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TigerConnect
Technical Buyer's Guide

Your complete guide to understanding the Clinical Communication & Collaboration (CC&C) Market

So Much More Than Secure Texting...

Yesterday's HIPAA-Compliant texting apps have evolved into fully integrated clinical collaboration solutions, but not all solutions are created equal. When you're looking for the right solution, **do you know the right questions to ask?**

This guide is designed to help you do just that.

Table of Contents

Introduction	1
Ongoing Relationship with Vendor	3
Security	6
Stability	8
Training and Support	11
Metrics	14
Integrations	20
Conclusion	26

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Introduction

Hospitals and healthcare organizations are increasingly investing in clinical communication & collaboration solutions/platforms (CC&C) to enhance care team coordination, expedite care delivery, increase patient safety and satisfaction, improve outcomes, and reduce cost.

In a recently released study, Trends in Clinical Communications & Collaboration (Malkary, 2021), Spyglass Consulting Group confirmed that 73% of healthcare organizations surveyed have made CC&C adoption an investment priority for 2021 and beyond (p. 10).

CC&C solutions leverage the basic capabilities of a secure text messaging application, but deliver them under a single, unified platform that's integrated with hospital systems like the EHR, nurse call, physiological monitors, smart beds, and lab. This allows automated alarm & alert notifications, role-based messaging, voice calls, and scheduling notifications to be securely routed to the appropriate individuals in real time.

While these elements contribute to a more robust platform offering, they also further complicate the buying decision. The continued evolution of underlying technologies, a changing regulatory/accreditation landscape, and dynamics associated with Covid-19 response (among many other factors), add layers of complexity to the task of choosing the best fit for your organization.

We created this guide for IT and clinical decision makers to demystify the most important elements (reliability/security/scalability/cost) when considering adoption of a CC&C platform.

This Technical Buyer's Guide is for you if:

- You're an IT professional in a healthcare organization that provides direct patient care.
- Your organization is considering adopting a new or enhanced clinical communication strategy for your clinical and administrative staff.
- Your team is looking to converge disparate clinical communications under a single platform (nurse call, alarm management, stats and orders, etc.)
- You're looking for easy-to-understand technical details that will enable you and your team to choose the best clinical collaboration solution for your organization.
- Your organization is sunsetting legacy and/or dated equipment (i.e. Rauland 4, 800 mhz phones, fleets of pagers, etc.)

Introduction

Below are the most common questions we hear from organizations that are evaluating CC&C solutions. We've organized the questions into six categories:

1. Ongoing Relationship with Vendor
2. Security
3. Stability
4. Training and Support
5. Metrics
6. Integrations

While no single system offers the highest rating in every category, it is crucial that you assess your organization's current AND anticipated needs in order to choose the system that best matches your goals.

At TigerConnect, we recognize the breadth and depth of this process. With that in mind, we often partner with hospital teams to evaluate existing workflow issues and address specific concerns such as:

- Platform compatibility
- Security
- Interoperability
- Scalability
- Multi-tenancy

This collaboration allows TigerConnect to gain the insight needed to create a customized solution for your organization's unique needs.

It's important to simplify the process of choosing a solution that helps your clinicians communicate and collaborate in the most efficient, accurate, reliable, and secure way possible today. And if you're just getting started with your research, we think you'll be pleasantly surprised by your options.

Ongoing Relationship with Vendor

Will our solution adapt as our organization and processes continue to evolve?

Introduction

A CC&C deployment, if executed successfully, has the power to affect cultural change throughout your organization. From a clinical perspective, it streamlines workflow, creating the foundation of clinical communication and collaboration between caregivers, allied health, and administrative users. This leads to better outcomes for patients.

From an IT perspective, the successful deployment of a CC&C platform can ease the burden of managing and maintaining disparate applications and lessen the complexity from multiple software integrations and medical device-interoperability - all while lowering total cost of deployment in the short term and total cost of ownership in the long term.

Rather than simply engaging in a singular transaction, healthcare IT leaders must also consider the scalability of the vendor relationship (not unlike the technology they are purchasing) as a major factor in choosing the right solution.

Healthcare organizations are dynamic with an ever-changing ecosystem of software/hardware solutions. There's also a constant evolution of regulatory requirements, organizational goals, mandates, policies and guidelines, as well as impacts from adoption of best practices around standardization, optimization, and technological innovation. This reality means flexibility and extensibility should be prioritized alongside scalability.

Key Considerations

Below are two reasons (among many more) to select a vendor that is invested in your success and demonstrates it by developing a strong ongoing relationship with your various stakeholders after go-live:

Reason #1: Targeted Training That Increases Return on Investment (ROI)

After you go live with your new system, your vendor can provide data that tells your success story:

- How many employees are enrolled?
- What percentage are actively using the platform?
- How many messages are they sending?
- Which middleware integration use cases are utilized the most?

The most advanced vendors will have analytics tools that allow them to track these metrics by department and even by clinician role (physician, RN, MA, etc.)

Ongoing Relationship with Vendor

A top-tier vendor who analyzes data from all of its customers will have proof that specific types of training increase adoption among specific types of clinicians. These same metrics drawn from their other clients to help establish credible, verifiable real-time industry benchmarks that can be leveraged in tracking adoption success. These advanced vendors will have used those metrics at other sites to identify the slow- and low-adopters ... and will have likely developed training strategies to increase usage among these users.

It's a proven formula: If you can get more clinicians and allied healthcare team members using your new platform more frequently, your organization will reduce time delays with patient care. Patients will get their meds, orders, consults, results, and ADT actions faster. This will result in enhanced patient safety and satisfaction, improved organization-wide efficiency and productivity, decreased clinical interruptions and caregiver burnout, and reduced costs - as your ROI moves steadily forward.

Reason #2: Best Practice Insights That Refine Your Clinical Workflows

Your vendor will have unique and valuable insights into the most efficient uses of their platform and its middleware/integrations. You'll get better access to those insights if you maintain a strong business relationship with them. They'll share best practices with you, which you can selectively implement to:

- ✓ Scale your applications beyond the scope of the initial investment
- ✓ Optimize your care delivery process
- ✓ Reduce costs through converged systems and centralized management
- ✓ Establish effective governance around your CC&C platform

The basic formula is this: Strong Ongoing Relationship = You Win.
While this may not seem like a technical consideration, we include it in this Technical Buyer's Guide because it shows how data + analytics, when properly mobilized, can spark process improvement and greater ROI.

Questions to Ask

Here are questions you may want to ask the vendors you're considering:

- ☐ How do you work with your customers post-implementation to track user and use case adoption, and then look for ways to increase adoption and engagement?
- ☐ To what extent do you help your customers develop training courses to increase adoption, engagement, and efficiency among end users?
- ☐ How do you analyze clinical workflows to develop best practice guidelines?

Ongoing Relationship with Vendor

Relationship Feature	Basic	Advanced	Elite
Pursue ongoing relationship		●	●
Apply analytics to develop targeted training			●
Develop and share best practices			●
Share proprietary industry benchmarks			●

Security

How do I best protect the security of patient data and staff communications?

Introduction

While healthcare organizations understand the importance of protecting patient information, many continue using unsecured technology, exposing risk in terms of fines and diminished trust within the broader community.

Adopting a CC&C platform organization-wide brings an added benefit of several security enhancements that can reduce the threat of PHI breaches.

Key Considerations

There's no governing body at the Joint Commission or anywhere else reviewing vendors' compliance with HIPAA regulations. While HIPAA regulations are commonly cited in healthcare, it is important to note that the term "HIPAA-compliant" does not come with a tight definition or a formal certification program for CC&C vendors. These are merely guidelines that vendors are advised to follow.

Still, organizations looking for a secure messaging platform can gain confidence of HIPAA compliance by focusing their security questions around the Security Rule, HITRUST Certification, and adoption of FDA cybersecurity standards.

There is much to consider with regard to security: employees must log in to a private communications network, PHI messages must be confined to that private network, messages must be encrypted and tracked, security processes must prevent PHI from being accidentally or maliciously disclosed, and if a device is lost or stolen, PHI must be remotely deleted.

Questions to Ask

Here are questions you may want to ask the vendors you're considering.

- ☐ Does your platform support customizable levels of security?
- ☐ Are messages encrypted at 256-AES or higher, both in transit and at rest?
- ☐ Describe your platform's approach to HIPAA and other security standards compliance.
- ☐ Do you host our app and our data? If so, what security features exist in your offering to ensure that our data will be protected from your other customers?
- ☐ Can we customize time frames for auto-logout?
- ☐ Does your application require a password or PIN to prevent unauthorized mobile access?

Security

- ☐ How long are messages kept? Are they stored on the device?
- ☐ Does your product have HITRUST CSF certification?
- ☐ Does your product have FDA Class II Medical Device clearance?
- ☐ Does the solution provide a secure archiving option for messages and associated metadata?

Feature	Basic	Advanced	Elite
Message encryption, in transition and at rest	●	●	●
Message recall – recall a message and attachment before it has been read	●	●	●
Message lifespan – set a lifespan to dictate when messages and attachments will permanently auto-delete		●	●
External messaging – Send secure messages to colleagues and patients outside of your organization	●	●	●
HITRUST CSF Certification			●
FDA Class II Medical Device Clearance			●

For more detailed information, review Appendix: HIPAA Confidence Builders

Stability

How can we ensure the platform will maintain 99.99% uptime?

Introduction

If your organization has already deployed a secure texting app to support patient care, it may be time to graduate to an integrated CC&C platform that your clinicians can depend on as much as your EHR. But for that to happen, **the system MUST be highly available**. Any downtime puts your patients at risk for delays in receiving timely care, filling prescriptions, and routing results. None of these circumstances produce happy faces.

Fortunately, most CC&C platforms leverage proven technologies and enjoy weeks upon weeks of uninterrupted uptime. Still, some systems will serve your organization better than others.

Key Considerations

When evaluating something as important as adoption of a clinical communications platform, it is not the time to accept unproven claims. Demand evidence of platform reliability and stability from your prospective vendors. What are the implications of downtime? If your organization is down for 10 minutes, what does that cost on average?

If you're backing a system with your name and reputation, **you want to make sure it has a consistent, verifiable track record of high availability where system-wide problems are both rare and brief.**

Another consideration is the system's architecture and its home. Today's most reliable solutions with the highest uptime are Software-as-a-Service cloud-based systems. This means you're sidestepping problematic issues such as:

- ⚠ New hardware
- ⚠ Upgrades
- ⚠ HACMP infrastructure
- ⚠ System monitoring
- ⚠ Application upgrades
- ⚠ Security concerns
- ⚠ Annual maintenance agreements

Cloud-based architecture ensures you always have the latest version of your platform. Generally, this is what most organizations need to support enterprise-wide clinical communications. Additionally, cloud-native vendors typically have little or no scheduled downtime for maintenance, unlike on-premise vendors.

Another nuance of the cloud model is multi-tenancy. It means many customers share common resources, much like you share your bank's resources with all their other customers. And just as your bank keeps your money separate from everyone else's money, a multi-tenancy architecture keeps your data separate from everyone else's. The advantage? **Everyone shares the cost, so everyone saves money.**

Worth noting, you'll likely want to look beyond your clinical communications vendor to get the complete system picture. Because, if your CC&C solution requires integrations, then you'll also need to consider the stability of the integrated systems. Your new solution may depend on your Single Sign-On or Active Directory infrastructure, so be sure to investigate the flexibility and stability of these related systems.

The exception, of course, is if your CC&C vendor offers an integrated middleware capability.
An embedded middleware offering (such as TigerConnect), is an FDA Class II Cleared Medical Device for secondary notification. This bypasses the need for traditional API-based integrations by consuming data directly from nurse call medical devices such as physiological monitors, beds, and other patient events such as critical labs. As those notifications are prioritized and sent to caregivers through a customizable, rules-based engine within the same platform, your organization can better mitigate the security risk from myriad direct integrations across multiple vendors.

Later in this guide, you'll read about integrations with EHR, nurse call, medical devices, ADT, PACS, paging, and on-call scheduling systems. If you plan to integrate your CC&C deployment with 3rd-party applications, you must consider how unscheduled downtime or maintenance windows for those systems will affect your CC&C platform performance.

As an example, TigerConnect proves system stability by publishing a public link to real-time uptime stats enabling anyone to see real-time incidents leading to downtime or system degradation, going as far back as 2008. Look for something similar from the vendors you're evaluating.

Questions to Ask

Here are questions you may want to ask the vendors you're considering.

- ☐ What's your track record of system uptime? Is this information publicly available?
- ☐ Is your proposed solution a cloud-based app? If so, does it run on an industry-standard infrastructure like Amazon Web Services (AWS)?
- ☐ Is your proposed solution single- or multi-tenant? Have the vendor explain how that is managed.
- ☐ Describe your system backup approach in terms of frequency and completeness of the backup. Why do you use this method? Are there other options?
- ☐ Do you offer the ability to set unique backup and retention/archiving policies?
- ☐ Do you conduct disaster recovery and business continuity exercises? If so, please provide the frequency and scope of the exercises, and indicate if it is done at an additional cost to your customers.

Stability

Stability Feature	Basic	Advanced	Elite
Regular backups	●	●	●
Scalable application layer	●	●	●
Scalable data layer	●	●	●
High Availability Cluster Multi-Processing (HACMP)		●	●
Cloud-based multi-tenancy architecture		●	●
Redundancy		●	●
Transparency to uptime statistics			●
Uptime	99%	99.9%	99.99%
Embedded Middleware Integration (FDA cleared)			●

Training and Support

Who do we call when we need help?

Introduction

One of the important takeaways from this guide is that today's CC&C solutions can be impressively comprehensive, especially if they offer the most advanced features, reporting tools, and middleware interoperability options. This means you'll need to consider training, support and self-serviceability in your purchase decision.

When you add more bells and whistles, the need for training increases to ensure users take full advantage of the extra capability. It also increases the different ways things can go wrong.

Key Considerations

If you are considering a full-featured clinical communication and collaboration platform provided by one of today's leading vendors, then your organization will need extensive training and support in order to get the highest utilization, adoption, and ROI from it. And it's not just the end users who will need training and support. Your technical staff will need information to help with implementation and system support.

For training, healthcare organizations want to see a variety of online, onsite, and remote options. They also want a variety of formats to accommodate the different learning styles and preferences of their employees. From step-by-step written documentation with screenshots to quick-start guides – from eLearning videos to remote webinars – they want all of the options.

For support, healthcare organizations operate 24/7, so they expect access to a 24/7 Help Desk staffed by knowledgeable people who can answer basic questions. That's the starting point. Competitive vendors provide a Tier 2 Help Desk staffed by technicians with deeper experience and knowledge. You'll also find Tier 3 Help Desks that handle the most difficult problems.

For most hospitals, the expectation is to have their own support team cross-trained for first line support. While the vendor is expected to be available 24/7/365, it can actually be quite detrimental for a hospital to have to solely rely on a 3rd-party for every single aspect of technical support. Clinical and IT teams want a single phone number to call - they do not want to have to know all the different vendor's phone numbers.

When it comes to serviceability, a highly valuable component of a CC&C solution is if the application can be configured by the end-user administrator. If you have to call the vendor every time you need to make a minor change to workflow, assignments, roles, etc., then you will be setting up your admin and support teams for delays, frustration, and long-term scalability concerns. Self-administration is critical, especially in the fluid hospital environment.

Be sure to ask your CC&C vendor about ease-of-use, UX, and configurability, particularly when it comes to day-to-day usage of the applications by the various clinical and IT stakeholders.

Training and Support

Questions to Ask

Depending on the level of training and support your organization will require, here are questions you may want to ask the vendors you're considering.

Training

- ☐ How do you train our system administrators? Is the training live and onsite? Are there remote and online options?
- ☐ What's your structure and format for training our end users? Is that training live and onsite or only online? Is there a vendor community site that includes video demonstrations, slide decks, and written user guides?
- ☐ Do you provide Train-the-Trainer services? If so, please describe the process.
- ☐ Do you provide Administrative Training services? If so, please describe the process.

Support

- ☐ What level of Project Management support do you provide for implementation?
- ☐ How do end users report problems?
  - ☐ Phone ☐ Email ☐ Text ☐ Online chat ☐ In-app form
- ☐ What percent of callers get their answer from your Tier 1 Help Desk?
- ☐ How do end users escalate problems? What's your SLA for response time?
- ☐ How do we report urgent problems that affect all end users? What's the SLA for response time?
- ☐ How do you leverage data from Help Desk calls to develop additional training?
- ☐ What level of support do you expect us to provide to our end users?
- ☐ Can you give two examples of complex technical problems you've had, and how quickly you resolved them? (You're looking for transparency; be suspicious if they are unwilling to provide any examples.)
- ☐ What level of support is required from our technical team for upgrades and break-fixes?

Training and Support

Training Feature	Basic	Advanced	Elite
Complete documentation for end-users and system administrators	●	●	●
Training videos that demonstrate system features and workflows	●	●	●
Onsite training and onboarding support for go-live		●	●
Train-the-trainer curriculum		●	●
Customized documentation developed specifically for your organization			●
Customized training developed specifically for your organization's workflows			●

Support Feature	Basic	Advanced	Elite
Tier 0 support – Self-help documentation, FAQs, and online training videos	●	●	●
Tier 1 support – Toll-free 24/7 Help Desk for basic questions and issues	●	●	●
Emergency hotline to report problems affecting all users	●	●	●
In-app access to vendor's help desk via email or chat	●	●	●
Tier 2 support – Vendor's help desk for advanced technical issues		●	●
Project planning support for the implementation phase		●	●
Tier 3 support			●

Metrics

What data should we be tracking to ensure the solution is delivering value to the clinical, IT and leadership teams?

Introduction

If you're like the organizations we talk with frequently, you're probably looking to implement CC&C as part of your long-term digital transformation initiatives, and because of the exceptionally low investment / high ROI results it brings. Perhaps you've got specific clinical, financial, and organizational goals, and you want to see how a secure CC&C solution can help you achieve those goals.

But you may not yet have discovered just how dramatically **a well-implemented, leading CC&C solution can propel your organization toward your goals.** A key ingredient of any communication platform's transformative potential lies in its ability to convert meta data and statistics into **compelling, actionable, timely, data-driven insights.**

For example, your management team may want to demonstrate value in terms of increased responsiveness, reduced length of stay, faster results routing, improved patient safety and satisfaction (resulting in better HCAHPS scores), reduction of alarm fatigue, more expedient pharmacy refills, and higher bed utilization. The thing is, you can only measure your solution's contribution toward those goals if you choose a platform that has rich reporting and analytics tools.

The right metrics allow you to see:

- Correlations between employee adoption of your CC&C platform, and high-level organizational goals like improved patient satisfaction and lower readmission rates
- Insights into how faster response times from your clinical staff lead to better patient outcomes and satisfaction
- Empirical data demonstrating the effectiveness and efficiency of clinical workflow, in real time and retrospectively

Let's get big-picture for a moment. Clinicians generally want to provide exceptional patient care at the bedside, right? The problem is, many clinical systems require manual interactions with a myriad of technologies that interrupt the patient-to-caregiver communication and thwart efficiency. At the same time, regulatory-driven policies and procedures can drain clinicians of their energy and enthusiasm to care for other human beings.

However, a CC&C solution with comprehensive reporting tools can provide compelling insights to your clinical leadership and administrative teams. The stories show how strategic workflow, streamlined communications, and care team collaboration can improve patient safety and satisfaction, reduce the impact of alarm fatigue, and create more supportive environments for your clinical teams. This will hopefully lead to more motivated users willing to increase their engagement with the application: This is how the right vendor solution eliminates obstacles that hinder your clinical staff from doing the good work they truly want to do.

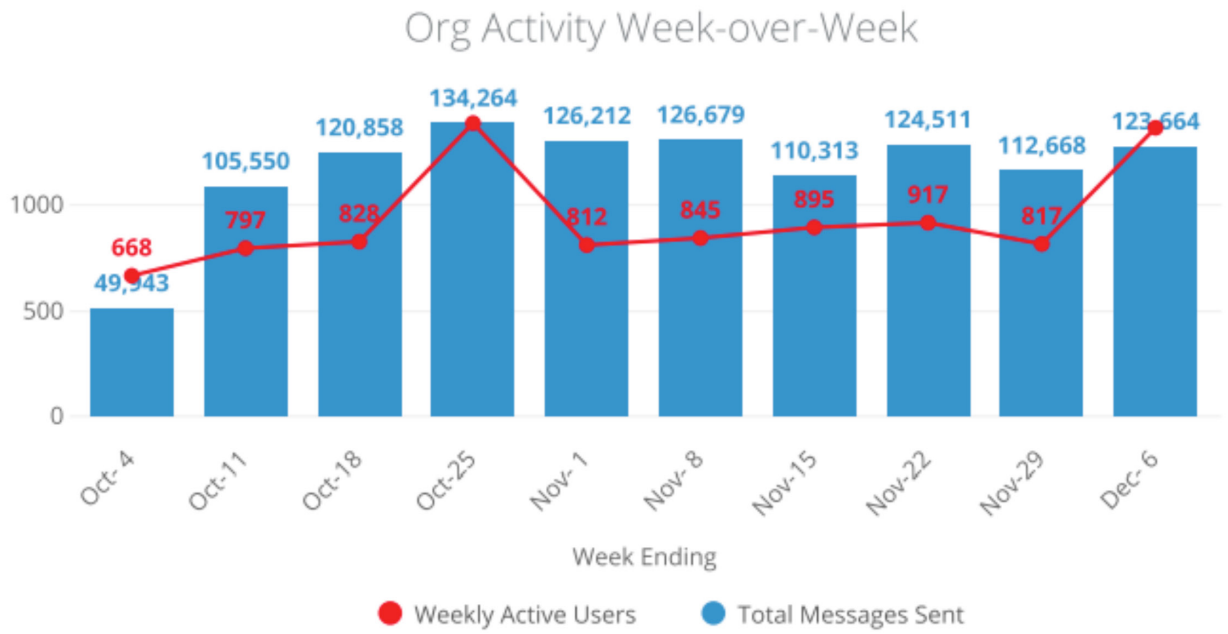
Metrics

Let's examine the metrics that will help you tell an inspiring story, which in turn enables actionable, timely, data-driven governance.

Key Considerations

When choosing a clinical communication solution for your care organization, it's helpful to review your mission statement. Your mission statement will dictate the level of richness you need in your platform's reporting and analytics tools, as well as the types of metrics you'll need to track.

For example, if your mission statement is "to improve life in a healing environment," then you'll be well-served by basic message volume metrics, such as the number of messages sent, delivered, and read each week:



Metrics

Monitor these metrics to ensure the platform is doing what it should. If you see a massive, unexpected drop in usage, you can start looking for the reason usage is declining.

But if your mission is "to improve patient health and reduce healthcare spend through collaboration, coordination, and communication in the community," you need a platform with real-time, comprehensive, flexible analytics tools that substantiate collaboration and coordination among clinicians, care teams, and patients. And then you **leverage the data to support objective, actionable, timely governance decisions.**

Department - Title	# of Provisioned Users	# of Active Users	# Msg Sent	# Msg Read	# Roles Msg Sent	# Roles Msg Read	# Data Calls	# Data Alerts	Msg Sent/User
Pediatrics - Resident	95	82	8,086	5,876	1,642	0	0	0	98.6
Medicine - Resident	70	66	3,449	2,790	223	0	0	0	52.3
Pediatrics - Attending	129	57	1,701	1,447	84	0	0	0	29.8
Neurology- Resident	10	9	1,411	1,296	105	0	0	0	156.8

Three Types of Reporting

We find it helpful to split reporting infrastructures into three groups. First, there's today-focused reporting. Use it when you want to monitor recent activity. Today-focused reporting is common to most secure CC&C solutions, and is helpful for the organization that is represented by the first mission statement above.

Today-focused reporting reveals the departments, clinician groups, and even individual users who are sending and receiving which types of text messages or are receiving notifications from which types of systems: nurse call, medical devices, EHR/CPOE, etc. For example, if your implementation includes medical device connectivity, you'll know which nurse, assigned to which patient/room, is receiving which type of alarm notification, when as well as what they did with the message (accept/reject/auto-escalation).

The second group of reports could be called nurture-focused. This advanced reporting is used to detect trends and formulate deeper insights into adoption, engagement, and usage of integrated devices/systems, as well as gaps in training. These reports enable compelling, data-driven analytics that can bring focus, purpose, and unity to your organization's care team communication strategy.

An example of nurture-focused reporting is a list of clinicians who are sending significantly more messages than average, reading more messages than average, and/or engaging consistently with more advanced features. These are your super-users. Learn how they're using the platform, then develop and publish best practices around their workflows.

Other nurture-focused reporting helps you prove a strong ROI with these metrics:

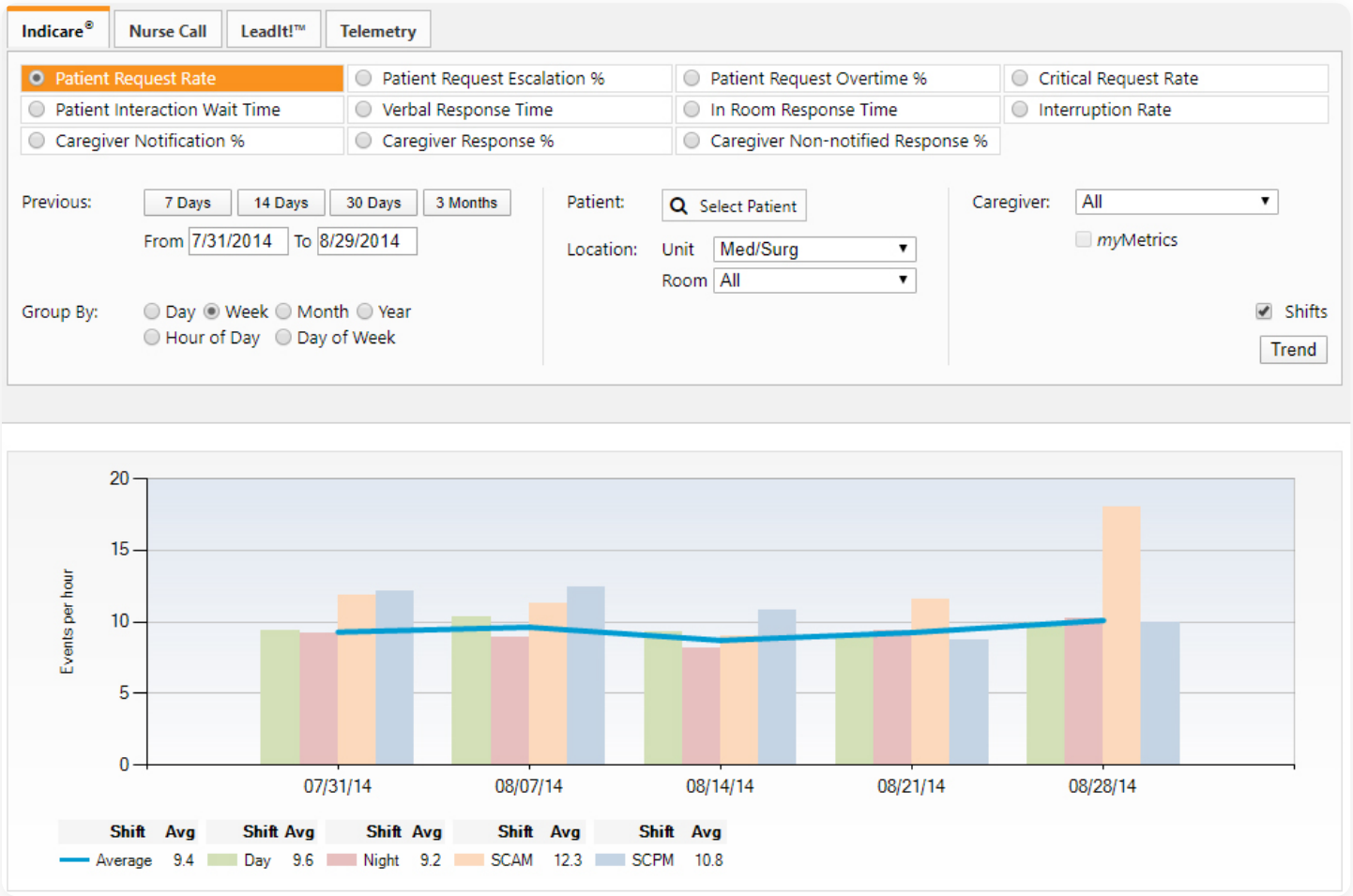
- Provisioned users — they have an account and can access the system.
- Activated users — they've logged in at least once. This indicates adoption.
- Active users — they've logged in over the past 7 days (or whatever time period you define). This indicates engagement.

Metrics

2,910	1,904	65.4%
Provisioned Users	Activated Users	Activated Users

Reporting on these basic metrics helps justify your investment. If you see that only 65% of care team members have logged in recently, you know you need to improve engagement, or you risk project failure. You can't get maximum leverage from the platform or transform the productivity of the care team if 35% are not even using the solution.

The third group of reports are focused on data insights derived from the management of clinical workflow and care team collaboration. Clinical workflow-focused reports collect and correlate data from nurse call systems, medical devices, middleware, and RTLS solutions along with patient perception feedback gathered during rounding to create an accurate, real-time picture of patient experience, responsiveness, staff workload, and unit performance. Clinical leaders can monitor, trend, and compare patient experience and responsiveness metrics by health system, region, hospital, unit, room, patient, or caregiver informing their decision-making and process improvement planning.



Metrics

Questions to Ask

Here are questions you may want to ask the vendors you're considering.

- ☐ Describe your reporting and analytics tools. What are the options in terms of time periods and groups of users?
- ☐ Can we report on the number of provisioned, activated, and active users?
- ☐ Can we report on the number of messages sent, delivered, recalled, read, forwarded, expired, and archived?
- ☐ Can we report on aggregated transactional message metadata, such as number of messages sent by nurses, or number of messages read by employees in the Neurology department?
- ☐ Can we define our own reportable clinician cohorts, such as Physicians, Midlevel Providers, and Nursing staff?
- ☐ Will our reporting tools include graphs and charts?
- ☐ Will our reporting tools support aggregation, trending, and drill-down capabilities?
- ☐ How do we access our reports? Do we log in to a reporting system and run defined reports, or are they run on a customizable schedule and pushed to us through email?
- ☐ Can we report on clinical workflow metrics from 3rd-Party nurse call, medical devices, rounding solutions, and Real-Time Locating Systems (RTLS)?
- ☐ How can your reporting help us optimize nurse workflows?

Metrics

Metric	Basic	Advanced	Elite
Message status – know instantly when messages are sent, delivered, and read	●	●	●
Message volume – number of messages sent, delivered, recalled, read, forwarded, expired, archived	●	●	●
User adoption and engagement		●	●
Analytics and insights – monitor usage and trends by individual, department, or organization to draw insights for optimizing use			●
Real-time interactive reporting tool — supports clickable drill-down functions			●
Real-time and retrospective clinical workflow analytics from 3rd Party nurse call, medical device, and other critical communication systems			

Integrations

How does the solution integrate with our existing EHR, Nurse Call, Medical Devices, RTLS, PACS, PBX, and other clinical systems?

Introduction

Most HIPAA-compliant messaging solutions can exchange data with common hospital systems. These integrations are a big part of what makes these systems so powerful.

We've organized the integrations into 5 categories:

1. EHRs
2. Nurse Call and Patient Alarms (Medical Devices)
3. Scheduling Services
4. User Access
5. Other Integrations

We'll look more closely at the integration options you'll find, and what it takes to set up and maintain the integrations.

Key Considerations

We've observed that organizations with the most successful clinical communication implementations initiated the evaluation process with a clear picture of desired integrations. Whether your organization has that picture or not, this section will show you what's available and, we hope, help you see that vendors are doing much of the heavy lifting required by the integrations. Any organization with a junior-level technical administrator can pull off nearly all these integrations, helping you **deliver real-time information in an actionable format.**

The goal is always to reduce the amount of time your patients spend waiting for admissions, transfers, orders, prescriptions, care team communications, consults, results, discharges, and post-discharge follow-up.

Electronic Health Record (EHR) Systems
EHR systems are excellent at collecting patient vitals, prescription requests, images, orders, results, consult requests, and ADT updates. And they get that information very close to your clinicians. But that last mile - getting the actionable data into the hands of your caregivers when they're not actively interacting with the EHR or email system - is where EHRs nearly always stop short.

That's where a CC&C solution can make all the difference. It brings your care team **important, time-sensitive patient alerts and results to the last mile, as soon as they're available.**

Integrations

We'll take a closer look at what you'll need to do to integrate with two of the big EHR systems, Cerner and Epic. However, leading vendors support integrations with MEDITECH, Allscripts, and most other EHRs. The idea is to give you a sense for just how achievable this is. Then we'll see how you can route HL7 notifications as secure text messages for immediate awareness of ADT events.

Cerner

Your clinical communication vendor will help you set up a handful of SMTP integrations. Beyond that, you'll let the Cerner app do the heavy lifting. Your vendor will most likely leverage the Cerner Rules Engine, where a Cerner admin defines the business rules for email alerts.

For example, the Cerner admin can define a rule to generate an alert for critical lab results to the ordering physician. Your Cerner integration detects that the Cerner Rules Engine is creating an email alert, intercepts it, and routes it instead through a secure text message to the ordering physician.

Epic

As with Cerner, your vendor will help set up SMTP integrations to send alerts for ADT events and transport requests. Another possibility is to redirect In Basket pages to your clinicians as text messages.

To their credit, Epic is improving its native clinical communication tools, but limitations persist. The organizations we hear from are looking for the full set of features and benefits described in this guide, currently available only from dedicated CC&C solution providers.

HL7

Regardless of the EHR, leading vendors can help you set up integration with your HL7 provider, such as:

- CorePoint
- Iatric Systems
- Infor Cloverleaf
- Intersystems Ensemble/HealthConnect
- NextGen's Mirth Connect
- Orion Rhapsody

To set up the connection between your HL7 provider and your CC&C platform, you'll need an onsite interface engineer with two high-level skills: First, they'll need to be able to process incoming HL7 messages. This is a common task for them.

The second skill involves posting the HL7 messages to your clinical communication system through a modern API. Interface engineers aren't typically required to work with APIs, so they may not be familiar with the necessary chain of processes:

- Call the CC&C platform's API to create the group
- Tag that group with the patient's MRN
- Send the message to the group

Integrations

If your strategy includes integration with your HL7 vendor so that critical alarms/alerts, radiology images, and lab results can be routed in real time to your clinicians, then look for a vendor who reduces the complexity of that chain by providing a clean API request that performs the chaining based on data passed into the API.

Ask your vendor if they support the ability to send HL7 messages into your EHR. This has its own set of technical and financial challenges, since most EHR systems are (understandably) reluctant to accept data from third-party systems.

Nurse Call and Patient Alarms (Medical Devices)

These integrations typically connect with up to three types of systems.

1. On-patient vital signs systems monitor heart rate, oxygen levels, and blood pressure. If measurements deviate beyond normal ranges, the system will automatically send detailed alerts to the relevant care team members.

2. Bedside nurse call buttons can be reconfigured to send notifications to the nurse's smartphone. You will likely need to install and manage middleware (unless it is already a component of the CC&C platform) to support this integration. Expect guidance from your vendor who will be familiar with the software that sits between a nurse call system like Rauland or Hillrom and your messaging platform.

   This integration usually requires support from two of your resources. You'll need someone who works closely with your middleware provider, or possibly someone employed by the middleware provider. You'll also need the person who's familiar with the nurse call alert types. Keep that in mind when you're thinking about a nurse call integration.

3. Voice over Internet Protocol (VoIP) integration (or call-back into the patient room) may require some extra work on your side before you can get it up and running. These "pre-flight" tasks include:

   - Identifying and shoring up dead zones at your site
   - Upgrading your wireless network's signal strength from 2.4 GHz to 5 GHz
   - Upgrading to more powerful devices

Once you've got everything set up, your CC&C platform will boast exciting new features, such as app-to-app calling between clinical users of your platform and patients via the nurse call solution.

Scheduling Services

Three different integrations comprise this category:

1. Answering Services
2. On-Call Scheduling Services
3. Paging Services

Integrations

All three of these integrations present a similar technical challenge. You'll be setting up integration with either an Operator Console or an Answering Service Console, such as AmTelCo, StarTel, or Spōk. The setup is straightforward and generally requires no development work and no new skills from your technical staff. You'll set up your vendor as a Service by completing a configuration form with about half a dozen SMTP or WCTP protocol settings. Then, work with your console vendor to turn it on.

For example, a vendor who supports the following WCTP operations will meet most, if not all, your needs:

- wctp-SubmitRequest
- wctp-SubmitClientMessage
- wctp-PollForMessages *(this one makes 2-way communication possible)*

An advanced feature of Scheduling Services integrations is known as Roles. It gives you the ability to route text messages to the clinician who's filling a specific role on the care team. You don't have to know that person's name, and you probably won't know the name of every care team member who will be active when a result becomes available. But with advanced Role functionality, you can be assured that messages will reach the right clinician at the right time, especially if integrated with an existing on-call scheduling system.

User Access

The two primary integrations for user access are Single Sign-On (SSO) and Security Assertion Markup Language (SAML).

If you'll need either SSO integration or SAML integration, we recommend any vendor that automates the installation, configuration, and maintenance processes as much as possible. There are two reasons. First, it means these otherwise complex tasks can easily be managed by someone with the skillset of a junior admin. Second, if the vendor has gone to the effort of streamlining the SSO implementation, they've probably taken extra helpful steps in other areas as well. It's an indication of smooth sailing for you.

With **SSO,** whether you're going to use Web SSO or Desktop SSO (or both), make sure you select a vendor that supports your strategy. We also suggest you look for vendors that support native SSO under the common Internet Information Services (IIS) web server.

With **SAML**, you'll want to make sure your vendor provides support for your Identity Provider, whether it's AD FS, Okta, OneLogin, or another IP. Part of the setup will require you to set up your vendor as another Service Provider to identify and connect to users. Your vendor should be able to make this a simple task that requires no new skills from your SAML staff. Also, if you have staff who will use your texting system at two or more sites and can't have messages from one site showing up in another site's network, make sure your vendor can support this setup.

Integrations

Other Integrations

If your organization has an EHR that's not supported by your preferred CC&C solution, then you will want to ask about integrations with other systems, such as:

- Medical Devices via IHE PCD - IHE Patient Care Device Technical Framework
- Picture Archiving and Communication System (PACS)
- Lab Information System (LIS)

If your care teams can't get real-time access to MRIs, CTs, X-rays, and critical lab results, then clinicians will be unhappy when they discover this basic functionality is available in other solutions.

Questions to Ask

Here are questions you may want to ask the vendors you're considering.

- ☐ Do you support integration with [name your EHR system]?
- ☐ Describe how your system leverages clinician roles.
- ☐ How does your system support clinical workflows?
- ☐ Do you support Web SSO? How about Desktop SSO?
- ☐ In what ways do you help us with our user access integration?
- ☐ Does your product allow communication outside of those managed in our own Active Directory?
- ☐ Would your system put us on the path of eliminating pagers? Please elaborate and provide examples with verifiable ROI of customers sites where you have implemented this replacement.
- ☐ What set of technical skills do we need so we can implement and support your integrations? List each integration separately and the necessary skills.

Integrations

Integration Feature	Basic	Advanced	Elite
Broadcast lists – send a message to the entire organization or to a custom distribution list	●	●	●
3rd-party file attachment	●	●	●
ADT			
Answering services		●	●
HIE		●	●
LDAP / Active Directory			●
On-the-fly group messaging		●	●
On call scheduling & paging		●	●
PACS		●	●
LIMS		●	●
Nurse call – immediately route nurse call messages to the right staff member for faster, more accurate responses		●	●
Automated role-based messaging – assumable roles take the guesswork out of who's on call and allow past messages to be accessible to subsequent role-owners			●
EHR			●
HL7			●
VoIP – connect with existing phone systems, do peer-to-peer messaging and video calling			●
3rd-party scheduling integration – automate role assignments by shift			●

Conclusion

You now have a solid overview of the technical requirements for implementing and supporting a HIPAA-compliant CC&C solution. We hope we've demystified this relatively new industry category, at least to the point where you know what questions to ask so you don't mistakenly choose a vendor that's not the right fit for your organization.

We encourage you to read this guide once more, because some of the topics we discuss early on will make more sense now that you have the full picture.

We also encourage you to select a vendor that:

- **Provides a rich set of features,** rather than expertise in only two or three of the seven areas we covered. Don't shut yourself out of the benefits of a versatile solution.

- **Is constantly developing new features** and improving their current functionality. This is a rapidly developing industry segment, and your organization will want to keep up with innovations so you can provide the best possible patient care.

- **Provides deep documentation and robust implementation** and support tools in a cloud environment so your technical team is not burdened with complicated, onerous maintenance and support processes. Who wants to be constantly applying workarounds and having to explain to leadership why things are not running smoothly?

After reading this guide thoroughly, you should feel much more prepared to have meaningful discussions with vendors. So ask the tough questions. Get answers you understand. Then **make your recommendation with confidence.**

Appendix

HIPAA SECURITY CONFIDENCE BUILDERS

Confidence Builder #1: The HIPAA Security Rule's Technical Safeguards

The organizations we hear from are understandably concerned about complying with the technical safeguards of the Security Rule. According to the HIPAA Journal, standard SMS and Instant Messaging apps typically violate Security Rule requirements in several ways.

Be sure your solution meets these guidelines:

- PHI can be reliably limited to authorized users who require the information to do their jobs, because messages can be forwarded, intercepted, or sent to the wrong person.
- Copies of messages containing PHI don't live in multiple places beyond a hospital's control, including the phone carrier's servers, the messaging company's servers, and the recipient's device, to name a few.
- There's a system to monitor the activity of authorized users when they're accessing PHI, including an audit trail.
- Employees have to authenticate their identity with a unique, centrally-issued user name and password. This will keep out children, when granted unsupervised access to mom or dad's smartphone.
- There's enforcement of policies and procedures that prevent PHI from being inappropriately altered or destroyed.
- Unencrypted PHI cannot be easily transmitted beyond the organization's internal firewall.

Confidence Builder #2: HITRUST CSF Certification

As mentioned earlier, the term "HIPAA-compliant" doesn't have a tight definition. In fact, it's somewhat subjective. HIPAA allows for controls that are reasonable and appropriate — but does not prescribe specific controls that meet those criteria. This situation makes HIPAA compliance open to interpretation and difficult to apply.

What's needed is a set of prescriptive standards, defined by a neutral, reputable body of healthcare experts.

Enter the HITRUST Alliance. This not-for-profit organization is governed by leaders from across the healthcare industry. HITRUST collaborates with privacy, information security, and risk management leaders to develop

and maintain its Common Security Framework (CSF). Organizations can use the CSF to develop processes to create, access, store, and exchange PHI safely and securely.

HITRUST's CSF is comprehensive as it integrates the security requirements of care organizations from multiple areas:

- ✓ Federal legislation like HIPAA, the HITECH Act and ARRA
- ✓ Federal agency rules and guidance from NIST, FTC, and CMS
- ✓ State legislation (e.g., Massachusetts, Nevada, and Texas)
- ✓ Industry frameworks such as PCI and COBIT
- ✓ Accreditation Recommendations from the Joint Commission

Vendors in the healthcare industry can pursue HITRUST CSF certification. **This is a rigorous process and takes about eight months to meet the demands of its 135 controls**. If your CC&C vendor has earned HITRUST certification, you have third-party evidence that they've adopted a prescriptive, industry-approved, standardized framework. Another score for the vendors.

Confidence Builder #3: FDA Class II Medical Device Cybersecurity Clearance

As part of its efforts to ensure medical device cybersecurity safety, the U.S. Food and Drug Administration (FDA) regulates medical devices and works aggressively to reduce cybersecurity risks. Medical device developers (like TigerConnect) are mandated to engineer appropriate mitigations to address patient data risks and ensure a heightened level of cybersecurity.

In order to receive clearance as a class II medical device for secondary alarm notification, TigerConnect followed the stringent FDA guidance to address cybersecurity throughout the product lifecycle, including during the design, development, production, distribution, deployment, and maintenance of the device.

About TigerConnect

As healthcare's most widely adopted care collaboration platform, TigerConnect uniquely combines clinical communication, workflow and alarm management, virtual care, and on-call scheduling in a single, easy-to-use, cloud-based solution. Cloud-native and mobile-friendly, TigerConnect combines a consumer-grade user experience with enterprise-grade infrastructure built specifically for healthcare. With an advanced, open API, it improves care quality, lowers risk and costs, and creates a better experience for patients, doctors, nurses, and care teams across shift changes and locations.

Trusted by more than 7,000 healthcare organizations, TigerConnect maintains 99.99% verifiable uptime and nearly 5 billion user sessions each year.

Where to learn more:

Website
www.tigerconnect.com

Sales & Product Demos
1-800-572-0470

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