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Arizona State University

Aicarelink

Enhancing Pre-Hospital Care Through Real-Data & Intelligent Routing

Vision

To become the leading AI-powered emergency connectivity ecosystem that accelerates life-saving decisions and ensures every patient receives the right treatment at the right hospital within the Golden Hour.

Mission

To empower emergency medical teams and hospitals with real-time clinical insights, intelligent routing, and AI-driven decision support that enhances pre-hospital care efficiency and outcomes.

Problem Statement

- Delayed diagnosis during ambulance transport
- Lack of real-time patient visibility for hospitals
- Arrivals at hospitals without needed resources (Intencive care unit, cath lab, stroke unit)
- Golden Hour lost due to slow coordination

Solution Overview

Aicarelink is an AI-powered emergency data bridge between ambulances and hospitals delivering real-time vital streaming, predictive analysis, and smart routing.

How it works?

Real-Time Data Collection & Transmission:

Include:

- Continuous monitoring of:
- Blood pressure
- Heart rate
- Oxygen saturation
- Electrocardigram
- Blood glucose
- Automatic data analysis using AI models.
- Instant streaming to hospital dashboard.

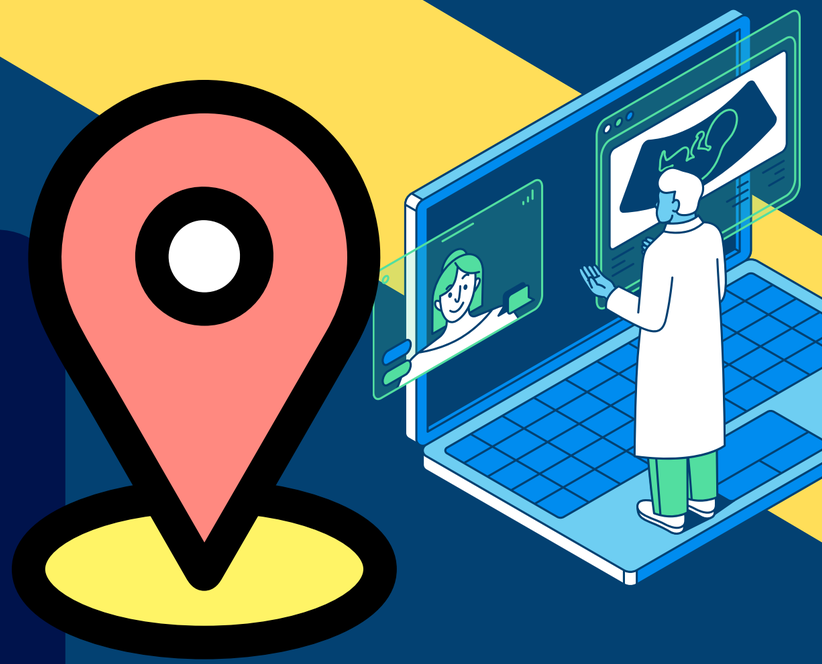
AI-Powered Early Assessment

- Stroke risk
- Myocardial infarction probability
- Shock / sepsis indicators

Supports doctors with early alerts and risk scoring.

AI clinical prediction.

AI-Optimized Destination Selection



- Detects nearest available ICU(intensive care unit) based on real-time bed and ventilator status
- Checks Cath Lab & Stroke Center readiness (PCI-capable centers, CT availability, stroke team activation)
- Displays hospital capacity dashboards: ED crowding, critical-care beds, ventilators, trauma bay status
- Avoids overloaded or resource-limited hospitals using AI congestion prediction
- Reduces unnecessary transfers & door-to-treatment delays by sending patients to the right facility first

Pre-Arrival Clinical Visibility

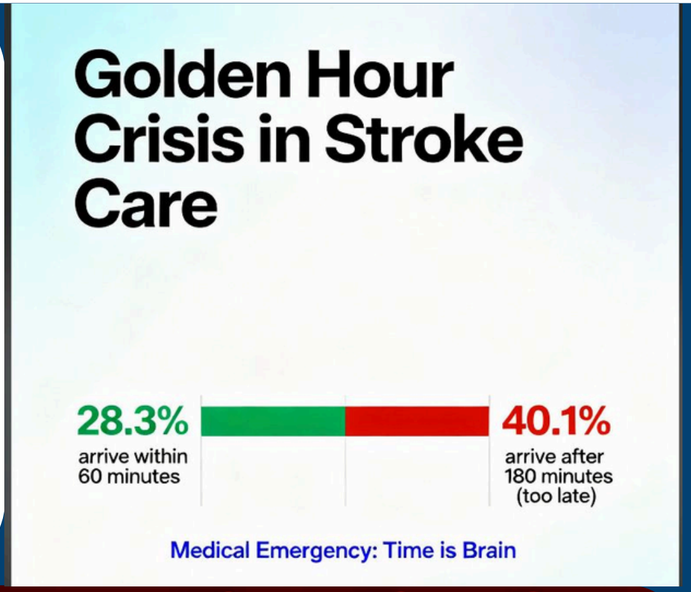
- Early activation of OR/ICU(operating room/intensive care unit) based on transmitted vitals, ECG, and suspected diagnosis
- Specialists notified before ambulance arrival (cardiology, neurology, trauma, anesthesiology)
- Faster Emergency Department mobilization: triage team ready, equipment prepared
- Reduced “door-to-decision” time through synchronized EMS–hospital handoff
- Minimizes crowding by pre-assigning the patient pathway (trauma bay → CT → OR → ICU)

Golden Hour Crisis and impact

Stroke Delays

Most patients miss the Golden Hour:

- Only **28.3%** reach hospital within 60 min
- **40.1%** arrive after 180 min (too late for thrombolysis)
- Brain loses **~2 million neurons per minute** without treatment



Ambulance & Prehospital Delays

- Response times doubled: 5–6 min → 11 min
- Longer waits sharply reduce cardiac arrest survival
- Median prehospital time = 47 minutes

Golden Hour Crisis and impact

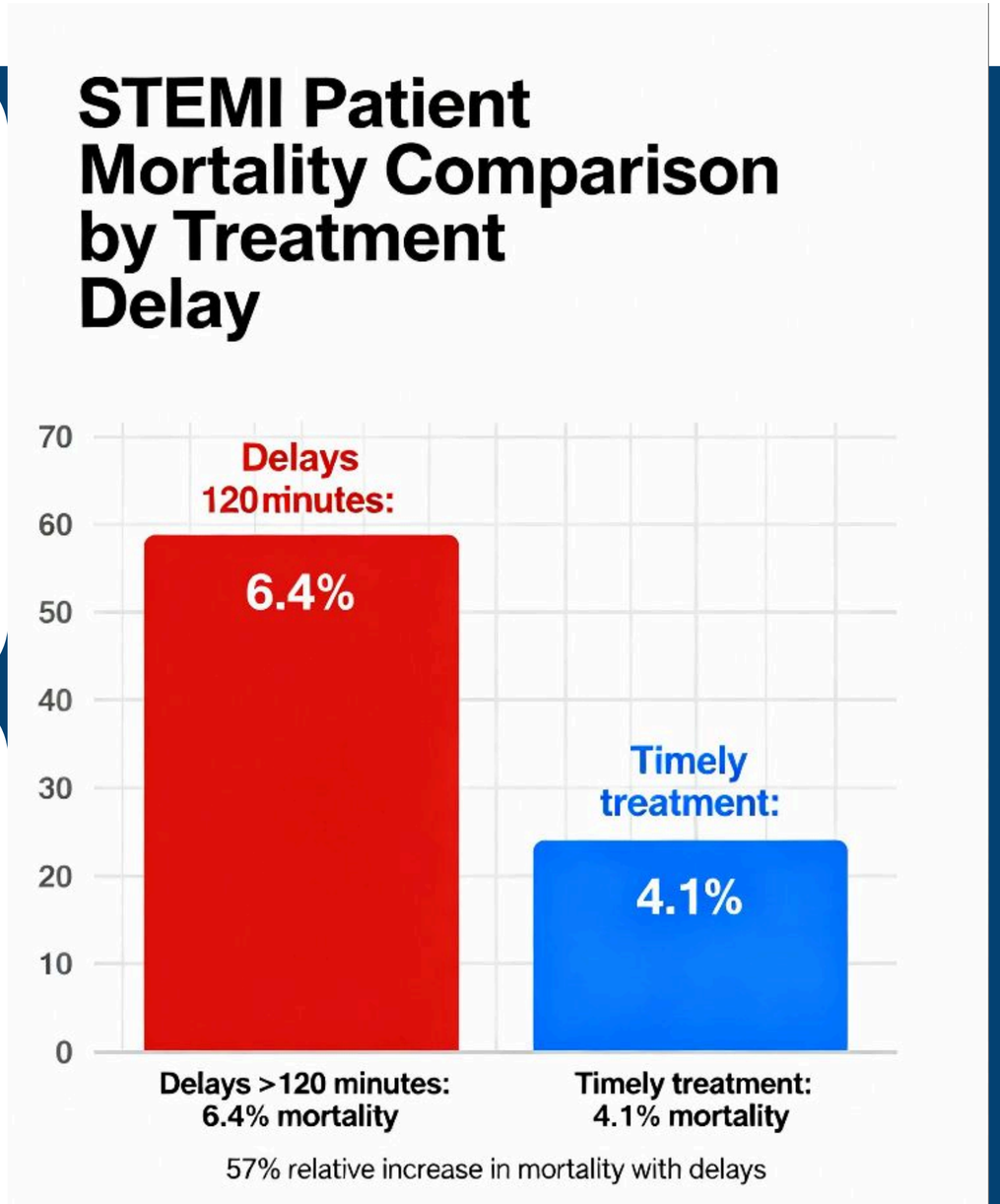
Mortality from Treatment Delays

- STEMI >120 min delay: 6.4% mortality
- STEMI <120 min: 4.1% mortality
- 57% higher mortality with delayed PCI
- Golden Hour stroke mortality: 2.7% vs 30.6% with complications

(STEMI:ST Elevated myocardial infarction)

Hospital Capacity Problems

- When hospitals exceed 85% capacity, unsafe ED crowding in 88.9% of cases
- 64% of delays happen while waiting for transfer
- No real-time visibility of ICU(Intensive care unit) beds, cath labs, or stroke units



System architecture

- Wearable & vital sensors
- In-ambulance device
- AI cloud engine
- Hospital dashboard
- Encrypted communication layer

Impact on Healthcare system

For Ambulance Team

- less manual reporting
- Faster decisions
- Clear hospital routing

For hospitals

- Prepared teams
- Better triage
- Early diagnosis capability

For patients

- Faster treatment
- Reduced complications
- Higher survival rates

Business Angle

Problem

Emergency care suffers from lost time, unprepared hospitals, and poor patient outcomes.

Solution

AI-powered analysis, early case visibility, and optimal patient routing enable faster, more efficient emergency care with lower overall costs.

Revenue Model

Hospital & EMS(Emergency medical Services) subscriptions

Pay-per-use options

Premium AI feature modules

Business Angle

Why It Works

Faster treatment reduces hospital burden
Better outcomes improve system KPIs
Strong demand for AI in emergency workflows
Easily scalable across regions and national systems

Market Opportunity

AI in healthcare + EMS(Emergency medical services) digital transformation = one of the fastest-growing sectors in global medical technology.

Why Aicarelink Is Unique

- AI-driven clinical analysis
- Real-time vital streaming
- Smart hospital resource matching
- Supports high-risk emergencies
- Scalable across national EMS systems

Conclusion

Aicarelink transforms emergency response into a smart, connected, AI-enabled ecosystem that saves time, improves outcomes, and strengthens national healthcare resilience

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Thank You

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