



Pulsara User Guidance for EMS Clinicians

EMS Clinicians,

Thank you for your patience with the initial Pulsara roll out across the EMS, UR Medicine and Rochester Regional Health systems. The rollout identified several personnel and technological issues that the health systems have been working hard to overcome, and including our EMS clinicians remains an integral part of our healthcare team. We continue to work collaboratively for technical solutions while recognizing that any solution intended to improve bidirectional communication will require mutual investment. Our office continues to meet routinely with the leadership teams from both systems to discuss regional and institutional performance, and opportunities for system improvements. Based on these meetings, we are providing the following updates:

Hospital Pulsara Status

Rochester Regional Health

RGH Adult – Live
RGH Pediatrics – Live
Unity – Live

UR Medicine

Strong Memorial Hospital – Live
Noyes Hospital – Live
Highland Hospital – Live
Strong West – Live
St. James - Not live. Implementation in progress
Thomson - Not live. No anticipated go live date.

RGH, Unity, Noyes and Strong have all confirmed their ability and desire to receive all patients inbound via Pulsara. If a critical patient or important information about the patient has not been acknowledged (eg needs BiPap, security, etc), please call the medical control line.

No facility has, nor will have a single person whose sole responsibility is to monitor alerts coming in via Pulsara. Just as EMS clinicians are fulfilling multiple roles when caring for patients, so are the personnel that monitor Pulsara at the facility. This is why its imperative to call the medical control line with any critical patient information that has not been acknowledged.

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EMS Pulsara Status

The data below shows the volume of use by EMS agency (Data supplied by Pulsara). Hospital systems and the Pulsara implementation team are incredibly grateful for your continued partnership.

Name	By EMS Agency								
	06/03 - 06/09	06/10 - 06/16	06/17 - 06/23	06/24 - 06/30	07/01 - 07/07	07/08 - 07/14	07/15 - 07/21	07/22 - 07/28	07/29 - 08/04
Monroe Ambulance, NY	122	140	179	173	224	234	223	236	250
AMR - Rochester, NY	116	84	96	161	257	362	378	280	241
CHS MHC, NY	57	65	78	106	128	116	130	111	118
Livingston County EMS, NY	54	53	57	59	46	60	52	64	56
Penfield Volunteer Ambulance, NY	50	21	31	52	75	82	82	72	78
Gates Volunteer Ambulance, NY	39	70	87	101	80	112	93	110	107
Irondequoit Ambulance Inc., NY	32	10	45	55	76	66	50	60	66
Perinton Ambulance, NY	24	18	18	29	40	36	38	39	40
Dansville Ambulance Co. Inc., NY	12	10	12	14	15	14	10	13	12
Mount Morris Ambulance, NY	9	7	12	7	11	7	6	6	6
Livonia Emergency Medical Service, NY	5	13	7	10	9	13	17	10	9
Brighton Volunteer Ambulance, NY	4	1	0	51	56	69	89	76	62
Honeoye Falls - Mendon Volunteer Ambulance, NY	4	3	4	6	8	5	8	8	7
Rush Fire District, NY	3	3	7	2	3	4	3	3	2
Nunda Volunteer Ambulance Corp, NY	2	7	3	6	7	4	8	7	6
UR Division of Prehospital Medicine, NY	2	0	0	0	0	0	0	2	0
Lima EMS, NY	1	3	0	5	0	4	3	3	2
Pittsford Volunteer Ambulance Inc, NY	0	1	5	9	0	18	19	30	25
Barnard Fire District, NY	0	0	1	1	0	0	1	0	0
Geneseo Fire Department, NY	0	0	0	0	0	4	0	0	0
Total	536	509	642	847	1035	1210	1210	1130	1087

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Important Notes:

- Below you will find an EMS Quick Reference that can be placed in your ambulances and stations for ease of reference.
- You must place enough information in the Chief Complaint / Notes field to inform the receiving hospital. As an example, one of our local hospitals received only “3 Narcan” as the Chief Complaint. This could be perceived several ways ranging from the patient received three doses of Narcan and is now doing well to the patient is non-responsive to Narcan and a resuscitation room is needed.
- The destination hospital may send you messages asking you about additional demographics, an EKG or other questions about the patient's condition. Please answer these if able. Pulsara is HIPAA compliant and these questions are being used to facilitate team activations, pre-arrive patients and assist with patient registration
- There are times when a change in a patient's clinical condition and/or changes in the patient's wishes indicate that EMS change hospital destination. In the event that the hospital destination changes, please update the "Transport to" field in Pulsara. This will remove the patient from the queue in the original hospital and Alert the new receiving hospital. The EMS provider should then receive a notification of the acknowledgment by the new facility.
- Many patients will fall into the Patient Type of "General". In the event that the patient requires an intervention immediately upon arrival at the hospital, you can either choose from the predetermined list (shown below in the quick reference) or type a message of your own.
- When a patient has an acute change in their condition, the EMS clinician should provide an update. This is done by adding a message to the patient by clicking the message icon. You can either choose from the predetermined list (shown below in the quick reference) or type a message of your own. Adding a message triggers an audible alert at the destination hospital.
- You may update the Chief Complaint field at any time but please note that this does not alert the destination hospital.
- Your crew cannot be updated once you start the patient channel. However, you can handoff the patient to another Unit within Pulsara.

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Quick Reference and Recommended Workflow

This guidance is intended to assist EMS clinicians in standardizing the ways in which they convey critical patient information, and integrate Pulsara into their workflows. This guidance also builds on the concepts of the standardized MIST report, and provides strategies for critical task prioritization around clinical care and communication.

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Step 1: Patient Demographics (name, DOB, age)

Scan the bar code on the back of the patient's driver license or government-issued ID card. This will auto-populate the demographic fields. If patient unwilling / unable to share ID, enter first / last name, DOB, gender as able.

Step 2: Patient Type

Accurate selection is essential to communicate patient needs and activate specialty services. The following Patient Type definitions are used by both hospital systems:

Patient Type	Definition for Use
Behavioral Health	Patient with primarily behavioral health presentation. Include nature (depressed, suicide attempt, psychotic, etc) and whether sedation given or patient in restraints.
Cardiac Arrest	Patient in cardiac arrest being transported. Not an ECLS candidate.
General	Patient meets none of the other patient type definitions. Include in chief complaint the nature (eg abdominal pain, asthma, fall with hip injury, etc) as well as vital signs and sufficient information to allow the ED to prepare for the patient.
Obstetrics	Patient with primarily obstetric-related complaint. Include weeks pregnant, and complaint (contractions, bleeding, baby born, etc).
Sepsis	Patient meeting sepsis protocol notification criteria. Include vital signs.
Shock/ECMO	Patient is an ECLS candidate (Transporting to Strong or RGH only).
STEMI	Patient meets STEMI notification criteria. Include vital signs, demographics, and upload/attach photo of 12-lead EKG. (Transporting to Strong, RGH, or Unity only)
Stroke	Patient meets stroke notification criteria for stroke symptoms with last known well <24 hours. Include time last known well, presenting neurologic deficit, demographics, and vital signs.
Toxicology / Overdose	Patient with primarily toxicological or overdose presentation. Include suspected agent, mental status, and vital signs.
Trauma	Patient meets trauma destination criteria (Red or Yellow) for transport to a trauma center. Include mechanism, injuries, and vital signs.

Example: A laceration to the finger from a knife while cooking would utilize "General" and not "Trauma". "Trauma" is reserved for patients meeting Red or Yellow Field Triage criteria. The National Guideline for the Field Triage of Injured Patients is attached for reference.

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Step 3: Images / ECGs

Using the Pulsara app, share ECGs and patient-specific images that will assist the receiving facility in their preparations and care. Taking a picture of the monitor display, including vital signs, can be a time-saving strategy. If utilizing images, a note should be placed in the Chief Complaint / Notes field, for example "Image of MVC damage attached".

Step 4: Chief Complaint / Notes

This may be typed, or clinicians may use the voice to type feature on their phone. Voice to type is often the fastest way to capture key information in Pulsara. All reports should include the components of a standardized MIST report:

- Mechanism or Medical Complaint
 - Mechanism: Speed, Mass, Height, Restraints, Number and Type of Collisions, Helmet Use and Damage, Weapon Type
 - Medical: Onset, Duration, History
- Injuries or Illness Identified
 - Key Findings of Assessments including Pain, Deformity, Injury Patterns, burn type and affected BSA, abnormal ECG (STEMI), Stroke (Scale used, Last Known Well, positive findings, anticoagulants)
- Signs and Symptoms
 - Vitals: BP, HR, BP, SPO2, RR, ETCO2, BG, GCS
- Treatments (as applicable)
 - Medications and Response, Dressings, Splints, TQ, Defibrillation / Pacing, CPAP, Vent, Other

Example 1: Patient Type: STEMI

Patient complains of shortness of breath for the last three hours. Inferior STEMI noted. See attached EKG. ASA given. No NTG due to hypotension. BP 85/50, HR 50, RR 16, GCS 15. Patient bradycardic and will pace if hypotension worsens.

Example 2: Patient Type: Trauma

Motorcycle rearended dump truck. Multisystem trauma. Numerous long bone fractures and flail chest. 60/40, HR 122, RR assisted with BVM and GCS 9. TQ to LLE.



Example 3: Patient Type: Cardiac Arrest

Patient initially complained of chest pressure. Now decompensating and unresponsive. Need resources. Unable to communicate further. (Note, this may be better communicated using standard medical control given the acuity and decompensation, use this type of message only to alert the facility that a critical patient is arriving)

Step 5: Transport To

Select receiving hospital, and your ETA. The ETA is based on drive time so if you are still in the patient's home or the patient is being extricated you may add additional time.

Step 6: ALERT

Press the ALERT button

Step 7: Messages

The receiving hospital can send and receive messages. The are prewritten messages that EMS clinicians can select or type their own messages. The receiving hospital can also send messages to the EMS clinicians, for example, "Can you please add an EKG?"

EMS Selectable Messaging for all Patient Types	
Title	Message
CPAP/BiPAP Patient	Patient is receiving CPAP or BiPAP.
Intubated Patient	Patient is intubated and/or on a ventilator.
Airway Needed	Patient is receiving BVM assistance and may require intubation on arrival.
Cardiac Arrest	Patient has gone into cardiac arrest. CPR in progress.
Critically Unstable Patient	Patient is critically unstable, being resuscitated. Please prepare for critical patient.
ROSC	Patient now has Return of Spontaneous Circulation.
Destination Change	Patient diverted to another hospital.
Security Assistance	Please have security available on arrival.
Transport Delay	Transport delayed due to traffic, weather, or mechanical issues.
ASL Translator Needed	Please have ASL translator available on arrival
Spanish Translator Needed	Please have Spanish translator available on arrival
Other Translator Needed	Patient requires language interpreter services on arrival.



Prioritization of Tasks

EMS clinicians must accurately prioritize tasks, especially when treating acutely ill or injured patients. Maintain a primary focus on addressing life-threatening injuries or conditions ("treat"), followed by navigating patients to the closest healthcare facility equipped to provide care matched to the patient's needs ("navigate"), and lastly, communicate with the receiving hospital for resource activation consultation / physician orders ("communicate"). Using Treat / Navigate / Communicate, clinicians will effectively prioritize tasks in alignment with established care bundles, and can quickly adjust priority of action when patient conditions change.

Within Treat / Navigate / Communicate, communication is a critical intervention. Pulsara is a recommended tool to accomplish this intervention. However, it is recognized that some acutely injured or ill patients will require significant hands-on care, and use of the app may be impractical. EMS clinician calls are anticipated in these cases, when practicable, using existing Medical Control phone numbers and processes.

Again, on behalf of the health systems, thank you for your continued partnership as we advance this technology and improve our processes. As process improvements are identified, they will continue to be communicated in similar formats.

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National Guideline for the Field Triage of Injured Patients

RED CRITERIA

High Risk for Serious Injury

Injury Patterns

- Penetrating injuries to head, neck, torso, and proximal extremities
- Skull deformity, suspected skull fracture
- Suspected spinal injury with new motor or sensory loss
- Chest wall instability, deformity, or suspected flail chest
- Suspected pelvic fracture
- Suspected fracture of two or more proximal long bones
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Active bleeding requiring a tourniquet or wound packing with continuous pressure

Mental Status & Vital Signs

All Patients

- Unable to follow commands (motor GCS < 6)
- RR < 10 or > 29 breaths/min
- Respiratory distress or need for respiratory support
- Room-air pulse oximetry < 90%

Age 0–9 years

- SBP < 70mm Hg + (2 x age in years)

Age 10–64 years

- SBP < 90 mmHg or
- HR > SBP

Age ≥ 65 years

- SBP < 110 mmHg or
- HR > SBP

Patients meeting any one of the above RED criteria should be transported to the highest-level trauma center available within the geographic constraints of the regional trauma system

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury

- High-Risk Auto Crash
 - Partial or complete ejection
 - Significant intrusion (including roof)
 - >12 inches occupant site OR
 - >18 inches any site OR
 - Need for extrication for entrapped patient
 - Death in passenger compartment
 - Child (age 0–9 years) unrestrained or in unsecured child safety seat
 - Vehicle telemetry data consistent with severe injury
- Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.)
- Pedestrian/bicycle rider thrown, run over, or with significant impact
- Fall from height > 10 feet (all ages)

EMS Judgment

Consider risk factors, including:

- Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
- Anticoagulant use
- Suspicion of child abuse
- Special, high-resource healthcare needs
- Pregnancy > 20 weeks
- Burns in conjunction with trauma
- Children should be triaged preferentially to pediatric capable centers

If concerned, take to a trauma center

Patients meeting any one of the YELLOW CRITERIA WHO DO NOT MEET RED CRITERIA should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center)