Sonya Hudson

Mrs. Chunchu

College Algebra

12 March 2018

How Math is used daily by Nurse’s

I am a Registered Nurse and it is very interesting to me how although we don’t realize it we are using algebra pretty much on a daily bases. I have been a hospice nurse for five years and use math to convert medications for end of life care. I worked as a med surge nurse for two years and during that time I routinely used addition, fractions and some algebraic equations to deliver the right amount of medication to my patients. Floor nurses are also required to take a medication exam on drug calculations yearly and pass to continue to give out medications. Nurses need a solid understanding of basic math concepts in order to safely calculate medication dosages before administering medicine to their patients. Nurses administer medications and each dosage much be calculated for each patient. Math formulas are used to determine how much to administer by IV drip, injection or by mouth. Nurses use math to make sure the medication amount is appropriate and that patients receive the correct dose. (Keefer, Amber. "How Is Algebra Used in Nursing?" Career Trend, http://careertrend.com/how-does-4675164-how-algebra-used-nursing.html. 05 July 2017)

There are different ways that nurses use math during their work day. The first way is by calculating doses. If the pharmacy sends you a medication with a different strength than what the doctor has ordered, for example you need 650mg of Tylenol for a fever and the strength is 325mg, you have to figure how many tablets to give to equal the 650mg dose. Also Nurses use algebra for drawing up IV mediations in liquid form. For example if you are giving 2mg of Morphine and the vial is a 4mg vial you have to be able to calculate the right dose. Another way that math is used is by converting between systems. Most measurements in meditation are based on the metric system. To give the medications needed you often have to be able to convert weight from kilograms to pounds. Some medications are based on a patient’s weight and the dosing is very important. (Boyd, Lucy. “How Do Nurses Use Math in Their Jobs?” *Chron.com*, work.chron.com/nurses-use-math-jobs-10475.html.)

In the medical field and being a floor or Intensive Care Unit nurse you often have to calculate IV drips. Nurses need to know the amount of medication the patient is to receive, the overall time period for administering it and how much medication will be given each hour. IV fluids come in 1000ml and 500ml bags. When the doctor gives the order for the IV Fluids to run in over a certain amount of time, for example 500mg over 30 minutes, the nurse must calculate the correct number of drops per minute to administer. Also there are drips that patients are being weaned off that require titration, such as blood pressure drips or drips that are sedating a patient due to the patient being on a ventilator. Insulin drips have to be titrated depending on the patient’s glucose reading. Drug titrations require full concentration on mathematical skills.

( Mahuron, Sara. “How Do Nurses Use Math in Their Jobs?” *Woman*, woman.thenest.com/nurses-use-math-jobs-10693.html.)

Nurses are called upon to use math for reasons other than medication administration. They must calculate intake and output of their patients, which means adding up every ounce of fluid taken in by any route and the amount voided or otherwise released from the body.  A doctor may need you to keep a caloric count of everything the patient consumed in a 12 or 24 hour period. A maternity nurse may have to calculate a due date in pregnancy.

In the Operating Room math is very critical in helping anesthesiologists concoct safe solutions and the right levels of oxygen for surgical patients. They have to take into consideration variables such as patient’s weight, the solutions dosages and the desired drug so that they can calculate the accurate amount of dilution needed for each individual patient. (http://work.chron.com/use-math-health-care-careers-26310.html)

Some medications must be prepared by a nurse before being administered. An example is medication that requires being reconstituted. Medication is stored in one strength or consistency, and then has to be reconstituted to a diluted form or liquid suspension. The medicine is called the solute, which is then mixed with a solvent. Nurses must be able to calculate how much to mix of each in order to make the correct strength medication.

. Throughout our work day we do not realize we are using these skills. To a nurse this is just part of our jobs and it just comes natural to us. Although math is not one of my favorite subjects, I have to realize that it is a very important part of my job. I do take math very seriously and know that one mistake can mean a life. Safety concerns, including a nurse’s proven competency in administering the proper dosages of medication, remain a key issue in preventing medication errors. (Keefer, Amber. "How Is Algebra Used in Nursing?" Career Trend, http://careertrend.com/how-does-4675164-how-algebra-used-nursing.html. 05 July 2017)

Works Cited:

Boyd, Lucy. “How Do Nurses Use Math in Their Jobs?” *Chron.com*, work.chron.com/nurses-use-math-jobs-10475.html.

Mahuron, Sara. “How Do Nurses Use Math in Their Jobs?” *Woman*, woman.thenest.com/nurses-use-math-jobs-10693.html.

Dosch, Michael P. “Clinical Mathematics.” *Clinical mathmatics*, www.bing.com/cr?IG=B53AD743C837434A855BA4F8582EA85D&CID=059B2ACCE6A5679630352161E7A36657&rd=1&h=bZsX9lV8fdwt8u4dXgN39cj4chnJ-6\_b0hJdOZ-lvpU&v=1&r=https%3a%2f%2fhealthprofessions.udmercy.edu%2facademics%2fna%2fagm%2fmathweb09.pdf&p=DevEx,5081.1.

Keefer, Amber. "How Is Algebra Used in Nursing?" Career Trend, http://careertrend.com/how-does-4675164-how-algebra-used-nursing.html. 05 July 2017.