

## Preparing Medications From A Vial

Female1: Hi, Wendy.

Female2: Hi, Renee. So today we're going to be drawing up a medication out of a vial.

F1: Right. So a vial is different than an ampoule. It can be single dose, it can be multi dose. Institutions try to provide us with single-dose vials whenever possible, just from a patient safety point of view. Less risk of contamination, right.

F2: Oh, for sure.

F1: Yeah, so vials are different than ampoules in that-- see it can be a larger volume, but not necessarily. But there's a rubber stopper at the end and there's a cap on there. So the cap has to be flipped off, the manufacturer suggests to clean the top with alcohol.

F2: Okay.

F1: Do that. I've checked my MAR. I know the volume that I have to give, so I select my appropriate syringe. You try to select a syringe that is most close to the volume of medication that you need to administer.

F2: Is there any rule, like, can you use any size of syringe? Like a 10 cc syringe or--

F1: So depending on your purpose there are some procedures where you need the larger volume syringe because of the pounds per square inch that come out of there. We'll learn about that when we learn about flushing central lines.

F2: Okay, so for medications, then, we're probably looking at 1 ml syringes or 3 ml syringe.

- F1: One to 3, exactly. 'Cause if you think about any of the injections you're ever going to give, intramuscular injections, you can inject up to 3 mls into a site although there's some variability in some of the different literature. Subcutaneous injections can be up to 2 mls. But again, there's some variability in the literature with that as well.
- F2: That would be a little red flag for me, then, if I was going to put in 5 mls of something. I'd say, hmm, did I do my math right?
- F1: Exactly, right. So we've cleaned our vial. We've, of course, done all of our checks. This is the correct drug for the correct patient and I know my dose. The thing with a vial is there's a vacuum in there. So you have to inject the same volume of air in before you take your volume of liquid out, okay. So in this case I need 1 millilitre, so I have 1 millilitre of air. I'm not using a filter this time 'cause there's no glass.
- F2: Okay, so you put 1 ml of air in there.
- F1: Yeah, and then we invert it.
- F2: And I see you're keeping the end of the needle under the--
- F1: Under the--
- F2: -- level of the fluid.
- F1: -- fluid, exactly. Sometimes if the pressure is high inside that vial when you inject the air you'll get a little bit of leakage out. That's okay. I mean, if you're allergic to the medication in there that's not okay in which case you would be wearing gloves. Okay, so I have my 1 ml.
- F2: If you got a bunch of air in there, can you push it back into the vial?

F1: Definitely, 'cause the system is all closed. Yeah. Let me just show you that for a sec'. Okay, so you can see that there's air there. I can simply just inject it back and then come and correct my volume here.

F2: Oh, great.

F1: So I'm going to do that. I'm going to scoop cap again. I'm going to doublecheck. All right, now I'm going to change over my needle. This time this is an intramuscular injection and my patient is a fair sized, young adult with large muscle mass. So I'm going to actually use a 1.5 inch needle this time. And it definitely has a safety system, and I'm going to put my label on again with two patient identifiers, the drug, the dose, what day and time I prepared this and who-- and my initials for sure. Now I'll go to the bedside and administer.

F2: Okay.