

# Microbiologist suggests hospitals open windows to reduce bacterial infections

February 20 2012, by Bob Yirka

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(Medical Xpress) -- Doctor Jack Gilbert, a microbiologist with Argonne National Laboratory, spoke at the recent meeting of the *American Association for the Advancement of Science* (AAAS) in Vancouver, Canada, and among other things, suggested that hospital administrators take note of what famed nurse Florence Nightingale preached over a hundred and fifty years ago; namely, open the windows to let in fresh air when tending to the sick, and they will heal better.

Gilbert is a member of the team at Argonne that is attempting to identify and categorize every [virus](#) and bacteria that exists in nature. In his talk, he cited the work of the University of Oregon's Doctor Jessica Green, who conducted experiments that showed that sampled bacteria were more diverse when exposed to freely flowing air from the outdoors, than were those in highly sterilized environments. But that the bacteria in the sealed and sterilized areas had more of the kinds of bacteria that are considered to be harmful.

Gilbert says that when microbes are allowed to mix with others, they wind up having to compete for resources, which causes a diluting effect. When hospitals are overly sanitized however, there is far less competition, which allows "bad" bugs free rein. He suggests this may account for the high number of infections that occur in hospitals despite serious attempts to completely sterilize them. He compares it to antibacterial drugs given to patients to kill bad bugs in the gut, which in killing off all the good bugs, tend to leave an environment conducive to the bad. He also referenced a 2009 study by Andreas Voss that found

that less than half of hospital staff washed their hands after using the rest room. His point is that no matter what hospital workers do, they are not going to be able to kill every virus and [bacteria](#) in any given environment, which means that the bad ones that manage to evade such efforts will thrive without any competition and go on to infect people.

Gilbert also told of a colleague of his working in a South American environment where it wasn't possible to sterilize equipment before working on patients. Implements were simply scrubbed using soap and water. His colleague reported lower infection rates than he'd experienced when working in highly sterile hospital environments. When looked at from this point of view, he says, it all leads to the same common-sense conclusion. To reduce hospital infections, follow Ms. Nightingale's simple advice: open the windows.

Others are not so quick to accept Gilbert's ideas however, suggesting that even so-called good bugs can cause problems if allowed to creep into open wounds.

**More information:** [www.bio.anl.gov/PI/gilbert.html](http://www.bio.anl.gov/PI/gilbert.html)

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