



# Hiding in Plain Sight: Contaminated Ice Machines Are a Potential Source for Dissemination of Gram-Negative Bacteria and Candida Species in Healthcare Facilities

Anubhav Kanwar, Jennifer L. Cadnum, Dongyan Xu, Annette L. Jencson and Curtis J. Donskey

## BACKGROUND

Contaminated ice machines have been linked to transmission of pathogens in healthcare facilities.

## OBJECTIVE

To determine the frequency and sites of contamination of ice machines in multiple healthcare facilities and to investigate potential mechanisms of microorganism dispersal from contaminated ice machines to patients.

## SETTING

The study took place in 5 hospitals and 2 nursing homes in northeastern Ohio.

## METHODOLOGY

We cultured multiple sites on ice machines from patient care areas. To investigate potential mechanisms of microbial dispersal from contaminated ice machines, we observed the use of ice machines and conducted simulations using a fluorescent tracer and cultures.

## RESULTS

While mould and slime built up on the inside of your ice machine is undoubtedly disgusting, it's the invisible contaminants that pose a real threat to your customers and employees. More than one outbreak of Legionella at a hospital or other healthcare facility has been traced to ice machines over the last few decades, and a study of 64 ice machines across 5 hospitals and 2 nursing homes found "Gram-negative bacilli and/or Candida were recovered from 100% of drain pans, 52% of ice and/or water chutes, and 72% of drain-pan grilles." During the operation of ice machines, ice often fell through the grille, resulting in splattering, with dispersal of contaminated water from the drain pan to the drain-pan grille, cups, and the hands of those using the ice machine. Contamination of the inner surface of the ice chute resulted in contamination of ice cubes exiting the chute.

People can become infected with these bacteria when they consume the contaminated ice and when ice falls through the drain pan grille of ice and beverage dispensers, splashing contaminated water onto their hands and cups.

## CONCLUSIONS

Our findings demonstrate that ice machines in healthcare facilities are often contaminated with gram-negative bacilli and *Candida* species, and provide a potential mechanism by which these organisms may be dispersed. Effective interventions are needed to reduce the risk of dissemination of pathogenic organisms from ice machines.

Source: *Infect Control Hosp Epidemiol* 2018;39:253–258