A history of protecting patients and populations

When the first patients with Ebola Virus Disease to be treated in the US were brought to Emory in 2014, a cadre of highly trained professionals was ready to care for them in the Serious Communicable Diseases Unit (SCDU) at Emory University Hospital. And in March 2016, SCDU staff successfully treated a patient with Lassa fever.

The SCDU was built and maintained under contract with the Centers for Disease Control and Prevention (CDC) in 2002 in the event a CDC employee was exposed to a highly contagious, lethal disease in the line of duty. The result was a fully equipped isolation unit, able to deal with biosafety level 4 pathogens and ready to be activated and staffed at a moment’s notice.

Prior to the Ebola outbreak of 2014, the SCDU has been activated for patients with other potential pathogens including Marburg virus disease and severe acute respiratory syndrome (SARS). In addition, the unit is used for ongoing education, training, and ground-breaking research on highly infectious diseases.

Ongoing efforts to fight disease

**TRAINING STAFF:** For more than a dozen years, Emory Health-care staff have been specially trained to work in the SCDU. The regimen includes annual exercises, skills training, and an online course for all staff. Unit staff drill for a variety of clinical scenarios.

**TRAINING OTHERS:** Emory was one of three institutions to receive funding to lead the National Ebola Training and Education Center (NETEC). This center aims to increase the capability of US public health and health care systems to safely manage individuals with special pathogens. To date, the NETEC has trained over 2,500 workers nationally. Visit www.netec.org.

"NETEC helped develop a national infrastructure to address the next serious communicable diseases outbreak. Whether visiting medical centers or states to review and enhance their programs, or holding training sessions at our facilities, entities at all levels were guided along the path of becoming part of a national network that could act in concert to manage the next infectious diseases outbreak."

—Bruce Ribner, MD MPH; Emory University

"You have to be very detail-oriented to work on a [special containment] unit. Just to take our PPE [personal protective equipment] off, there were approximately 20 steps you had to follow."—Sharon Vanairsdale, SCDU program director

The Serious Communicable Diseases Unit at Emory has become a regional, national, and international resource on the strict protocols that are needed to safely care for patients with Ebola and other highly infectious diseases.
Ongoing efforts (continued)

- **SCDU FEATURES:** The three private rooms in the SCDU resemble ICU rooms, with adjustable beds, IVs, and monitors. Every procedure a patient could need, from mechanical ventilation to hemodialysis, can be performed in the unit. The unit has a dedicated lab to perform blood counts, routine chemistries, blood gas measurements, urinalysis, and tests for a variety of infectious agents. Currently, the unit is undergoing renovation to accommodate 11 patients who require airborne infection isolation.

- **GLOBAL MODEL:** Emory’s isolation unit has served as a model for similar units at other facilities nationally and internationally and is one of only two sites in the world certified by the World Health Organization to treat patients with Smallpox. The SCDU maintains an online Ebola education site (www.emoryhealthcare.org/ebola-prep). Health care organizations, public health agencies, and governments in the US and other nations use this site to prepare for possible outbreaks of highly contagious diseases.

- **SCREENING PATIENTS:** Emory Healthcare has strict protocols in place to identify patients with possible symptoms of a highly communicable disease. Patients are referred to the Emory Travel Well Center, which can screen patients quickly and safely and arrange transport to the SCDU for treatment if ever needed.

- **SHARING KNOWLEDGE:** Emory experts in medicine, nursing, administration, technology, environmental sciences and public health comprise our model of interdisciplinary research within the Serious Communicable Diseases Program. This program strives to bridge the gap between research and bedside care, making our discoveries immediately applicable to improving patient outcomes.

The clinical care that was performed in the SCDU has led to a number of research questions. Emory currently collaborates with Georgia Tech and Georgia State to look at human factors, built design, and surrogates for viral transmission and contamination. The discovery of Ebola uveitis led to the Emory Eye Center providing care in West Africa. The Emory Vaccine Center is currently enrolling study subjects for an Ebola vaccine.

“I will always be grateful for the way the Emory team fought tooth and nail for me when I could not, and continues to fight for me now,”—Dr. Ian Crozier, Ebola survivor, who nearly lost sight in one eye from Ebola-related uveitis months after his bloodstream was virus-free.

“It is our mission to pass on what we have learned to other health care providers and hospital staff.”

—Dr. Bruce Ribner, infectious disease specialist and SCDU medical director