

Bringing the C-Suite to the Bedside in Critical Care Medicine

A new paradigm, with modern strategies, reimagines the ICU

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Introduction

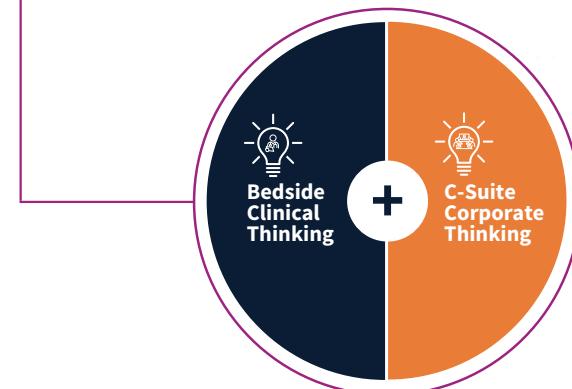
The nation's intensive care units (ICU) face unprecedented stresses. The clinical and C-suite professionals who oversee their management are challenged with ensuring high-quality care amidst difficult reimbursement and staffing environments, as well as chronic under-resourcing. While the ICU is a critical clinical necessity in the patient care journey, it is often viewed as an expensive cost center, measured primarily by the financial realities it represents within the hospital system.

After almost two decades of clinical and operational leadership, I believe the time is now to reshape this outdated viewpoint. The ICU should not be considered as only an expensive cost center. We can progress well beyond the old way of thinking. We can create a more holistic view of the ICU, one that includes deliberate clinical and operational alignment to ensure high-quality care within the patient journey while optimizing economic measures. The new way of thinking integrates the clinical and C-suite goals and creates opportunities to enable the deployment of modern operational strategies. By evolving the paradigm, we can create new norms in the ICU, resulting in increased value for the patient and hospital ecosystem.

This paper argues for a new way of thinking about the ICU, including a new paradigm and modern operational strategies. By combining the clinical and operational thinking of clinicians with the strategic thinking of the C-suite, we enable shared understanding and goals. Additionally, we can create efficiencies and optimize costs by deploying new, proven operational strategies.

New Paradigm:

- Interconnected C-suite and Clinical Leadership



Modern Operational Strategies:

- Expanded role of physicians, virtual health and teleintensivists
- Optimized advanced practice provider (APP) scope and responsibility
- Integrated staffing
- Modernized nurse training

The new way of thinking about the ICU expands beyond the current viewpoint and demonstrates an interconnected approach, aligning holistic cost with the complex clinical management requirements and well-being of the patients who require ICU-level care. Patient needs remain the primary focus, aligned in parallel with the strategic needs of the hospital, to ensure both the delivery of high-quality care and fiscal adherence to the hospital's goals.

The Challenge: Wide-ranging effect of an outdated mindset

The pandemic exposed the wide-ranging effect of the outdated ICU paradigm. In the critical care medicine space, we are realizing the following trends:

- **Delays in care to critically ill patients** lead to a ripple effect of additional costs throughout the hospital, and not just in terms of negative outcomes.
- **Under-resourced or locums-resourced ICUs** promote net increases in cost, wasted time and delayed patient care leading to sub-optimal outcomes.
- **Poor communication amongst clinical teams** also produces additional cost, because of delays in care, poor throughput, and longer lengths of stay (LOS).

Considering the total cost of ICU care from the income & expense statement perspective, there is one cost for each service line of care delivered and a subsidy for the ED. Unfortunately, examining critical care from this perspective can lead to a misunderstanding of total costs and the benefits delivered to patients. A segmented view leads to unsustainable services and negative outcomes for patients, clinicians, and the hospital.

Consider a typical critical care facility with a 16-bed ICU. The critical care team covers the shifts throughout the week, usually with a fractioned coverage model. The hospital has some nighttime coverage with an APP, but there is insufficient volume or financial resources for a dedicated coverage model.

This model is prone to problems in management which lead to inappropriate ICU admissions, sub-par throughput, and negative outcomes such as higher mortality and increased length of stay.

Additionally, the current staffing model leads to poor documentation because it is no single clinician's primary focus. This leads to reduced fee-for-service revenue and a negative downstream impact on the case mix index (CMI).

In this existing paradigm, many C-suite professionals might consider building a full ICU program with better coverage to improve throughput and patient outcomes. To provide 24 hours of coverage seven days a week, this example of a 16-bed ICU will need two full-time intensivists and two critical care APPs. In addition, a medical director will oversee the program.

Here is what this hypothetical program might cost:

Annualized 16-BED ICU STAFFING COSTS

Intensivist:	\$400,000 — \$500,000/year x2
Night call:	\$110,000 — \$180,000
Medical Directorship:	\$80,000 — \$100,000
APP:	\$160,000 — \$200,000 x2
TOTAL:	\$1.31 — \$1.68 million

Note: costs will vary depending on the location and market conditions

If it is a 30-bed ICU, you will need an additional intensivist on days and potentially an additional APP on nights, boosting the price tag closer to \$2.75 million. Meanwhile, in the existing paradigm, the hospital was only paying about \$200,000 for those four to six hours of cross-coverage.

The program above, with a full-functioning ICU with 24/7 coverage, will give almost any chief financial officer (CFO) sticker shock. When I meet with the C-suite at hospitals considering an expansion of coverage, they often blanch at the costs. But this is thinking about costs in the old, siloed paradigm.

The New Paradigm: Interconnected thinking

In the new way of thinking, the viewpoint expands beyond the siloed cost of the ICU department and considers how the impact of a well-managed critical care program will ripple throughout the hospital ecosystem. It includes both cost savings and previously unrecognized gains that are real but not inherently obvious from an accounting perspective. This new way of thinking about critical care is not only necessary but potentially transformative.

To facilitate interconnected thinking, we must align the thinking across the clinical and C-suite leaders who manage the ICU. There are two sets of strategies: up-close clinical and high-level strategic. I call these two groups “bedside thinking” and “C-suite thinking.”

Operating a critical care program in today’s environment challenges the C-suite to think differently in a number of areas, including integrated staffing plans, nurse training, expanded responsibility for APPs, a comprehensive recruiting (people) strategy that wisely deploys telemedicine to address new use cases, and interconnected leadership to ensure broad alignment.

The discovery period in every new ICU program typically involves a lengthy questionnaire. These questionnaires cover everything from broad questions designed to give a basic overview of the size and scope of the existing program to more specific questions about performance data, operations, credentialing, scheduling, and clinical management.

As experienced critical care leaders know, these questionnaires are usually insufficient for surfacing the real pain points and problems of an ICU. In fact, the traditional mechanisms of assessing the needs of an ICU program are inherently steeped in the old way because they are absent the dialogue and collaboration needed in today’s environment. Real-time discovery often happens when leaders work alongside their clinical care teams onsite. Only then will you discover that, while the site may have answered “yes” to a question about whether they are doing interdisciplinary rounding, the truth is that this process has been inconsistent,

unproductive, and unfocused for years, leaving out precisely the most important discussions on goals of patient care.

The operational leaders’ site visits should serve as extensions of the questionnaire, an opportunity to observe and go deeper — to learn “the good, the bad, and the ugly.” Practiced leaders will be able to sensitively but clearly discern where hidden problems may lie and where the roadblocks are when successfully implementing a critical care program.

By aligning the bedside thinking and the C-suite thinking during the assessment period, existing realities are acknowledged, shared goals are created, and care teams can begin to design solutions mutually and collaboratively.



Modern Operational Strategies: Proven tactics to reimagine care

Shifting to a new paradigm, is a critical first step in approaching a new way of thinking in the ICU. However, to accelerate the evolution we must also deploy integrated operational strategies to create immediate efficiencies while also optimizing costs including: 1) Expanded role of physicians, virtual health and teleintensivists, 2) Optimized APP scope and responsibility, 3) Integrated staffing, and 4) Modernized nurse training.

1) Expanded role of physicians, Virtual Health and Teleintensivists

Physician services groups tend to place a singular emphasis on recruiting. Since their inception, these companies were formed to recruit clinicians for their programs. In some sense, it has been their primary function. A hospital needs certain services performed; it is up to the physician services group to find people to provide those services.

In today's environment, we know it is not so simple. Previously, we may have talked about a recruiting strategy, but today the C-suite must think more holistically. An operationally efficient ICU must prioritize three staffing-related tasks to be financially successful both now and overall:

1. Recruit the right people
2. Retain the right people
3. Leverage telemedicine

Without effective recruiting and retention, it is too easy to fall into the trap of thinking that a modern technology solution will be a silver bullet for staffing problems. Too many technology companies today promise to "solve" the clinical staffing crisis, whether through a "gig" approach to clinical staffing or by leveraging proprietary (but now widely and increasingly available) platform technologies. There is no substitute for a strategy that prioritizes permanent, onsite clinicians dedicated to their local communities.

Of course, it is equally foolhardy to ignore or devalue the enormous potential for new telemedicine technology that is applied and deployed on a broad set of use cases, many of which were not feasible even just a few years ago.

COVID made it clear that telemedicine should be integrated into the brick-and-mortar operations of physician service lines. Forward-thinking critical care programs will include teleintensivist coverage as a standard provision that can be implemented as a wrap-around coverage model for onsite staffing or integrated on an as-needed basis. The question for the hospital should not be *whether* to use teleintensivist care but *when*.

The three major areas to consider when implementing telemedicine are quality, access, and cost:¹

Quality/Access:

- Early intervention by board-certified or board-eligible intensivist
- Bedside nurse mentoring in real-time
- Care targeted to when and where it is needed

Cost/Access:

- Logistical support for ICU admission and discharge to optimize throughput
- Supervision of advanced practice providers
- Removing geographical barriers to the expertise of intensivist

Cost/Quality:

- Standardization and adherence to evidence-based care
- Early identification of deterioration
- Reducing post-acute care costs

Finally, many system leaders have asked me how I was able to make programs successful that had struggled in the past. I always tell them that it is not *me* who made it successful, but a comprehensive strategy to find, retain, and grow the right people, those with the relationship-building skills, passion, and attention that are the secret sauce of any overly complex hospital service and most importantly, the clinical professionals were aligned with the C-suite.

2) Optimized APP Scope and Responsibility

Many hospital leaders understand there are potential financial benefits to expanding APP responsibility in their ICUs. However, hospital structures and processes often handicap this approach with old ways of thinking and antiquated paradigms remaining as institutional constraints. Interestingly, if we compare a critical care

unit in which APPs work to the top of their license in collaboration with the intensivist vs. one in which intensivists provide all or most of the care, many are intrigued.

The argument for increasing APP responsibility extends beyond the financial imperatives. Not only can APPs work within appropriate quality safeguards, but, in the new paradigm, APP involvement is critical to *increasing* quality in the ICU. When intensivist-managed care and oversight are in place, supplemental care provided by APPs is safe, high-quality, and not associated with a negative difference in mortality, length of stay or ventilator days.² APPs can also positively impact care on improving infections and prophylaxis rates as well as increase early identification of sepsis.³ When considering the cost difference between an intensivist and an APP, APPs provide a decrease in costs per visit and per consumer at typically $\frac{1}{3}$ to $\frac{1}{2}$ of the salary cost.⁴

The new way of thinking about the top-of-license question is to tackle both the high-level changes and the on-the-ground impediments with a systematic approach that allows the use of an expanded team (including APPs), while ensuring safe, consistent, and high-quality care. This approach has three components:

- A. Culture change within the organization
- B. Updates to hospital bylaws, if required
- C. Navigation of individual state regulatory regimes

A. Culture Change

There is no doubt that some specialists will resist a greater role for APPs within the critical care space.

I once encountered a hospital where the chief operating officer (COO) and chief medical officer (CMO) agreed on greater APP involvement. However, they warned me about “internal politics,” and before long, one of the medical board’s long-time members, a surgeon, approached me. He said he would never allow our group to care for his patients and would not assist in the APP proctoring of procedures as required by the facility bylaws.

This kind of response is not uncommon. Culture change is difficult, and nothing changes minds like being *shown* that current or antiquated thinking may be inaccurate and that there are opportunities to address mutual goals another way. Active demonstrations of skill and

competency, for example, an APP safely and efficiently placing a central line, are the surest and most powerful way to change minds quickly.

The surgeon at the hospital eventually walked into the ICU as a highly trained APP was doing just that. As he was in the unit, the surgeon surprisingly offered to proctor the procedure, and when she was finished, he wrote down the remarks “excellent” on her proctoring form.

Incidents like these are small but important steps towards gaining trust and credibility with the medical staff in this new paradigm.

B. Updating Hospital Bylaws

The challenge of utilizing APPs to the top of their license can feel like a chicken and egg situation. Specialists sitting on a hospital’s board may resist the change until they can see evidence of APP competency, but they have no opportunity to see evidence of APP competency until the bylaws have been updated to allow APPs to practice to the top of their license.

Navigating these complex dynamics requires operational leaders skilled in the art of relationship-building. The C-suite, the hospital’s medical board, the credentialing committee, and other stakeholders all have an invested interest in putting their stamp on questions of scope of practice.

Clinical and operational leaders must work collaboratively to demonstrate APP competency through procedural logs and referrals. It may look differently at each facility, but the end goal is always the same: provide exceptional care to patients that utilizes an evidence-based approach.

The other key point to communicate is that from a critical care perspective, APPs are not there to replace intensivists. They are there to partner, collaborate and utilize their procedural skills to support critically ill patients under the direct oversight of the intensivist.

C. Navigating state-by-state regulation

Ensuring that APPs can work to the top of their license means supporting individual providers and the organization to navigate the local regulations which may prohibit or restrict APP practice.

The reality is that, in some states, NPs are already working out of scope—in this case, it is important to help them get on the path toward securing whatever additional education or certifications they need. We are seeing this increasingly with the family nurse practitioner (FNP) role as their education and certification does not support the new regulations that their background must match the clinical field in which they practice.

This is even more important as it relates to timing. Based on updated laws, states can choose to remove FNPs from all inpatient settings with no notice, leading to significant staffing challenges and patient care issues due to lack of coverage. Addressing and supporting the scope of practice changes proactively will ensure situations like the above do not occur.

3) Integrated Staffing

The C-suite can draw a straight line from the choice of staffing models to the bottom line of their spreadsheets. Even when many of the “soft” benefits of a quality critical care program are considered, the staffing model still plays an outsized role in determining whether a program will be financially and qualitatively viable for the hospital.

Typically, staffing models are determined based on national benchmarks adjusted according to the acuity of the ICU patients, their associated comorbidities, the case mix index, and clinical support. National benchmarks can also provide RN-to-ICU patient ratios, intensivist-to-ICU patient ratios, and nighttime coverage ratios. These ratios are adjusted according to the number of ICU consults, new admissions and discharges, bed

occupancy rates, actual patient acuity, and time of day. The addition of teleintensivist coverage and support are also factored into the equation.

What these calculations do not consider, however, are a range of other benefits to the hospital and patients, all of which, in an integrated, non-siloed way of thinking, have significant downstream impacts on a hospital’s bottom line:

- Avoiding unnecessary transfers enables the hospital to take care of higher acuity patients and thus boosts the case mix index. In addition, it attracts and retains top talent clinicians.
- Getting patients out of the ED and into the ICU faster frees up ED beds and increases patient flow into and out of the ED.
- Better quality care reduces infections, creates efficient transfers, and reduces bouncebacks. All of this improves length of stay, freeing up additional capacity.
- Better outcomes and keeping patients closer to home increases patient satisfaction and the hospital’s reputation in the community, allowing it to expand and retain market share.



Interdisciplinary Partnership Case Study

At a 38-bed Intensive Care Unit, this new interdisciplinary paradigm:

- Established a joint Critical Care Operations Committee, improving communication and partnership between all stakeholders, and offering a clear avenue for collaboration between patient care departments.
- Created and implemented standardized Spontaneous Awakening and Breathing Protocols on all mechanically ventilated patients, including education and bedside training of ICU nursing and respiratory care teams.
- Improved collaboration between the ED clinicians and nursing teams such that all ICU admission requests were seen within 30 minutes of notification, allowing for assessment of ICU admission appropriateness, and ensuring the ED team was supported with clinical guidance and ICU-specific order set implementation.

Results:

90-Day Impact

180-Day Impact

Lives Saved: **41**

Mortality
reduced by
7.4%

2.09
day decrease in
average vent days

2.5 hour (50% reduction)
decrease in emergency department
ICU hold times

1.54
day decrease in
average ICU days

2.41
decrease in average
inpatient days

Lives Saved: **99**

Mortality
reduced by
9.5%

2.1
day decrease in
average vent days

1.54
day decrease in
average ICU days

2.15
decrease in average
inpatient days

4) Modernized Nurse Training

In an era of increasing nursing shortages, many facilities feel forced into accepting nursing staff who continually practice in high-acuity situations beyond what they were trained to manage. This leads to further turnover, additional staffing shortages, and more costs.

In the old paradigm, the effort to train up nursing to manage the demands of a forward-thinking critical care program may be seen purely in terms of the time and cost of training, whether onsite or off. The new paradigm recognizes the downstream effects of lesser-trained nurses in the ICU.

There is ample academic literature that points to greater avoidance of negative outcomes if nurses can be trained up to the CCRN certification:

- Researchers writing in the Pediatric Journal of Critical Care surveyed 43 free-standing children's hospitals and found that the odds of complications "significantly decreased" as the institutional percentage of nurses with a Critical Care Registered Nurse certification increased.⁵
- A review of multiple studies in Critical Care Nursing found that patients who were cared for by nurses with specialty certification had a lower rate of falls, decreased rates of central-line-associated bloodstream infections, and a decreased incidence of failure to rescue.²

Meanwhile, the COVID pandemic forced many care teams to innovate their way toward better outcomes. In January 2022, nurses at Boston Medical Center cataloged the impact of a Critical Care Resource Nurse Team (CCRNT) on patient care. Having evolved the concept from traditional Rapid Response Teams (RRT), the CCRNT supported multiple patient care teams within the hospital, seeking to erase siloed thinking and transition to a "system-wide nursing and patient safety model." This new model improved communication, provided monitoring for at-risk patients, and significantly decreased patient mortality.⁶

Nurses with specialty certifications report higher job satisfaction and leave their jobs at lower rates compared to nurses without those trainings.⁷ In other words, hospitals can reduce costs paid to travel nursing agencies and locums, as well as the expenses of recruiting and onboarding new nurses, simply by providing specialty training to their existing staff.

OLD PARADIGM:

- Fractional ICU coverage
- Decreased quality
- Increased nursing and clinician turnover
- Increased costs for coverage (ie. locums)

NEW PARADIGM:

- Increased quality and better outcomes:
 - Decreased ICU and inpatient mortality
 - Decreased ICU and Inpatient length of stay
 - Fewer patient complications and infections
 - Decreased incidents of failure to rescue
- Higher nursing retention
- Improved interdisciplinary communication and collaboration

In the competition for top talent, it is important to make this training as available and accessible as possible. This means providing the courses onsite and for free, even reimbursing nurses for their time and certification costs. The benefits in terms of lower mortality, avoidance of bad outcomes, and increased nursing retention and morale are more than worth the time spent on training.

Conclusion

Throughout my career as a Clinical Nurse Specialist and operational leader in critical care, I have seen firsthand the profound impact on patients and clinicians when there is a disconnect between the professionals in the C-suite and those at the bedside. In truth – as with most things in hospital-based medicine, all reasonable perspectives must be acknowledged and aligned for hospitals and clinicians to succeed in their core mission and for patients to benefit optimally.

Not long after starting a new contract, I was onsite at a medium-sized community-based hospital providing support to the clinical team, most who were new to the facility. As we were rounding in one of the ICUs, a patient abruptly decompensated and coded in front of us. Due to the small size and location of this ICU and lack of organization around location of equipment and supplies, there was confusion during this event regarding clinical support and responsibilities of the responding team.

I was there to determine the hospital's critical care pain points: what resources they needed, and how my organization could begin to improve care for patients and enhance operational efficiency for the hospital. The patient who was coding in front of me represented much of what was ailing the program:

- An over-reliance on temporary staffing leading to lack of continuity of care
- Under-trained nurses not comfortable with certain patient populations or procedures
- An under-resourced department with suboptimal equipment and supplies. The tools for intubation, ultrasound, and invasive catheters were either not in proximity or mislabeled.

At that moment, I wished I could bring the hospital's CFO to the bedside to see what was unfolding. We could have a discussion, with the evidence there in front of us, that things needed to change. A new way of thinking needed to be adopted. At the same time, I knew the clinicians at the bedside could benefit from a glimpse into the financial and operational pressures facing the C-suite. My experience—while dramatic—was not unexpected. It is a clear example of why we need to abandon the Old Way of assessing and empowering ICU programs and transition to a better, higher quality, sustainable, *and* cost-efficient New Way.

Transitioning out of these siloed, rigid ways of thinking is difficult. By adopting the new paradigm and four interconnected strategies: expanded role of physicians, virtual health and teleintensivists, optimized APP scope and responsibility, integrated staffing, and modernized nurse training, we can shift the thinking in the ICU and achieve amazing transformation in critical care.

- 1 - Lilly & Motzkus, CCM 2017
- 2- Kleinpell, CCM 2019; Gershengorn, CHEST 2011; Kreeftenberg, CCM 2019
- 3- Kreeftenberg, CCM 2019; Kleinpell, CCM 2019
- 4- Kleinpell, CCM 2019
- 5- https://journals.lww.com/pccmjournal/Abstract/2018/08000/The_Impact_of_Critical_Care_Nursing_Certification.4.aspx
- 6- https://journals.lww.com/dccnjournal/Abstract/2022/01000/Critical_Care_Resource_Nurse_Team__A_Patient.10.aspx
- 7- https://journals.lww.com/nursingcriticalcare/Fulltext/2020/05000/CCRN__certification__Why_it_matters.6.aspx

