

STEPHEN

RUOSS:

So nontuberculous mycobacteria are an interesting collection of organisms. And while we, as a medical community and the lay community, know a lot about tuberculosis, there is a remarkable family that TB is a part of. The nontuberculous mycobacteria have, for naming purposes, included a vast variety of organisms, some, but not all, of which are known human pathogens.

And our knowledge of these organisms as human pathogens has increased in recent years. Certainly over the last 10 to 15 years, there's been an explosion of information about, and interest in, these nontuberculous mycobacteria in general. An important feature to distinguish them from TB is they do not require a human host for transmission.

And in fact, we, as humans, have exposure to these organisms from the community in which we live and are infected from that community, not from other human-infected vectors. So we are acquiring these as environmental pathogens. And that has some interesting consequences, namely that our exposures are probably our immediate environment. That includes the household and outside the household.

These are water living and soil contaminated organisms so that being in the community with exposures certainly will, for humans in general, result in risk of infection. We probably, in general, all of us are exposed to these organisms through municipal and household water supplies. They, like a number of bacteria that we know of maybe better like *Pseudomonas*, are great at forming biofilms.

And thus, one can recover them in their variety of studies, examining this and reporting quite striking findings of biofilms in water faucets, biofilms on shower heads with notably amplified numbers of mycobacteria, including mycobacterium avian complex, the most notable and numerous of the infecting NTM pathogens.

There is a worldwide prevalence of these organisms, though the organisms are not always uniformly distributed in the environment. We're not entirely sure what the organism preferences and needs are that result in environmental and regional differences, but there certainly are regional and environmental differences.