

# Antimicrobial Copper and Ebola Virus Control

## Fact Sheet

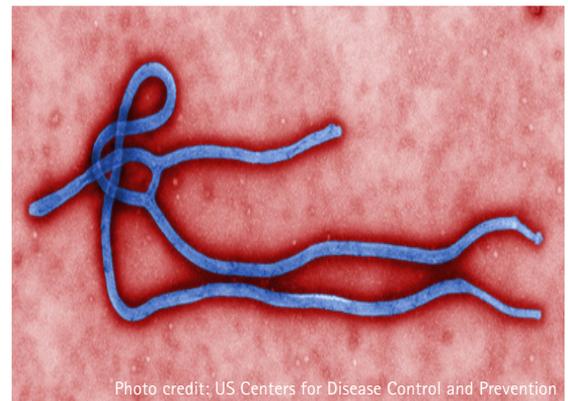
### Introduction

The transformation of the recent outbreak of Ebola virus into a potential global epidemic, where it is anticipated that 10,000 new cases will occur each week by year's end, warrants aggressive deployment of proven infection prevention technologies. Antimicrobial copper touch surfaces have been shown to continuously reduce microbial burden in the built environment and lower the acquisition of hospital-associated infections without staff intervention. Existing data on viruses suggest that antimicrobial copper will also inactivate Ebola virus.

### Quick facts:

- Ebola virus is transmitted through direct contact with body fluids/substances of an infected person with symptoms, or through exposure to objects that have been contaminated with infected blood or body fluids<sup>1</sup>.
- A laboratory study conducted under environmental conditions that favour virus persistence found that Ebola virus could remain active on contaminated surfaces for up to six days<sup>2</sup>.
- Viruses like Ebola are susceptible to a broad range of surface disinfectants. However, testing on copper surfaces and other disinfectants is difficult at this time due to limited access to laboratories with the required safety clearances.
- The US Centers for Disease Control and Prevention (CDC) has instructed hospitals to use disinfectants with proven efficacy against the following viruses: norovirus, rotavirus, adenovirus and poliovirus<sup>1</sup>. These viruses have a similar genetic structure to Ebola.
- Laboratory testing has demonstrated that copper alloys are effective against norovirus<sup>3</sup>, rotavirus and adenovirus (Figure 1).

Based on CDC's recommendation, and proven efficacy against viruses with similar genetic structures, copper alloys are expected to inactivate Ebola virus. Strategically deployed copper surfaces within care facilities may reduce Ebola exposure from blood, urine, vomitus, stool, secretions and shed skin as it is encountered on common touch surfaces in the built environment. All available infection prevention options should be considered to combat this epidemic, including antimicrobial copper surfaces which work 24/7 without behavioural changes or electricity.



Infectious virus recovered from stainless steel surfaces      No infectious virus recovered from copper surfaces

Figure 1: Norovirus unable to infect host cells after 2 hours exposure to copper surfaces at room temperature<sup>3</sup>

<sup>1</sup> US Centers for Disease Control and Prevention. Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus. <http://www.cdc.gov/vhf/ebola/hcp/environmental-infection-control-in-hospitals.html>.

<sup>2</sup> Sagripanti JL, Rom AM, Holland LE. Persistence in darkness of virulent alphaviruses, Ebola virus, and Lassa virus deposited on solid surfaces. *Arch Virol* 2010; 155:2035-2039

<sup>3</sup> Warnes, SL, Keevil, CW 'Inactivation of Norovirus on Dry Copper Alloy Surfaces', *PLOS One*, September 2013, Vol. 8, Issue 9