

[MUSIC PLAYING]

MARK WYLAM: We had a patient who underwent a successful bilateral lung transplant. And on day three she developed signs of coma and then went into deep coma. Later, we discovered that she had a blood culture that was growing a very rare germ known as *micoplasma hominis*.

RICHARD DALY: And she may have also been infected with your *ureaplasma* as well.

MARK WYLAM: Then we did some deep reading and discovered that this germ, unique in this transplant circumstance, is a factory for the production of ammonia.

RICHARD DALY: It was the help of the infectious disease who did the right tests and the right cultures to find the organism.

ROBIN PATEL: We were, at the time, developing a rapid diagnostic assay for *micoplasma hominis*. This was very fortuitous. We also developed another PCR for another related bacterium called *ureaplasma*. This bacterium makes an enzyme called urease, which hydrolyzes urea to carbon dioxide and ammonia.

MARK WYLAM: And we found that the body was riddled with this germ, in the sense that she had a septicaemia and went on to have a high level of ammonia to cause the coma. The aha moment that suggested that this germ came from the donors occurred when two patients simultaneously received organs from the same donor.

RICHARD DALY: Indicating that the source of the infection wasn't at the recipient. But the source was the donor.

ROBIN PATEL: Since that time, we've used our PCR assays, which provide a rapid diagnostic test for these organisms.

MARK WYLAM: And now, not only do we understand the cause, but we can preemptively prevent it from recurring in any patients in the future.

ROBIN PATEL: There were also people who were involved who were able to test those hypotheses and really confirm or refute what might be happening. I think that really wouldn't have happened had we not had the big team approach.

MARK WYLAM: This discovery wouldn't have occurred without our collaborative opportunities to interact with each other on a daily basis.

ROBIN PATEL: Now we know that this is caused by an organism. And we have treatment for that organism. And we know that if we treat these patients, if we catch what's going on early enough, they survive, and they get over it, and they live.