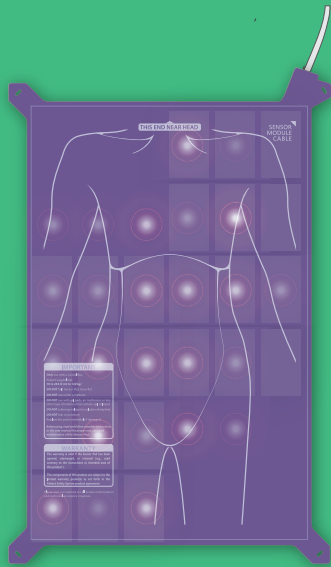# System Components

On Care Receiver Side

MedicusTek Control Box

MedicusTek Control Box is a device installed by the bed. When a patient is trying to get off the bed, the MedicusTek Control Box will send signals to nurse station, but also play a voice recording to alert and remind the patient to wait for caregiver's assistance.

MedicusTek Sensor Pad

MedicusTek Sensor Pad is a sensor module which can be easily installed on the mattress. Through MedicusTek Sensor Pad, patient's in-bed condition can be monitored and sent to the MedicusTek System, as well as their bed-leaving events.

On Caregiver Side

MedicusTek Dashboard

MedicusTek Dashboard is primarily placed at nurse stations and operated with touching panel and presents the information intuitively and graphically, managing the whole ward or individual patient's status.

MedicusTek Dashboard Program

MedicusTek Dashboard Program is installed in MedicusTek Dashboard, providing caregivers with real-time patient's in-bed data, and a searchable history of individual bed lying record.

MedicusTek Server Software

MedicusTek Server Software assists in data algorithm and storage with HIPPA compliance to keep the data secure.
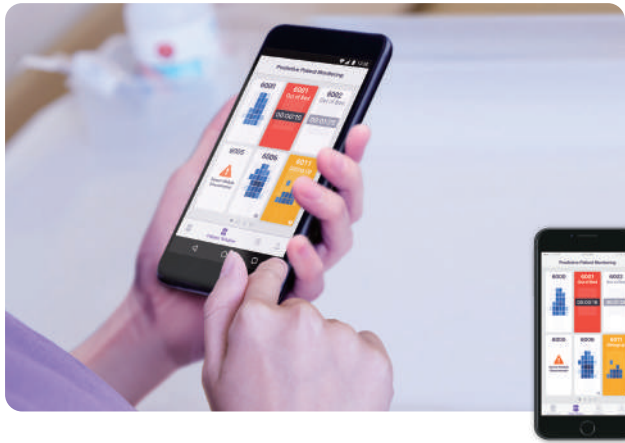
MedicusTek Mobile App

Using the MedicusTek Mobile App, supporting both Android and iOS, capable of sound and visual notifications, caregivers can see the information and check on responsible patients remotely* while having their duties around the ward.

*Caregivers must use the mobile devices within the same network domain as MedicusTek System.

Predictive Patient Monitoring™

MedicusTek System

Product Functions

■ Reduce the risk of fall with early notification of patient leaving bed

■ Graphically display patient's pressure points and time, in order for the caregivers to assist in patient reposition.

■ Systematically record and establish patient care information for use in medical analysis

■ Improve the efficiency of medical personnel for reducing medical costs

Product Features

■ **Contact-free Sensor Detection**
Integrate the sensor into the existing environment to reduce patient's rejection and discomfort

■ **Friendly and Personalized Bedside Alert**
Remind patient the safety of bed exit with adjustable warning language and volume

■ **Multiple Beds Management**
Support monitoring of 40 beds

■ **Personalized System Settings**
Adjust appropriate warning notifications and settings according to the patient's condition

■ **24-Hour Patient's In-Bed Status Monitor**
Reduce nursing staff alert fatigue through eliminating in-room inspection to understand the patient's in-bed activities

■ **Real-time notifications while being mobile**
Receive instant alert messages through mobile devices to allocate care time and improve quality of care

System Components	Medical Device Requirement	Technical Specification
MedicusTek Control Box	FDA Class I Medical Device ISO 13485 Certification MDD Class I Medical Device	Wi-Fi (2.4/5G) / Ethernet Transmission AC 100~240V, 0.2~0.1A, 50~60Hz
MedicusTek Sensor Pad	FDA Class I Medical Device ISO 13485 Certification MDD Class I Medical Device	Pressure Sensor Module Included Water Proof Material
MedicusTek Dashboard Program MedicusTek Server Software MedicusTek Mobile App	HIPPA Compliance	Windows OS Windows OS / Linux OS iOS 10 / Android 8.0

MedicusTek International Awards

| MD&M West 2017 Innovation Prize Winner | 14th National Innovation Award of Taiwan in Smart Health Technology | 2016 Taiwan HQIC Silver Medal in Smart Health IT |

MedicusTek System

MedicusTek System is an intelligent integrated system for patient safety, with exclusive pressure sensing technology, to record the bedside activities of the patients 24 hours a day. When the patient is admitted to the hospital, the side effects of his or her illness, medication, or treatment may cause physical weakness and reduced ability to move independently, thereby creating a potential risk of falling out of bed or pressure injuries, potentially increasing the likelihood of expanded medical resources.

Through MedicusTek sensor module, the patient's body distribution and pressure time can be detected when the patient is in bed. When the patient gets up and gets out of bed, a warning sound and flashing light will be triggered automatically by MedicusTek Control Box reminding the patient to pay attention to safety; the MedicusTek Dashboard located at the nurse station and the mobile device carried by the caregivers will receive warning sounds and messages simultaneously and provide appropriate assistance. When the same pressure point exceeds the set time, MedicusTek Dashboard and the mobile device will also receive warning sounds and messages synchronously to remind caregivers to help patient reposition.

The clinical trial provided convinced data that MedicusTek System can inform the caregivers prior to patient's bed-exit around 45 seconds. Through MedicusTek System, one can always keep tracking of the patient's current status, including the patient's history of bed activity, activity records, alert notifications, and more. Caregivers can also see the sustained pressure points and provide long-term bedridden people with effective reposition.

Suitable Facilities

Medical institutions   Nursing home   Long-term care institutions
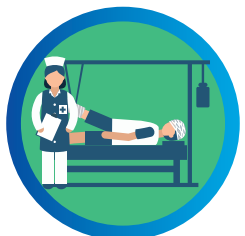
Suitable Audiences

The elderly   Individuals who are not likely to be active   Long-term bedridden   Post-operative patients   Patients with risk of falling
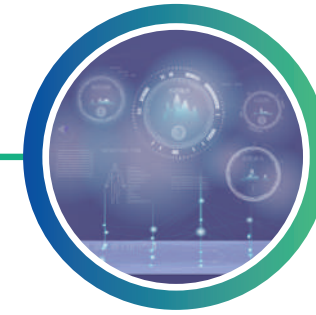
Smart Ward with Smart Care

In Room
Bedside Alert of Fall Prevention

Managment
Data Reporting of Patient Care

Nurse Station
Patient Management in Central Monitor

In Wards
Realtime Notifications with Mobile Device

Plans for Fall Prevention

MedicusTek's uniquely smart algorithm, using clinical research and analysis results, accurately subdivides the process of patient's bed leaving behavior into four phases: stirring, sitting up, leaving and out of bed, enabling nurses to provide immediate response to each phase.

Nurses can set different reminder notifications according to the patient's condition. In doing so, patients can be warned by early prediction of patient behavior patterns to reduce the incidence of falls within the hospital[1].

Customized Notification Settings for Different Conditions

Nursing personnel sets up warning notifications at different stages according to the patient's fall risk assessment. For example, high-risk patients need to be attended when they wake up while low-risk patients only need to be notified when the patient is about to leave the bed.

Visualized Patients Leaving Bed

Unlike the general notification system that only provides sound notifications, the system provides visual alerts. If the patient is sitting on the bed and intends to get out of bed, the alert on the central monitor and mobile phone application will be displayed by sound and red flash. Nursing personnel can learn about the patient's bed condition from the central screen of the nurse station or the mobile phone app.

Mobile App to Facilitate Remote Operations

In order to facilitate the caregivers to keep track of the patient's activity status during work, the system can be used with Android or iOS mobile devices so that nursing personnel can receive real-time notification of patient status even if they are not at nursing stations[2].

Note
1. In order to effectively reduce the fall rate, caregivers or nurses must still physically assist the patient when the alert is sent.
2. A stable network environment is required for real-time notification.

Plans for Pressure Injuries

The sensor module of MedicusTek Inc. is able to detect patient activity, unrelieved pressure points and pressure time. With the algorithm for bedridden care, the system provides with "Reposition" and "Immobile" notifications to assist in patient turnover.

Visualized Body Pressure Distribution

Pressure points and pressure time are shown on the Central Monitoring Program and Mobile App. The color of the pressure points will turn darker with time and be sent to the central station and caregiver's mobile devices in real-time, so that patient's status can be tracked at any time[1] and caregiver can provide with reposition care whenever needed.

Customizable Plans of Patient Reposition

The system provides a reminder for patient reposition. The caregiver can set a reminder time of 30, 60, 90, 120 minutes or manually according to patient's status. The system will send reposition notification when the time is up.

Reposition Assessment Tool

With the proprietary algorithm, the reposition efficacy can be evaluated from the level of activity and unrelieved pressure points. If the level of activity is insufficient, the turnover is only classified as a minor movement, rather than an effective reposition. The reposition efficacy is recorded in the system and can be used for fine tuning the reposition protocol.

Note
1. A stable network environment is required for real-time notification.