreditation.org
• Medical Assistant – http://www.bls.gov/ooh/healthcare/medical-assistants.htm

• New Jersey Board of Nursing - www.state.nj.us/oag/ca/medical/nursing.htm
• National League for Nursing - www.nln.org
• Occupational Therapy – www.acote.org
• American Association of Respiratory Care – www.aarc.org
• Association of Surgical Technologists – http://www.ast.org
GETTING STARTED

WHAT INFORMATION DO I NEED?

• Career Opportunities
• Job locations
• Salary Ranges
• Required education

WHERE TO LOOK FOR INFORMATION? – LOCATED ON RVCC LION’S DEN
ADD RESOURCES

• Add resources that your college uses for career services and career planning that students may want to visit.
WHO WILL BE MY CLIENTS?

What Do You See When You Look At Me Nurse

www.youtube.com/watch?v=LOtNdn_GsMc

"IF WE COULD SEE INSIDE OTHERS' HEARTS": LIFE, in 4 min

https://www.youtube.com/watch?v=VI2_klnv_xw
WHAT IS MY LEARNING STYLE?

• Auditory Learner

• Visual Learner

• Kinesthetic Learner

• Take a free learning style inventory at Pennsylvania State University
  http://www.personal.psu.edu/bxb11/LSI/LSI.htm
SMART START AT RVCC (DAY TWO)

DAY TWO – PROFESSIONALISM AND INTRODUCTION TO THE LANGUAGE OF MEDICINE
DAY TWO OBJECTIVES

- Define professionalism
- Discuss transition from student to employee
  Resume writing, Job interview
- Discuss components of EXCELLENT customer service
  Accountability, Attitude, Reliability, Verbal and Written Communication
- Introduce medical terminology
  Medical Terms, Acceptable Abbreviations, Body Systems
- Demonstrate use of the military clock
PROFESSIONALISM – WHAT IS IT?

• Definitions

• Components of Professions

• Professional Requirements
WHAT IS A PROFESSIONAL TO YOU?

• List characteristics that you have observed in the past?
TRANSITIONAL ROLE FROM STUDENT TO PROFESSIONAL
TRANSITION FROM STUDENT TO EMPLOYEE

- Students & Teachers
- New Grad, New Experience/Specialty & Preceptor/Mentor
- Experienced Nurse & New/Grad, New Staff
KEYS TO SUCCESS FOR NEW HEALTHCARE PROFESSIONALS

• CRITICAL THINKING SKILLS
• PROBLEM-SOLVING SKILLS
• PRIORITIZATION
• MOTIVATION
• TEAM WORK, SENSE OF COMMUNITY
SUCCESS ON LICENSING AND CERTIFICATION EXAMS

• STUDY, STUDY, STUDY
• EVALUATE YOUR LEARNING AND STUDY STYLES
• ENROLL IN A REVIEW COURSE IF AVAILABLE
• PRACTICE QUESTIONS
• PREPARE PHYSICALLY AND MENTALLY FOR EXAM (Rest, Sleep, Food)
GETTING THE JOB

• THE RESUME
• PRE-INTERVIEW, DO YOUR HOMEWORK
• THE INTERVIEW
• DRESS CODE AND BEHAVIOR
• POST-INTERVIEW
IS THIS THE JOB FOR ME?

- URBAN vs. RURAL, INNER CITY vs. COMMUNITY HOSPITAL
- CLINICS, PHYSICIAN’S OFFICES, LABORATORIES, SCHOOLS
- AVAILABLE POSITIONS, VARIED PRACTICE SETTINGS
- ORIENTATION
- COMPENSATION, BENEFITS
- TRAVEL DISTANCE AND TIME
KEEP GROWING!

- CONTINUING EDUCATION, JOURNALS, CONVENTIONS, SEMINARS, WORKSHOPS
- SPECIALTY CERTIFICATIONS
- HIGHER EDUCATION INSTITUTIONS AND PROGRAMS
- PROFESSIONAL ASSOCIATIONS
- SHARING WITH COLLEAGUES
- NEW AND ONGOING RESEARCH
GOALS

• WHERE DO I SEE MYSELF IN ….

1 YEAR?

5 YEARS?

10 YEARS?
MOLD YOUR CAREERS!

• Transition from Student to Health Care Professional is challenging and often has many steps along the way…

• … Face change head on with a clear, focused plan ….

• Go forth and mold your careers and your life!
ADD RESOURCE

• Insert Networking session PowerPoint ‘Writing the Effective Resume.’ This can be found on Skills Commons

• Link: https://www.skillscommons.org/handle/taaccct/8715
QUESTIONS & ANSWERS
ADD RESOURCES (PG. 2)

• Insert the Slides and presentation materials on “6 Secrets to Writing a Great Cover Letter which can be found on Skills Commons

• Link: https://www.skillscommons.org/handle/taacct/8601
SMART START AT RVCC (CUSTOMER SERVICE)
COMPONENTS OF CUSTOMER SERVICE

• Accountability
• Reliability
• Verbal and Written Communication
• https://www.youtube.com/watch?v=y2Z4OEhufTQ
• https://www.youtube.com/watch?v=W1RY_72O_LQ
• Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
• https://www.youtube.com/watch?v=0jPkJ6CtK360
• Exercise: Can you give an example of good customer service?
COMMUNICATION EXERCISE

• Reflection Exercise: Think about a time you misinterpreted communication. Think about how easy and common it is to misinterpret messages. Think also of times when you have said – “Well, had I known that, I would have …?” This is a classic example of gaps in communication.
CONFLICT RESOLUTION

• Assertive vs. Aggressive behavior

• Cool down before discussing conflict with those involved

• Use assertive communication to discuss the issue, problem-solve and strive for a win-win solution
CULTURE IS ...

- Culture
- Culture and Health Care
SMART START AT RVCC

INTRODUCTION TO MEDICAL TERMINOLOGY
MEDICAL TERMINOLOGY

- WORD PARTS
- MEANINGS
- MEDICAL DICTIONARY
- PRONUNCIATION
- SPELLING
- ABBREVIATIONS
WORD ANALYSIS

• PREFIXES

• WORD ROOTS/COMBINING FORM

• SUFFIXES
WHEN ANALYZING WORDS...

• BEGIN AT THE END

• LOOK AT THE WORD PARTS IN THIS ORDER:
  1. SUFFIX
  2. PREFIX
  3. ROOT(S)
SUFFIXES

UNIT(S) OF MEANING ATTACHED TO THE END OF WORD THAT CHANGE THE MEANING OF A WORD OR CREATE A NEW WORD
SUFFIXES THAT CHANGE A ROOT WORD TO A NOUN

- **-CIDE** killer
- **-GEN** production of
- **-ICIAN** one charged with
- **-IST** skilled in
- **-METER** measure
- **-PHYLAXIS** protection
SUFFIXES THAT CHANGES A ROOT WORD TO AN ADJECTIVE

- **-AC, -IC, -ARY, -AL, -ACY** pertaining to
- **-AD** toward, in direction of
- **-AN** pertaining to, belonging to
- **-AR** of, related to, pertaining to
- **-ILE** capable of, having qualities of
- **-IOUS** capable of, causing
- **-OID** like
SUFFIXES THAT DENOTES A DISEASE PROCESS

- **AGRA** severe pain
- **ALGIA** pain
- **ATRESIS** abnormal closure
- **CELE** swelling, bulging, tumor
- **CHEZIA, CHESIA** discharge of foreign substance
- **DYNIA** pain
- **EMA** swelling, distention
MORE SUFFIXES THAT DENOTES A DISEASE PROCESS

- **-IA, -IASIS**  
  disease, condition

- **-ITIS**  
  inflammation

- **-PATHY**  
  suffering, disease

- **-PENIA**  
  deficiency

- **-RRHAGE, -RRHAGIA**  
  bursting forth

- **-RRHEA**  
  flow, discharge
SUFFIXES THAT INDICATES A SURGICAL OR DIAGNOSTIC PROCEDURE

- **-CENTESIS** puncture of cavity
- **-CIS** cut
- **-CLASTIC** breaking
- **-CLEISIS** closure
- **-DESIS** binding, fusion
- **-ECTOMY** excision, cutting out
- **-OSTOMY** creation of a mouth or opening
- **-OTOMY** cutting into
- **-TRIPSY** rubbing, crushing
Suffixes that indicates smallest

- **-culus, -culum, -cule, -ole, -olus** indicates the smallest
NOT TRUE SUFFIXES... BUT CHANGE THE MEANING OF THE WORD

- **CHEMICAL COMPOUNDS:**
  - **ASE** enzyme
  - **ATE** salt made from an acid

- **DENOTING A CONDITION**
  - **FUL** full of
  - **ID** condition
  - **NESS** state of being
  - **OSIS** condition
PLURALS/PLURALS OF NOUNS

- SINGULAR
  -A
  -EN
  -EX
  -OS or -US
  -ON or -UM

- PLURAL
  -AE
  -INA
  -ICES
  -I
  -ES or -A
PREFIXES

UNIT(S) OF MEANING ATTACHED TO THE FRONT OF A WORD THAT CAN CHANGE THE MEANING OF THE WORD OR CREATE A NEW WORD
PREFIXES - RELATED TO POSITION REGARDING TIME AND PLACE

- **ANA-** up, back again
- **ANTE-** before
- **NOCT(I)-** night
- **PRIM-** first
- **TER(T)-** third
PREFIXES - DESCRIBING POSITION OR LOCATION

- **ACRO-** extremity, tip
- **CIRCUM-** around
- **CONTRA-** opposite, against
- **JUXTA-** near
- **MEDI-, MESO-** middle
PREFIXES - RELATED TO TYPE

- **BRADY**- slow
- **TACHY**- fast
- **MAL**- bad
- **PATH(O)**- disease, suffering
PREFIXES - DESCRIBING DIRECTION

• **AB**- away
• **AD**- to, toward
• **DEXTRO**- right
• **LEVO**- left
• **PRO**- forward, anterior
• **RETRO**- behind, backward
PREFIXES - DESCRIBING NUMBER AND QUANTITY

- **BI-**  two
- **AMBI-, AMPHI-**  both
- **DEMI-, HEMI-**  one-half
- **MONO-**  one
- **PAN-**  all
- **POLY-**  many
PREFIXES - RELATED TO SIZE AND AMOUNT

- **AN-,A-** none
- **ANIS(E)-** unequal
- **MACRO-**, **MEGA-** large
- **MICRO-** small
- **OLIGO-** scant
PREFIXES - DENOTING COLOR

- **ALBA-**, **LEUKO**- white
- **CHLORO**- green
- **CHROMO**- color
- **CYANO**- blue
- **ERYTHRO-**, **RUBE**- red
- **LUTE-**, **XANTHO**- yellow
- **MELANO-**, **NIGRO**- black
DENOTING SHAPE

- **ORTHO-** straight
- **PLATY-, EURY-** broad, flat
- **PACHY-** thick
PREFIXES - DENOTING #'S IN ASCENDING ORDER

- **MONO**- one
- **BI**- two
- **TRI**- three
WORD ROOTS/COMBINING FORMS

• WORD ROOT(S) - Foundation of word’s meaning, can sometimes stand by itself as a separate word

• COMBINING VOWELS - A vowel added to the end of the root

• COMBINING FORMS – The root(s) and combining vowel together
IDENTIFICATION AND SPELLING OF MEDICAL WORDS

• IF THE SUFFIX BEGINS WITH A VOWEL, DROP THE COMBINING VOWEL AND ADD THE SUFFIX

• IF THE SUFFIX BEGINS WITH A CONSONANT, KEEP THE COMBINING VOWEL AND ADD THE SUFFIX

• KEEP THE COMBINING VOWEL BETWEEN TWO OR MORE WORD ROOTS
MEDICAL TERMINOLOGY HINTS

• PREFIXES AND SUFFIXES – Many have multiple meanings.
• SPELLING – Words of Greek origin can be difficult to spell because of silent letters
• IMPORTANCE OF CORRECT SPELLING – An addition or omission of letter(s) can change the meaning of the word
SMART START AT RVCC (A&P)

ANATOMY AND PHYSIOLOGY
ANATOMY AND PHYSIOLOGY

• ANATOMY:
  Study of body structures and their organization

• PHYSIOLOGY:
  Study of the processes and functions of the body
ORGANIZATION OF STRUCTURES

- ORGANISM
- CELLS
- TISSUES
- ORGANS
- SYSTEMS
LOCATIONAL TERMS

- POSITIONAL AND DIRECTIONAL TERMS
- PLANES OF THE BODY
- QUADRANTS AND REGIONS
POSITIONAL AND DIRECTIONAL TERMS

- SUPINE/PRONE
- LATERAL
- SUPERIOR/INFERIOR
- ANTERIOR/POSTERIOR
- MEDIAL
- PROXIMAL/DISTAL
- SUPERFICIAL/DEEP
BODY PLANES

- FRONTAL
- SAGITTAL
- TRANSVERSE
QUADRANTS AND REGIONS

• RIGHT UPPER QUADRANT
• LEFT UPPER QUADRANT
• RIGHT LOWER QUADRANT
• LEFT LOWER QUADRANT
• NINE REGIONS – RIGHT AND LEFT HYPOCHONDRIAC, EPIGASTRIC, RIGHT AND LEFT LUMBAR, UMBILICAL, RIGHT AND LEFT INGUINAL, HYPOGASTRIC
BODY CAVITIES

- **DORSAL CAVITY** – cranial and spinal cavity
- **VENTRAL CAVITY** – body organs, peritoneum
CYTOLOGY

- CELL STRUCTURE
- GENETICS
- GENETIC DISORDERS
- GENETIC COUNSELING
- CONGENITAL DISORDERS
HISTOLOGY

- STEM CELLS

- TISSUES – epithelial, connective, muscle and nerve

- TISSUE FORMATION – aplasia, hypoplasia, hyperplasia, dysplasia, anaplasia
PATHOLOGY

• TYPES OF DISEASES

• DISEASE TRANSMISSION

• OUTBREAK OF DISEASES
MAJOR BODY SYSTEMS

- SKELETAL
- MUSCULAR
- CARDIOVASCULAR
- RESPIRATORY
- LYMPHATIC AND IMMUNE
- DIGESTIVE

- URINARY
- NERVOUS
- INTEGUMENTARY
- ENDOCRINE
- REPRODUCTIVE
SMART START AT RVCC (DAY 3)

DAY THREE – TECHNOLOGY IN HEALTHCARE AND MEDICAL MATHEMATICS
• Discuss the role of technology in health care
  Electronic Health Records, portals, medical equipment, research
• Discuss safety principles of medication administration
• Discuss the concept of polypharmacy
• Identify pertinent information on medication labels
• Utilize medical math calculations to determine correct medication doses
• Discuss common medication interactions and potential side effects
ROLE OF TECHNOLOGY

- ELECTRONIC HEALTH RECORDS
- HEALTH INFORMATION PORTALS
- MEDICAL EQUIPMENT – ELECTRONIC THERMOMETERS, BLOOD PRESSURE MACHINES, TELEPHONIC MEDICINE, MONITORS, DAVINCI ROBOTIC SURGERY
MEDICATION ADMINISTRATION
PRINCIPLES

• Right patient
• Right medication
• Right dose
• Right route
• Right time
• Right documentation
ORAL ROUTE OF MEDICATION ADMINISTRATION

ADVANTAGES OF ORAL ROUTE

• Easy
• Most common method
• Many choices
• retrievable
• Less Anxiety
• No Pain
• No Break in the Skin

DISADVANTAGES OF ORAL ROUTE

• Requires the patient participate
• Slower onset
• Prolonged effect
• Potential drug to drug or drug to food reactions
• Aspiration Risk
• GI Irritation
ORAL MEDICATIONS

- ASSESS patient’s ability to swallow safely
- Plan: expected outcomes, crush or not, needs of patient, equipment, position, education
- Implement: gather equipment, position, educate,
- Evaluate: knowledge, side effects, effects,
CASE STUDY

• An 83 year old patient given Cardizem CD. The capsule was too large to swallow so the patient chewed it. She became weak, bradycardic and died!!!!!! WHY?

• What is polypharmacy? How would this impact on the 83 year old patient above?
**Drug Facts**

**Active ingredient (in each tablet)**
Chlorpheniramine maleate 2 mg

**Purpose**
Antihistamine

**Uses**
temporarily relieves these symptoms due to hay fever or other upper respiratory allergies:
- sneezing
- runny nose
- itchy, watery eyes
- itchy throat

**Warnings**

Ask a doctor before use if you have
- glaucoma
- a breathing problem such as emphysema or chronic bronchitis
- trouble urinating due to an enlarged prostate gland

Ask a doctor or pharmacist before use if you are taking tranquilizers or sedatives

**When using this product**
- You may get drowsy
- avoid alcoholic drinks
- alcohol, sedatives, and tranquilizers may increase drowsiness
- be careful when driving a motor vehicle or operating machinery
- excitability may occur, especially in children

If pregnant or breast-feeding, ask a health professional before use.

Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away.

**Directions**

| Adults and children 12 years and over | take 2 tablets every 4 to 6 hours; not more than 12 tablets in 24 hours |
| children 6 years to under 12 years | take 1 tablet every 4 to 6 hours; not more than 6 tablets in 24 hours |
| children under 6 years | ask a doctor |

**Other information**
- store at 20-25° C (68-77° F)
- protect from excessive moisture

**Inactive ingredients**
- D&C yellow no. 10, lactose, magnesium stearate, microcrystalline cellulose, pregelatinized starch

Look at this Over-the-Counter medication label

Find the specific uses of this medication.

What are the potential side effects?

How frequently should this medication be taken?

What is the correct dose for children 6-12 years old?

What does the *Warnings* mean?

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient’s dose is 40 mg. On hand are 20 mg tablets. How many tablet(s) should the patient receive?</td>
<td></td>
</tr>
<tr>
<td>Patient’s dose is 20 mg. On hand is medication 40 mg in 5 mL. How many mL should the patient receive?</td>
<td></td>
</tr>
<tr>
<td>Patient’s dose is 5 mg. On hand are 10 mg tablets. How many tablets should the patient receive?</td>
<td></td>
</tr>
<tr>
<td>2 grams = ? mg</td>
<td></td>
</tr>
<tr>
<td>Patient’s dose is 30 mg. On hand are 10 mg tablets. How many tablet(s) should the patient receive?</td>
<td></td>
</tr>
<tr>
<td>Patient’s dose is 750 mg. On hand is 250 mg tablets. How many tablet(s) should the patient receive?</td>
<td></td>
</tr>
</tbody>
</table>

**Show All Your Work And Circle Your Answers.**

**Name ________________________________      Date ____________**
7. Patient's dose is 50 mg. On hand are 20 mg tablets. How many tablet(s) should the patient receive?

8. Patient's dose is 75 mg. On hand are 25 mg tablets. How many tablet(s) should the patient receive?

9. 300 mg = ? Grams

10. 500 mg = ? Grams
MEDICAL MATH CALCULATIONS

SEE HANDOUTS FOR MATH QUESTIONS TO SOLVE
MEDICAL MATH CALCULATIONS
– CONVERSIONS AND FORMULA

• CONVERSIONS

<table>
<thead>
<tr>
<th>1 gram (g) = 1000 milligrams (mg)</th>
<th>1 kilogram (kg) = 1000 grams (g)</th>
<th>1 kilogram (kg) = 2.2 pounds (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 teaspoon (tsp) = 5 milliliters (mL)</td>
<td>1 tablespoon (tbsp) = 15 milliliters (mL)</td>
<td>1 tbsp = 3 tsp</td>
</tr>
<tr>
<td>1 ounce (oz) = 30 mL</td>
<td>12 oz = 360 mL</td>
<td>1 cup = 8 oz = 240 mL</td>
</tr>
</tbody>
</table>

• FORMULA

\[ D \text{ (dose desired)} \times \text{Quantity} = \text{amount to give} \]

\[ H \text{ (what on hand)} \]
Use this link to access the Measure Conversion Chart for Weight (UK)


### MEASURE CONVERSION CHART – WEIGHT (UK)

Please note, long tons are used in the UK, short tons are used in the US.

#### METRIC CONVERSIONS

<table>
<thead>
<tr>
<th>Metric</th>
<th>Imperial</th>
<th>1 ton long</th>
<th>1 ton short</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 gram</td>
<td>1000 milligrams</td>
<td>1 gram = 1000 mg</td>
<td>1 gram = 1000 mg</td>
</tr>
<tr>
<td>1 kilogram</td>
<td>1000 grams</td>
<td>1 kg = 1000 g</td>
<td>1 kg = 1000 g</td>
</tr>
<tr>
<td>1 tonne (1 megagram)</td>
<td>1000 kilograms</td>
<td>1 tonne (1 Mg) = 1000 kg</td>
<td>1 tonne (1 Mg) = 1000 kg</td>
</tr>
</tbody>
</table>

#### IMPERIAL CONVERSIONS

<table>
<thead>
<tr>
<th>Imperial</th>
<th>Metric</th>
<th>1 ton long</th>
<th>1 ton short</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ounce</td>
<td>16 drams</td>
<td>1 oz = 16 dr</td>
<td>1 oz = 16 dr</td>
</tr>
<tr>
<td>1 pound</td>
<td>16 ounces</td>
<td>1 lb = 16 oz</td>
<td>1 lb = 16 oz</td>
</tr>
<tr>
<td>1 stone</td>
<td>14 pounds</td>
<td>1 st = 14 lb</td>
<td>1 st = 14 lb</td>
</tr>
<tr>
<td>1 quarter</td>
<td>2 stone</td>
<td>1 qr = 2 st</td>
<td>1 qr = 2 st</td>
</tr>
<tr>
<td>1 hundredweight</td>
<td>4 quarters (or 8 stone)</td>
<td>1 cwt = 4 qr (or 8 st)</td>
<td>1 cwt = 4 qr (or 8 st)</td>
</tr>
<tr>
<td>1 ton, long</td>
<td>20 hundredweight (160 stone)</td>
<td>1 ton = 20 cwt (or 160 st)</td>
<td>1 ton = 20 cwt (or 160 st)</td>
</tr>
</tbody>
</table>

#### METRIC -> IMPERIAL CONVERSIONS

<table>
<thead>
<tr>
<th>Metric</th>
<th>Imperial</th>
<th>1 ton long</th>
<th>1 ton short</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 gram</td>
<td>0.035274 ounces</td>
<td>1 g = 0.035274 oz</td>
<td>1 g = 0.035274 oz</td>
</tr>
<tr>
<td>1 kilogram</td>
<td>2.20462 pounds</td>
<td>1 kg = 2.20462 lb</td>
<td>1 kg = 2.20462 lb</td>
</tr>
<tr>
<td>1 kilogram</td>
<td>35.27396 ounces</td>
<td>1 kg = 35.27396 oz</td>
<td>1 kg = 35.27396 oz</td>
</tr>
<tr>
<td>1 tonne</td>
<td>0.9842 ton, long</td>
<td>1 tonne = 0.9842 ton, long</td>
<td>1 tonne = 0.9842 ton, long</td>
</tr>
<tr>
<td>1 tonne</td>
<td>157.47304 stone</td>
<td>1 tonne = 157.47304 st</td>
<td>1 tonne = 157.47304 st</td>
</tr>
</tbody>
</table>

#### IMPERIAL -> METRIC CONVERSIONS

<table>
<thead>
<tr>
<th>Imperial</th>
<th>Metric</th>
<th>1 ton long</th>
<th>1 ton short</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ounce</td>
<td>28.34952 grams,</td>
<td>1 oz = 28.34952 g</td>
<td>1 oz = 28.34952 g</td>
</tr>
<tr>
<td>1 pound</td>
<td>453.59237 grams</td>
<td>1 lb = 453.59237 g</td>
<td>1 lb = 453.59237 g</td>
</tr>
<tr>
<td>1 pound</td>
<td>0.45359 kilograms</td>
<td>1 lb = 0.45359 kg</td>
<td>1 lb = 0.45359 kg</td>
</tr>
<tr>
<td>1 stone</td>
<td>6.35029 kilograms</td>
<td>1 st = 6.35029 kg</td>
<td>1 st = 6.35029 kg</td>
</tr>
<tr>
<td>1 hundredweight</td>
<td>50.8023 kilograms</td>
<td>1 cwt = 50.8023 kg</td>
<td>1 cwt = 50.8023 kg</td>
</tr>
<tr>
<td>1 ton, long</td>
<td>1.01605 tonnes</td>
<td>1 ton, long = 1.01605 tonnes</td>
<td>1 ton, long = 1.01605 tonnes</td>
</tr>
<tr>
<td>1 ton, short</td>
<td>0.90718 tonnes</td>
<td>1 ton, short = 0.90718 tonnes</td>
<td>1 ton, short = 0.90718 tonnes</td>
</tr>
</tbody>
</table>
COMMON MEDICATION INTERACTIONS AND SIDE EFFECTS

COMMON INTERACTIONS

• DRUG – DRUG INTERACTIONS
• DRUG-FOOD/BEVERAGE INTERACTIONS
• DRUG-CONDITIONS

COMMON SIDE EFFECTS

• ALLERGIC REACTION – ITCHING, RASH, ANAPHYLACTIC SHOCK
• BLEEDING
• NAUSEA AND VOMITING
• DIARRHEA, CONSTIPATION

http://www.fda.gov/Drugs/ResourcesForYou/ucm163354.htm
http://www.webmd.com/a-to-z-guides/drug-side-effects-explained
SMART START AT RVCC (DAY 4)

DAY FOUR – PATIENT SAFETY, INFECTION CONTROL AND CLINICAL COMPETENCIES
DAY FOUR OBJECTIVES

• Define Infection Control and Infection Control procedures
• Discuss Patient Safety and the Joint Commission’s National Patient Safety Goals
• Demonstration and correct Return Demonstration of specific clinical competencies
  Handwashing, Application, Removal and Disposal of PPE, Measure accurate Vital Signs (Blood pressure, Pulse, Respiration and Temperature)
• Identify common conditions and medications for which vital sign monitoring is indicated
INFECTION CONTROL

HANDWASHING, MASK, GOWN AND GLOVES!
CHAIN OF INFECTION

- INFECTIOUS AGENT
- SOURCE (RESERVOIR)
- PORTAL OF EXIT
- TRANSMISSION
- PORTAL OF ENTRY
- SUSCEPTABLE HOST
ADD IMAGE (PT. 2)

- Add image of your choice of chain of infection
STANDARD PRECAUTIONS

• BLOOD AND BODY FLUIDS
• APPROPRIATE PROTECTIVE WEAR
• HANDWASHING
• STORAGE OF CONTAMINATED WASTE
• PROPER DISPOSAL OF SHARPS
• SPECIFIC ISOLATION PROCEDURES
ISOLATION – TRANSMISSION-BASED PRECAUTIONS

• CONTACT ISOLATION
• DROPLET
• AIRBORNE
• STRICT
• PROTECTIVE (NEUTROPENIC)
“IF IT IS WET-WEAR GLOVES”
MEDICAL ASEPSIS

- DEFINITION
- WAYS TO PROMOTE MEDICAL ASEPSIS
- DISINFECTANTS
- ANTISEPTICS
A snapshot of the Safety Goals
Not all of JCAHO’s National Patient Safety Goals (NPSGs) apply to hospitals. For 2007, accredited hospitals must comply with the requirements for the following eight goals:

Goal 1  Improve the accuracy of patient identification.
Goal 2  Improve the effectiveness of caregiver communications.
Goal 3  Improve the safety of using medications.
Goal 7  Reduce the risk of healthcare-associated infections.
Goal 8  Accurately and completely reconcile medications across the continuum of care.
Goal 9  Reduce the risk of patient harm resulting from falls.
Goal 13 Encourage patients’ active involvement in their own care.
Goal 15 Identify safety risks inherent in your patient population.


PATIENT SAFETY AND INFECTION CONTROL

The Joint Commission’s National Patient Safety Goals are reviewed and updated frequently. There are updates 2016 goals:

Goal 1 – accuracy of patient ID continues.
Goal 2 – Caregiver communication issues continues.
Goal 3 – Safety of medication administration continues.
Goal 6 – Reduce harm related to clinical alarms returns.
Goal 7 – Reduce risk of Healthcare-associated infections returns.
Goal 9 – Reduce risk of patient harm from falls continues.
Goal 14 – Reduce hospital-acquired pressure ulcers returns.
Goal 15 – Identify safety risks inherent in patient population continues.
SKILLS/TECHNIQUES

• HANDWASHING
• PERSONAL PROTECTIVE EQUIPMENT (PPE)
  Mask
  Gown
  Gloves
VITAL SIGNS
THE VITAL SIGNS

- Temperature
- Pulse
- Respiration
- Blood Pressure
- Most Hospitals Also Require Assessment of:
  - Pain Level
  - Pulse Oximetry
TEMPERATURE - WAYS TO TAKE TEMPERATURE

- Oral
- Rectal
- Axillary
- Ear/Tympanic
- Forehead (Temporal Artery)
TEMPERATURE - BODY TEMP VARIATIONS

- Afebrile: without elevation in body temp
- Pyrexia: a body temp above normal
- Hypothermia: decreased body temp, death may occur below 34 degrees C.
- Febrile: elevated body temp
- Core temp: temp of deepest tissues of body. i.e.: cranium, thorax, abdomen & pelvic cavity. 98.6F is constant
TEMPERATURE - SIGNS & SYMPTOMS OF FEVER

• Increase temperature
• Increase heart rate
• Increase respiratory & depth
• Shivering
• Cold skin
• Cyanotic nail beds
• Goosebumps
PULSE - METHODS OF PULSE ASSESSMENT

- Palpation
- Auscultation
• Add image of your choice showing areas on the human body for pulse.
PULSE - VARIATIONS

- Bradycardia: heart rate less than 60/min
- Tachycardia: heart rate greater than 100/min
- Dysrhythmia: irregular heart rate
- Pulse Deficit: deficit in pulse to the peripheral pulse site (assess 2 sites at same time)
PULSES

PULSE QUALITY

- Absent pulse
- Thready
- Weak
- Normal
- Bounding

PULSE CHARACTERISTICS

- Rate
- Rhythm
- Pulse Deficit
PULSE - FACTORS THAT INFLUENCE PULSE RATE

• INCREASES: short term exercise, fever, heat, acute pain, drugs, hemorrhage, postural changes, COPD, asthma, hypoxia.

• DECREASES: conditioned athlete, hypothermia, unrelieved severe pain, relaxation, medications, lying down.
RESPIRATIONS - CHARACTERISTICS OF RESPIRATIONS

• Depth: degree of movement of the chest wall
• Rhythm: observe chest or abdomen
• Rate: Adult, 12-20/min: Child 20-30/min: Newborn 30-60/min
FACTORS INFLUENCE CHARACTER OF RESPIRATIONS

• Exercise, increases rate and depth
• Pain, shallow
• Anxiety, increase rate and depth
• Smoking, increases rate
• Body position, straight promotes full chest expansion: slumped – impairs: flat-prevents full chest expansion
• Medications: decrease or increase rate and depth
• Brain injury: decrease rate and depth
TYPES OF ABNORMAL BREATHING

- Bradypnea
- Tachypnea
- Apnea
- Dyspnea
- Cheyne Stokes
- Wheeze
- Stridor
BLOOD PRESSURE

- Systolic: reflects contraction of ventricles
- Diastolic: reflects relaxation of ventricles
WHAT FACTORS INFLUENCE BLOOD PRESSURE

• Age: older adults have rise in systolic pressure related to decrease in vessel elasticity
• Circulating Volume
• Stress: sympathetic stimulation, increases
• Ethnicity: HTN highest in African-Americans and develop at younger age
• Medications: multiple increase and/or decrease
ASSESSING BLOOD PRESSURE

• SITES
  – Upper Extremity
  – Lower Extremity

• EQUIPMENT
  – Stethoscope
  – Doppler/Ultrasound
  – Automated Devices
BLOOD PRESSURE SKILL

- Proper Cuff Size
- Proper Patient Positioning
- Palpation
HYPERTENSION

• Hypertension: usually asymptomatic, takes years, thickening and loss of elasticity in the arterial walls which decreases blood flow to vital organs causing damage. Risk factors: family hx(history), cigarette, heavy alcohol, high sodium intake, sedentary lifestyle, diabetic, old, African-Americans.
HYPOTENSION

- When systolic BP below 90mm, Dilation of the arteries in the vascular bed, loss of a substantial amount of blood volume (hemorrhage), or failure of the heart muscle to pump adequately (MI).
SIGNS & SYMPTOMS OF HYPOTENSION

• Pallor
• Skin mottling
• Clamminess
• Confusion
• Increased heart rate
• Decreased urine output
OTHER ASSESSMENTS

• PAIN LEVEL
  – The 5th Vital Sign
  – Use of Appropriate Pain Scale

• PULSE OXIMETRY
  – Measures Oxygen Concentration in Hgb
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Competent</th>
<th>Not Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prepare and assess hands.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Turn on water and adjust flow and temperature.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Wet hands thoroughly and apply soap.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Wash thoroughly wash and rinse hands.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Thoroughly dry hands and arms with paper towel from finger tips towards arm. Discard paper towel in appropriate receptacle. Turn off water using dry, clean paper towel.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Thoroughly wash and rinse hands.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>Competent</td>
<td>Not Competent</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>---------------</td>
</tr>
<tr>
<td>Don clean disposable gloves. Pull gloves over cuffs of neck.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don the face mask. Look for top edge of mask; hold by top edge of mask under chin and the lower edge of the nose.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place upper two strings at back of head. Place lower two strings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Place top edge of mask over the bridge of the nose.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overlap the gown at the back and the neck at the waist.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pull arms and hands through sleeves. Tie the strings at the neck first to keep gown in place.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don clean gown.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>When picking up clean gown, do not allow it to touch contaminated area(s).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifting the gown in front of you, avoid touching the floor.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**REMOVING PPE:** Remove gloves first.

1. First glove is removed by using opposite hand to grasp soiled glove at palmar surface and rolling the glove inside out. Hold removed soiled glove with fingers of remaining gloved hand. To remove second glove, place first two fingers of bare hand inside the cuff of glove. Pull second glove off to the fingers by turning inside out. The results are first glove is removed by using opposite hand to grasp.

2. When picking up clean gown, do not allow it to touch contaminated area(s).

3. Untie waist strings in the back. Touching gown along the inside of the neck, pull it down the shoulders. Roll up the gown with soiled part on the inside and gown along the inside of the neck; pull it down the back. Touching front. 

4. Untie lower strings, then upper strings. Hold upper strings; then upper strings.

5. Untie lower strings, then upper strings. Discard in appropriate container.

6. Untie lower strings, then upper strings. Hold upper strings; then upper strings.

7. Untie lower strings, then upper strings. Discard in appropriate container without touching front.
### Assessing a Peripheral Pulse

**Procedure:**
- **Perform Hand Hygiene and Identify Patient and Provide Privacy.**
- **Select pulse point.**
- **Position patient comfortably.**
- **Palpate and count pulse using two or three middle fingers lightly over pulse point.**

**Assessing Body Temperature using an Electronic/digital Thermometer**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Competent</th>
<th>Not Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong></td>
<td></td>
<td>#</td>
</tr>
</tbody>
</table>
### Assessing Blood Pressure

1. **Assessing Blood Pressure**
   - Clean stethoscope.
   - Choose proper size cuff for the patient.
   - Position patient properly and expose upper arm.
   - Wrap deflated cuff evenly around upper arm, have center of bladder directly above brachial artery and for an adult have lower border of cuff 1 inch above the antecubital space.

2. Palpate brachial or radial artery: Inflate cuff until pulse disappears then slowly release the valve and note the reading. When pulse reappears, fully deflate cuff and wait 1 to 2 minutes. Repeat until pulse palpable.

3. Position stethoscope properly:
   - Earpieces should tilt slightly forward.
   - Place diaphragm of stethoscope over brachial pulse. Position stethoscope properly – earpieces should align with brachial pulse.

4. Palpate brachial or radial artery: Inflate cuff until pulse disappears then slowly release the valve and note the reading. When pulse reappears, fully deflate cuff.

5. **Assessing Blood Pressure**
   - Perform Hand Hygiene and Identify Patient and Provide Privacy.

### Assessing Respirations

1. **Assessing Respirations**
   - Perform Hand Hygiene and Identify Patient and Provide Privacy.
   - Count respiratory rate by observation or palpation by placing hand on patient’s chest to feel movement or placing patient’s arm across their chest to feel movement.

2. Count respirations for one minute and observe the depth, rhythm and character of respirations. Document findings.

### Assessing an Apical Pulse

1. **Assessing an Apical Pulse**
   - Perform Hand Hygiene and Identify Patient and Provide Privacy.
   - Count for 30 seconds and multiply by 2. If pulse is irregular count for 1 minute.

2. Count the rhythm and volume of the pulse. Document findings.

### Procedure Competency

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Competent</th>
<th>Not Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing Blood Pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessing Respirations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessing an Apical Pulse</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Release valve on cuff so that pressure decreases at a rate of 2 to 3 mm Hg per second. As pressure falls, identify manometer reading at each phase of pressure decrease. Document findings.

### Procedure

<table>
<thead>
<tr>
<th>Competent</th>
<th>Not Competent</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DAY 5
CARDIOPULMONARY RESUSCITATION
DAY FIVE OBJECTIVES

- Identify 3 types of CPR certification courses available from American Heart Association
- Correctly perform Cardiopulmonary Resuscitation (CPR)
- Correctly apply and use Automatic External Defibrillator (AED)
- Assess scene for safety
- Identify requirements to become a certified CPR instructor
TYPES OF CPR CERTIFICATION

- BASIC LIFE SUPPORT (BLS) FOR HEALTH CARE PROVIDERS
- HEARTSAVER CPR
- FIRST AID AND CPR
- ALL ABOVE CAN INCLUDE USE OF AED, INFANT, PEDIATRIC AND ADULT PROCEDURES
CPR AND AED TRAINING

- PLEASE REFER TO THE AMERICAN HEART ASSOCIATION – HEARTSAVER BOOK

- DEMONSTRATION, PRACTICE AND RETURN DEMONSTRATION OF CPR AND AED TRAINING

- RECEIVE AHA HEARTSAVER CERTIFICATION CARD
THE SCENE IS SAFE!

- USE ALL SENSES – LOOK, LISTEN, SMELL
- LOOK FOR BROKEN WINDOWS, BROKEN DOORS
- LISTEN FOR ARGUMENTS, HISSING SOUNDS, WATER RUNNING
- SMELL FOR SMOKE, CHEMICALS

- CALL FOR PROPER PROFESSIONALS

BECOME A CPR INSTRUCTOR

- Requires a High School Diploma
- AHA or Red Cross Instructor Training and Instructor Certification
- Good Public Speaking and Customer Service Skills
- Physical Ability to Perform CPR and Life Necessary Teaching Equipment

http://study.com/articles/How_to_Become_a_Certified_CPR_Instructor.html
BASIC LIFE SUPPORT
BASIC LIFE SUPPORT

• Add resources (PowerPoint) for student on CPR and instructions on how to prepare for the on campus portion of the course for skills and CPR certification. Students will have purchased the book and received it in the welcome package from their home school.

• If this is a joint college course- provide the necessary college information on where and when to show up for this portion of the program at the home college site.

• This on campus day will include skill based education (handwashing, vital signs and CPR Certifications- some home college will do it in one day some do two days depends on college) and CPR certification to complete the course. If students do not go on to a health professions program at the college, they are still completing the course with a CPR Certification, a valuable certification for anyone and an attractive certification that future employers will see.

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