

## LEAF PATIENT MONITORING SYSTEM

# The next step in wireless patient monitoring



### The Impact of HAPU

Despite a growing emphasis on preventing hospital-acquired pressure ulcers (HAPUs), pressure ulcers remain the most prevalent preventable hospital acquired condition.

Each year, over 1 million patients will suffer from a *hospital-acquired* pressure ulcer. Pressure ulcers occur most commonly in the elderly, which is the fastest-growing segment of the population.

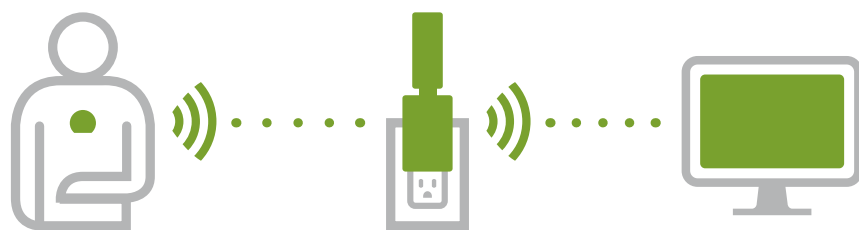
The estimated average incremental cost of treatment for a single pressure ulcer is \$10,700, and the total cost of treating pressure ulcers in the United States per year is ~\$10B.<sup>1</sup>

In 2008, the Centers for Medicare and Medicaid Services (CMS) classified pressure ulcers as a preventable Hospital Acquired Condition (HAC) that will no longer be reimbursed by current insurance guidelines, forcing the costs of treating hospital acquired pressure ulcers onto provider organizations.

### Automating Patient Turn Protocols

The Leaf Patient Monitor is a wireless system for monitoring the position and movement of hospital and long term care facility patients susceptible to pressure ulcers. It enables caregivers to define customized turn protocols for each patient and drives compliance to that care plan by notifying when an assisted turn is required.

A wireless, wearable single-patient use sensor is adhered to a patient's upper torso so that his or her body position and movement can be monitored. Data collected by the sensor is automatically communicated wirelessly through a Leaf proprietary mesh network of relay antennas, to a Central Monitoring Station where it is permanently stored, and analyzed. Leaf Turn Management Software displays in an organized and simple way patient turn history, current patient positional status, and notifies if and when staff assisted turn actions are becoming necessary, are necessary or are overdue.



#### Leaf Patient Sensor

The wireless, disposable sensor attaches to patients using an industry-leading, medical grade adhesive. Simply remove the adhesive backing and place the sensor on a patient's upper chest. The sensor automatically recognizes when it is attached to a patient and immediately begins monitoring the patient's position and activity.

#### Leaf Antennas

Leaf antennas can be plugged into any unused wall outlets. The antennas automatically self-assemble into a wireless mesh network, which is highly redundant to ensure data integrity. The patient sensors will automatically communicate with antennas that have the highest signal strength to optimize data transmission.

#### Leaf User Interface

Patient data can be viewed on desktop computers, tablets, or smartphones. The interface provides useful information at a glance, with patient turn priority and actionable items clearly displayed in a manner that avoids contributing to nuisance alarms and alarm fatigue.

## Leaf Turn Management Software

The Turn Management Software analyzes the patient data, displays relevant information and alerts when a patient has been in a position for a duration longer than specified by the individualized turn protocol.

### Patient Identification

Room Number and Patient Initials are clearly displayed for easy patient identification and tracking.

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### Turn Status Indicator

A simple color bar is recognizable at a glance. Green is all-good, Yellow means an action is coming up, and Red indicates an action is overdue.

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### Additional Information

Upright (in bed or in a chair) and Prone positional qualifiers are displayed when warranted. System status and diagnostic notices display as well.

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| Room | Patient | Time Until Next Turn | Position  | Information |
|------|---------|----------------------|---|-------------|
| 2301 | M.S.    | 1:57                 | L <span style="border: 1px solid black;">B</span> R                                 | Upright     |
| 2302 | C.M.    | 0:14                 | <span style="border: 1px solid black;">L</span> B R                                 |             |
| 2303 | S.S.    | Turn Due 0:03 Over   | L B <span style="border: 2px solid red;">R</span>                                   |             |
| 2304 | M.L.    | 1:51                 | <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">L</span> B R | Prone       |

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### Turn Priority

The digital timer counts down to a turn being due, and then begins to count up after a turn due alert to help prioritize and coordinate necessary actions within workflow.

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### Patient Position

Accurately displays the real-time position of each patient. If desired, any patient specific position can be set to alert in order to avoid pressure to a known high risk area.

## Documentation and Reports

Reports can be easily queried to document all self and assisted turning activity, on current admits or discharged patients, over selectable time periods, on a per-patient, shift, ward, floor, or complete enterprise basis.

Data for all monitored patients is securely stored in an SQL database for documentation and reporting purposes. Users with administrative privileges can view statistics regarding turning protocol compliance rate, turning efficiency, patient activity level, and various other parameters. Statistics can be viewed for individual patients or can be compiled for groups of patients (ward, floor, hospital, or a complete enterprise).

All monitored patient data transmitted through the proprietary secure and redundant mesh wireless network is received and permanently stored in an SQL database. Data for current or discharged patients remains available on the server for accountability and documentation purposes. Reports can be easily queried to document all turning activity, on current admits or discharged patients, over selectable time periods, on a per-patient, shift, ward, floor, or complete enterprise basis.

### Reference:

1. "Preventing Pressure Ulcers in Hospitals: A Toolkit for Improving Quality of Care." Agency for Healthcare Research and Quality. US Department of Health and Human Services. Publication # 11-0053-EF. April 2011.



### About Leaf Healthcare, Inc.

Leaf Healthcare creates wireless patient monitoring solutions for health care providers who are seeking more efficient and cost effective ways to improve patient safety and clinical outcomes.

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