

# **Development and deployment of a web-based physician order entry system**

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## **Abstract**

The computer-based Physician Order Entry System (POES) has been employed in many clinical institutes in Taiwan. Most of the POES systems are developed in the two-tier client-server architecture, and a large portion of the systems are constructed on a mainframe or even a single PC. The exponential growth of the Internet has had a tremendous impact on our society in recent years. In consideration of the future user interface and system architecture, we have developed a three-tier web-based Physician Order Entry System and successfully deployed it in the Wang-Fang Hospital in Taipei. The system is the first POES based on three-tier and World Wide Web (WWW) in Taiwan. The system provides the Subjective, Objective, Assessment, and Plan (SOAP) structure for the physician to enter subject, object, diagnoses, medicine dosage, treatment and laboratory test request, and prints out the prescription and necessary document. The doctor can also retrieve the patient's medical record on the system. One of the special characteristics of the system is its personalized design. The doctor can define their own diagnosis, medicine and treatment database and any combination of these to facilitate their clinical work. The system has been reviewed since February 1999. The result shows that the clinical procedure has become more efficient, and the chances of omission have been reduced. The system is very stable and the Open Database Connectivity (ODBC) database access did not show any delay in the network. Since we have incorporated many new web-programming techniques, the progress of the techniques will improve the system performance in the future.