Quality Care Through Numeracy

Print:

Nursing Assistant Math: Quality Care Through Numeracy

Industry Sector: Healthcare
Content Area: Mathematics
Core Topic: General Numeracy

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Common Core State Standards

Standards for Mathematical Practice:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
4. Model with mathematics.
6. Attend to precision.

High School—Number & Quantity: Quantities

N-Q.1: Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
N-Q.2: Define appropriate quantities for the purpose of descriptive modeling.

Adult Basic Education Standards

Number Sense

N-1: Represent and use numbers in a variety of equivalent forms in contextual situations.
N-2: Understand meanings of operations and how they relate to one another.
N-3: Compute fluently and make reasonable estimates.

Industry Overview

Healthcare in America

From neonatal nurses to radiology technologists, medical coders to medical office assistants, health educators to home care aides, the healthcare industry provides a vast and diverse array of services to individuals at every stage of life. Providing nearly 17 million jobs and accounting for an estimated $18 million of the U.S. GDP in 2009, healthcare is the nation's largest industry. In Massachusetts, in particular, healthcare accounts for more than 15% of employment (compared with 12% nationally), accounting for approximately one in six jobs. With an aging baby boomer population that is living longer, there is greater demand for more and higher quality preventative and long-term healthcare across the United States. With eight of the 30 fastest growing occupations, healthcare is predicted to be one of the fastest growing industries both nationwide and in Massachusetts between now and 2020.

Careers in Healthcare

The healthcare industry includes a vast array of jobs related to planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development. This industry includes five career pathways:

- therapeutic services, which includes professionals who work directly with patients to improve their health by providing direct care and treatment for patients (for example, a nurse or a physical therapist assistant);
- diagnostic services, which includes professionals who plan and conduct tests to detect and diagnose diseases and injuries, and use test results to plan treatment (for example, a radiologic technologist or a sonographer, who perform diagnostic imaging examinations, such as X-rays or ultrasounds);
- health informatics, which includes professionals who compile and manage health information and records (for example, a medical records and health information technician, who organizes and manages patient databases; higher-level positions, such as administrators of healthcare facilities or departments, are also included in this pathway);
- support services, which includes professionals who provide assistance to other medical professionals, allowing them to do their jobs in diagnosing and treating patients or supporting therapies (for example, food service workers and nutritionists ensure that patients' meals are healthy and meet dietary guidelines); and
- biotechnology research and development, which include careers that involve bioscience research; while many of these professions require doctoral or medical degrees, some entry-level opportunities in the field require only an associate degree (for example, food and agricultural science technicians).

Mathematics and Communication Skills Needed in Healthcare

The growing complexity of the healthcare industry, including changing technologies, requires workers to continuously upgrade their skills. In addition to technical skills specific to their job, mathematics and literacy skills are crucial for success in all occupations across the healthcare industry.

Communication: First and foremost, no matter the job, good healthcare practitioners are committed to giving patients the best care available and keeping abreast of health research and developments in the field. All workers need to be able to read medical journals and understand medical terminology and vocabulary, as well as read and write literate emails to co-workers/supervisors. Many healthcare jobs also require the ability to read and interpret charts and access and interpret electronic medical records in order to provide quality care.

Many health careers, especially—but not exclusively—those in therapeutic services—involve interacting with patients and their families, in some cases working with people who may be sick, disabled, or dying. Even support staff in a medical office or hospital require effective oral communication skills as well as compassionate interpersonal skills such as the ability to listen and talk to patients to assess needs. Effective communication with colleagues as well as patients is crucial. Healthcare is increasingly a group activity, in which a patient's recovery depends on how well all members of a healthcare team perform specific function, and how well they communicate and collaborate with one another.

Mathematics: From reading charts to interpreting data to measuring and administering correct medicine, basic mathematics skills are essential for providing quality care across most healthcare occupations. Nurses, for example, use mathematics for calculations in all areas of their duties. They use mathematics to calculate dosages, caloric requirements for individual patients, calibrate

equipment, and interpret lab results. Charts and patient data are often presented as decimals or percentages, and a nurse must be able to convert between the two, thus requiring competency in understanding and using ratios, proportions and percentages.

Much of modern medicine is based on statistics, and all workers in the industry should have a basic understanding of how statistics are used to influence medical trends. Nurses, for example, need to be aware of the statistics behind prescribing medications and possible side effects or complications. They might use statistics to counsel patients on diagnoses or prognoses, or in gathering patient histories.

Career Opportunities in Healthcare with Education from Community Colleges

Massachusetts Community Colleges play a crucial role in preparing students for careers in health sciences across all sectors of the industry—therapeutic services, diagnostic services, informatics, and support services. All 15 community colleges offer pathways to nursing careers, the largest occupation in the healthcare industry. Additionally, Massachusetts Community Colleges offers associate degree and certificate programs that prepare students to enter occupations across all sectors of the industry, for example:

- *Therapeutic services:* registered nurse, practical nurse, nursing assistant, certified nurse's aide, massage therapist, fitness trainer and instructor, dental hygienist, dental assistant, pharmacy technician, physical therapist assistant, occupation therapy assistant, respiratory assistant, medical assistant
- *Diagnostic services:* radiologic technologist and technician, radiographer, surgical technologist, sonographer, phlebotomist, paramedic, polysomnographic technologist and technician, medical and clinical laboratory technician, magnetic resonance imaging technologist, nuclear medicine technologist, veterinary technologist
- *Informatics:* Medical record and health information technician, medical coder, medical interpreter, medical biller, medical transcriptionist, health educator

Recent Career Opportunities in Massachusetts

The following is a sample of healthcare job listings in Massachusetts that require an associate's degree or certificate:

- Registered Nurse (RN), AmeriCare At Home, Boston, MA [show]
- Medical Technologist, Emerson Hospital, Concord, MA [show]
- Ultrasound Technologist, Brockton, MA [show]
- Licensed Practical Nurse, Hologic, East Watertown, MA [show]

Employment Outlook for Healthcare

America's aging population is now nearing or entering retirement (opening new jobs), and will continue to require more services and the increased use of innovative medical technology for diagnosis and treatment. As a result, healthcare is one of the fastest growing industries both nationwide and in Massachusetts, where growth is even higher than nationally. For example, in 2010, Baystate Health of Springfield, which employs more than 10,000 across its Western Massachusetts system, said that it would likely need to hire about 15,000 people between 2010 and 2020 to replace retiring workers and meet increased demand.

One important factor in the healthcare industry is the financial pressure on hospitals to focus on efficiency and profitability, which results in discharging patients as soon as possible. These financial pressures, along with increased healthcare coverage under federal law, will likely result in a growth in out-patient services in the healthcare industry, such as rehabilitation clinics, long-term care facilities, and home care programs. As a result, occupations experiencing the largest growth include home care aides, physical and occupation therapist assistants, dental hygienists, and medical assistants.

Emerging careers in Health/Information Technology (HIT): Estimates based on data from the Bureau of Labor Statistics (BLS), Department of Education, and independent studies indicate a shortfall of approximately 51,000 qualified Health IT (HIT) workers who will be required over the next five years to meet the needs of hospitals and physicians as they move to adopting an electronic healthcare system, facilitated by the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009. The HITECH Act is a key component of healthcare reform. The Act encompasses interoperable electronic health records (EHRs) including computerized systems to order tests and

medications, and support systems to aid clinical decision making and the development of a national health information network to permit the secure exchange of electronic health information among providers. The Congressional Budget Office estimates that the incentive mechanisms in the HITECH Act will increase HIT adoption rates from 45 percent to about 70 percent for hospitals and from 65 percent to approximately 90 percent for physicians. To support job growth in this emerging career field and ensure the adoption of EHRs, new types of workers are needed to facilitate information exchange across healthcare providers and public health authorities, and assist in redesigning workflows within healthcare settings to maximize the quality and efficiency benefits of EHRs, while maintaining privacy and security of health information and records. To that end, the Department of Health and Human Services has embarked on an initiative to build the HIT workforce with community colleges as the primary training ground for these new workers: (1) Practice workflow and information management redesign specialists; (2) Clinician/practitioner consultants; (3) Implementation support specialists; (4) Implementation managers; (5) Technical/software support staff; and (6) Trainers. The average hourly earnings for community college program graduates are expected to be in the target range of between $12.46/hour to $20.25/hour.

Resources:

Healthcare Employment Outlook:

- Massachusetts Career Information System: Massachusetts-specific information on careers which can be used to look at different industries, occupations within those industries, and the skills and education needed to work in these jobs
- WorkKeys Occupational Profiles
- Bureau of Labor Statistics

Healthcare Career Information:

- Top 5 Reasons to Work in the Healthcare Field, About.com
- Break Into a Healthcare Career, About.com
- Healthcare Initiatives, US Department of Labor
- Six Healthcare Careers that are Booming, Yahoo! Education
- Career Clusters in Health Sciences, National Association of State Directors of Career Technical Education Consortium
- Explore Health Careers, American Dental Education Association

Massachusetts Healthcare Job Listings:

- Massachusetts Healthcare Jobs, Jobs.net
- Healthcare Jobsite, Beyond.com

Workplace Scenario (8th Grade Level)

You are a nursing assistant at a nursing home in the Boston area. You are responsible for a number of care giving tasks for the patients there. These include dressing, bathing and feeding residents. You make beds, help patients with walking and toilet assistance, and turn bedridden patients. You also take vital signs and administer medication from the nurse. You carefully document all interactions with patients.

A task you perform regularly is taking patients' vital signs (blood pressure and pulse). When you take blood pressure, you need to choose the right size cuff for the patient's size. A cuff that is too large or too small can give an incorrect reading. The patient's posture is also important to get an accurate blood pressure reading. The patient should have proper back support. He or she should also be sitting up straight and have feet on the floor. If a patient has incorrect posture, you need to tell him how to adjust. It is important to communicate in a professional and friendly way.

Sometimes you need to weigh patients. This is important because the dose of some medications can change if a patient's weight changes. Seemingly small weight changes can also be indicators of disease. For example, patients on diuretics need their weight monitored carefully. A patient might gain one or two pounds over a few days. This increase may indicate the patient's diuretic needs to be adjusted.

Usually patients are weighed in pounds. However, medications are typically given using the metric system. You often convert back and forth between the two systems. You then record the weight accurately. This ensures patients do not receive the wrong dosages due to an incorrect weight in their chart. You may also have patients from different countries. In their country of origin they may not use pounds for measuring weight. You will need to convert from one system to the other for them.

You are also responsible for administering patient medication. The nurse dispenses the medication into a paper cup. You double check to make sure the dosage is correct. You then bring it to the patient. The patient's prescribed dosage may require multiple tablets. You double check that the accurate number of pills has been provided. For example, a patient might need 600 milligrams of ibuprofen. The pills are each 200 milligrams. You need to be sure you're providing 3 pills. You also need to be able to explain it to the patient.

Workplace Scenario (High School Level)

You are a nursing assistant employed at a nursing home in the Boston area. You are responsible for a number of caregiving tasks for the patients at the nursing home. These include dressing, bathing and feeding residents, making beds, helping patients walk, toilet assistance, and turning bedridden patients. You also take vital signs, administer medication prepared by the nurse, and carefully document all interactions with the patient.

A task you perform regularly is taking patients' vital signs (blood pressure and pulse). When you take blood pressure, you need to choose the correct size cuff for the patient's size. To do this, you need to estimate the circumference of the patient's arm. For an accurate reading, the cuff should be long enough to cover two thirds of the limb being used. A cuff that is too large or too small can give an incorrect reading. Posture is also important to get an accurate blood pressure reading. The patient should have proper back support, should be sitting up straight and have feet on the floor. If a patient has incorrect posture, you need to verbally guide him to adjust his posture in a professional and friendly manner.

Sometimes you need to weigh patients. It is important to get an accurate weight because the dose of certain medications can change if a patient's weight changes. Seemingly small weight changes can also be indicators of disease. For examples, patients on diuretics need their weight monitored since seemingly small increases of one or two pounds over a day or two may indicate the patient's diuretic medications need to be adjusted. Usually patients are weighed in pounds, yet medications are typically given using the metric system. You may need to convert back and forth between the two systems and then record the weight accurately so that patients do not receive the wrong dosages based on an incorrect weight in their chart. You may also have patients from different countries that do not use pounds for calculating weights but will want to know what you are recording for their weight. You will need to convert from one system to the other in order to provide them with that information.

You are also responsible for administering patient medication. The nurse dispenses the medication into a paper cup, which you then bring to the patient. It is important to double check to make sure the dosage is correct. The patient's prescribed dosage may require multiple tablets and you will need to double check that the accurate number of pills has been provided. For example, if a patient needs 600 milligrams of ibuprofen, and the pills are each 200 milligrams, you will need to be sure you're providing 3 pills and are able to explain that to the patient.

Core instructional context

Nursing assistants need to perform important tasks, such as keeping track of the amount of medicine patients have taken over a given day, making beds, and taking vital signs. Because of this, being comfortable with unit conversion is very important. Assistants should be comfortable converting between metric and non-metric units; for example, converting from pounds to kilograms when measuring a patient's weight and converting from inches to centimeters when measuring a patient's arm circumference to determine the size of a blood pressure cuff needed.

Example: If a patient weighs 220 pounds, what is his weight in kilograms?

220 ÷ 2.2 lbs / kg = 100 kg.

If a patient's arm circumference is 12.2 inches, what is this circumference in centimeters (cm)?

12.2 inches × 2.54 cm / inch = 31 cm.

Recommended Dosage
Normally when administering medication, there is a recommended dosage in "mg/kg" that depends on the patient's weight in kg. For this, you need to use the dosage:weight ratio provided to determine the amount of medicine (in milligrams) that you can give the patient.

Practice problem: A patient weighs 100 kg. He is taking medicine once a day, and the dose is 4 mg/kg. How much medicine should be given to the patient?

Answer:100 kg × 4 mg / kg = 400 mg of medicine.

Time Management
When figuring out the amount of time available to accomplish a certain task, it is important to be able to convert between days, hours, and minutes, as well as factor in times for breaks and lunch.

Worked Examples

1) It takes 5 minutes to make a bed. Assuming that time needed for travel between rooms is negligible, how many beds can you make in two hours?

First, convert hours to minutes:

2 hours × 60 min/hr = 120 minutes

Now, divide 120 minutes by the amount of time it takes to make a bed.

120 / 5 = 24. You can make 24 beds during this time.

2) It takes 6 minutes to make a bed. There are two beds in every room. After working on each room, it takes one minute to lock up and move to the next room. About how many beds can you make in around three hours? Assuming that if you make one bed in a room, you should make the other one as well.

First, convert hours to minutes:

3 hours × 60 min/hr = 180 minutes

Each room takes 6 minutes for each bed, and one minute to lock up and move to the next room – so working on each room takes 6 + 6 + 1 = 13 minutes.

Let's divide the total minutes, 180, by the number of time it takes for each room.

180 / 13 = 13.8 rooms. Let's try rounding 13.8 up to 14.

Checking the work with the rounded answer 14 shows that 13 × 14 = 182 minutes, so making beds for 14 rooms would be two minutes more than three hours.

14 rooms × 2 beds per room = 28 beds.

Now let's round down to 13 rooms.

Multiply 13 by the number of beds in each room

13 rooms × 2 beds per room = 26 beds.

So if everything is going smoothly and you don't mind the extra couple minutes, you can make 14 × 2 = 28 beds. Otherwise, given that there are two beds per room and you should make both beds in each room you work on, you would probably have time to make 26 beds.

3) A nurse makes a bed in 7 minutes. How many beds can you make in an 8 and a half hour shift with union requirements of a 30 minute break for lunch and a 15 minute break each hour?

Let's first subtract the hour of lunch.

8.5 – 0.5 = 8

Now let's see how much of a given hour the nurse would work, taking into account the 15 minute break..

60 minutes in an hour – 15 minute break = 45 minutes.

Now, multiply the 45 minutes by each hour the nurse would work per day.

8 hours × 45 worked minutes per hour = 360 minutes.

Then divide the total minutes worked by the number of minutes it takes to make a bed

360/7 = 51.4. The nurse can make 51 beds during this time.

4) It takes 5 minutes to make a bed and 5 minutes to walk across your building. You need to make beds for six rooms on one side of the building, and eight rooms on the other side. Each room has two beds. How much time will this take? Give your answer in hours and minutes.

First, let's find the total number of beds you need to make.

6 rooms + 8 rooms = 14 rooms

Now, we need to multiply these by the number of beds.

14 rooms × 2 beds per room = 28 beds

Now, multiply by time needed to make each bed.

28 beds × 5 min / bed = 140 minutes

Add in time needed to walk across the building.

140 + 5= 145 minutes.

Now, convert to hours and use the remainder as minutes.

145 minutes / 60 minutes in an hour = 2 hours remainder 25

Total time is two hours and 25 minutes.

5) A patient can have a maximum of 800 mg of ibuprofen per day. The patient has already had four doses of 200 mg ibuprofen every two hours and his last dose was an hour ago. He is already asking for more. Can the patient have more ibuprofen? What do you say to the patient?

4 doses × 200 mg per dose = 800 mg. The patient cannot have more ibuprofen. You can inform the patient that the next time he can have ibuprofen is the next day. If the patient is in a lot of pain, you may want to consult the physician about what the options are.

6) A patient who weighs 195 pounds needs his weight recorded in kilograms to calculate dosage. What is his weight in kilograms?

195 lbs ÷ 2.2 lbs / kg = 88.6 kg

7) A patient that weighs 140 pounds is taking a new medication. The dosage every eight hours is 3 mg/kg. How much can the patient take per day?

First, convert from pounds to kilograms (kg) by dividing by 2.2:

140 ÷ 2.2 = 63.6 kg

Now, multiply the dosage by the patient's weight in kg.

3 mg/kg × 63.6 kg = 191 mg.

Find out how many doses can be taken per day.

24 hours in a day ÷ 8 hours between each dose = 3 doses.

Now, multiply 191 by 3 since you are calculating the total dosage in a day.

191 × 3 = 573 mg per day.

8) You have 20 beds to make in three hours. Mrs. Smith and Mrs. Jones both need extra time from you because they love to talk and you enjoy your conversations. Given that making each bed takes seven minutes, how much time do you have to talk to each of these two patients?

First, convert hours to minutes.

3 hours × 60 = 180 minutes

Figure out how many minutes are needed to make the beds.

20 × 7 = 140 minutes for making beds

Subtract minutes needed from minutes available.

180 – 140 = 40 minutes

Divide the remaining minutes by each patient.

40 min / 2 = 20 minutes per patient

9) A patient's arm circumference is about 11.4 inches. Would you use an adult blood pressure cuff or a large adult cuff? Solve using the chart below.

Cuff	Arm Circumference Range
Adult	27-34 cm
Large Adult	35-44 cm

First, convert inches to cm:

11.4 Inches × 2.54 cm/inches = 29 cm

This number falls within the range of 27-34 cm, so the patient would use the normal adult cuff.

Source: http://www.plus-size-pregnancy.org/lgbpcuffs.htm#Figuring%20Out%20What%20Size%20Cuff%20You%20Need

Contextualized learning activities

Making beds problem

Watch a video.
Watch video of how to make an occupied bed and ask students to come up with a realistic time of how long it takes: http://www.youtube.com/watch?v=8tcj4BbmFmE

Discuss.
Have a discussion about how to come up with the time needed to accomplish daily tasks. Ask people to share what their methods are. Then, have them apply their logic to daily nursing calculations.

Practice
Have students practice measuring each other's arms with blood pressure cuffs and making the necessary conversions.

Application
Have students plan how much they can do of a repetitive task in a given amount of time (ex. Washing cars, washing dishes, etc.)

Problems.
1) It takes 7 minutes to make a bed. Assuming that time needed for travel between rooms is negligible, how many beds can you make in four hours?

4 hours × 60 min/hr = 240 minutes

240 / 7 = 34.2. You can make 34 beds during this time.

2) It takes 4 minutes to make a bed. There are two beds in every room. After working on each room, it takes one minute to lock up and move to the next room. About how many beds can you make in around five hours, assuming a 30 minute break for lunch?

First, convert hours to minutes:

5 hours × 60 min/hr = 300 minutes

300 minutes – 30 minute lunch break = 270 minutes

Each room takes 4 minutes for each bed, and one minute to lock up and move to the next room – so working on each room takes 4 + 4 + 1 = 9 minutes.

Let's divide the total minutes, 270, by the number of time it takes for each room.

270 / 9 minutes = 30 rooms.

30 rooms × 2 beds per room = 60 beds.

You can make 60 beds during this time.

3) A patient can have a maximum of 900 mg of ibuprofen per day, and a maximum of 150 mg every two hours. The patient has already had four doses of 150 mg ibuprofen every two hours and her last dose was an hour ago. He is already asking for more. Can the patient have more ibuprofen? If so, when?

4 doses × 150 mg per dose = 600 mg. This is less than the maximum amount per day of 900 mg. So the patient can have another dose, but given that her last dose was an hour ago, she should wait an hour before the next dose.

4) A patient who weighs 175 pounds needs his weight recorded in kilograms to calculate dosage. What is his weight in kilograms?

175 pounds ÷ 2.2 lbs / kg = 79.5 kg.

5) A patient that weighs 205 pounds is taking a new medication. The dosage every six hours is 4 mg/kg. How much can the patient take per day?

First, convert from pounds to kilograms (kg) by dividing by 2.2:

205 ÷ 2.2 = 93.2 kg

Now, multiply the dosage by the patient's weight in kg.

4 mg/kg × 93.2 kg = 372.8 mg.

Divide 24 hours by the time between doses to determine doses per day.

24 hours / 6 hours between doses = 4 doses per day.

372.8 × 4 = 1491 mg per day.

6) A patient's arm circumference is about 15.7 inches. Would you use an adult blood pressure cuff or a large adult cuff? Solve using the chart below.

Cuff	Arm Circumference Range
Adult	27-34 cm
Large Adult	35-44 cm

First, convert inches to cm:

15.7 Inches × 2.54 cm/inches = 40 cm

This number falls within the range of 35-44 cm, so the patient would need the large adult cuff.

Contextualized test items

1) A nurse makes a bed in 5 minutes. How many beds can you make in a 6 hour shift with union requirements of a 30 minute break for lunch and a 10 minute break each hour?

Let's factor in the 10 minute break right off the bat.

60 minutes in an hour – 10 minute break = 50 minutes.

During each shift you would work

6 hours × 50 worked minutes per hour = 300 minutes.

300 minutes – 30 lunch break = 270 minutes.

270/5 = 54. The nurse can make 54 beds during this time.

2) It takes 6 minutes to make a bed and 12 minutes to walk across your building. You need to make beds for five rooms on one side of the building, and four rooms on the other side. Each room has two beds. How much time will this take? Give your answer in hours and minutes.

First, let's find the total number of beds you need to make.

5 rooms + 4 rooms = 9 rooms

Now, we need to multiply these by the number of beds.

9 rooms × 2 beds per room = 18 beds

Now, multiply by time needed to make each bed.

18 beds × 6 min / bed = 108 minutes

Add in time needed to walk across the building.

108 + 12 = 120 minutes.

Now, convert to hours and use the remainder as minutes.

120 minutes / 60 minutes in an hour = 2 hours.

3) A patient can have a maximum of 500 mg of ibuprofen per day, and a maximum of 90 mg every two hours. The patient has already had three doses of 90 mg ibuprofen every two hours and her last dose was an hour ago. She is already asking for more. Can the patient have more ibuprofen? If so, when?

3 doses × 90 mg per dose = 270 mg. This is less than the maximum amount per day of 500 mg. So the patient can have another dose, but given that her last dose was an hour ago, she should wait an hour before the next dose.

4) A patient who weighs 154 pounds needs his weight recorded in kilograms to calculate dosage. What is his weight in kilograms?

154 lbs ÷ 2.2 lbs/kg = 70 kg

Cuff	Arm Circumference Range
Adult	27-34 cm
Large Adult	35-44 cm

First, convert inches to cm:

12.2 Inches × 2.54 cm/inches = 31 cm

This number falls within the range of 27-34 cm, so the patient would use the normal adult cuff.

Contextualized project

1) Interview nursing assistant about the math he / she uses throughout the day.

2) Research the dosages of medicines at local stores and at home by reading the labels. Determine how much medicine is needed for hypothetical patients.

3) Solve problems within patient case studies. These may include patient background, dosage per day, etc. Determine how long you should anticipate being in the patients' room, what type of blood pressure cuff to use, how often to give medicine, and how much medicine should be in each dose.

Additional or extension activities, multimedia, readings and/or resources

Certified Nurse Aide has to Think on Her Feet
http://www.youtube.com/watch?v=vItBfzlWwX8

Certified Nursing Assistant Skills Video
http://www.youtube.com/watch?v=K8Q2tI-YtOI

21 nurse aid skills
http://www.youtube.com/watch?v=inxdGldWXYw

Free training videos
http://4yourcna.com/free-cna-training-videos-2/

Sample precertification page
http://www.sierracollege.edu/academics/divisions/science-math/nursing/cna.php

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