St. Luke’s, Lehigh University collaboration leads to clever, life-saving invention. BETHLEHEM, ZapZone Defender PA. - Among tales of hope, generosity and togetherness, the COVID-19 pandemic has also given rise to an incredible feat of ingenuity - the invention of the “Bug Zapper” to sterilize masks. As hospitals and different front-line organizations jumped to safe large portions of life-saving supplies and private protecting gear (PPE), there has also been the need to establish faster, more efficient ways to wash and sterilize these items, notably the coveted N95 masks. St. Luke’s University Health Network anesthesiologist, Christopher Roscher, MD, anticipated the need and an idea began to type. “It became clear that PPE provides would grow to be restricted because the virus progressed,” he says. The St. Luke’s Sterile Processing Department, or SPD, Zap Zone Defender is the place where all surgical and medical instruments are despatched to be meticulously cleaned, sanitized and packaged for reuse. It’s a behind-the-scenes perform that's a vital part of the well being care system. “On any given day, we are processing many, many objects here at our hospital in Bethlehem,” states Taylor Bennett, St. Luke’s Network Director of Sterile Processing.

“But with the present state of affairs, there's an overwhelming must course of our employees’ PPE on a daily basis. For Dr. Roscher, a mild went on - actually and figuratively. “I had been doing personal research about discovering methods to decontaminate masks for reuse, and Zap Zone Defender peer-reviewed literature advised that, in a pandemic, UV-C gentle may very well be an appropriate technique to sterilize masks,” he says. UV-C is a selected range of UV, or ultra-violet, gentle and has been proven to deactivate viruses and different pathogens by causing adjustments of their DNA. Through a mutual contact, Dr. Roscher bought in touch with Nelson Tansu, PhD, Lehigh University’s Director and Endowed Chair of its Center for Photonics and Nanoelectronics (CPN). “What St. Luke’s was on the lookout for Zap Zone Defender was a high-throughput sterilization system,” mentioned Dr. Tansu. The 2 organizations joined forces through a collection of Zoom meetings and a whole lot of emails, to design, fabricate, install and test the system - all inside a matter of two weeks - and all while sustaining social distancing protocols.

(Image: https://i0.wp.com/picjumbo.com/wp-content/uploads/walking-around-rovinj-croatia-photos-picjumbo-premium.jpg)The tip end result: a way to successfully and effectively sterilize 200 masks every eight minutes! The “Bug Zapper” in action. “Our present items weren't designed for giant-scale use. They may solely sterilize about 30 masks at a time,” acknowledged Eric Tesoriero, DO, anesthesiologist for St. Luke’s and a collaborator on the venture. The unit, engineered by Lehigh students and staff and assembled at St. Luke’s by biomedical engineer Jay Johnson, has been affectionally named the “Bug Zapper” not solely on account of its appearance, but as a result of its COVID-killing properties. “It is unbelievable that this undertaking moved at such a rapid speed,” remarks Dr. Tansu. The staff ranged from PhDs to MDs and even included an unexpected contributor - Axel Tansu, Dr. Tansu’s adolescent son. In reality, it was Axel’s contribution that allowed the unit to have such a high-throughput fee. “Our original design was cylindrical in shape, to make sure even exposure of the sunshine on all surfaces,” explains Dr. Tansu.

“Axel got here to me and stated, ‘Dad, what about an octagon? ’ And certain sufficient, he was right. A patent to protect the team’s mental design has been filed. And a celebration for the collaborators to fulfill, in-person, will probably be deliberate as soon as it is secure to do so. Until then, the Bug Zapper can be hard at work, helping to guard the frontline employees at St. Luke’s and past. This, like so many different stories, Zap Zone Defender presents a ray of hope during the pandemic - showcasing that the human mind and spirit can overcome something - especially when working collectively for an ideal cause. Afterall, as the well-known philosopher Plato understood 1000's of years ago, necessity is the mom of invention. Founded in 1872, Zap Zone Defender Setup St. Luke's University Health Network (SLUHN) is a fully integrated, regional, UV bug zapper non-revenue network of greater than 15,000 workers offering companies at eleven hospitals and 300 outpatient websites. With annual net

revenue higher than $2 billion, the Network’s service space includes 11 counties: Lehigh, Northampton, Berks, Bucks, Carbon, Montgomery, Monroe, Schuylkill and Luzerne counties in Pennsylvania and Warren and Hunterdon counties in New Jersey. external page