

### Scenario 3: The case of the flying urine

#### Materials & Directions:

- hCG QuickVue One-Step Urine test package insert
- Scenarios
  - Part 1: Read & complete before going to Part 2 or 3. DO NOT change your answers after moving on to part 2 or part 3

#### Part 1:

The site technologist was going to perform a Rapid Urine hCG on a participant's urine. She was starting a new kit lot, and so she laid out the 3 cartridges on the workbench so she could run the patient alongside 2 external controls (the recommended Control Set, Catalog Number 00272, for this kit: one positive and one negative QC). After getting the control vials out of the refrigerator, she directly proceeded to place 3 drops of urine, of course using the kit dropper supplied for the participant's urine, for each sample and control. She set the timer for 3 minutes.

And then, she sneezed. Not just a tiny teeny sneeze, but the 'Big Bad Wolf' sneeze! The urine container and 3 cartridges went flying to the floor. Wham, the container of pee burst open with its contents flying everywhere. What a mess, and no urine was recovered. The technologist started to clean up the room when the 3 minute timer went off. She recovered the cartridges from the floor that had slid across to the other side of the room. Thankfully, she labeled them well enough to identify them, and looked at the cartridges. The negative QC was negative, the positive QC was faintly positive (faint pink line), and the patient had a solid pink to reddish line. All the internal QC's were fine.

#### Should she report out the participant results? Why or why not: list all possibilities.

**LC: No**, results should be reported.

1. The cartridges hit the floor while the urine was absorbing into the cartridge. Urine could have spilled out before all absorbed, with possible contamination between cartridges
2. The 'reaction' (antibody-antigen) takes place across 4 absorbent pads, and the urine may not have advanced correctly through the pads after being 'jolted' by the fall.
3. It's hard to be sure, but she may have sneezed directly into the cartridges contaminating the samples.

#### Are the QC results valid?

**LC: No**, due to possible contamination & cartridge trauma, and cold QC.

#### Is there any procedural error that was made before the sneeze?

**LC: Yes**,

1. The tech used the hCG the controls directly out of the refrigerator. See highlighted text above.  
Note: This may have also contributed to why the positive QC cartridge was 'faintly positive (faint pink line)'.  
2. The controls, according to the package insert, do not need to be refrigerated to begin with.

Once answered, go to Part 2...

## Part 2: The case of the flying urine continued

The tech, which was going to report out the results, decided to have another sample collected due the possibility that the results would be unreliable. The urine was recollected by the participant, who had not yet left from her visit that day. She set up the new urine sample without external controls this time (because they worked earlier even though they fell to the ground). She proceeded to set up the test with the correct number of drops (3) & set the timer at 3 minutes. When the timer went off, she read the urine, and to her surprise, there was no visible line at the test area (negative). The internal controls were acceptable (blue control line was showing).

What does this mean? LC: Negative result. This cartridge was showing that the participant, when this procedure was performed correctly, did not have any hCG detected in a **quantity greater than 25 mIU/ml**.

What should she report out? LC: After she reruns the external controls, and they are acceptable, the report will be 'Negative'.

Should she have run the external QC again?

LC: Yes. They were initially run cold....and needed to be rerun at room temperature. Also, the cartridges may have been contaminated or damaged in the fall.

Is there anything else she needs to do at this point?

LC: Maybe. A good observant tech maybe curious to why, even after the cartridge hit the ground in the first test, the result was positive and now it's negative.

Please go to Part 3...

Part 3,

After she reported the urine hCG as negative, and was ready to throw the cartridges away, and she noticed that that the test line was red.

What may have caused this?

LC: A very low urine hCG, one less than 25 mIU/ml, will possibly become positive when the urine test goes beyond 3 minutes.

This may have happened for 2 reasons in this Scenario:

1. The urine was recollected the same day as the original urine. A first morning sample is always best, and is most concentrated.
2. The patient urine in the first part of the scenario was probably read past the '3' minute' time limit, therefore again showing a low level hCG.

Now, what should she do? LC: The tech should add a comment to the negative report alerting the clinician to the possibility that this may be a very early pregnancy, and more testing may be considered.