

Novel Biostatic Antimicrobial Technology From Clearstream-mPact Technology Partnership (CmTP) Offers Effective Protection Against Transmission of Ebola Virus

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The CmTP MediDefense technologies—which include mPale and mPerial—contribute to the emergency response solution for reducing surface transmission of the Ebola virus, with mPale included in a recent supply airlift to Ebola-stricken Liberia.

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International efforts to combat and contain the current Ebola virus epidemic are receiving further support from recent initiatives sponsored by U.S. government agencies, nongovernmental organizations (NGOs) and other charitable organizations. While research into solutions remains ongoing, healthcare workers, emergency responders, patients and others can immediately benefit from advanced technologies such as the CmTP MediDefense system, which includes biostatic antimicrobial treatments and disinfecting biocides that are scientifically formulated to minimize the surface transmission of infectious diseases such as the Ebola virus.

Experts have asserted that the lack of processes and preparation for highly contagious diseases has severely threatened public health and safety worldwide. The consequences of this can be seen historically, through the spread of viruses such as the bird flu from Southeast Asia, Severe Acute Respiratory Syndrome (SARS) from China, Middle East Respiratory Syndrome (MERS) from Saudi Arabia, and most recently, the Ebola virus from West Africa. “Ebola is a powerful reminder that a health threat anywhere can affect us,” said Dr. Tom Frieden, director of the Centers for Disease

Control and Prevention (CDC). “It's really urgent that we address the weak links and blind spots around the world.” (1)

Several recent government initiatives are intended to address those blind spots. As reported by the Associated Press, the current administration requested \$600 million for the CDC to implement a Global Health Security Agenda, working with an international coalition to improve disease detection in high-risk countries and guard against the next contagion. (1) In addition, the Clearstream-mPact Technology Partnership (CmTP, Clearstream-mPact) is a review candidate for the recently issued United States Agency for International Development (USAID) Ebola Grand Challenge, which aims to generate innovative solutions that enhance the tools and personal protective equipment (PPE) used by healthcare workers in Ebola-stricken regions. (2)

Charitable organizations such as Samaritan's Purse, Healey International Relief Foundation, and Emergency USA have also undertaken efforts to provide immediate support to healthcare workers and emergency responders in West Africa, sponsoring airlifts of critically needed supplies. An October shipment to Liberia contained more than 200,000 pounds of protective gear, such as rubber gloves, masks, rubber boots, disinfectants and other supplies, (3) including Clearstream-mPact's mPale antimicrobial treatment.

“We are proud to contribute to the emergency response solution for the Ebola pandemic, and we are committed to supporting frontline workers in their efforts to reduce surface transmission of this deadly virus,” said Jim Praechtl, CEO and Director of Product Development for Clearstream, LLC and CmTP. “Our proprietary biostatic antimicrobial technology offers a novel approach, physically disrupting the cellular activity of viruses by puncturing their cell walls. Other product technologies typically rely on chemical poisons, which can have adverse effects that potentially lead to mutations resulting in stronger, more resistant forms of bacterial and viral threats. mPale will aid workers by reducing the threat of surface transmission of the virus in at-risk environments while decreasing the potential for mutations.”

The active technologies found in the company's MediDefense products, including mPale and mPerial; have been extensively chronicled and successfully used to combat a wide spectrum of bacterial, fungal and viral contaminants. When used in combination with

personal protective equipment (PPE) and other traditional sanitization and disinfection protocols, they can deliver powerful protection against the spread of infectious diseases such as Ebola. Praechtl asserts that the CmTP products have the ability to reduce surface transmission of the Ebola virus based on their active technology's efficacy against similar viruses, including Ebola surrogate viruses such as the vaccinia virus and the bovine diarrhea virus (BVDV), which is also used as a surrogate for the hepatitis C virus (HCV).

In addition to the validated successes of the active technology against the more difficult to control DNA viruses, mPale and mPerial have also been proven effective against RNA viruses that are similar in structure to Ebola. The CmTP MediDefense technologies are designed to work in a two-step process:

Step one: Thoroughly clean and disinfect surfaces with the mPerial detergent/disinfectant/biocide. mPerial cleans, sanitizes, and disinfects both porous and non-porous surfaces, removing grime and chemical residue in preparation for the next phase.

Step two: Apply the mPale Antimicrobial with AEGIS Microbe Shield, which provides long-term static (bound) surface protection rendering offending microbes inactive. Its unique formulation has the ability to bond with virtually every porous, non-porous, organic or inorganic surface. Furthermore, mPale is non-toxic, non-leaching, environmentally safe, and offers durable long-lasting protection between scheduled disinfection protocols and terminal cleanings.

Beyond these two flagship products, the Clearstream-mPact MediDefense system includes other forms of antimicrobial and antibacterial protection. mPulse Hand Sanitizer features the same silane quaternary technology used in mPale as a fortifying preservative for this highly effective formula. Its non-toxic, alcohol-free formula kills 99.99% of bacteria and viruses on contact and provides hours of protection, even after multiple hand washings, and is approved for direct food handling. mPower Laundry Detergent combines powerful cleaning properties with an EPA-registered static antimicrobial, imbuing fabric with long-term protection from microorganisms that builds

cumulatively with repeated washings. It is phosphate-free, non-toxic, hypoallergenic, and safe for septic systems and the environment.

To learn more about the Clearstream-mPact contributions in the battle against the Ebola pandemic, including details on MediDefense antibacterial and antimicrobial technology. Clearstream is a multi-dimensional and diversified provider of products and services that combine multiple disciplines. Clearstream's environmentally safe, corrective, and long-term protective solutions employ advanced antimicrobial formulations in the fight against microbial cross-contamination and surface degradation. The company is based in Charlotte, North Carolina, and has partner-run operations in Florida, Texas, South Carolina and Pennsylvania.

1. "US Looking Past Ebola to Prepare for Next Outbreak; ABC News; November 24, 2014; accessed November 26, 2014. abcnews.go.com/Health/wireStory/us-past-ebola-prepare-outbreak-27128975.

2. "USAID Announces Grand Challenge to Fight Ebola"; press release posted on USAID website; October 7, 2014; accessed November 26, 2014. usaid.gov/news-information/press-releases/oct-7-2014-usaid-announces-grand-challenge-fight-ebola.

3. "Samaritan's Purse Airlifts Protective Supplies to Ebola-Stricken Liberia"; Charlotte Observer; October 1, 2014; accessed November 26, 2014. charlotteobserver.com/2014/10/01/5213373/samaritans-purse-airlifting-protective.html.