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# An SMS Based M-Health Application for Ambulance Emergency Geo-Location Notification System

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## Abstract

Mobile technology, irrespective of platform and device extends access to and increases efficiency in health emergency services and responses, including ambulance models. It is overt that in most conventional emergency alert/notification systems (EAS), call-taking can be difficult sometimes while reporting an emergency particularly if the person on the phone is a close relative of the dying patient and is experiencing panic or fear; if they are out on the street or on the highway and do not know the exact address of the emergency, or perhaps the immediate person to save the day is either a dumb, speech impaired or a deaf, hearing-impaired person. This is why an alternative system is required that will address these issues and in addition complement the existing system by bringing simplicity in locating emergency scene. The Emergency Medical Service (EMS) industry is investigating complementary and alternative methods for requesting assistance and contacting like the Enhanced-911. One such method being investigated is SMS messaging. This research work is focused on designing an m-Health application that uses mobile phones running java as its interface to build an inexpensive and complementing means to notify ambulance stations of accident locations for swift and timely first aid attention compared to others that are built into vehicles (e.g. GM Onstar) or others strictly for smart phones. This notification system engages GSM's SMS services and Google Map APIs in transmitting the exact location of where emergency service is needed to an ambulance point.

*Keywords:* m-Health, Location Based Service, SMS, Geo-location.

## Introduction

It has been observed in the mobile computing world that mobile devices including smart phones, tablets, netbooks, MP4 players, Internet TVs have open up new vistas of innovative services in every aspect including the delivery of healthcare services through e-Health, m-Health, telehealth, telecare and telemedicine applications. These feats were possible because mobile devices have circulated more quickly among people than road systems, power grids, water works, or fiber optic networks as noted by Qiang et al. (2011).

M-health which is sometimes referred to as a type of telemedicine is one subset of the larger set called e-health. It is an integrated system of health-care delivery that employs telecommunications and mobile computer technology as a substitute for face-to-face contact between health service provider and client. Qiang et al. (2011) define M-Health as the use of mobile applications for healthcare service delivery. Istepanian et al. (2003) mentioned that, as of 2003, m-Health was looked upon as a form of "wireless telemedicine involving the use of mobile telecommunications and multimedia technologies and their integration with mobile healthcare delivery systems". It is basically viewed now as the connection of mobile, portable, computing and medical devices with sensors over wireless, mobile or fixed