C.S. Lin, Y.S. Lee, P.Y. Wu, Wireless bed occupancy monitoring system for residents in nursing homes. Gerontechnology 2010;9(2):303; doi:10.4017/gt.2010.09.02.150.00 **Purpose** Falls are a serious health issue and are the greatest cause of death in nursing home residents. The residents easily fall while they are getting out of bed. Reducing the chance of fall accidents to enhance the safety of residents is urgently necessary. The purpose of this study is to use wireless sensor network technology to develop the monitoring management system to monitor the bed occupancy status of high risk fall residents 24 hours a day, 7 days a week. When a resident leaves the bed, the system will send an alarm to the nurse station and the nurse can assist the patient to get out of the bed at once. The goal of the proposed system is to decrease the chance of fall accidents in the residents and enhance the quality of care. **Method** ZigBee technology is the standard of choice among the other wireless technologies due to its efficient low-power connectivity and ability to connect a large number of devices into a single network. Thus, this study will integrate the pressure sensors and ZigBee wireless network technology to implement a bed occupancy monitoring system (*Figure 1*). **Results & Discussion** The user interface of the system (*Figure 2*) shows that the green light is on when the resident is in the bed, when the red light is on; the alarm is triggered when the resident leaves the bed. So, the nurse on duty at the nurses' station can easily monitor the status of the residents via user interface. Once the residents leave the bed, the nurse can respond quickly and go to help. The simulation results demonstrate that the proposed system can monitor the bed occupancy status of the residents in near real time. The system will be installed to test and evaluate the usability in Taoyuan general hospital associated nursing home in the future. The test results will be used as an important modification basis for the system.

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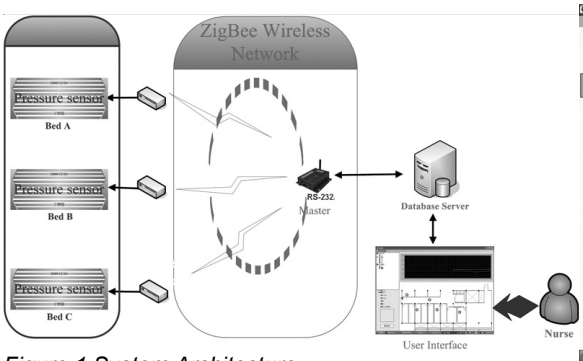

Figure 1 System Architecture

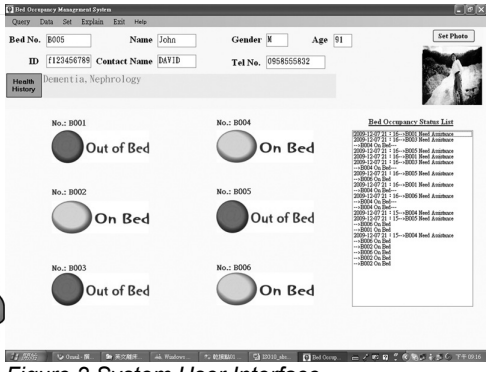

Figure 2 System User Interface