WHITE PAPER

POP-UP ICU SOLUTION:

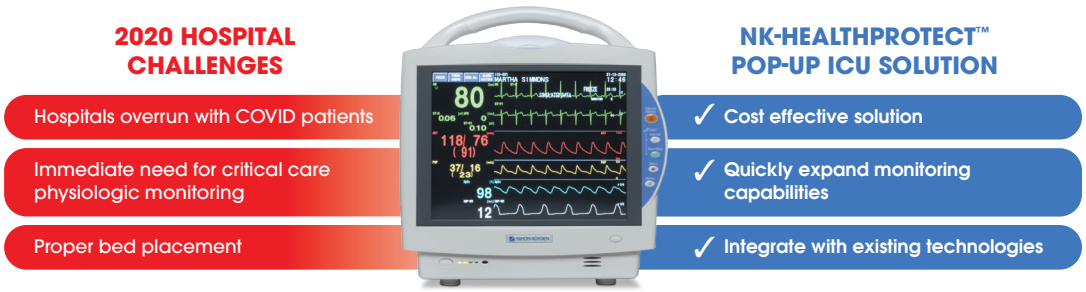
CRITICAL CARE EXPANSION MADE EASY

Critical Care units are no stranger to crisis and chaos – it is what these well-prepared and experienced staff handle best. Health systems have to strike a fine balance between having properly trained staff and the right equipment to meet the average daily census needs. However, the recent COVID-19 pandemic has taught us all that there are limits to the capabilities of these vital units. The ability to care for critically ill patients can be quickly compromised if the right technology to monitor and treat them is not available. The need to expand critical care monitoring is apparent and the timing must be rapid or the quality of care will be sacrificed.

Background

Hospitals across the world are faced with the inability to expand critical care areas in a timely and efficient manner. Even if an organization finds the physical space and human resources to provide an overflow area for these patients, the ability to provide the same level of care can be difficult to achieve without the proper technology. This often leads to prolonged ED length of stay, as patients await critical care beds. Studies indicate that 15.9% of patients are boarded in the ED for greater than 24 hours after the receipt of admission orders.[1] Many solutions to provide adequate physiologic monitoring can take months to integrate into an existing IT infrastructure, cost millions of dollars, and take weeks to bring in new monitoring equipment. This scenario is impractical for an intensive care unit that needs the ability to expand immediately to accommodate an influx of patients during a pandemic, disaster, or simply, a busy season.

Consider a 150-bed acute care health system in the Mid-West to illustrate a set of challenges that were presented to nearly every hospital in the country in early 2020. This hospital was overrun with COVID patients and had an immediate need for critical care physiologic monitoring, with the overarching goal of proper bed placement. This innovative health system decided to search for a non-traditional approach to critical care expansion. What they needed was a **cost-effective solution** that enabled them to **quickly expand monitoring capabilities** without the need to **integrate with existing technologies**. The solution came in the form of the newest Nihon Kohden offering, the *NK-HealthProtect™ Pop-Up ICU Solution*.



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Assessment

In March of 2020, the Society of Critical Care Medicine estimated that the health needs created by the coronavirus pandemic would far exceed the capacity of U.S. hospitals.[2] This was perhaps the understatement of the year. For this health system, the ability to admit and monitor critical care patients was quickly put to the test when they found themselves at peak capacity in a matter of days.

The Ability to Monitor is Restricted

Traditional cardiac monitoring has always been tied to a physical bed. During times of overcrowding, patients are often held in the emergency department due to limited monitoring equipment and physical space availability. Studies have demonstrated that patients who are critically ill, and experience a length of stay greater than six hours in the emergency department, have increased mortality.[3] During the pandemic, this health system was looking to drop that dangerous constraint and expand monitoring to be patient centric. With the help of the *NK-HealthProtect™ Pop-Up ICU Solution*, a repurposed endoscopy unit was expanded to 15 inpatient COVID beds with immediate critical care monitoring capabilities. Facilitating admission options that can accommodate a critical care patient allows providers to **properly place patients based on patient acuity rather than making triage decisions based on equipment availability**.

Expansion Time Frame is Impractical

The implementation of medical capital equipment is lengthy. This multilayered process involves many stakeholders, approval bodies, and operational considerations. Once purchased, a typical implementation would require several weeks to integrate with the existing IT infrastructure. When critical patients need to be monitored, this time frame is no longer feasible. The *NK-HealthProtect™ Pop-Up ICU Solution* **requires only 40 minutes to create a 16-bed ICU including all equipment and material needed for a fully functional solution**. *The monitor's central station is preconfigured in a true plug-and-play system that is ready for patients.* Any hospital system with physical space and appropriately trained nurses will have the **instant ability to provide clinical oversight**, whether they are expanding beds on an existing unit or opening an overflow area in a conference room. Removing the typical top-down approach of purchasing and integrating equipment mitigates risk and immediately creates a safe environment for the patient population.

Technology is Expensive

Healthcare leaders have to look at ways to continually grow their business while simultaneously meeting the needs of their community. This balance can be in direct contrast to purchasing capital equipment. Technology is expensive, but should not be an element that stands in the way of increasing the overall throughput and revenue of a health system. During a pandemic or any patient overflow event, healthcare organizations are thrown into a budget crisis in an effort to keep up with equipment and human resource needs. *An added benefit is that after a surge event, the organization is left with an excellent source of equipment that can be repurposed and replace any outdated monitors on existing units.* The *NK-HealthProtect™ Pop-Up ICU Solution* allows organizations to have a **more cost-effective solution to maintaining safe and effective care while monitoring the critical care population**.

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Recommendation

The request for vendor support during the overwhelming task of expanding ICU capabilities was met with the *NK-HealthProtect™ Pop-Up ICU Solution*. **Monitoring Capability is Expanded:** Whether your critical care patients are housed on an existing unit, or relocated to an overflow area, the quality to care should be standardized. **Expansion is Easy:** The entire implementation process can occur within a two-week period, with less than an hour to set up equipment. **Technology is Cost Effective:** *NK-HealthProtect™ Pop-Up ICU Solution* is offered as an affordable technology option to help healthcare organizations find a feasible option for managing throughput.

Conclusion

The goal for any healthcare organization is to provide safe, quality care to all patients and not to be limited by technology. The *NK-HealthProtect™ Pop-Up ICU Solution* offers the ability to expand monitoring capabilities within hours. NK built a solution that is neutral to infrastructure and existing technologies and unrestricted by space. The solution minimizes risk by allowing for proper patient placement from a physiologic monitoring and acuity standpoint. When COVID-19 is a distant and difficult memory, hospitals that have prepared themselves with the *NK-HealthProtect™ Pop-Up ICU Solution* will truly have clinical readiness for any future medical emergency.

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Contact healthprotect@nihonkohden.com
to discuss how we can help your surge planning

Bibliography

[1] Mohr, N., et. al. "Boarding of Critically Ill Patients in the Emergency Department." *Critical Care Medicine*, vol. 48, no. 8, August 2020, pp. 1180-1187. doi: 10.1097/CCM.0000000000004385, Accessed 6 Feb. 2021.

[2] Halpern, N. and Tan, K. "United States Resource Availability For COVID-19." *Society of Critical Care Medicine (SCCM)*, 12 May 2020. https://www.sccm.org/Blog/March-2020/United-States-Resource-Availability-for-COVID-19. Accessed 6 Feb. 2021.

[3] Gunnerson, K., et.al. "Association of an Emergency Department–Based Intensive Care Unit With Survival and Inpatient Intensive Care Unit Admissions." *Emergency Medicine*, vol. 2, no. 7, 2019. doi:10.1001/jamanetworkopen.2019.7584. Accesses 20 Feb. 2021.

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MMLB 345 (A)-CO-3562