The problem I’m choosing is resource tracking for emergency response management. EMS needs quick access to resources like medical supplies or personel.

The current solutions are a road map from The Federal Emergency Management Agency (FEMA) that helps local governments manage their resources. There’s also a disaster management software called Crisis Track that not only helps manage resources but also helps with damage assessment.

I chose this problem because I felt that being able to track and move resources fast and efficiently during emergencies can help save lives or minimize the emergency. Hopefully making just a part of the process that ems uses faster, will improve response times as a whole.

For my solution on making an emergency response resource management program. I would like to have emergency responders track needed resources in real time during disasters or other emergencies. I also want it to have an alert for when resources need to be restocked or are available. It would also need to have Inventory management for the alert. I want my program to not only be used for local governments or agencies but also be used in households.

EMS program

#keep track of resources

def resource(type, quantity, location):

If type not in resources:

Resources = []

#alerts for resource

def resourceStatus

If resource == 0L:

Display alert (resourcetype, out of stock)

If resource < minimum:

Display alert (resourcetype, running low)

#resource availability

def resourcesAvailable

def assignAmbulance(ambulances, call, trafficData):

availableAmbulances = getAvailableAmbulances(ambulances)

bestAmbulance = null

shortestTime = infinity

For each ambulance in availableAmbulances:

estimatedTime = CalculateTime(ambulanceLocation, callLocation, trafficData)

If estimatedTime < shortestTime:

bestAmbulance = ambulance

shortestTime = estimatedTime

updateAmbulanceStatus(bestAmbulance, 'on the way')

sendRouteToAmbulance(bestAmbulance, call.location)

sendPatientInfoToHospital(call.location, bestAmbulance)

Return bestAmbulance

Findings

<https://www.fema.gov/emergency-managers/practitioners/recovery-resources>

<https://crisistrack.juvare.com/>

*Carter, Alix J. E., M.D., and Robert Grierson M.D. "THE IMPACT OF AMBULANCE DIVERSION ON EMS RESOURCE AVAILABILITY." Prehospital Emergency Care 11.4 (2007): 421-6. ProQuest.*

[*https://go.openathens.net/redirector/pima.edu?url=https://www.proquest.com/scholarly-journals/impact-ambulance-diversion-on-ems-resource/docview/221114260/se-2?accountid=13194*](https://go.openathens.net/redirector/pima.edu?url=https://www.proquest.com/scholarly-journals/impact-ambulance-diversion-on-ems-resource/docview/221114260/se-2?accountid=13194)

*Gerard, Daniel R. "DELIVERING THE COVID VACCINE." EMS World 50.2 (2021): 20-7. ProQuest.*

[*https://go.openathens.net/redirector/pima.edu?url=https://www.proquest.com/trade-journals/delivering-covid-vaccine/docview/2489017662/se-2?accountid=13194*](https://go.openathens.net/redirector/pima.edu?url=https://www.proquest.com/trade-journals/delivering-covid-vaccine/docview/2489017662/se-2?accountid=13194)

*Shah MN. The formation of the emergency medical services system. Am J Public Health. 2006 Mar;96(3):414-23.*

[*doi.org/10.2105/AJPH.2004.048793.*](http://doi.org/10.2105/AJPH.2004.048793)

[*https://www.emsmemorial.org/ems-history*](https://www.emsmemorial.org/ems-history)

*Carter, Alix J. E., M.D., and Robert Grierson M.D. "THE IMPACT OF AMBULANCE DIVERSION ON EMS RESOURCE AVAILABILITY." Prehospital Emergency Care 11.4 (2007): 421-6. ProQuest.*

[*https://go.openathens.net/redirector/pima.edu?url=https://www.proquest.com/scholarly-journals/impact-ambulance-diversion-on-ems-resource/docview/221114260/se-2?accountid=13194*](https://go.openathens.net/redirector/pima.edu?url=https://www.proquest.com/scholarly-journals/impact-ambulance-diversion-on-ems-resource/docview/221114260/se-2?accountid=13194)

<https://www.juvare.com/webeoc/>

<https://pubmed.ncbi.nlm.nih.gov/9709336/>