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doi:10.4017/gt.2010.09.02.197.00 **Purpose** To prevent pressure ulcers, measures including repositioning schedules should be initiated[1,2]. More than one third of adults 65 and older fall each year in the United States[3]. Among older adults, falls are the leading cause of injury deaths and are the most common cause of nonfatal injuries and hospital admissions for trauma. The rates of fall-related deaths among older adults rose significantly over the past decade[4]. In skilled nursing facilities many of these falls occur at night, and are the result of elderly persons attempting to ambulate without assistance. **Method** A novel fiber optic sensor can detect levels of movement as a risk factor for development of pressure ulcers or falls[5]. Long term care focus groups were interviewed and a system was developed: (i) Resident location: In/Out of Bed. (ii) Movement level as indicator of risk for pressure ulcers (low movement), and falls (high movement). (iii) Caregiver presence and activity at bedside. (iv) Automated documentation of resident and caregiver activity. **Results & Discussion** This system, VivaTRAK™, was optimized to permit non-invasive, continuous monitoring for risk of pressure ulcers and falls. It provides a personal digital device prompting caregivers to perform ADLs, respond to critical situations, and permit Point of Care Documentation of caregiver & patient activities. It consists of: (i) Bedside computer with transceiver. (ii) RFID sensor. (iii) Fiber optic sensor (Active Sense™). Each caregiver carries a personal digital device/RFID card. ActiveSense™ permits monitoring of patient movement in bed. Sensor data can be analyzed, with clinically useful information provided to the caregiver's personal digital device prompts such as 'Turn Patient', or 'FALL RISK**:** Patient Out of Bed'. In 'Typical Nocturnal Activity' (*Figure 1*) there is initial movement associated with the patient, settling down prior to going to sleep, and periodic arousals considered normal; in contrast to 'Individual With Nocturnal Aggitation/Insomnia Due to Illness' (*Figure 1*) with frequent arousals and increased activity throughout the night. Data suggest that egress from bed can be predicted in time to send a prompt with a message such as "FALL RISK: Check Patient".

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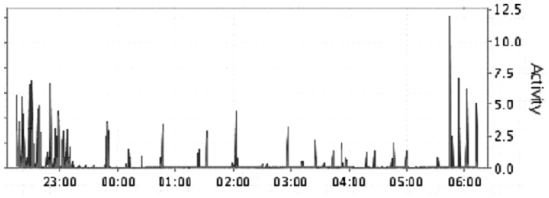
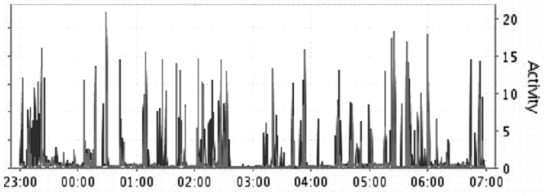


Typical nocturnal activity



Nocturnal agitation/insomnia due to illness

Figure 1. Examples of common activities