The new Mercy Virtual Care Center in Chesterfield, MO, has no waiting rooms, hospital beds, or patients. Instead, Mercy Virtual, which opened last winter, houses more than 300 doctors and nurses who sit in front of computer displays, watching over the care of patients at 38 hospitals in six states. Some are highly trained intensive care specialists who oversee ICUs remotely, alerting nurses at the bedside to changes in a patient’s condition before a crisis occurs. Others monitor the health of chronically ill patients at home using iPads and medical devices that relay vital signs to the hospital’s “command center” via telemedicine technology. The goal: to catch problems early and keep patients out of the ER. The first-of-its-kind facility may be shepherding in a new era of health care—one in which only the sickest patients need hands-on care in a hospital and others are tended remotely or through the occasional house call.

“This is the new model—moving away from brick and mortar and relying on technology to keep people healthier,” says Randall Moore, Mercy Virtual’s president.

Researchers at the Roswell Park Cancer Institute in Buffalo are just beginning clinical testing of the world’s first lung cancer vaccine, called CimaVax. Used in Cuba since 2011, the widely anticipated vaccine “targets the cancer’s fuel source in a deceptively simple way and with minimal side effects,” says Kelvin Lee, Roswell Park’s chair of immunology.

Every few years, the world seems to face a new microbial menace, such as Ebola. New research suggests that these bugs may have met their match in an experimental cancer drug known as AR-12 that may combat drug-resistant bacteria and viruses. AR-12 works by targeting a family of proteins that is essential for the replication of almost every type of bacterial or viral pathogen while leaving the normal cells of the body unharmed.

“It’s not an antibiotic itself, but it interferes with the ability of bacteria to become and stay resistant to antibiotics,” says lead investigator Paul Dent, a professor of biochemistry and molecular biology at Virginia Commonwealth University.