Critical Care Outreach to Rural and Community Hospitals

ORGANIZATIONS

- Avera Health
- Saint Luke's Health System
- MaineHealth

CHALLENGE

Responding to the need for access to critical care in geographically remote locations and maximizing return on technology investments.

SOLUTION

Use of *e*ICU® Program Outreach as a new business model to market *e*ICU critical care services to remote healthcare facilities.

BENEFITS

- Extends clinical reach and impact on quality of care
- Increases revenue for host facilities
- Increases patient referrals
- Defrays operating expenses

"The benefits of eICU® Program Outreach are many. Along with improving quality of care and reducing operating costs, it can expand strategic collaboration, extend an organization's reach, and enhance its mission of community service."

— *Sue Goran, RN, MSN, Operations Director, MaineHealth VitalNetwork*

BACKGROUND

Faced with a nationwide shortage of intensive care specialists, a growing number of health systems are establishing *e*ICU® Programs to enhance the care of critically ill patients. Studies demonstrate that these programs are achieving improvements in quality of care indicators, including severity adjusted mortality rates, and financial ones, such as severity-adjusted lengths of stay.

Telemedicine programs and clinical transformation initiatives, such as the *e*ICU Program, can require a strategic investment to launch and operate. As a result, these often are initiated by large, urban-based health systems encompassing multiple facilities. Yet rural and community hospitals, which have even greater difficulty attracting intensivists and other specialist physicians, also can benefit from *e*ICU Programs. The experiences of the U.S. military in the Pacific Rim and other healthcare providers show that *e*ICU Programs save lives and deliver financial benefits to geographically remote locations.[1, 2]

Some are using *e*ICU Program Outreach to bridge the gap by extending their services to remote hospitals within and beyond their traditional coverage areas. In the process, they are defraying some of their *e*ICU Program operating expenses and creating new opportunities for their health systems.

SOLUTION

Three providers offering their *e*ICU® Program to remote sites on a contract basis are: Avera Health System in Sioux Falls, South Dakota; Saint Luke's Health System in Kansas City, Missouri; and MaineHealth in Portland, Maine. The evolution of the outreach programs for each of these sites has varied. In each case, however, intensivist-led teams at the host facilities are pushing the limits of telemedicine with remote monitoring and decision support technologies to monitor patients hundreds of miles away and support bedside caregivers.

Avera Health

Avera *e*ICU®CARE provides coverage for 67 intensive care beds at 12 Avera hospitals and three non-affiliated hospitals on a contract basis. The vision to offer outreach services to surrounding rural communities has been integral to the implementation of their *e*ICU Program. Avera plans to add an additional nine sites to their coverage in the near future. The coverage area currently spans four states in the rural Midwest, extending 300 square miles from Sioux Falls.

Saint Luke's

Saint Luke's *e*ICU Program focused entirely on its own four hospitals until the system was contacted in 2006 by Hays Medical Center (HMC) in Kansas, six hours away. HMC now contracts with Saint Luke's for 19 hours of coverage each day, with another non-affiliated hospital in Missouri planning to come on board soon.

MaineHealth

MaineHealth's *e*ICU Program, known as MaineHealth VitalNetwork, expanded as

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part of a statewide initiative to improve healthcare access for rural residents. It currently provides *e*ICU Program services to 84 ICU beds at four MaineHealth hospitals and one non-affiliated hospital. They will soon be adding four more outreach facilities with plans to continue expanding coverage across the state. MaineHealth works closely with potential outreach facilities to help secure government grants for their telemedicine initiatives.

RESULTS

Avera Health, Saint Luke's and MaineHealth have leveraged their *e*ICU Programs to extend improvements in patient outcomes and critical care services to rural communities.

Outcome Improvements

Pat Herr, RN, Program Director for Avera *e*ICU®CARE, notes that the program has been key to helping rural facilities achieve high-quality outcomes for critically ill patients. Since implementing *e*ICU®CARE, Avera has realized a:

- 29 percent reduction in severity-adjusted mortality
- 46 percent reduction in severity-adjusted lengths of stay[3]

Herr notes that the system also provides a safety net in severe weather. For example, one patient located many miles from the nearest critical care facility suffered an acute myocardial infarction during a blizzard. With the help of Avera's *e*ICU Program, he received critical care at a local hospital until the storm passed and he could be transferred to another facility for specialized services.

Saint Luke's reports that its outreach arrangement with HMC has helped the rural facility manage rising acuity levels that previously challenged its capacity to handle critical cases. "In supplementing the coverage provided by HMC's two intensivists, the *e*ICU Program provides a viable alternative to adding new clinical resources," says Jennifer Ball, *e*ICU Operations Director for Saint Luke's. "We have had several emergency situations in the middle of the night where the nursing staff has requested our help."

The *e*ICU Program at Saint Luke's Health System has led to significant improvements in critical care outcomes. Compared with APACHE® III predicted values, the program has helped achieve a:

- 50 percent drop in ICU mortality
- 18 percent decrease in ICU length of stay

Similar quality improvements also are being realized in Maine, which has an acute need for intensive care services with a higher-than-average population age 65 and older (14.6 percent, compared to the 12.4 percent nationwide). Post-implementation data compiled by MaineHealth over a year's time demonstrates a dramatically improved survival rate, translating to an additional 60 lives saved in one year. MaineHealth has also noted decreased patient lengths of stay.

"Our *e*ICU Program reflects our all-inclusive outreach strategy in the state," says Sue Goran, RN, MSN, Operations Director for MaineHealth VitalNetwork. "We have an open-door policy by which we include any facility that wants help. When we have the state of Maine covered by the program, we will look to expand to other states that may also benefit from the service we provide."

Other Benefits

Health systems that offer *e*ICU outreach services prefer to keep financial details confidential for competitive reasons. It is clear, however, that outreach initiatives can help defray operating expenses associated with ongoing maintenance of *e*ICU Programs.

*e*ICU Program Outreach enables host facilities to expand their clinical reach, increasing referrals and forming new patient and physician relationships. One of Saint Luke's nephrologists, for example, now manages dialysis for all intensive care patients at Hays Medical Center.

CONCLUSION

Healthcare organizations are finding that the *e*ICU remote outreach solution provides a cost-effective strategy for leveraging limited resources, improving patient care in remote communities, and producing better outcomes for critically ill patients. As MaineHealth's Goran says, *e*ICU Programs are likely to transform the 'culture of care' for healthcare providers within their own regions—and beyond.

Health systems that are implementing *e*ICU Program Outreach not only provide a public service by enhancing the quality of critical care in remote areas, they are also increasing the return on their technology investments by allocating costs and generating new revenue streams.

REFERENCES:
1) *e*ICU Case Study M.03.01.071205, "Building a Sustainable Rural *e*ICU Model"
2) *e*ICU Case Study M.03.05.080104, "Reducing Emergency Air Evacuations"
3) Zawada, Edward T., et al., "Financial Benefit of a Tele-Intensivist Program to a Rural Health System," *CHEST. 2007;* 132: 444

FOR MORE INFORMATION:
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