無線應用協定於災難醫療資訊傳輸之應用

Application of Wireless Application Protocol for Medical Information Transmission in Disaster

中文摘要

醫療資訊的即時傳輸將可獲取各種災難救援的救護情況及所需的醫療資源資訊，此資訊有助於指揮系統的決策及救災工作的執行。因此藉由各種資訊傳輸設備與緊急醫療資源資料庫介面系統的連結與建立、讓災難現場人員所配備之各種可攜式通訊器材（如：WAP 行動電話、PHS、PDA、衛星電話、NOTEBOOK…等）能傳送災難現場之需求，使醫療資源得以適時、適地且適量地投入，並即時顯示處理狀況，以供後續之追蹤與支援，如此醫療資訊才能在災難發生時發揮最大功效。

網際網路的盛行與無線行動通訊科技的發展，使得醫療資訊得以透過一般電腦與WAP 手機這些終端設備介面做即時而正確的傳輸，尤其在平時以快速經濟的有線傳輸方式進行緊急醫療資源資料的收集，而當災難發生時有線通訊失效或需高機動性、高移動性的通訊需求時，可運用無線通訊傳輸設備來連接醫療資訊資源，以應變災難時各種可用資源的查詢、調度、動員和指揮。

本研究不僅建構出一 WWW 介面系統，用以防救災之醫療單位做資訊蒐集及提供查詢，另外亦建構一 WAP 介面系統，給持手機的高移動性救災人員做災難現場醫護情況的回報，同時亦提供使用者(包含一般大眾)做災難就醫傷患的查詢。最後，透過有線與無線行動通訊的特性並加以整合而有效達到災難前的各項醫療資源之準備及災難應變中醫療資訊之傳輸。另本研究之醫療資訊傳輸主要應用於災難時通訊設備仍能正常運作，或災難後通訊恢復正常時使用。

英文摘要

Realtime transmission of medical information about the current status of medical support and further requirement of medical resource, is important for decision making and coordination in emergent management of disasters. In order to ensure successful communication of medical information, and efficient allocation of resources, in adequate time, place, and amount, it is necessary to establish an interface between various communication devices and the database of emergency medical resources. The personnels could be equipped with any available mobile communication devices, eg.WAP, GSM or PHS cellular phones, PDA, satellite phones, notebooks, etc, to report their progress or to request any further needs, from the site of disaster.

The univeral availability of internet and the advancement of mobile communication technology, make possible the realtime and correct connection between terminal

interface of computers and WAP cellular phone. In peace time, medical emergency information could be collected by cheap connection by wire. During disasters, when the by-wire connection fails, or more efficient mobile route is needed, wireless communication could take over to fulfill abruptly increased requirement of queries, orders, recruitment, and command.

In this research, in addition to construction of an WWW interface for the information collection and distributeion for emergency facilities, an WAP interface was established for the mobile personnels to commuicate about their first-aid. Both interfaces were designed for the specialist or non-specialist user to query about the wounded or mortality in medical department. The integration of different benefits of by-wire or wireless applications would improve the efficiency of transmission of medical information. The application would work both when communication are not interrupted in disasteric settings, and when communication is resumed after emergent conditions.