

Service Definition

Communications and Logistics Platform

Connected Teams, Integrated Healthcare
and Systems of Care that Scale

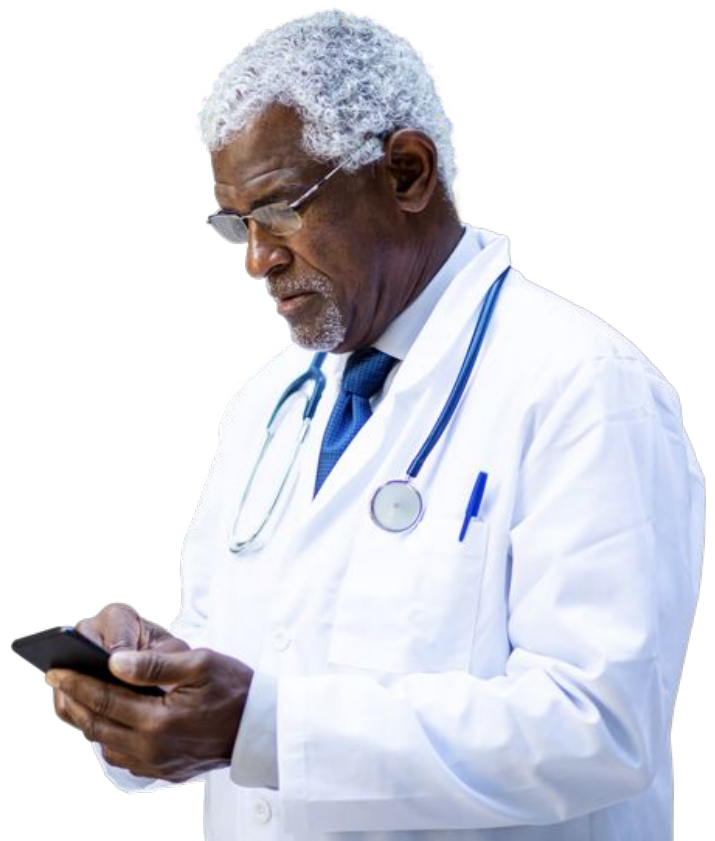


Joey Branton
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Company OVERVIEW

Pulsara is a privately held technology company based in Bozeman, Montana in the United States with team members across the globe. Developed by physicians, Pulsara's innovative communications and logistics platform unites distributed teams and fragmented technologies as incidents evolve. Pulsara has been delivering its innovative solution in the United States and Australia since 2013; improving the lives of people in need and those who serve them. Our customers include regions and states, large health systems, standalone tertiary-care and primary-care facilities, and ambulance services, all of which are using Pulsara for a variety of impactful communication needs.



HOSPITAL OR HEALTHCARE FACILITY



pulsara[®]
UNITED

Annual
Subscription

PRODUCT SUITE

Pulsara MANAGER | Administration Dashboard, Case Management
Pulsara for iOS, Android, Browser | Mobile Communication Network App
Pulsara HQ | Patient Encounter Management
Pulsara PATIENT | Provider to Patient Dedicated Communication Channel
Pulsara API | Integrations

SERVICE WORKFLOW

LVO Workflow Management
Integrations with Stroke AI
Structured Data Collection (ECGs, Stroke Scores, Vitals, Lab Values)
At Patient, Door Time, Case Milestone Time Stamps
Cath Lab Alerting
Sepsis Alert Flows
Cardiac Arrest Alert Flows
Tiered Trauma Activations
General Patient Alert Flows for Any Patient

KEY INTERACTIONS

Ambulance Communications
Cardiac Monitor Integrations
Start A&E / Inpatient Case
Consult / Transfer to and from other Organisations
Incidents - Receive Patients and Indicate A&E Availability
Intra-Organisation Communication
Provider to Patient / Family Communication

KEY FEATURES

Ambulance Communication Optimisation
GPS Enabled ETA
Audio Clip Recording
Live Audio / Video Calling / Group Video Conferencing
Audio and Video Call Recording (between two or more parties)
Image Upload
Auto Alert Pre-Designated Care Teams
Configurable Alerting (Break Through Do Not Disturb)
Dynamic Building of Care Teams
Group Chat
Instant Feedback to All Care Team Members
On-Call Status Management
Mobile and Browser Friendly
Data Encrypted at Rest and in Flight
UK Based Cloud Data Hosting





Unite Regional Care Teams

With Pulsara **UNITED**, ambulance teams can instantly and seamlessly communicate event-based patient information, including one-tap team notifications, image sharing, audio/video calls, ETA alerts, etc. right from the Pulsara platform.

Quickly start a case, share important details (like the ECG or images from the field) and receive instant feedback as soon as the case is closed. Pulsara simplifies workflows, replaces the radio report, and enables emergency services to be a connected part of every patient case.



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SOME INCLUDED



PARTICIPATE



ADD-ON

ADD-ON

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INTERACTIONS

Ambulance Communication (radio report)
Consult / Transfer to Receiving Organisation
First Responder to EMS Hand-off
Other Intra-Organisation Communication (Internal Medical Direction, Supervisor)
Consult / Transfer to Alternate Destination
Provider to Patient Communication
Incidents (Such as Mass Casualty Incidents, Multiple Patient Incidents)

KEY FEATURES

Live Video / Video Calling / Group Video Conferencing
Billable Medical Control Encounter
Federated Authentication - *Implementation Fee Applies*
Audio and Video Call Recording (between two or more parties)

INTEGRATE

Pulsara API - ECG
Pulsara API - ePCR

ADD-ONS

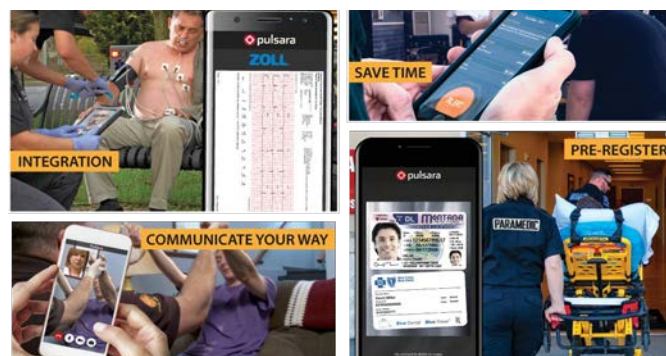
Alternate Destinations
Virtual Care Center



Product Overview

PREHOSPITAL TO HOSPITAL COMMUNICATION

At Pulsara, we believe EMS to hospital communication provides an important backbone for successful comprehensive care. Instead of an archaic radio report, teams use Pulsara to start a case, alert, and communicate seamlessly with the hospital through an encrypted, user friendly mobile app.



Through early notification, Pulsara allows the critical care teams in the hospital to prepare for patient arrival, preregister, and, when appropriate, bypass the A&E directly to definitive treatment.

Ambulance teams can easily communicate with the A&E for unlimited patients illnesses or injury, eliminating confusion and miscommunication. This is particularly critical in time-sensitive emergencies such as STEMI, Stroke, Sepsis, Cardiac Arrest, and Trauma.

Secure messaging, group video, recorded audio clips, image-sharing, and ECG transmission are all included in the Pulsara **UNITED** package for ambulances and hospitals.

“It’s more than a communication tool;
it’s a system-wide solution to transform patient care.”

Overlake Medical Center, USA

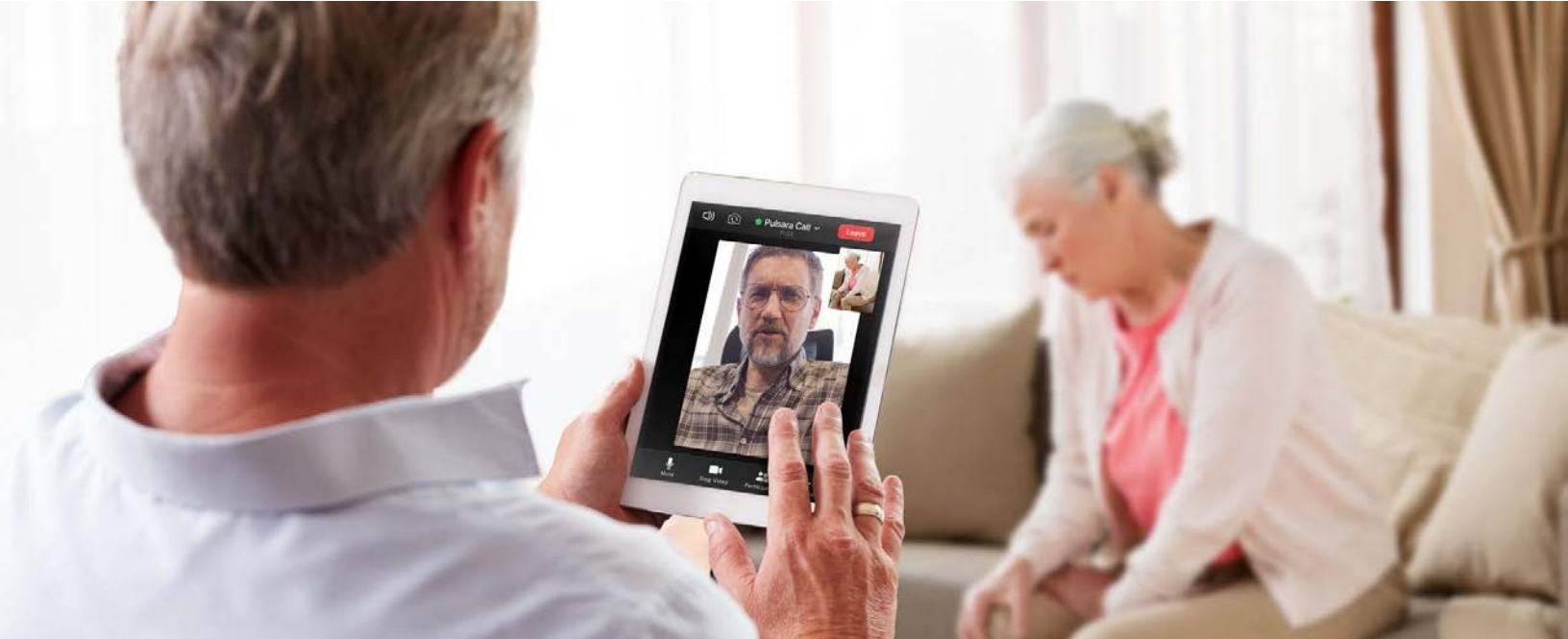
How to Build Your System



Pulsara Building Blocks

Pulsara allows any organisation – whether the ambulance, the A&E, a referring hospital or receiving hospital – to start a patient channel. The versatility and flexibility of Pulsara provides a secure platform to dynamically build a care team within and across organisations, yielding a shared awareness experience for patient care. Sharing images or audio clips, communicating via live video or audio calls, and leveraging the group chat feature ensures everyone on the care team stays informed while reducing communication missteps. Pulsara unites the care team in one patient channel that we call the Pulsara **RED LINE**.

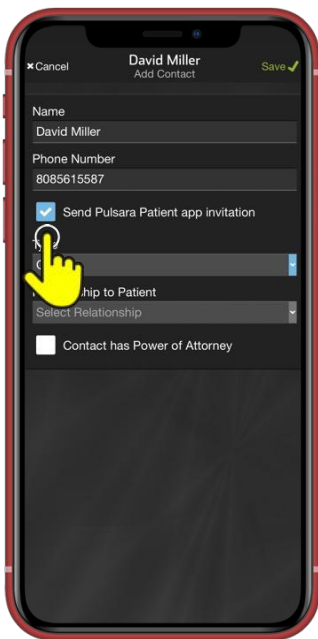




Pulsara **PATIENT**

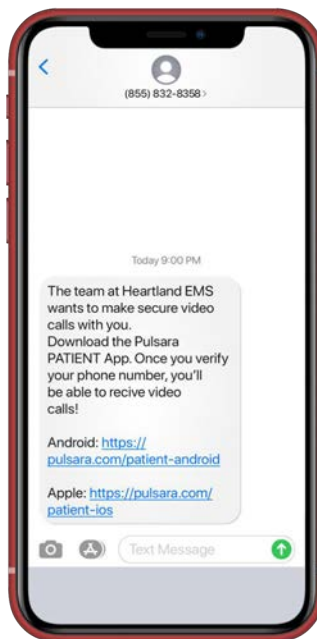
Pulsara PATIENT allows any clinician, at any time, to add a patient or family member's contact information to the Pulsara channel and invite them to have a live video telehealth call. Their contact information remains accessible for any clinician associated with the case to initiate a GDPR-compliant, secure video telehealth meeting with the patient or family member. Pulsara PATIENT is available upon with request with 4 months of lead time.

Step 1 Invite Contact



Within the patient channel, the clinician can add the desired person in CONTACTS.

Step 2 They Install

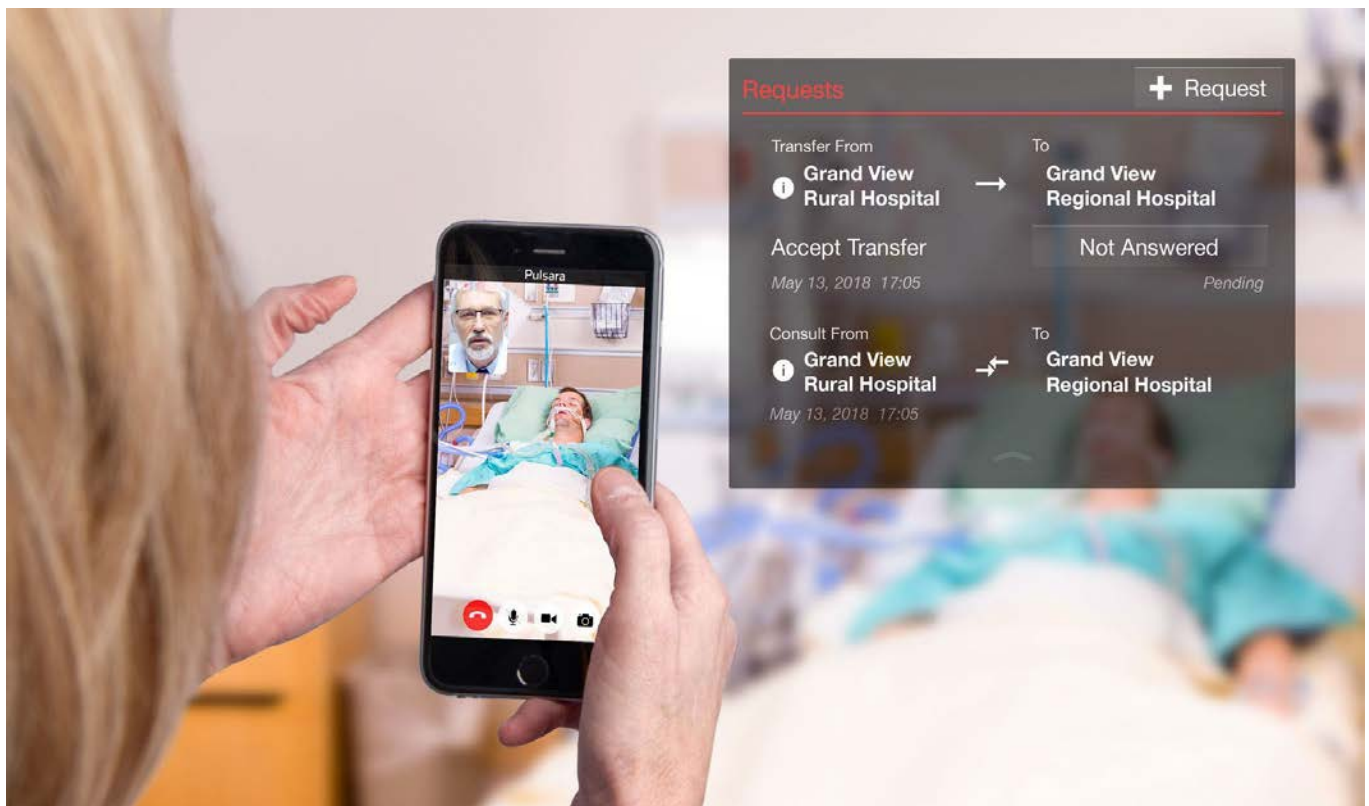


That person will receive a text with the link to download and install Pulsara PATIENT.

Step 3 Communicate Securely



Once installed, the clinician will be notified and can initiate a secure audio or video call.



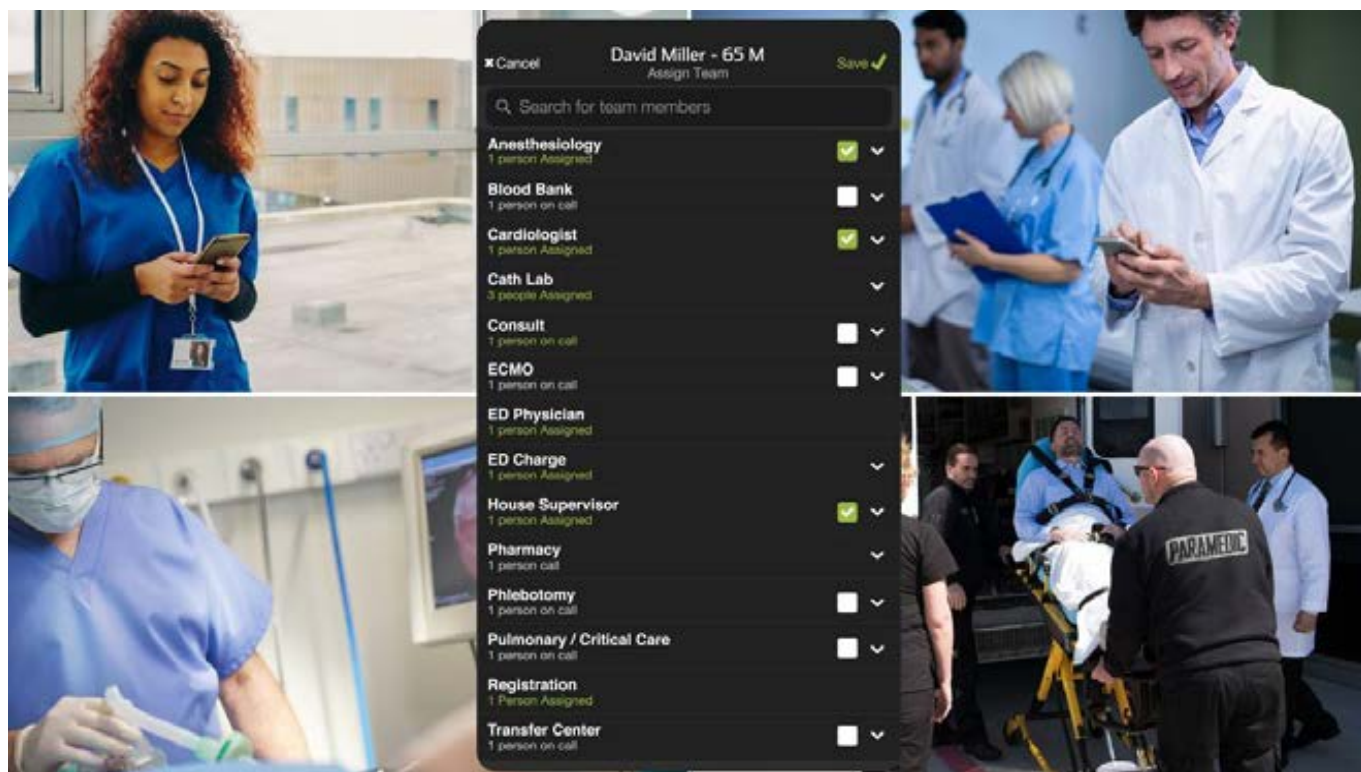
Interfacility **Communication**

Consults are faster and more simple with Pulsara. And, patient transfers are easy to initiate with a few taps. Instead of using audio-only calls, clinicians leverage video calls, photos, messaging, and other media to share critical patient information and determine the appropriate disposition.

Should a transfer be needed, both facilities can track the process in real-time.

With Pulsara, any referral site, affiliated organisation, or hospital has access to start a case and consult or transfer a patient to a Pulsara **UNITED** hospital.





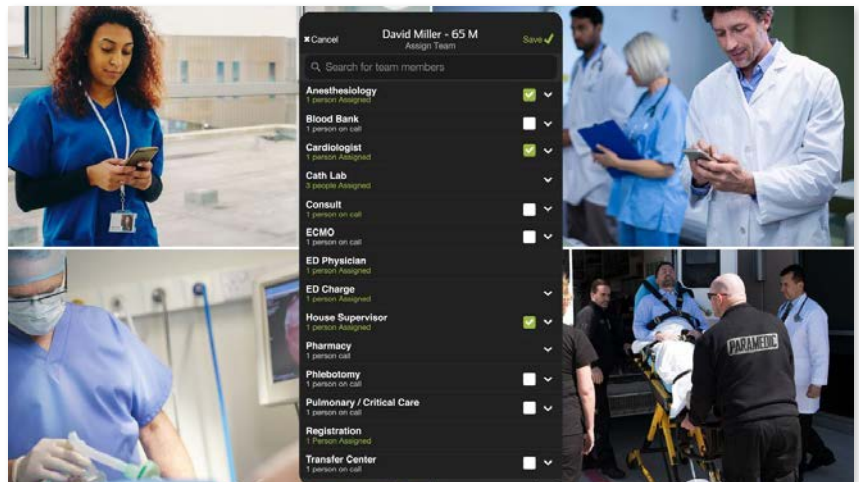
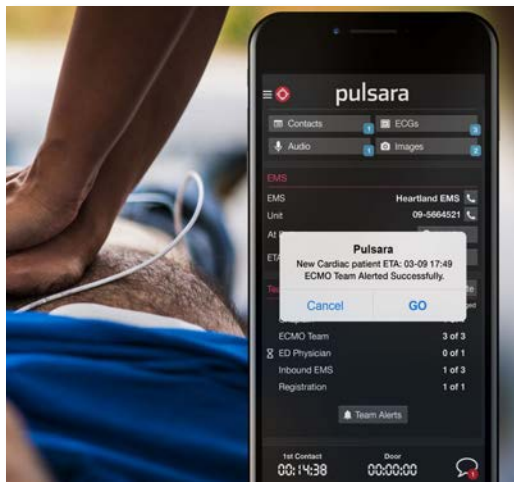
Intrafacility **Communication**

Early notification from an ambulance can drastically reduce treatment times, but what about the patient who walks into the Accident and Emergency? Or the patient who presents with a potential stroke or pulmonary embolism on the medical floor? The Pulsara platform can be used to manage all patients, including ambulance transports, transfers, walk-ins and patients already within your facility.

With Pulsara, communication doesn't stop in the A&E. Your ability to dynamically build internal teams has the potential to reduce initial "at patient" time to "comprehensive care" by up to 50%. This dramatic decrease in treatment time has been shown to reduce morbidity/mortality and ICU length of stay while providing an increased opportunity to meet time-sensitive criteria for life-saving treatments such as mechanical thrombectomy for Large Vessel Occlusion stroke patients. Our specially-designed stroke workflow within the platform enables clinicians to share images, stroke scores, tPA contraindications and other specialized care information - including from integrations with neuro AI technology - aid in the to enable stroke teams to communicate in the most efficient and timely manner.

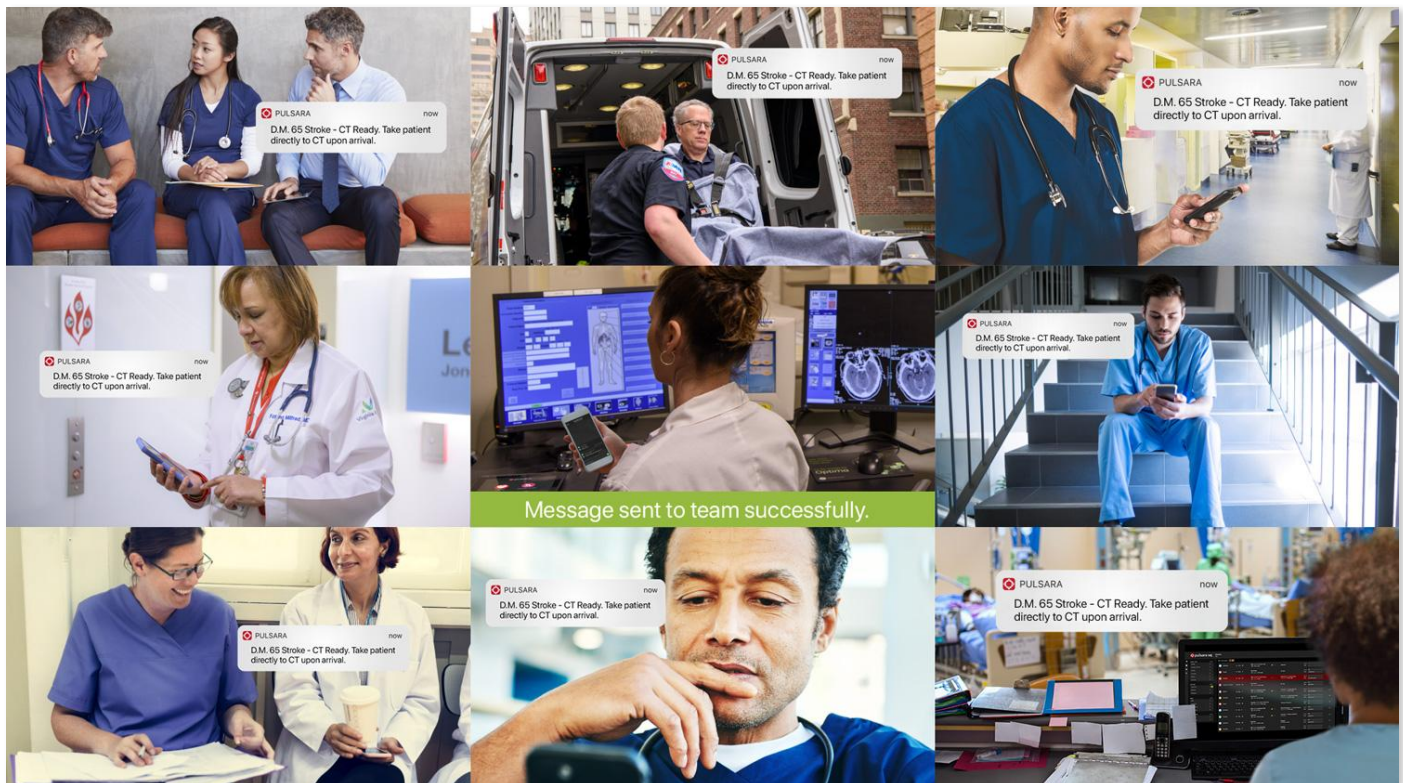
After reviewing a patient alert, the A&E can activate pre-designated teams or manually select team members to be added to a patient case.

Example Interactions



Alert pre-designated team members such as CT tech, Neuro nurses, and stroke coordinators.

Need to bring additional staff into a case to collaborate? The process is simple and allows for group communication, including live video calls between team members.



As the patient moves through comprehensive care, milestones are documented and push alerts can be triggered to team members, indicating the next step in a logical process. Unlike a page, when a Pulsara alert is received, the care team member is now placed in the channel with other clinicians for group communication.

Example Interactions

FLOWCHART NOTES

Flowchart Notes is a flexible tool to capture relevant chronological information within a patient channel. This feature allows adding notes that can be entirely free form or based on pre-defined templates containing prompts for common treatment questions. Every entry is logged with a timestamp with the name of the entity who added the note, enhancing tracing and accountability. Templates can be created and updated via administrator access in Pulsara MANAGER under the Flowcharts section for any type of facility or organisation.

✕ Cancel
Y M - 88y M
Save ✓

New Note

Flowchart - Notes

Time
🕒 13:53

☒ Alert teams once this note is saved
Alert text: "Treatments - Antibiotics administered"

Template

Treatments - Antibiotics administered

Body

Name ()
Dose ()
Route - IV () IM () PO ()

Flowcharts

Hospital > Flowcharts

All Patient Types

All

Shared

Publicly Editable

Search templates by title or text

+ Template

Note Templates

Belongings - left with family	All Patient Types	Shared	Notes are private		
Belongings - with patient	All Patient Types	Shared	Notes are private		
Disposition - Discharged to Home	All Patient Types	Not Shared	Notes are private		
Disposition - Transferred to Floor	All Patient Types	Not Shared	Notes are private		
Disposition - Transferred to ICU	All Patient Types	Not Shared	Notes are private		
Disposition - Transferred to Surgery	All Patient Types	Not Shared	Notes are private		
Med - Amiodarone (IV) given		Shared	Notes are private		
Med - ASA given (PO) given		Shared	Notes are private		
Med - Atropine (IV) given		Shared	Notes are private		

Users

Cases

Hospital

Hospital Details

Message Templates

Flowcharts

Teams

Associated EMS Agencies

Relationships

Alert Rollover

STEMI Cancel Indications

Stroke Contraindications

Identity Provider

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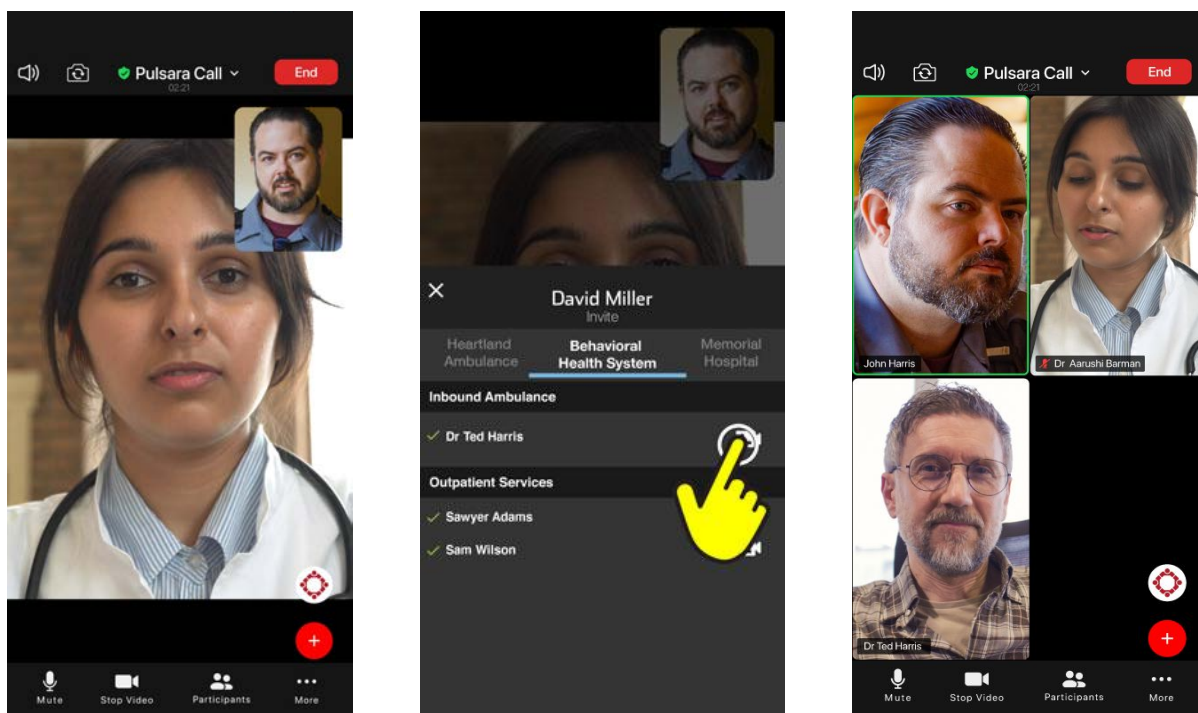
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IT'S ABOUT PEOPLE

Example Interactions

GROUP VIDEO CONFERENCING

In this rapidly changing world of healthcare, an incredible video experience to support patient care is needed more than ever. With Pulsara, you have the ability to conference as many team members as needed across organizations. Group conferencing with Pulsara includes configurable default behavior for camera and speaker, as well as advanced controls for call participants.



Video calls can be 1:1 or, with the tap of a button, updated to include as many participants as necessary. There are numerous opportunities to enhance coordination and communication through Group Video Conferencing, such as:

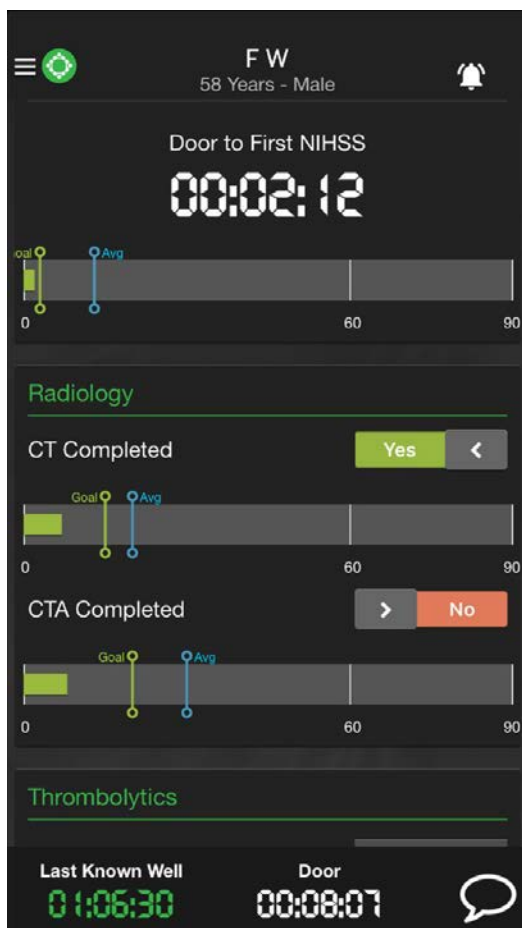
- ✓ Transfer Coordination
- ✓ High-Risk Procedure Planning
- ✓ Sepsis Huddle
- ✓ Mental Health Huddle
- ✓ Complicated Hand Injuries
- ✓ Burn Care

...the opportunities are endless.

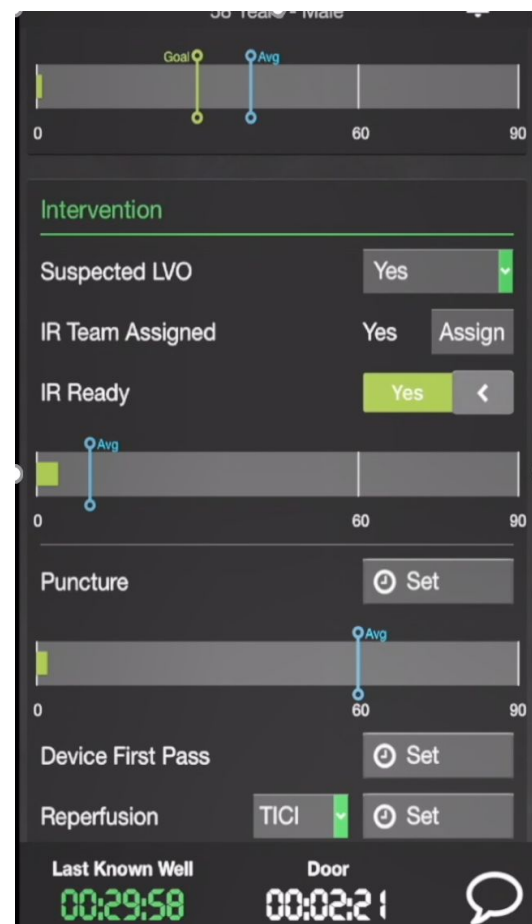


Example Interactions

COMPREHENSIVE STROKE WORKFLOW



Treatment goals and pre-established milestones are easily captured with a toggle. The universal clock keeps all members of the care team aware of critical metrics for quality improvement.



Pulsara makes it extremely easy to capture critical workflow events allowing for robust data reporting QA/QI and care team feedback.

Example Interactions

IMAGE UPLOADS

Image uploads allow for collaboration to take place within Pulsara. Images can be taken at bedside or the scene of an accident. Personal identification facilitates pre-registration. Automatically upload ECGs and CT stroke imaging through API integrations.

INTEGRATIONS

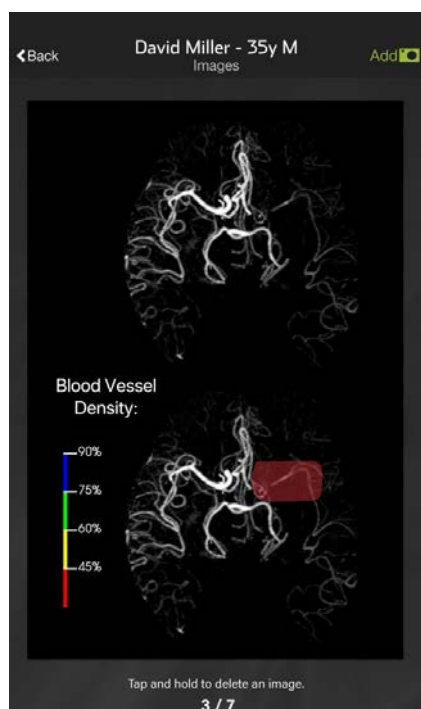
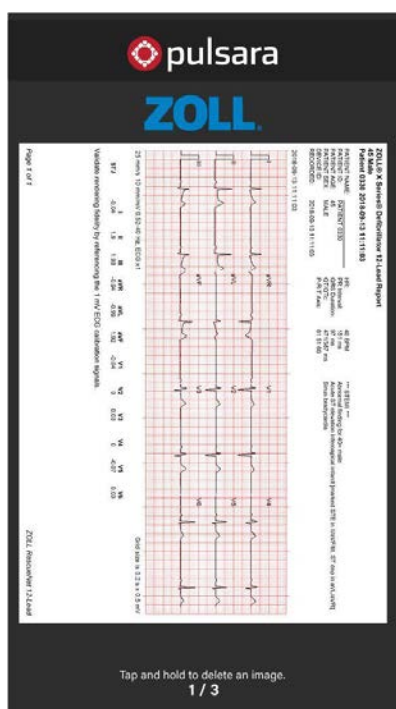


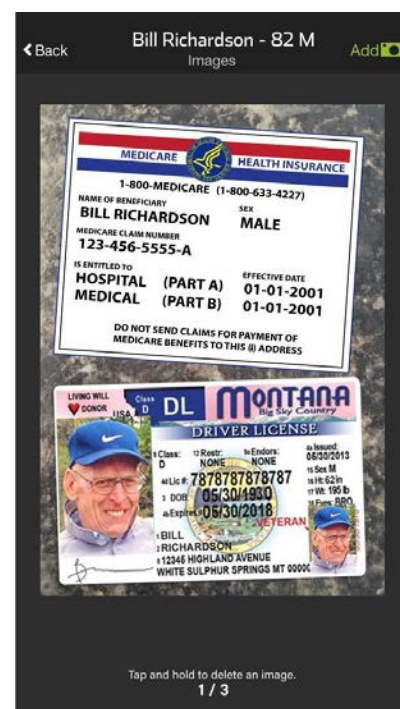
Image showing current integration with Artificial Intelligence CT imaging.

INTEGRATIONS



ECG integration for real-time interpretation

OTHER IMAGES



Preregister patient and send them directly to their room.

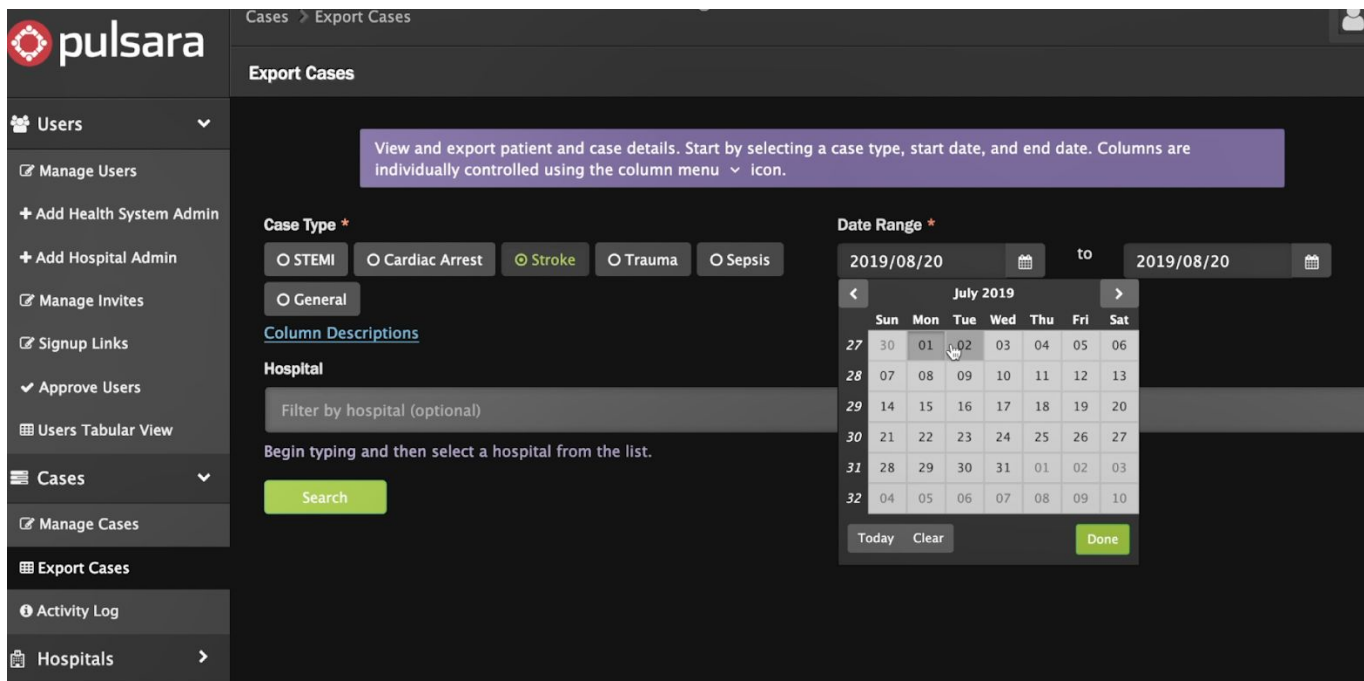
"The Pulsara app has allowed for immediate notification of an incoming stroke patient. This allows me and my team to plan accordingly with staffing the angio suite, etc. ultimately speeding time to treatment."

Dr. Daniel Huddle, Neuroradiologist, UCHHealth, Colorado USA

Pulsara **MANAGER**

DATA ANALYTICS

Help manage the daily operations, create shared awareness, and easily report on the metrics that matter most to your facility for quality purposes or for registry reporting using Pulsara's administrative functionality.



Patient	Age	Gender	Height	Weight (kg)	Room	Method of Arrival	Status	Hospital	Case Creation Time	Last Known Well Time	ED Door Time	Activation Time	EMS Agency	EMS Team Members	EMS At Patient Time	Scene Departure Time
Doe, John	54 Years	Male	5' 7"	61		ED Patient	Stopped	Regional Medical Center	#####	4/17/15 11:06	4/17/15 12:06	4/17/15 12:06				
Doe, John	47 Years	Male	5' 9"	57		ED Patient	Stopped	Regional Medical Center	#####	4/17/15 10:03	4/17/15 11:03	4/17/15 12:04				
Doe, John	86 Years	Male	5' 8"	66	313	Inpatient	Stopped	Regional Medical Center	#####	4/17/15 10:01		4/17/15 12:02				
Doe, John	72 Years	Male	6' 3"	57		EMS	Stopped	Regional Medical Center	#####	4/17/15 11:55	4/17/15 12:00	4/17/15 11:59	Northwest EMS	Jones James, Smith Jared, Wood Bryan	4/17/15 11:50	4/17/15 11:53
Doe, John	75 Years	Male	5' 11"	82		EMS	Stopped	Regional Medical Center	#####	4/7/15 10:44	4/7/15 13:02	4/7/15 12:46	Northwest EMS	Jones James, Smith Jared, Wood Bryan	4/7/15 12:40	4/7/15 12:40
Doe, John	96 Years	Male	5' 3"	67	403B	Inpatient	Stopped	Regional Medical Center	#####	4/3/15 14:50		4/3/15 14:50				
Doe, John	77 Years	Male	5' 9"	72		ED Patient	Stopped	Regional Medical Center	#####	4/3/15 14:39	4/3/15 14:39	4/3/15 14:39				

Pulsara HQ

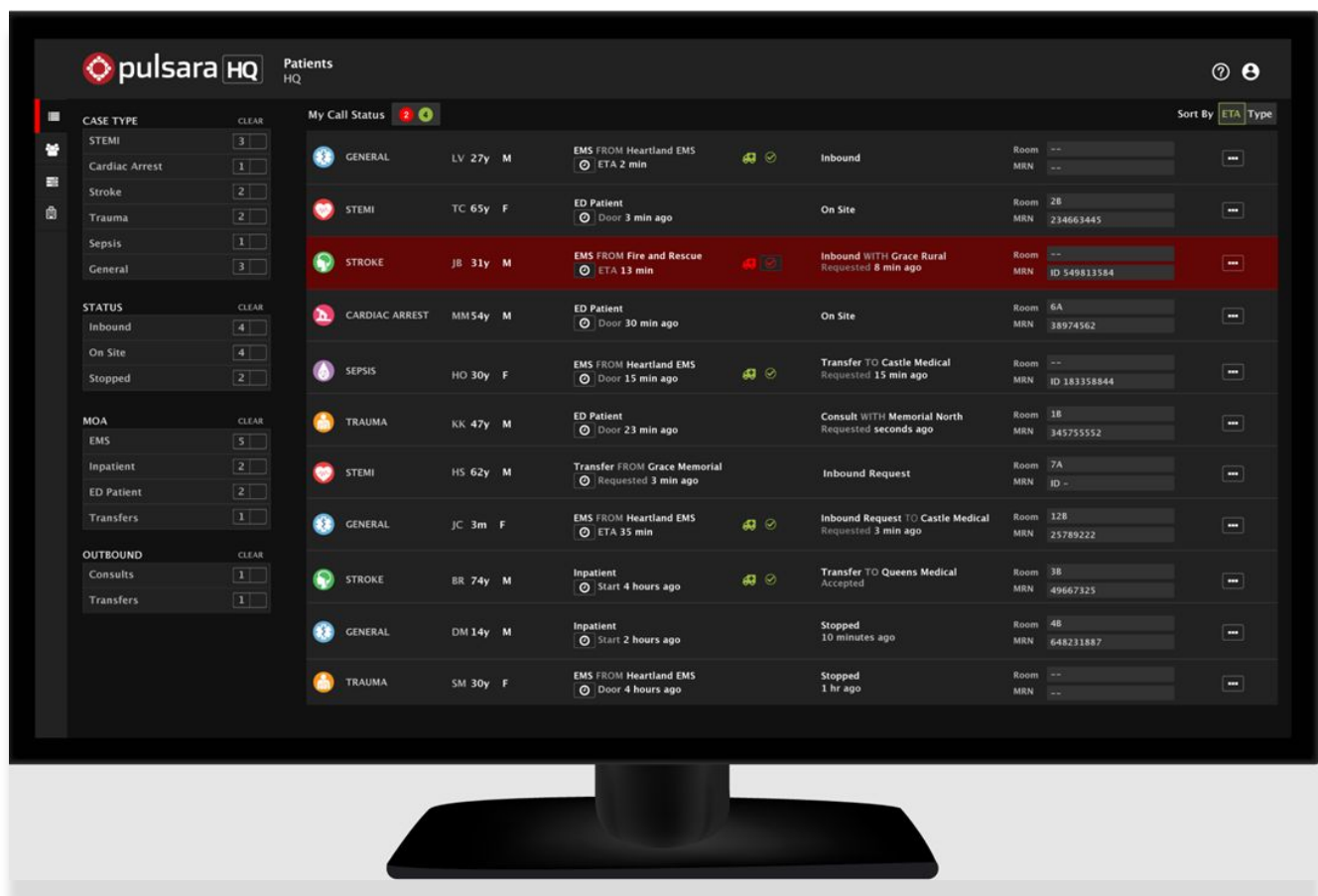
COMMAND CENTRE FOR ENHANCED PATIENT COORDINATION

Powerful and Simple

Working alongside Pulsara's mobile app, Pulsara HQ enables clinicians to easily manage patient status and details in a centralised location. Pre-registration, triage, team activation, and more can now be managed from one screen using a web browser.

Increase Productivity, Coordination, & Transparency

With Pulsara HQ, hospital A&Es can easily manage and monitor incoming and active cases right from their browser, providing responsive patient care for every case type. With HQ, clinicians can see new patients, view patient information, filter and sort large numbers of patients with ease, send acknowledgments to the ambulance and activate the care team, view alerts, begin patient registration, set door time, and much more.





Pulsara **Security**

Pulsara takes privacy and security very seriously. A copy of Pulsara's SOC2 Type II report, as well as our Technical Privacy and Security Summary, are available upon request for your IT due diligence. We are an approved vendor by many of the large US health systems, including HCA, Ascension, and Tenet.

Here are the key points:

1. Secure mobile applications - no patient information is stored on devices.
2. Secure cloud platform - built on top of AWS, we follow best practices for the entire application development lifecycle.
3. Light footprint on IT - no servers or on-premise hardware to install, and we do all the upgrades and maintenance.
4. Secure platform - security at every level, 3rd-party audits, background checks, etc.
5. Reliable and scalable platform - geographic redundancy, horizontally scalable, vertically scalable.

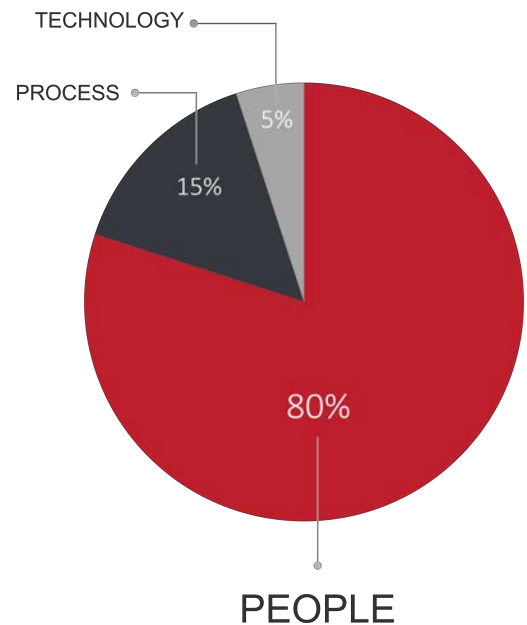


For more information, visit www.pulsara.com/en-gb/it

Implementation Philosophy

At Pulsara, we understand that implementation is both a science and an art. We believe that the first step in forming a successful partnership is **listening** to understand your current challenges and needs. Understanding the “why” is crucial before we work with your organisation to establish clear goals and focus on the “how”.

While the Pulsara platform is intuitive and easy to master, changing process and behavior is not. In fact, we believe that implementing new technology is 5% technology, 15% process, and 80% people. Our team will walk alongside and equip you with the tools and resources needed for effective change management.



We will work closely with your team to ensure they understand the vision, skills, incentives, resources, and action plan and avoid common pitfalls in change management.



Executive Sponsorship

Executive Sponsorship is a vital component to initial customer success and long-term retention. The qualified executive sponsor at your organisation should hold a senior or executive leadership position that provides governance across all service lines.

At the start of the implementation process, Pulsara's Regional Director works closely with the Executive Sponsor to create a presentation for key stakeholders to socialise the project plan with their teams. We will work to assist in providing messaging to each Pulsara end-user prior to training, ensuring that the staff at your organisation are primed for successful adoption of new technology and processes.

"Pulsara has made a massive difference in communication for all of our workflows. It gets the right information to the right care team members at the right time, allowing us to adequately prepare for a variety of patient cases."

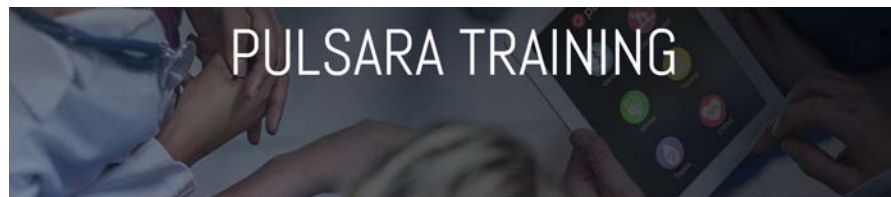
**Janet May, Stroke Coordinator
Latrobe Regional Hospital, Melbourne, Australia**

Implementation Summary

Pulsara implementation is completed remotely through a series of five one-hour working sessions. Once socialisation of the platform is complete, the Pulsara implementation team will work alongside your project stakeholders to build each Pulsara team, configure alerting pathways of each team, and provision end users. Once staff are provisioned, we will collaborate with your organisation's Pulsara Project Manager to conduct end-to-end table-top testing, including all relevant parties, and ensure that users are prepared for sole use of the platform prior to eliminating previous alerting and communication pathways.



Pulsara provides customers access to the online Pulsara Training portal, which includes written and video instruction for each Pulsara user persona to ensure that staff thoroughly understand how to use Pulsara for their position on the care team. We also provide administrators with assessment resources so that organisations can include Pulsara Training in their own learning management systems for new employee onboarding and annual competencies.



EMS & AMBULANCE



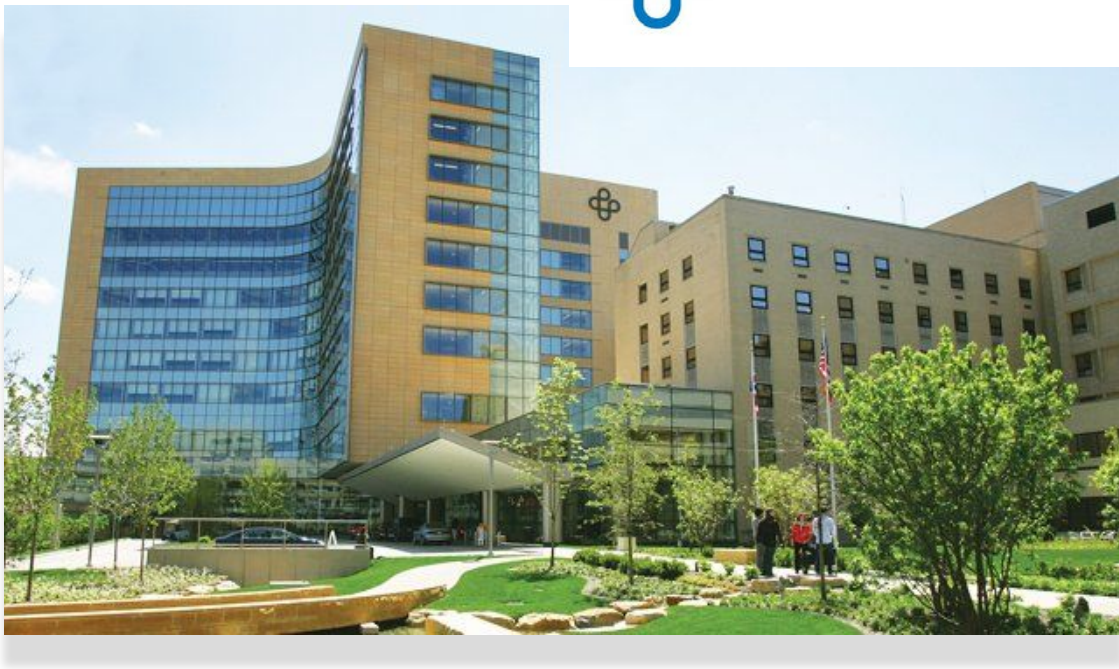
Pulsara MANAGER
EMS & Ambulance

Customer **Reference**

PREMIER HEALTH - **OHIO, USA**

Miami Valley Hospital, a comprehensive stroke center, implemented Pulsara utilising stroke functionality with minimal ambulance involvement. With Pulsara they were able to streamline their internal processes eliminating unnecessary steps. Door-to-needle and door-to-puncture times soon trended downward. They expanded Pulsara utilisation to a primary stroke center within their system. Involving their regional referral center, dwell times for stroke patients at Miami Valley Hospital - South decreased as well as a noticeable decrease in first medical contact-to-balloon times for patients that originated outside of their CSC. Premier Health has now expanded the use of Pulsara to include STEMI, Sepsis, Trauma and alerting of their emergent surgery teams at the Miami Valley Hospital - South campus.

Contact: John B. Terry, Neurointerventionalist
jbterry@premierhealth.com



Customer **Reference**

ST. ELIZABETH HEALTHCARE - **KENTUCKY, USA**

Saint Elizabeth implemented Pulsara in 2016 with goals of decreasing their door-to-balloon times while improving communication. Their system consists of four non-PCI centers and one PCI hub. After the implementation of Pulsara, they realised a 27% decrease in their door-to-balloon times as well as decreased dwell time from their non-PCI centers for A&E walk-in patients. They utilise their patient logistics centre to facilitate patient movement through their system and assist the cath lab in scheduling cases based on information in Pulsara. After such success in the cardiovascular service line, it was then implemented for their stroke and orthopaedic trauma services as well. A large part of this success comes from ambulance involvement in the region. With over 30 agencies involved, patient information is communicated early in the patient's journey, allowing teams to be assembled and ready prior to ambulance arrival at the hospital.

Contact: Danielle Stiner, EMS Community Outreach Coordinator
Danielle.Stiner@stelizabeth.com



LATROBE REGIONAL HOSPITAL

Revolutionizing Patient Care in Australia with Networked Communication



Latrobe Regional Hospital Scales Healthcare Communication Platform to Unite Care Teams.

THE PROBLEM

For Latrobe Regional Hospital (LRH), streamlining communication was the biggest focus, both to improve patient care and to strengthen collaboration across its healthcare system. Up until the beginning of 2020, they used a combination of phone calls and pagers to interface among Emergency Services, ED, and hospital staff—resulting in inefficiencies and challenging communication for caregivers.

"I think the willingness of the ambulance to actually ring prior to Pulsara was a big thing," said Carolyn Beltrame, an Emergency Nurse at LRH. "They knew that a lot of the time, the phone would be busy, or difficult for us to answer."

But even when the ambulance did connect with hospital teams, communication was often faulty. "Due to spotty reception, we could miss a patient's name or not get their date of birth right," said Mark Scammell, Operations Community Engagement Liaison Coordinator at Ambulance Victoria. "Upon patient arrival, [we were] scrambling for the right details and pulling their old notes."

Latrobe wanted a technology solution that could scale to meet patient needs and centralize communication for all of its departments, staff, and partners.



THE CLIENT

www.lrh.com.au

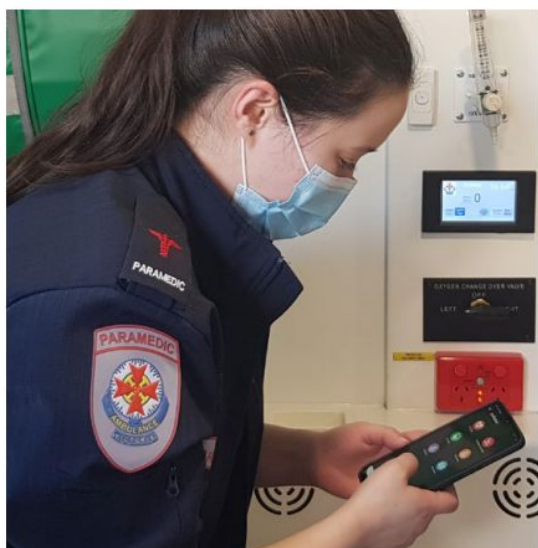


Latrobe Regional Hospital (LRH), located 150 kilometers east of Melbourne, Australia, is one of the region's largest employers with more than 1900 staff. A purpose-built teaching hospital caring for a population of more than 260,000 people.

The LRH Emergency Department is a 30 bed unit with 12 short-stay beds and sees approximately 30,000 people a year.

HIGHLIGHTED RESULTS

- ▶ Door-to-CT times improved from 22 minutes on average to approximately 7 minutes, a 68% improvement.



Latrobe is the third hospital in the state of Victoria to implement a mobile communication platform called Pulsara. Made possible by grant funding, the hospital activated the technology across multiple entities in February 2020, including ambulance partners, cardiology, stroke, and mental health teams.

Pulsara connects people when seconds matter with a secure, unified patient channel—replacing multiple phone calls, radio reports, faxes, and pagers—and allowing care teams to communicate efficiently and effectively when treating patients.

When Ambulance Victoria initiates a patient case in Pulsara, the case is able to evolve in the platform as the appropriate Latrobe team members are notified to respond. Each caregiver can easily add resources with a simple tap in the mobile app—from incoming patient data to ambulance arrival time to vitals needed for specialist consultations.

THE RESULTS

By August 2020, six short months after implementation, Latrobe expanded the technology to the majority of its staff members, including all ED, nursing, pediatric, and transfusion divisions.

Most recently, the hospital's mental health triage unit—which responds to a high number of the region's mental health cases—has been onboarded.

Latrobe's ED staff treats an influx of individuals with drug dependencies, and Pulsara helps manage these patients more effectively by notifying the hospital of incoming cases ahead of time. Through Pulsara, Ambulance Victoria is able to relay details on the patient's severity, quickly informing the hospital of the needed intervention well before arrival. This allows the care team to be ready and waiting at the door when the ambulance arrives. By introducing Pulsara into their current mental health response protocols, Latrobe has increased the safety of both patients and caregivers.

Additionally, Latrobe is adding its local mental health police response to the platform to support the community management of these case types.



"Pulsara has made a massive difference in communication for all of our workflows," said Janet May, Stroke and Pulsara Coordinator at Latrobe. "It gets the right information to the right care team members at the right time, allowing us to adequately prepare for a variety of patient cases."

One particular case type that has benefitted from the improved communication at LRH is stroke.

"Now with Pulsara ... we are able to pre-register the patients, so stroke patients can go directly to CT on arrival," said May. Compared to data from March through July of 2019, in 2020, LRH improved door-to-CT times from an already impressive 22 minutes down to just 7 minutes on average, a 68% reduction in treatment time.

"It's worked from the bedside through to the ED department through to the CT scanner through to the tele-stroke consultants," added Prof. Chris Bladin, a Neurologist at Ambulance Victoria/Monash University, and Director of the Victorian Stroke Telemedicine service, which assisted with bringing Pulsara to Latrobe.

Latrobe and Ambulance Victoria are currently using Pulsara to manage their COVID-19 patients more safely and efficiently, while simultaneously keeping the well-being of Emergency Services and ED staff a priority. Now, the healthcare system is working to expand the platform's capabilities to further synchronize communication and innovate patient care throughout the region.





pulsara®

For more information, please contact:

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www.pulsara.com/en-gb

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