

Positive gains from negative pressure

HRRMC completes a critical ventilation system upgrade to its ICU

Before the word *COVID* was ever part of our lexicon, Heart of the Rockies Regional Medical Center (HRRMC) was spearheading a project to upgrade three of its inpatient rooms to function with a ventilation system known as negative pressure. Negative pressure rooms support infection control and isolation for patients who have highly contagious, airborne illnesses including COVID-19, tuberculosis, SARS and MERS. This system, which is beneficial to both patients and medical staff, has become the standard of care in hospitals nationwide.

In a negative pressure room, the air pressure inside the room is lower than the air pressure outside the room, trapping pathogens inside. When the door, or *anteroom* opens, non-contaminated, filtered air flows into the negative pressure room. Highly filtered exhaust systems then draw the contaminated air out of the room, cleaning the air of harmful particles.

The timing of HRRMC's decision to implement this standard of care and ultimately support the evolving medical needs of our community was fortuitous. Discussions in the fall of 2019 to incorporate negative pressure capability into the hospital's intensive care unit (ICU) were validated by year-end data showing a 78 percent increase over projections for ICU patients. Months later, on March 5, 2020, the first COVID-19 case was confirmed in Colorado. The first COVID-19 case in Chaffee County would soon follow.

Following approval of the ventilation system upgrade by the hospital's board of directors, the HRRMC Foundation applied for a grant from the Department of Local Affairs (DOLA) to assist with funding. Midway through last year, the Foundation was awarded the grant in the amount of \$150,000, which covered more than 50 percent of the total project expense.

"This is an important project for our patients and for our community," explained Lezlie Burkley, HRRMC Foundation Director. "The addition of negative pressure functionality means that our ICU staff, patients and visitors are that much more protected from airborne diseases." Due to the impact of COVID-19, the timeframe for the ICU remodel was intensified, and DOLA was instrumental in supporting the project financially. "DOLA has been an important partner on several HRRMC expansion projects over the past two years," said Burkley.

Prior to the start of the remodel, and in order to manage COVID-19 cases requiring acute care, HRRMC's Facilities department was able to retrofit a unit in the ICU with interim negative pressure functionality. While the temporary unit was instrumental in providing a higher level of critical care in the midst of COVID-related hospitalizations, construction of the permanent negative pressure rooms was imminent.

In order to minimize disruption to patient care services in the ICU, and to take advantage of a downturn in COVID-related caseload, Colarelli Construction—the commercial contractor hired by HRRMC—had a two-week window this past December in which to complete the project and pass inspections by state and local agencies. Together with HRRMC's Facilities staff, they accomplished that goal. The hospital's ability to pivot and to execute this deliverable proved crucial. Only two weeks into January of this year, Chaffee County would record its highest COVID-19 case rate of the pandemic due to the new Omicron variant.

In addition to its two ICU rooms, HRRMC also has an adjacent inpatient room outfitted with negative pressure functionality. The adjacent room will support ICU overflow, as well as isolation of a non-ICU patient. Each of the negative pressure rooms has its own bathroom, helping to further mitigate the risk of exposure for staff and other patients.

According to Bob Morasko, HRRMC CEO, "This negative pressure system was a necessary change that provides a higher standard of care and allows our inpatient healthcare services to be adaptable and responsive to current and future needs."

If the pandemic has taught us anything as a healthcare facility, it is that we must be prepared in caring for critically ill patients that require isolation, even beyond COVID-19 cases. We must be able to address health concerns such as tuberculosis and MERS. Equally as important, we need to be able to scale our acute patient services to an ever-increasing need for them as our community grows. As the HRRMC service area has expanded to include Custer and Saguache counties, we are also seeing a population boom and a consistent increase in high-traffic tourism to our region. More people means more potential for critical care and contagious illnesses, and a greater impact on HRRMC's services.

Heart of the Rockies Regional Medical Center is committed to meeting these challenges. We will keep our eyes on the horizon as we continue to deliver personalized and exceptional healthcare to our community members.

The HRRMC Foundation provides the hospital with financial support to facilitate innovative programs and provide state-of-the-art healthcare services to the Salida Hospital District. For more information about the Foundation's initiatives, contact Lezlie Burkley at 719-530-2218 or visit HRRMC.com/Foundation.