

Technical Buyer's Guide

TigerConnect Technical Buyer's Guide

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

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

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Hospitals and other care organizations are turning to clinical communication & collaboration solutions—often referred to as CC&C systems—as a way to improve care-team coordination and to expedite care delivery. But there’s an unexpected challenge with this journey.

These clinical communication solutions are changing so rapidly, it’s not easy for IT decision-makers to be confident with their vendor selection. You want to pick the best system for your organization, but there are so many factors to consider. And the factors keep changing. At any moment, you don’t know what you don’t know.

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 thinking of purchasing a new system to support clinical communications among your clinical and administrative staff.
- You’re looking for technical details that will help you choose the best communication solution for your organization.

This guide is in response to the most common questions we hear from organizations who are shopping for a CC&C system. We’ve organized the questions into seven categories:

- **Security**
- **Stability**
- **Training & Support**
- **Ongoing Relationship with the Vendor**
- **Metrics**
- **Device Ownership**
- **Integrations**

What you’ll find in your research is that no single system offers the highest rating in every category. In fact, most excel in only three or four areas. So it’s crucial that you assess your organization’s current AND anticipated needs. Because nobody wants to be the one who recommended a system that turned out to be inadequate and obsolete two years later.

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

The Difference Between Secure Texting and Clinical Communications

From the outside, it's hard to tell the difference between a secure texting app and a clinical communication platform. You might have a vague sense, but the differences can be summed up like this:

- Secure text messaging is a more basic, 1.0 version of messaging that consists of direct and group messaging along with a handful of features and admin controls.
- Clinical Communication Platform solutions leverage the basic capabilities of a secure text messaging application, but deliver them under a single unified platform that's integrated with a hospital's systems like electronic health records, lab, or paging solutions. This allows automated alerts, role-based messaging, Voice over Internet Protocol calls, and scheduling notifications to be routed to the appropriate individuals.

Introduction

By now, every care worker and administrator in a hospital understands the importance of protecting patient information. And yet, rampant unsecured short message service (SMS) use persists.

Care organizations MUST be vigilant to protect electronic protected health information (ePHI). The fine for a single Health Insurance Portability and Accountability Act (HIPAA) violation can be as high as \$50,000, and repeated violations can reach \$1.5 million. If any clinicians at your organization are sending text messages through the native app on their Smartphone using standard SMS, or through consumer IM apps like WhatsApp or Facebook Messenger... **they're inviting damaging financial and social consequences to your organization.**

But today's advanced clinical communication systems resolve these risks, keeping your organization out of harm's way.

Key Considerations

The term "HIPAA-compliant" doesn't come with a tight definition or a formal certification program for text message vendors. It's more like a set of guidelines that vendors voluntarily adhere to and claim. And there's no governing body at the Joint Commission reviewing the vendors' compliance with HIPAA guidelines. Still, organizations looking for a secure texting system can gain confidence of HIPAA compliance by focusing its security questions around the **Security Rule** and **HITRUST certification**.

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. Standard SMS and Instant Messaging apps typically violate Security Rule requirements in these ways:

- PHI cannot 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 typically live in multiple places beyond a hospital's control, including phone carrier's servers, the messaging company's servers, and the recipient's device, to name a few.
- There's no system to monitor the activity of authorized users when they're accessing PHI. No audit trail.
- Employees don't have to authenticate their identity with a unique, centrally-issued user name and password. Nor do their children, when granted unsupervised access to mom's or dad's Smartphone.
- There's no enforcement of policies and procedures that prevent PHI from being inappropriately altered or destroyed.
- Unencrypted PHI can easily be transmitted beyond the organization's internal firewall.

What an Ideal System Looks Like

Each of these potential violations is addressed by a robust HIPAA-compliant text messaging system. Employees must log into to a private communication network. PHI messages are confined to that private network. Messages are encrypted and tracked, and security processes prevent PHI from being accidentally or maliciously disclosed. If a device is lost or stolen, PHI can be remotely deleted. Score one for the vendors.

Confidence Builder #2:

HITRUST Common Security Framework (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 in that it integrates the security requirements of care organizations from multiple areas:

- ✓ Federal legislation like HIPAA and American Recovery and Reinvestment Act (ARRA)
- ✓ Federal agency rules and guidance from National Institute of Standards and Technology (NIST), Federal Trade Commission (FTC), and Centers for Medicare and Medicaid Services (CMS)
- ✓ State legislation (e.g., Massachusetts, Nevada, and Texas)
- ✓ Industry frameworks such as Payment Card Industry (PCI) and Control Objectives for Information and related Technology COBIT)

Vendors in the healthcare industry can pursue HITRUST CSF certification. This is a **rigorous process that takes up to a year to meet the demands of its 135 controls**. If your secure texting vendor has earned HITRUST certification, you have third-party evidence that it has adopted a prescriptive, industry-approved, standardized framework. Another score for the vendors.

Looking for more information? We’ll close this section by providing a **link** to a concise list of questions on complying with HIPAA regulations for text messaging.

Questions to Ask

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

- Does your system support customizable levels of security?
- Describe your system'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 the data will be protected from your other customers?
- Do you use at least 256-bit encryption for messages at rest and in transit?
- Are message databases encrypted using whole-database encryption?
- Can we customize time frames for auto-logout?
- Does your application require a password or PIN to prevent unauthorized mobile access?
- Do messages and attachments self-destruct after a certain time period?
- How do you prevent users from seeing patient data if the user is not part of the Care Team?
- Does your product have HITRUST CSF certification?

| Feature | Basic | Advanced | Elite |
|---|-------|----------|-------|
| External messaging – send secure messages to colleagues and patients outside of your organization | ● | ● | ● |
| 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 | | ● | ● |
| HITRUST CSF Certification | | | ● |

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 system that your clinicians can come to depend on as much as (or more than) 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 patient care, filling prescriptions, and routing results. None of these circumstances produce happy faces.

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

Key Considerations

This is not the time to accept vague, evasive answers from your vendor. If you're backing a system with your name and reputation, you want to make sure it has a consistent track record of high availability. This is the message we hear from organizations asking us about the stability of our system.

Another consideration is the system's architecture and its home. Today's most-reliable solutions are Software-as-a-Service Cloud-based systems. This means you're not taking on:

- New hardware
- Upgrades
- HACMP infrastructure
- System monitoring
- Application upgrades
- Security concerns

Later in this guide, you'll read about integrations with EHR, nurse call, Admission, Discharge, and Transfer (ADT) system, Picture Archiving and Communication System (PACS), paging, and on-call scheduling systems. If you build integrations with systems that are already prone to unscheduled downtime, or require frequent maintenance windows, then the affected pieces of your texting solution will inherit those downtime problems.

And that's why organizations aren't impressed by how clever the vendors can be in developing their clinical communication solutions. Hospitals want evidence that solution providers are leveraging widely-accepted standards and proven tools when introducing third-party integrations into the hospital's environment.

In the spirit of full disclosure, be sure your vendor publishes a link proving its system stability with real-time statistics for the whole world to see, including any downtime or system degradation as well as consistent uptime stats.

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? Explain why.
- 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 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% |

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 integration options.

Which means you'll want to consider training and support in your purchase decision.

Because as you know, when you add more bells and whistles, you increase the need for training that enables users to take full advantage of the extra functionality.

Key Considerations

The good news is that nearly everyone at your organization knows how to send and receive basic text messages. They're already familiar with the purpose, process, and user interface for texting. They're 80% through the learning curve of your new system.

However, if you're considering a full-featured clinical communication and collaboration system provided by one of today's leading vendors, **then your organization should consider training and support in order to get the highest Return on Investment from your system.** 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.

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 it live and onsite? Remote and online?
- What's your structure and format for training our end-users? Is it live and onsite? Is it only online? Are there instructional videos, slide decks, and written user guides?
- Do you provide Train-the-Trainer 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 me 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 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 | | | ● |

With all the talk of HITRUST Certification, multi-tenancy architecture, and a Tier 3 Help Desk, it's very easy to overlook a huge win sitting unobserved in the shadows of your vendor agreement. But some far-sighted organizations see the win, bring it out of the shadows, and make it an integral part of the business strategy.

You read the title for this section, so you know the win we're referring to is the ongoing relationship you have with your vendor. It's possible for your organization to succeed without nurturing this relationship, but honestly, it'd be a shame to leave so much value untapped. Let's take a closer look at this deceptively powerful factor in the success of your secure texting system.

Key Considerations

Here are two good reasons to select a vendor that's, A) invested in your success and, B) demonstrates it by developing a strong ongoing relationship with your organization after go-live:

Reason #1: Targeted Training and Benchmarking 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 your system?
- How many messages are they sending?
- Which integrations experience the highest usage?

A top-tier vendor who analyzes data from all its customers will have proof that specific types of training increase adoption among specific types of clinicians. And as adoption arises, you'll get more and more out of your investment through greater efficiencies and productivity. Can you see the value of partnering with a vendor who commits its resources to your success?

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

But get this: your vendor has those same metrics for its other clients. It has real-time industry benchmarks. Advanced vendors will have used those metrics at other sites to identify the slow- and low-adopters... and then develop training strategies to increase usage among these users.

See, the thing is, if you can get more clinicians using your new system more frequently, your organization will reduce time delays with patient care. Patients will get their meds, orders, consults, results, and ADT actions faster. Patient safety and satisfaction go up, organization-wide efficiency and productivity go up, costs go down, and 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 its system and its integrations. You'll get better access to those insights if you maintain a strong business relationship with them.

Your vendor will share best practices with you, which you can selectively implement to:

- Optimize your care delivery process
- Bring down costs
- Establish effective governance around your secure texting system

The basic formula is this: Strong Ongoing Relationship = You Win.

And 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.

- Do you work with your customers post-implementation to track user adoption, and then look for ways to increase adoption and engagement?
- Do you help your customers develop training courses to increase adoption, engagement, and efficiency among end-users?
- Do you analyze customer workflows to develop best practice guidelines?

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

If you're like the organizations we talk with, you're not implementing a clinical communication solution just because it's all the rage and you heard it has a crazy, off-the-charts ROI. More likely, you've got specific financial and organizational goals, and you want to see how a secure texting app can help you achieve those goals.

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

For example, your management team may want to demonstrate ROI in terms of reduced Length of Stay, faster results routing, improved HCAHPS scores, faster pharmacy refills, and higher bed utilization. The thing is, you can only measure texting's contribution toward those goals if you choose a system that has rich reporting and analytics tools. **The right metrics allow you to see a correlation between employee adoption of your texting system, and high-level organizational goals** like improved patient satisfaction and lower readmission rates.

Let's get big-picture for a moment. Clinicians generally want to provide exceptional patient care, right? The problem is, many clinical systems require workflows that thwart efficiency. At the same time, regulatory requirements drain clinicians of their enthusiasm to care for other human beings.

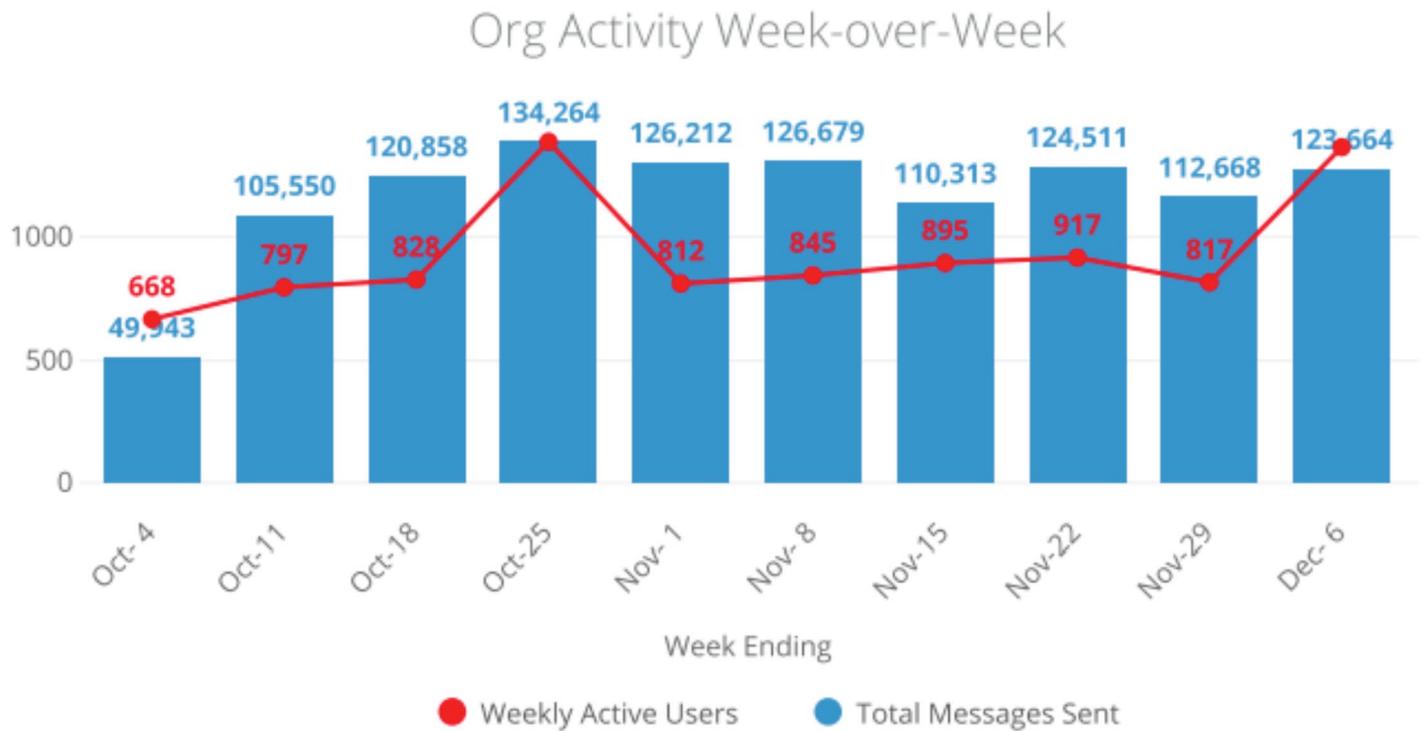
However, a CC&C solution with comprehensive reporting tools can tell your employees a compelling story. The story shows that **strategic messaging workflows improve patient safety and satisfaction**. So now they're motivated to engage more deeply with the application. This is how the right vendor solution removes obstacles that hinder your clinical staff from doing the good work they deeply want to do.

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. Because your mission statement will dictate the level of richness you need in your system'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:



Monitor these metrics to make sure the system is doing what it should. If you see a massive, unexpected drop in usage, you can start looking for the reason your employees are not using the solution.

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

Two Types of Reporting

We find it helpful to split reporting infrastructures into two groups. First, there's today-focused reporting. Use it when you want to monitor recent activity. Today-focused reporting is common to most secure texting systems, and is helpful for the organization behind 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. For example, if your implementation extends to an integration with your EHR system, you'll know how quickly physicians are receiving and reading results.

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, usage of integrations, and gaps in training. These reports enable compelling, data-driven governance that can bring focus, purpose, and unity to your organization's texting strategy.

Reporting on these basic metrics helps justify your investment. If you see that only 40% 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 system or transform the productivity of the care team if 60% are not even using the app.

Final word: **Make sure each report is both timely and actionable.** If it isn't, it's just frustrating noise.

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 system, 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 in the past 7 days (or whatever time period you define). This indicates engagement.

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 meta data, 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, Mid-Level Providers, and Nursing staff?
- Do your reporting tools include graphs and charts?
- Do your 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?

| 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 | | | ● |

When you decide to purchase a clinical communication solution, one of your first questions is, “Who provides the hardware?” Does your organization provide each end-user with a Smartphone, or do you ask your employees to use the phone they already own and are familiar with? This second option is known as Bring Your Own Device, or BYOD.

This Technical Buyer’s Guide wouldn’t be complete if it didn’t at least provide you with the pros and cons of each option. We won’t be recommending one strategy over the other. Rather, our goal is to give you complete information so you can make a fully-informed decision you won’t regret later. So let’s take a closer look.

Key Considerations

We’ve identified 13 factors that will play into your organization’s “to BYOD or not to BYOD” question. Just know, this WILL be your organization’s decision. We’ve observed that BYOD works best for some organizations while organization-provided devices make more sense for other organizations.

We’ll describe each factor in the context of the strategy in which it works better.

BYOD is the better strategy for these factors:

- The number of devices a clinician must carry and manage.
- Sanitization of the device and the spread of germs.
- The percent of clinicians who work at multiple sites.
- The organization’s need to purchase, support, and maintain another device for each clinician.
- The learning curve for working with the texting device, especially if it’s an OS that’s unfamiliar to the user.
- The selection of one standard operating system (iOS vs Android).

Organization-owned devices is the better strategy for these factors:

- Timeliness for replacing misplaced, broken, stolen, and battery-is-dying devices.
- Standardization of devices.
- The need to enforce a common platform (iOS vs Android).
- Compliance with the U.S. Fair Labor Standards Act, which may require compensation to employees who use their personal device for work purposes while off-shift.
- The organization’s desire to leverage devices designed for HIPAA-Compliant texting.
- State laws requiring reimbursement to clinicians for some portion of their phone bill if they’re required to use their personal phone at work.
- The vendor stores message data on the device.

We hope the above list will help you decide on the best device strategy for your organization.

Questions to Ask

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

- Does your system work equally well on iOS systems and Android systems?
- Are text messages stored on the local device?
- Do you have the ability to remotely disable the app if a device is lost or stolen?

| Feature | Basic | Advanced | Elite |
|---|-------|----------|-------|
| Device management – manage access remotely, and block access for lost or stolen devices | | ● | ● |
| Text, image, voice, and video messages are NOT stored on the local device. | | ● | ● |

Most comprehensive CC&C 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:

- EHRs
- Nurse and Patient Alarms
- Scheduling Services
- User Access
- 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 went into the evaluation process with a clear picture of the integrations they wanted to implement. 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 a timely and affordable way.**

The goal is always to improve organizational outcomes by reducing the amount of time your patients spend waiting for admissions, transfers, orders, prescriptions, consults, results, discharges, and post-discharge follow-up—all leading to less time in a waiting room or a bed, waiting for the next thing to happen.

Electronic Health Record (EHR) Systems

EHR systems are extremely good 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... well, EHRs stop just short.

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

We'll take a closer look at what it takes to integrate with two of the big EHR systems, Cerner and Epic, as well as integrations with MEDITECH, Allscripts, and most other EHRs. The idea is to give you a sense for what is possible. 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 Cerner 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 the CC&C smartphone app 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 its credit, Epic is improving its native clinical communication tools. Still, 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.

The Pitfalls of EHR-provided CC&C Offerings

While attempts by EHR vendors to offer home-grown CC&C solutions are becoming more common, they face several inherent and serious hurdles that dedicated CC&C vendors do not.

For starters, EHR communication runs within the EHR so any system outages could also take down your main communication channel.

Additionally, facilities within a health system that are using a mix of EHRs will be unable to communicate as the communication is happening on different platforms.

Finally, solutions from dedicated CC&C vendors are purpose-built and constantly being improved, while EHR versions are often "check the box" exercises than end up being poorly funded long-term.

HL7

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

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

To set up the connection between your middleware provider and your texting system, you'll need an onsite interface engineer with two high-level skills. First, they'll need 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, so it's critical to select a vendor with an open API and an easy-to-use SDK with an adequate level of documentation and support to:

- Call the texting system's API to create the group
- Tag that group with the patient's MRN
- Send the message to the group

Does your strategy include integration with your HL7 vendor so critical alerts, radiology images, and lab results can be routed in real time to your clinicians? If so, 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 reluctant to accept data from third-party systems.

Nurse and Patient Alarms

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

- **On-patient vital signs systems** can monitor signs like 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.
- **Bedside nurse call buttons** can be reconfigured to send text messages to the nurse's Smartphone. You will likely need to install and manage middleware 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 Hill-Rom and your texting system.

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 types of alarms. Keep that in mind when you're thinking about a nurse call integration.

- **Voice over Internet Protocol (VoIP)** integration 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 device

Once you've got everything set up, your texting system will boast exciting new features, such as app-to-app calling between users of your texting system and video calls between physicians.

Scheduling Services

Three different integrations comprise this category:

- Answering Services
- On-Call Scheduling Services
- Paging Services

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 Spök. 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 config 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 Persona Management. 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 functionality, you can be assured that messages will reach the right clinician at the right time.

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.

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:

- 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 nursing 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.
- What set of technical skills do we need so we can implement and support your integrations?
List each integration separately and the necessary skills.

| 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 | | | ● |

You now have a solid overview of the technical requirements for implementing and supporting a clinical communication and collaboration solution. We hope we've demystified this relatively new industry... 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 with three qualities:

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



About TigerConnect

As healthcare's largest provider of clinical communication solutions, TigerConnect helps physicians, nurses, and other staff communicate and collaborate more effectively, accelerating productivity, reducing costs, and improving patient outcomes. With 6,000 facilities, 99.99% uptime, and over 10 million messages processed each day, TigerConnect continually delivers advanced product innovations and integrates with critical hospital systems such as the EHR, nurse call, and scheduling solutions.

The company's commitment to client success is reflected in its broad support organization that works directly with clients at every stage to streamline communication workflows and achieve the highest possible ROI.

For more information, visit www.tigerconnect.com to learn how clients like RWJBarnabas, Geisinger, and LifePoint are using TigerConnect to solve healthcare's biggest communication challenges.

Where to learn more:

Website

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