By Anne Harding

UV Light Effective For Disinfecting Stethoscope Membranes

NEW YORK light-emitting diodes (LEDs) can be used to disinfect stethoscope membranes, according to a recent study.

Lead investigator, Dr. Gabriele Messina of the University of Siena in Italy and his colleagues are developing a portable device based on the technology, which uses UVC radiation to destroy bacteria. Dr. Messina told Reuters Health in a telephone interview that he expects the device to reach the market this year, and that it will cost less than 100 euros and weigh less than 100 grams.

Nosocomial infections kill 140,000 people in the US and Europe each year, he noted, and cost about 40 billion euros annually. Doctors' hands - a known source of nosocomial infection - are actually cleaner than stethoscope membranes, he added.

While stethoscope membranes can spread microbes and viruses from patient to patient and health care professional to patient, Dr. Messina and his colleagues note in their report, published online August 5 in the American Journal of Infection Control, healthcare workers rarely disinfect stethoscope membranes in clinical practice.

UVC light breaks DNA molecules by inducing pyrimidine dimmers in thymine and cytosine, and has been tested for disinfecting hospital rooms and environments, the researchers point out. The new study tested a prototype membrane-disinfecting device consisting of a circular cover for the head of a stethoscope with a UVC LED at the center.

The investigators sowed 28 stethoscope membranes with Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa, or Enterococcus faecalis, and then transferred the membranes to Petri dishes. Dishes were either exposed to the UVC LED for one minute, or left untreated.

Each bacterium showed a significant reduction in colony-forming units after UVC exposure. Reduction was 85.5% for E. faecalis, 87.5% for S. aureus, 94.3% for E. coli, and 94.9% for P. aeruginosa. There were no significant differences in effect between bacteria.

The device will run on a rechargeable battery, and is intended to be worn in a coat pocket.

"It's automatic, the operator doesn't have to learn anything new," Dr. Messina said. "They have to simply attach the stethoscope head to the device."

The device will take three to five minutes to work, he added. "If you use it as it's intended every time, actually you should reduce at least 90% of the bacteria which are on the stethoscope membrane and with regular use the percentage could be increased a lot."

Dr. Messina and his colleagues have formed a startup, egoHEALTH, to develop the device, and are collaborating with Light Progress to bring it to market.

SOURCE: http://bit.ly/1Kw9ebi

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References: Reuters Health) - Ultraviolet (UV

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