This storyboard conceptualizes one scenario of an integrated medical system during a Mars exploration mission. All content is for illustrative purposes only and neither defines nor implies system design requirement.

Illustration by Jesus Garate
The medical system has noted a couple of changes in your exercise capacity and abnormal changes in your vitals.

Sam, I wanted to check in with you. Have you been feeling alright?

Hey Mike, yeah. I've been feeling a little run.

The medical system logged a decrease in your exercise performance over the past 2 days and abnormally high hear rate. You completed the exercises but your reactive exercise fero profile and your treadmill time at maximum speed both decreased.

Oh, before I get started on the crew health status review for this week, let me check the cabin... looks like the atmospheric and environmental measurements appear to be within limits.

Sam Rogers://
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I've had a low level headache that has been bothering me. I also feel a bit more fatigued and frankly it seems like I'm peeing a bit more than normal.

Let's go to MedBay and check you out.

Sure...

Alright, I'm going to check your abdomen now.

You bladder seems tender.

I've added my findings to your health record.

Interesting, the medical system is showing a flag on Sam's exercise performance...

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The Medical System shows the image on the monitor and guides the caregiver through the procedure.

Mike uses a sample card to put in the optical analyzer using the Exploration Laboratory Analysis device to analyze the urine sample.

I'm going to need a urine test. Fill this up.

When you get back I'll be ready to take a little blood as well.

Your urine shows leukocyte esterase present and is slightly positive for nitrites. Your white blood cell count is elevated at 11.5.

Mike repeats the same process, this time using a fingerstick sample card to collect blood from Sam's finger to do a complete blood count.

Now let's see if any bacteria is in the urine.

Ah, yes, there is. I'm going to treat you for urinary tract infection, Sam. Let me just check what antibiotics our medical system recommends based on the microbial profile and available stock.

Now I just need to log the diagnosis and complete my notes in the health record.

Back on Earth, the ground medical team receives the updates of the medical activities and health of the crew on board.

The medical system automatically synchronizes the ship's crew health records with the ground version.