Chapter 8
Revolutionizing Emergency Medical Services With AI and Telegram Integration

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ABSTRACT

In emergencies, nearly every hospital bed was taken, forcing the collapse of the whole health department. Tragically, many patients lost their lives due to the lack of beds, ventilators, medical intensive care units, or oxygen supplies, as well as the difficulties faced by the ambulance drivers who brought them to the hospital. As a result, they had to wait outside the facility for a long time. The main problem is that there isn't a suitable system linking the surrounding hospitals to analyse the patient's condition simultaneously within the ambulance; hospitals with the necessary equipment should be selected at the appropriate moment. One possible solution to this problem is a system that gathers data about hospitals and medical systems' availability from a centralised server page that links to all nearby hospitals. The system then uses artificial neural networks to analyse the patient's condition with the help of the LSAI48266X AI board.

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INTRODUCTION

Nearly every hospital bed was occupied during the emergency, and the health department failed because of several issues. There was a severe shortage of oxygen, ventilators, beds, and medical intensive care unit beds, which caused the ambulance drivers to wait outside the hospital for an extended period. As a result, people died inside the ambulance.

To avoid this, a technique that monitors the patient's status in the ambulance using an artificial neural network has been devised; the appropriate hospital should be chosen at the proper time. The artificial neural networks will ascertain the patient's state using biological parameters, such as respiration, heartbeat (beats per minute), body temperature, and Spo2 (pulse oximeter). Subsequently, it will categorise the patient's requirements, including ventilator support, oxygen bed support, and MICU support, by verifying the hospital's availability through the networked medical system. Include information from almost 180 countries. Every year, 1.25 million people lose their lives in automobile accidents; the worst hit are nations with low per capita income.

Due to the world population's rapid rise, there is a massive increase in demand for vehicles, which has made traffic congestion and accidents on the roads worse. Accidents causing delayed reactions increase the frequency of deaths, putting the public in danger. An automatic accident detection system is necessary to avoid this case. Any incident involving a moving vehicle, an impediment, or a person is considered a road crash. How long it takes for an ambulance to reach the accident site and carry the patient to the hospital has a significant influence on the victim's chances of survival. Aiming to speed up the collection of data regarding car accidents in India by the emergency response department is the objective of Singh et al. (2021).

Most of the time, minor injuries sustained in an automobile collision may be treated and the victim saved; however, if emergency personnel arrive too late, the injuries can become fatal. The initial goal is to find the scene of the accident and notify the rescue teams as soon as possible so that they can take immediate action to save the victim's life.

Important Technological Advancements in Ambulance Services

1. Integration of point-of-care diagnostic equipment for immediate testing and assessment.
2. Use of mobile communication devices for seamless coordination with hospitals and emergency medical services.
3. Implementation of automated medication dispensing systems to ensure accurate and timely administration of drugs.
4. Adoption of lightweight and portable medical equipment for enhanced mobility and ease of use in emergencies.
5. Incorporation of vehicle telematics for monitoring ambulance performance and maintenance needs in real time.
6. Implementation of remote access technology for specialists to provide real-time guidance to paramedics during critical situations, improving the level of care delivered in the field.
7. Integration of augmented reality (AR) technology to assist paramedics in visualizing patient anatomy and identifying potential injuries, leading to more accurate on-site assessments and interventions.
8. Adoption of drone technology for emergency supply delivery, providing additional medical resources to paramedics at the scene or en route to the hospital.