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Tele-ICU Scorecard

About

Compelling peer-reviewed research has determined that the use of Tele-ICU technology can significantly improve survival and reduce lengths of stay for ICU patients. The following Tele-ICU scorecard has been developed to assist organizations in providing a comparative assessment of key features to aid in the decision making process and optimal vendor selection for a centralized Tele-ICU solution. This scorecard serves to define the critical software, clinical, reporting, analytics, and transformation services present in existing Tele-ICU models implemented within the United States. Proprietary feature and vendor solution-specific designations have been intentionally excluded for comparison purposes.

How to Use

This Tele-ICU scorecard compiles longitudinal survey data from Tele-ICU installations within the US collected over a 15 year period. Published data from peer-reviewed studies supports the identified categories and segmentation presented. Vendor comparison can be accomplished quantitatively through the assignment of a numerical value from **1** (*least likely to meet criteria*) to **5** (*most likely to meet criteria*). The ultimate selection of a Tele-ICU vendor is dependent on multiple factors, however this scorecard is intended to provide an objective comparison of available solutions.

I. Vendor Partnership

An organizational commitment to Tele-ICU is significant. A dedicated vendor partner will support customer goals in achieving positive results and return for the organization. It is important to understand current state offering, and the future direction and vendor investment in the Tele-ICU solution.

Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Market share	Evidence on current installations in operation within given market			
Experience	Period of time (years) where platform is actively being utilized within given market (market ready/ released solution and higher score represents greater market experience)			
Evidence of Innovation	Percent allocation of R&D spend to Tele-ICU solution development based on total business segment revenue			
Customer Testimonials	Vendor supplied testimonials and reference list from existing customers			

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Vendor Partnership continued				
Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Longitudinal Alignment	Vendor capability to align Tele-ICU with solutions across population health continuum (e.g.: Ambulatory telehealth) and agnostic to other EMR solutions			
Collaborative Environment	Vendor sponsored Tele-ICU community to share learnings, and benchmark performance			
Fostering Education	Vendor organized events to provide periodic updates on Tele-ICU related subject matter			
Active User Groups	Defined meetings for clinical, operational performance and technology sharing			

II. Program Support

Tele-ICU adoption is about embracing change. Confidence in executing change management organizationally requires a consultative approach by the vendor to learn and align with organizational and executive goals. A fundamental success measure for Tele-ICU sustainability is the program reliance on on-going calibration and performance management. Setting up for success begins at implementation, and follows through periodic reviews aligned with established success metrics defined mutually by the organization and the vendor.

Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Transparency	Vendor disclosure of all costs – one time and operating – vendor can support build out of a value proposition/cost benefit analysis			
Implementation Proposal	Vendor provides a dedicated team of Tele-ICU Subject Matter Experts (SME) to align with Project Management, Clinical Program Management, Intensivist Consultant, Interface Analyst, equipment and network installation, and Executive Sponsor skill set for duration of implementation			
Change Management	Vendor supports collaborative engagement sessions to align Tele-ICU adoption with current bed-side practitioner team with dedicated services practitioners			

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Program Support continued		Vendor A	Vendor B	Vendor C
Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Training	Vendor solution inclusive of training program for all Tele-ICU solution end users by responsibility (MD, APN, RN, Admin, technical, etc.)			
Consulting	Vendor provided clinical and operational consultant service for duration of program to assist with improving outcomes			
Routine Updates	Software updates and upgrades included in vendor provided Tele-ICU program agreement.			
Upgrade Support	Vendor provides 24x7x365 Tele-ICU support included within program costs			
Marketing Planning	Marketing programs to increase internal and external Tele-ICU awareness supplied to customer by vendor			

III. Platform

When selecting a Tele-ICU solution, the software platform determines the use-ability of the system, its scalability and extensibility for broader population health and care venue applications.

Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Quality Framework	Tele-ICU solution and clinical tool development cleared by FDA 510(k)			
Continuity Planning	Vendor is able to provide roadmap for successive innovation of Tele-ICU platform to include customer input through Product Advisory Board			
Enterprise Extensibility	Evidenced ability and direction to support broader care venue application of Tele-ICU model (e.g.: ED/Med-Surg/consult)			
Scalability - Site	Capability to support critically ill patients, whether in the ICU, or via rapid response to other areas within hospital			
Scalability - Network	Capability to support ICU population capacity across Health System and to external health systems			
Clinical Outcomes	Vendor or peer-reviewed data on solution efficacy relative to patient outcomes			

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Platform continued				
Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Operational Outcomes	Vendor or peer-reviewed data on solution efficacy relative to operational efficiency			
Financial Outcomes	Vendor or peer-reviewed data on solution efficacy relative to Return on Investment (ROI)			

IV. Interoperability

A Tele-ICU solution shall align with HITECH Act and Meaningful Use guidelines to be interoperable with an organization's EHR. In many instances, consolidation and acquisition patterns have resulted in multiple revisions and / or multiple EHR vendors being present across an organization. A Tele-ICU solution that can integrate across such systems and provide a unified remote experience is optimal.

Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Core data integration	Evidenced capability to aggregate data for patient ADT, Physiologic Monitoring Vital Signs, Lab, Medications, Flowsheet data and notes across EHR instances and EHR revisions			
Standards Based	Vendor supports standards-based interoperability (HL-7)			
Integration Support	Dedicated integration team to support implementation and on-going upgrades or ICU add-ons			
Third Party Relationships	Vendor states willingness to work with (both inbound and outbound) other vendors to achieve interoperability without the need to replace existing technologies			
Data Interface Optimization	Vendor presents integration strategy leveraging Interface Engine to optimize Tele-ICU interface development, testing and on-going maintenance			

V. Tele-ICU Software

The vendor designed Tele-ICU software provides the clinical operator with the tool for managing the ICU patient population clinically, and engaging with bed-side clinicians through audio-visual technology for patient assessment and management. Tele-ICU software technologies vary widely in features and functionality, however the evaluation criteria for this component is based on the software's ability to present meaningful data to the clinician that optimizes patient management.

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Tele-ICU Software continued		Vendor A	Vendor B	Vendor C
Component / Feature	Definition & Use			
Data Presentation	Vendor Software presents unified view of patient data for improved information assimilation and decision making			
Patient Summary	Software provides a summary view of key clinical data, including current treatments, diagnoses and important trends, organized by organ system and presented in both textual and graphical formats			
Population Census	Tele-ICU managed population is able to be arranged by clinician operator and defined by location (e.g.: hospital, unit)			
Acuity Rounding	Embedded Clinical Decision Support (CDS) Algorithms provide acuity based patient prioritization to optimize interventions (per FDA 510k guidance)			
Visualization	Graphical visualization of patient (e.g.: red, yellow, green) identifies patients with changing or deteriorating condition			
Advanced Alerting & Algorithms	Vendor presents additional proprietary Clinical Decision Support innovation and bundled alerts supported by outcomes evidence			
Integrated A/V Technology	Software solution supports integrated A/V solution for HIPAA compliance			
Staffing Ratio (Intensivist)	Maximum ratio of Intensivist to patient staffing alignment supported (expected range of 1: 150)			
Staffing Ratio (APN/RN)	Maximum ratio of nurse to patient staffing alignment supported (expected range of 1: 40)			
Uptime Statistics	Vendor provides historical data on customer uptime experience			

VI. Tele-ICU Hardware

A Tele-ICU is a centralized, physical location that virtually supports multiple physical end-points within the hospital ICU. Hardware and peripherals to support operations should meet enterprise-class specifications.

Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Data Center	Vendor provides specifications for on premise and virtualized environments required for the Tele-ICU system			
Operations Center	Vendor provides recommendations on design and hardware requirements for staffing and system engagement			
Fixed In-Room A/V	High definition audio and visual solution provided within the patient room			
Mobile A/V	Audio and visual engagement supported for wired and wireless applications, including mobile carts to enable flexibility in deployment			
Bi-Directional Engagement	In-room alert functionality integrated into Tele-ICU solution to enable bed-side initiation of intervention			

VII. Program Reporting & Analytics

The success of the Tele-ICU system needs to be measured to show clinical, operational and financial results. The ability to demonstrate such systematic outcomes requires the Tele-ICU vendor to provide reporting capabilities and data analytics tools.

Component / Feature	Definition & Use	Vendor A	Vendor B	Vendor C
Daily Management Reports	Real time reporting generated by the Tele-ICU for daily management and best practice compliance included			
Benchmark Reporting	Reporting capability to evaluate unit/hospital performance and compared against other Tele-ICU systems in the community			
Analytics	Data access capability to generate ad-hoc or initiative based reporting to be created by the Tele-ICU			
Research	Tele-ICU vendor provides repository of de-identified data that is standardized and normalized to conduct research			

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Program Reporting & Analytics continued		Vendor A	Vendor B	Vendor C
Component / Feature	Definition & Use			
Publication	Tele-ICU vendor supports and collaborates with organization to develop academic studies			

Summary Scoresheet

Category	Vendor A	Vendor B	Vendor C
Vendor Partnership			
Program Support			
Platform			
Interoperability			
Tele-ICU Software			
Tele-ICU Hardware			
Program Reporting & Analytics			
TOTAL SCORE			

Conclusion

The evaluation of Tele-ICU vendors supports the aim to adopt a clinically focused solution tuned to an organizations environment that enables staff to be more efficient and spend more time on patient care. The investment and selection process is not merely one of determining which vendor presents the lowest cost initially, but what solution aligns best with the vision to positively impact patient while improving access and reducing total cost of ownership over the long term.