Microbes are built for stealth. By stealth I mean the capacity to invisibly and unknowingly get past our defenses. The microbes’ small size allows them to travel invisibly from one place to another in very small liquid droplets as splashes or splatters or to ride the air currents as smaller aerosol particles. Because of their reproductive ability only a few viable microbes need to land in a suitable environment to increase their numbers many times over. We don’t know that the microbe has landed until several hours or days later when the progeny of the original pilgrims have reproduced in sufficient numbers to be seen or to otherwise cause trouble.

My first experience with being a victim of microbial stealth occurred many years ago when a colleague at another institution sent me a culture of *Erysipelothrix rhusiopathiae*. To verify the culture I streaked it on a blood agar plate. After 24 hours of incubation I expected to find small, round, translucent colonies on the surface of the blood agar. To my surprise I found large, ground glass colonies. To determine the microscopic morphology I performed a gram stain and found chains of large gram positive rods looking like “bamboo shoots” with each rod containing what looked like a spore in the center. *E. rhusiopathiae* would have appeared as small gram positive rods. I confirmed the spore with a spore stain. I remember my colleague had told me that he was also working with *Bacillus anthracis* in his laboratory, and it soon became clear that the *E. rhusiopathiae* culture was contaminated with *B. anthracis*. We can only guess at how this contamination occurred, but we will never know for sure. This example indicates the power of microbes to unknowingly travel from one place to another in the laboratory environment, even when we think they have been safely contained.

Cross contamination of cultures, as illustrated by my anthrax experience, is one consequence of a microbe stealthily slipping past our defenses. Cross contamination can occur with pathogens and non-pathogens. In this issue of *JABSA* a rarer form of cross contamination is described in the MMWR article on the misdiagnoses of *Mycobacterium tuberculosis* (*Mt)*. The stealthy microbe in this article is an avirulent laboratory *Mt* control strain H37Ra which is morphologically similar, if not identical to virulent *Mt* which cross contaminates clinical cultures being tested for *Mt*. The consequences of this cross contamination was the misdiagnoses of tuberculosis in a number of patients.

Another consequence of a pathogenic microbe slipping past our biosafety defenses is a laboratory acquired infection (LAI). The article by Gaidomovich et al in this issue documents 78 cases of LAIs by seven arbo-, arena- and hantaviral agents at three Russian Institutes from 1956 to 1988. Almost all of the infections probably occurred by the aerosol route. Documented of LAI’s with several of these agents is rare.

LAI’s and cross contaminations are our reminders of the stealthy nature of microbial pathogens and the weak points in our biosafety defenses. If we understand the nature of our enemy we will be better prepared to defend against them.

Richard C. Knudsen
Centers for Disease Control and Prevention
Atlanta, Georgia