# Utilizing UV-rays to Eradicate Micro-Organisms on Healthcare Workers Cellular Phones to Prevent Cross-Infection

Black, Toni-Ann

Hospital-acquired infections are becoming increasingly numerous and difficult to manage. There are strict regulations in most hospitals regarding infection control however these are scarce regarding cellular-phones. Use of cellular-phones in hospital environments has become an integral part of healthcare. Cellular-phones may carry pathogenic bacteria which could be a source of hospital-acquired infections. A unit that chargers multiple cellular-phones and simultaneously exposes them to ultra-violet light will decrease the bacterial burden on cellular-phones. This will decrease the risk of cross-infection. After designing and constructing such a unit, 30 Health Care Workers' (HCW) cellular-phones were swabbed pre, post and six-hours after exposure to the unit. The swabs were cultured; colony counts were compared, basic bacterial identification and antibiotic susceptibility testing was performed. All HCWs surveyed used their cellular-phones while in ICU, 8.4% ever cleaned their cellular-phones and 6.2% washed their hands regularly after using cellular-phones. Organisms found on cellular-phones included; Sensitive Staphylococcus aureus, Coagulase negative staphylococci, and Gram-negative bacilli. These organisms were found to be the most common causes of hospital-acquired infection in the ICU for the preceding month. Use of the unit decreased bacterial colony counts on cellular-phones by 99.6% immediately after use. Six hours after use the decrease persisted at 98.8% (p=0.005). All healthcare workers surveyed were prepared to use the unit. Results show the unit is an effective and acceptable infection control intervention. Using this unit in the hospital environment will reduce the risk of cross infection caused by cellular phones, increasing patient health safety.

**Awards Won:**

Third Award of $1,000