tigerconnect

When Every Second Matters:

Guide to Speeding Critical Response Workflows

Every second matters in emergency situations

Care teams must take swift action when patients arrive at the Emergency Department (ED) with symptoms of a stroke, heart attack or showing signs of sepsis. They execute a complex workflow of interdependent actions by different specialists and support staff to triage, assess and treat patients. Unfortunately, many hospitals struggle with these workflows and the communication hand offs between care team members involved. In just one example published by the American Heart Association, stroke patients can wait more than 1.5 hours between ED arrival and the start of the clot-removal process.[1]

In any given critical care workflow, certain steps cannot be taken without completing previous steps, leaving lives in the balance when inefficient communication hampers coordination. **A recent study of more than 600 patient admissions published by the National Institutes of Health found that a quarter of critical response situations suffered from workflow delays of 15 minutes or more – some more than an hour.** These delays resulted in significantly higher in-hospital mortality (34.7%) and substantially longer length of stay (of three days or more) in addition to the need for ICU admission or ventilation.[2]

Faster workflows drive improved outcomes

The ability of critical care teams to connect, coordinate and communicate at each stage of a workflow is key to saving lives. It also impacts staff morale. Gaps in hand-offs and patient care delays impact the patients and erode staff satisfaction with their jobs and the organization.

Communication technologies can help bridge these gaps. However, many hospitals still rely on older technologies such as pagers, manual scheduling systems, and other approaches that cannot keep pace with the demands of patient care and the complexity of ever-changing hospital processes. Miscommunication among care team members leads to frustration and impacts patient care.

Figuring out who is on call can be a cumbersome exercise of looking up schedules, making numerous phone calls or overhead pages, and waiting for a response. Delays in consults and ineffective communication wastes precious minutes and, in some cases, can take hours. The pressures leading to staff burnout build in those lapses.

1 https://newsroom.heart.org/news/even-short-delays-in-the-er-may-reduce-the-lifespan-of-stroke-survivors

2 National Institutes of Health. https://pubmed.ncbi.nlm.nih.gov/28500920/

Inefficiency also drives costs at a time when pressure is rising to reduce the growth of healthcare inflation. Chief Medical Information Officers (CMIOs), Chief Financial Officers (CFOs), and other healthcare leaders have a strategic interest in streamlining clinical workflows for the benefit of patients, staff and the bottom line.

Take action with steps such as:

- Investigating fundamental inefficiencies directly related to how teams connect and communicate
- Deploying cloud-based technology to help create repeatable workflows that accelerate critical response, reduce staff burnout, and enhance patient outcomes

Healthcare executives focused on improving these workflows can achieve better patient outcomes, better cost profiles, and higher staff satisfaction.

This eBook will demonstrate the life-saving advantages of clinical communication and collaboration (CC&C) platforms in the following critical response scenarios:

- Code Blue (emergency communication for cardiac or respiratory arrest)
- Critical Labs
- Sepsis
- ST-Elevation Myocardial Infarction (STEMI)
- Stroke

Code Blue **Critical Labs** **Sepsis** **STEMI** **Stroke**

Code Blue

When an patient experiences a cardiorespiratory arrest, a Code Blue is initiated to call the rapid response team. A Code Blue aims to dispatch a team of trained resuscitators to the patient as fast as possible. Survival of a Code Blue event varies between 11% and 35% and is impacted by the speed and quality of care. Hospitals that follow best practices for early intervention with CPR, defibrillation, and advanced care, experience the best patient outcomes.

Survival rates vary from
11% to 35%[3]

292,000
Adults experience in-hospital cardiac arrest each year.[4]

In a typical Code Blue response, the nurse presses a button that sends a notification to the hospital administrator that a code blue is in progress. The operator then calls back to verify the code with the staff. Minutes tick by as this back-and-forth plays out. Once they receive confirmation, a text page and overhead page are sent with the patient location – but those pages may not include additional information. The responding provider lacks any details of the patient or the code event. This process can take more than five minutes before a response team arrives in the patient's room.

Streamlining this process by replacing pages with contextual messaging speeds up the response and provides the care team with valuable patient information before they even arrive on the scene. In some cases, the response time can be reduced by nearly 50%. See how a streamlined Code Blue workflow can speed response times in an emergency.

UMMS Shaves Minutes Off Code Blue Response Time

The University of Maryland Medical System (UMMS) used TigerConnect to significantly improve its Code Blue notification process. They were able to eliminate overhead pages and alerts that don't provide the full context of a patient's status. Instead, they use TigerConnect to alert, mobilize, and communicate with rapid response teams using automated, contextual messages. The new process has saved 2 minutes and 25 seconds on Code Blue response times and helped to combat alert fatigue among their staff.

"Two and a half minutes is an eternity when someone is in cardiac arrest," said Tiffany Kuebler, PA-C, MMS, Medical Director of Clinical Informatics at UMMS.

University of Maryland Medical System

3 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5745254/
4 https://pubmed.ncbi.nlm.nih.gov/26480612/

Critical Labs

Critical lab work is a mainstay of the ED. Delays can keep a patient in the ED longer than necessary, taking up resources in one of the most expensive parts of the hospital system. Lab results are often a gating item for discharge or ward assignment.

Getting critical lab results communicated to the nurse and then to an attending physicians is a bottleneck. Traditionally, the lab would call the ward. Whoever answers the phone would page the nurse and eventually transfer the call to the nurse. The nurse would take down the results and then read them back to check accuracy. The nurse then must deliver the lab results to the physician. Communication breakdowns can potentially introduce inaccuracies in the information that providers eventually act on.

With a CC&C platform, it's possible to streamline information hand-offs to reduce the chances of any miscommunication.

The time from lab result to a provider being notified can be reduced from an average of 31.5 minutes to 6 minutes.

"Critical laboratory results require prompt reporting to the attending physician, as they may indicate that a patient is in a life-threatening condition. Matching expectations between the doctor and the laboratory needs to be better defined."

-National Institutes of Health.[5]

Geisinger receives near real-time notification of critical labs

Geisinger successfully integrated TigerConnect with its lab alert and acknowledgment process to allow for near real-time turnaround of critical values. Previously, laboratory staff relied on a manual call-back process. With TigerConnect, any labs that meet the critically high threshold in the system trigger a workflow that delivers the notification to the appropriate provider. The provider can acknowledge receipt via TigerConnect, which automatically feeds back into the Geisinger systems meeting JCAHO accreditation requirements.

This workflow allowed Geisinger to reduce the average turnaround time for critical lab values from 11.3 minutes to 3 minutes, which adds up to more than 2,400 hours saved each month.

Geisinger

5 https://pubmed.ncbi.nlm.nih.gov/26480612/

Sepsis

Hospitals operate with Sepsis Teams that coordinate evaluations, responses, treatments, and transfers. It is vital that the team is activated quickly and team members have information about patient status. Delays in evaluation and gaps in communication slow the Sepsis Team response, putting patients at risk. Traditional workflows have built-in inefficiencies that can be solved with a CC&C platform.

In a typical workflow, when a patient meets the sepsis criteria, the nurse must contact the operator, who puts out an overhead page to declare the sepsis emergency. The sepsis team members might hear the overhead page or get a buzz from a pager on their belt that requires further phone calls. Key team members must review the nurse's assessment to move on to other steps in the workflow.

"Sepsis affects an estimated **49 million people** and causes **11 million deaths** globally every year." – World Health Organization[6]

"1.7 million Americans are diagnosed with sepsis every year, and 350,000 of those Americans die – more than from prostate cancer, breast cancer, and opioid overdoses combined." – National Sepsis Data Trust Initiative[7]

This inefficient process can delay assembling the team up to an hour. Further delays in completing hand-offs between Sepsis Providers and Attending Providers extend the response times for the whole team, increasing frustration. Now the patient is anxious and lacks confidence in their situation. A CC&C platform can help modernize the workflow to bring efficiency to sepsis response.

The connected team approach eliminates the lag in activating the Sepsis Team. The TigerConnect Clinical Collaboration Platform provides information to accelerate the steps once the team is with the patient and ultimately facilitates the hand-offs to the attending nurse and physician so the Sepsis Provider can be freed faster for another assignment. The overall response times can be reduced from an average of 80+ minutes to an average of less than 40 minutes.

Temple Health Drops Sepsis Mortality Rate 30-40%

Temple Health achieved a 30-40% reduction in sepsis mortality by using TigerConnect to automatically send a secure message to the Sepsis Team as soon as key indicators are met, signaling sepsis in the EHR. This allows the providers to not only predict sepsis earlier but dramatically reduce the time for intervention, ultimately improving patient outcomes.

TEMPLE HEALTH

6 https://www.who.int/health-topics/sepsis#tab=tab_1

7 https://www.sepsisregistry.org/why-it-matters/

ST-Elevation Myocardial Infarction (STEMI)

Every second matters when a patient is in cardiac arrest. The faster you can respond and begin coronary angioplasty, the better the odds of survival. In many hospital settings, "door-to-balloon time" can take well over an hour and sometimes up to two hours to begin the procedure. The delay is often due to inefficient workflows and communication bottlenecks that rely on manual processes and outdated paging technology to activate the response team. Multiple steps, such as contacting the operator to page the response team, consulting schedules, and locating the correct contacts and their pager number, all create problematic time. When there is no response to the page or calls are missed, additional minutes add up quickly.

The number of patients who suffer in-hospital cardiac arrests continues to rise and is now nearly **290,000 annually**.[8]

Survival rates have plateaued in recent years at around **25%** despite efforts to improve care delivery.[9]

Better communication can reduce problematic time spent waiting for consults and on-call staff to respond. Asynchronous, contextual communication between care team members can directly impact the speed at which cardiac patients receive care. Sending a message with specific patient health information, such as ECG and assessment results, provides the response team with vital information even before they arrive in the ED. This connected team approach uses automated alerts and intelligent role-based message routing to reduce the number of steps for faster, more efficient communication resulting in better outcomes and fewer medical errors.

The TigerConnect Clinical Collaboration Platform can help activate response teams sooner, eliminate the need for multiple pages, and help reduce door-to-balloon time from over 90 minutes to less than an hour.

Geisinger saves crucial time with pre-arrival team activation

Geisinger leverages TigerConnect in many emergency scenarios. Specifically, Geisinger EMS teams can send a pre-arrival notification of patient symptoms to the STEMI Team via TigerConnect rather than having to wait until the patient is onsite to activate, saving precious time and allowing the team to formulate a treatment plan and prepare for the patient's arrival at the hospital.

Geisinger

8 https://www.ahajournals.org/doi/10.1161/CIRCOUTCOMES.119.005580

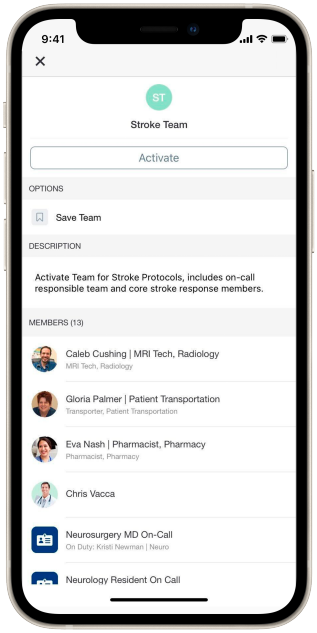
9 https://www.ahajournals.org/doi/10.1161/CIRCOUTCOMES.120.006837

Stroke

The clock starts ticking for stroke patients before they reach the emergency room door. Once they arrive in the ER, quickly activating stroke response teams impacts the patients' long-term outcome. How fast the patient receives care depends on how care team members communicate.

Time is tissue. In patients experiencing a typical large vessel acute ischemic stroke, **each minute 1.9 million neurons**, 14 billion synapses, and 12 km (7.5 miles) of myelinated fibers are destroyed.[10]

$46 Billion
The estimated cost of stroke services in the United States, including health care, medicines to treat stroke, and missed days of work.[11]



Delays caused by missed calls and outdated phone lists cost valuable minutes and create bottlenecks. In many cases, difficulty contacting specialists and waiting for verbal reports from the consulting neurologist consumes more precious time.

Real-time, contextual communication between care team members can directly impact the speed at which stroke victims receive care. By creating a team message group, updates are automatically shared with all team members, allowing them to share scan results and other critical patient information quickly and securely. In some cases, door-to-needle time can be reduced from an hour and a half to less than an hour.

Baylor St. Luke's Medical Center Slashes Door-to-Needle Time By 50%

Baylor St. Luke's Medical Center reduced its door-to-needle time from an average of 62 minutes to an average of 30 minutes by integrating the TigerConnect Clinical Collaboration Platform and a clinical decision support tool, which triggers an automated text alert from TigerConnect to the established Stroke Team members as soon as an order is set in the ED. In addition to reducing treatment and reaction time, the real-time communication between Stroke Team members has improved patient outcomes with an estimated 75 stroke lives saved per year.

Disclaimer: Results were achieved by a TigerConnect customer. Results are not guaranteed as factors depend on specific procedures and policies that are unique to each setting.

St. Luke's Health

10 https://www.ahajournals.org/doi/10.1161/01.str.0000196957.55928.ab
11 https://www.cdc.gov/stroke/facts.htm

The TigerConnect Clinical Collaboration Platform

The TigerConnect Clinical Collaboration platform was built to change the critical response model in healthcare organizations still using communication and coordination approaches rooted in the past. In each of the critical response scenarios above, activating the response team requires multiple steps. Those might include checking a schedule for who is on call, paging those people, contacting the operator for overhead paging, or playing a frustrating game of phone tag while a patient waits for care.

With TigerConnect, the critical response team can be activated with a single tap on a device. Through role-based communication, the on-call specialist or support staff member is automatically contacted. The staff member initiating the critical care alert can attach any information via secure text, video, or links to EHR.

The team arrives quickly, ready to act. No more pager alerts, phone calls, or overhead paging.

Request a free TigerConnect demo today.

About TigerConnect

TigerConnect transforms healthcare with the industry's most widely adopted clinical collaboration platform – uniquely modernizing how doctors, nurses, care teams, patients, and data connect. With solutions spanning care communication, patient engagement, scheduling, alarm notifications, nurse call, and more, TigerConnect accelerates productivity, reduces costs, and improves patient outcomes, safely and securely. Trusted by more than 7,000 healthcare entities for user-friendly yet enterprise-ready solutions, TigerConnect delivers 99.995% verifiable uptime for more than 10 million messages each day.