LEETEK LIFE

Bowel Sensor
Operations Management System

Smart Healthcare System

Unrivaled bowel sensor healthcare system that supports
patients in maintaining self-esteem and hygiene

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The Aging Population in Transition

23 million
19 million
15 million
11 million
7 million

8.57M — 2022
13M — 2030
17.22M — 2040
19 million — 2050
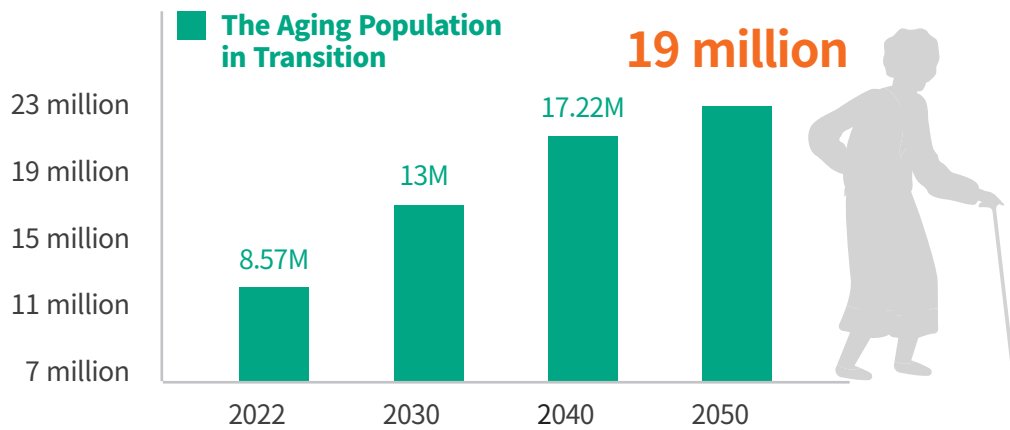
The aging population over 65 is experiencing a notable increase.

KBS 9 대구경북

대구지역 요양병원
4곳 중 1곳 '환자 관리 부실'

Despite the growing elderly population

services are experiencing low satisfaction levels

Challenges of Aged Care Facility Oversupply

A need to differentiate services emerges

An increasing number of aged care facilities

3,289 — 2017
3,389 — 2018
3,604 — 2019
3,850 — 2020
4,132 — 2021
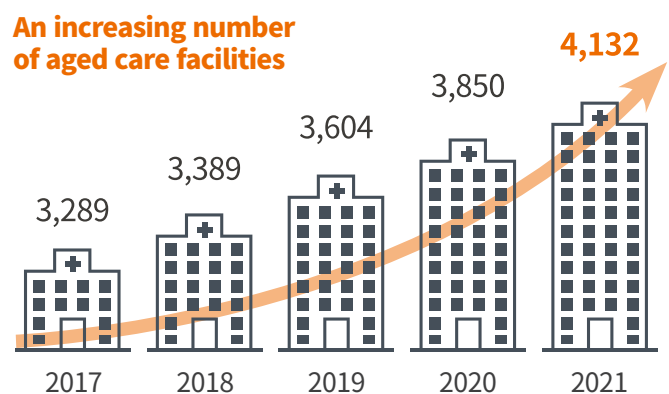
The moment a patient is prescribed to wear a diaper **their self-esteem may be adversely affected.**

The patient's distress with a soiled diaper is difficult to comprehend, especially when they must wait for the diaper to be changed.

Nursing care workers responsible for numerous patients face a series of challenging and painful tasks when physically assessing the bowel condition of each patient.

Providing the desired high-quality services to patients and their guardians is limited by the challenges of excessive labor costs and operational difficulties.

Wearing a diaper poses a potential threat.
to the health of patients, not only in terms of self-esteem.

Skin rashes

caused by exposure to humidity in diapers

Bacteria in excrement

Colon bacillus, Dysentery, Staphylococcus aureus, etc

Unsanitary environment

resulting from neglected bowel movements exacerbates the pain of patients in the room

Heightened anxiety for guardians

The emotional burden of not being able to personally care for the patient weighs heavily on the guardians

Our Smart Healthcare System is designed to provide comprehensive assistance.

For patients dealing with dementia, urinary incontinence, severe conditions, and cognitive impairments related to defecation, our Smart Healthcare Bowel Sensor Operation System offers improved management.

This extends support not only to the patients but also to the dedicated carers, who, always concerned about their patients' conditions, indirectly bear the burden of suffering. Additionally, healthcare workers, responsible for the well-being of both patients and guardians, find enhanced care through our system.

LEETEK LIFE

Processes of Smart Healthcare System

Experience an unrivaled bowel sensor healthcare system that not only supports patients in maintaining self-esteem and hygiene but also enhances overall patient management and hospital operations in real-time.

1. Counseling/Registration for Hospitalization

2. Hospitalization of Patient (with Attached Sensor)

3. Monitoring

4. Bowel Sensor Issuing Notifications for Bowel Movements

5. Data Delivery to Staff

6. Diaper Change (Health Care)

7. Patient Treatment and Care

8. Data Storage on Web Server

9. Consultation with Caregiver

What are the benefits of the system?

Enhanced Patient and Guardian Satisfaction

- Prompt assistance for patients, minimizing the occurrence of secondary diseases such as skin rashes, food poisoning, abdominal pain, diarrhea, bloody excrement, respiratory infections, bedsores, and more.
- Elevated Patient's Self-Esteem
- Efficient Defecation Treatment Reducing Odor and Maintaining a Pleasant Environment
- Increased User Satisfaction
- Relieved Guardian Anxiety for a More Comfortable Daily Life
- Enhanced Caregiver Concentration and Bonding

Alleviates Caregiver Fatigue

- Real-Time Monitoring for Large Patient Numbers

- Planned Patient Care

- Improved Working Environment

- Partial Work Intensity Reduction
  - 30% Reduction in Diaper Replacement Rate
  - Real-Time Notification for Care Workers and Management Centers
  - Task Division Based on Program Results
 - Increased Concentration on Patient Care

Cost Reduction in Hospital Operations

- Labor and Operating Cost Reduction

- Efficient Resource Utilization

- Improved Workforce Retention

- Data-Driven Patient Management
  - Accumulation and Utilization of Event Data for Patients

- Strengthen Quality Medical Services and Implement Unique Service Policies Serving as a Strategic Marketing Tool.

- Additional Revenue Generation through Dualizing the System

- Transition from Traditional Analog Methods to a More Innovative Induced Charging Model

- Servitization as a Paid Service

- Financial Sustainability by Covering Hospital Operating Expenses through the Generation of Additional Profits from a Monthly Fixed Amount

Detailed Overview of Smart Helathcare System's Processes

Smart Healthcare System Details

01 Sensor Application
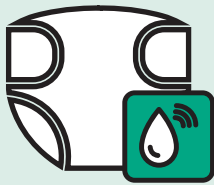
- The sensor, designed to be light in weight and of optimal size to minimize irritation, sets the standard for defecation weight.
- Securely attach the sensor to the outer cover of diapers ensuring no direct contact with the skin and filth.

02 Patient Information Registration and Management

- Register comprehensive patient hospitalization information at the central management center.
- Capture detailed data, including patient name, room, bed number, person in charge, group, etc.
- Enable automatic data management after each diaper change.
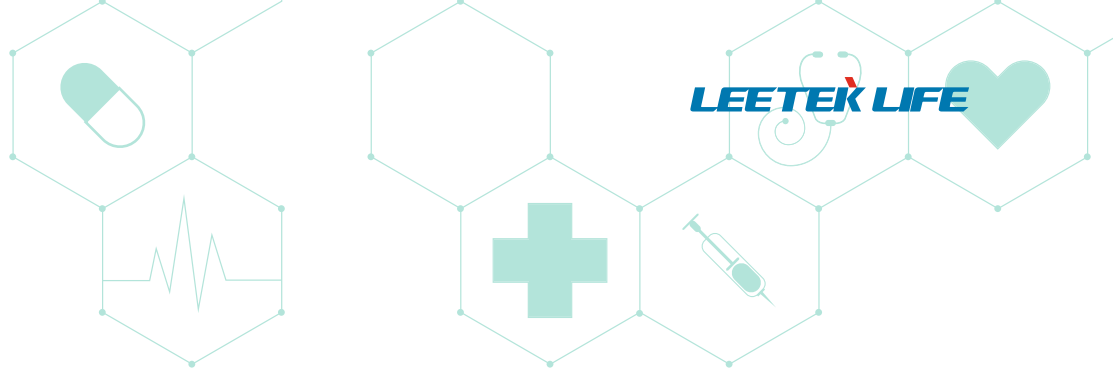
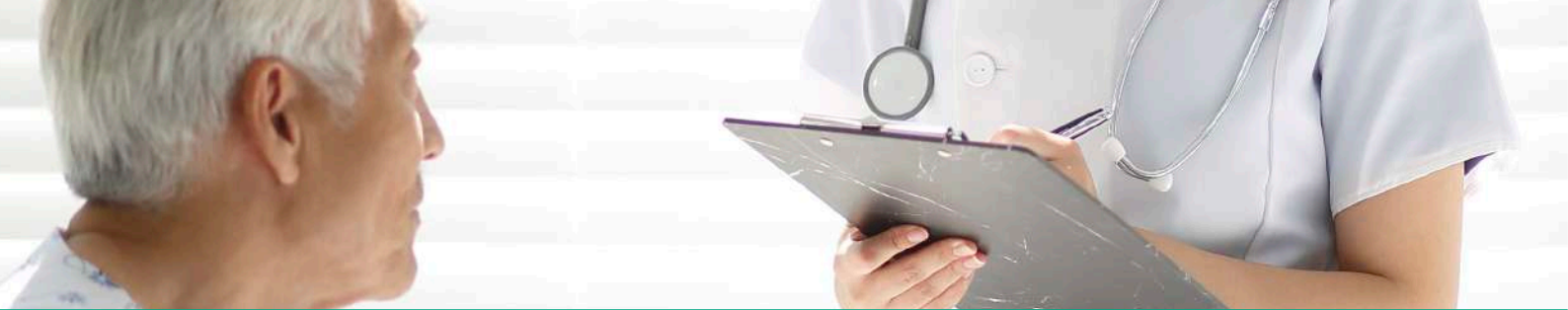## 03 Patient's Bowel Movement Occurrence

- Receive notification of the patient's bowel movement.
- Display notifications on the monitor in the central management center.
- Operate the receiver device for caregivers, prompting diaper change.
- Display status by color, indicating whether the action has been processed.

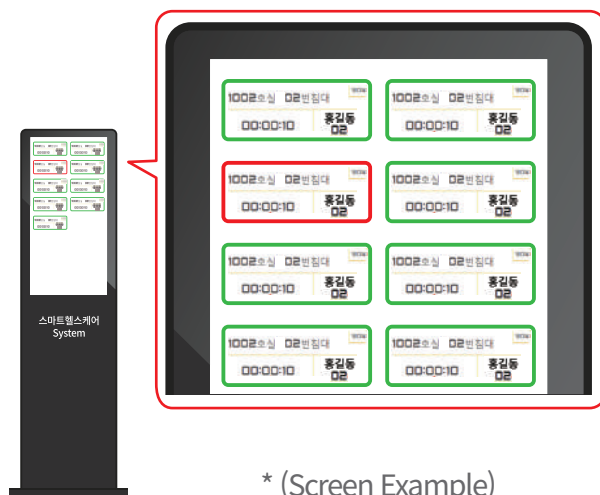## 04 Sensor Status and Server Program

- Display real-time information on patient care and program operation status.
- Initiate requests for handling work by the assigned care worker if not processed.
- Accumulate event data for each patient and utilize it in comprehensive patient management.

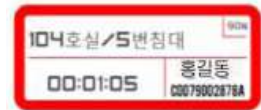# Central Control System for Patient Management

* (Screen Example)

Grey : Indicates no communication within the set time.

Yellow : Activates when the sensor detects an event.

Red : Alerts when the set time elapses after the sensor detects.

Sensor Battery Remaining Capacity

Location of Event Occurrence

Registered Patient Names

Administrator Number

Elapsed Time Since Sensor Detection
- Click to delete
- Time display initiates upon detecting the event

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The way you treat the elderly in your community says a lot about your values.

Bowel Sensor Operations Management System

Bowel Sensor Specifications

- Real-time event notifications for patients' bowel movement.
- Applicable for all types of diapers.
- The amount of defecation can be adjusted according to the patient's individual defecation characteristics
- External attachment type allows for free attachment, detachment, and continuous use.
- Replaceable battery sensor with a long service life (lasting 6 months). Coin battery: CR2032, 3.0V, Lithium battery
- Optimal shape design for loss prevention: 19g / H(56.5) x V(56.5) x T(8.6) mm
- Application of LORA method for reliably transmitting wireless data.

32" Standing Touch Screen Monitor

- Displays real-time notifications of bowel movement.
- All-in-one with Server & Client program.
- No need for additional devices (keyboard, mouse)
- Ultra-thin design (23mm), easy to move around

Display Area : 392.85*698.4mm / 16 : 9, Brightness 300cd/m2
Touch Panel : 3mm Tempered Glass / Projtected capative touch

스마트헬스케어
System
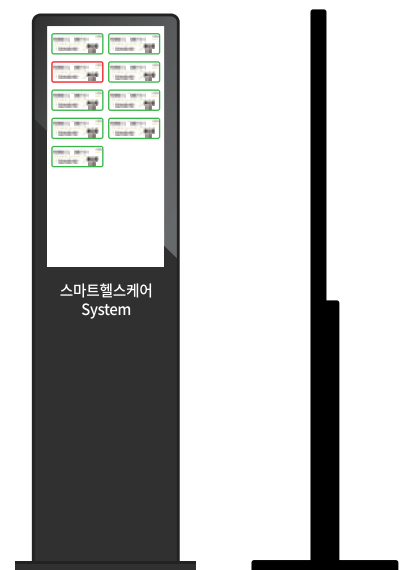
* (Screen Example)

Mini PC with Windows 10 Pro

* (Screen Example)

Windows 10 Pro Set-top Box
(Scanner, Client program, Server program)

Dimension : 106 x 106 x 18 mm	Input : 100-240V, AC, 50/60Hz
LPDDR3 : 4GB	Storage : Emmc64g
CPU : Intel® Apollo	Adapter : 12V/1.5-2A
Graphics : Intel® HD Graphics	

Receiver Device
for Bowel Movement Sensing

Micro RTX
(Transmitter-Receiver Data Collection Device)
Radio Communication: LoRa
Power: USB 5V/0.2A

* (Screen Example)

Dimension : W(65) X D(38) X H(35)
TX POWER : 10mW below (+10dBm)
Operating temperature : -10 ~ +50 (℃)
Dimension : W(65) X D(38) X H(35)

Fall Prevention Management System

Sensing Device Designed for Bed Attachment

* (Screen Example)

- Attach the sensor device to the bed's safety bar
- Real-time monitoring detects patients grasping the safety bar, enabling prompt response to unexpected behaviors and preventing fall accidents in advance.

|	
TX POWER : 10mW below (+10dBm)	Total Weight : 50g
Dimension : W(65) X D(38) X H(35)	USB 5V/0.31A

Emergency Bell for Fall Warning

- Triggers a caution for staff when a fall event occurs. (Enables interventions for patients and appropriate sanctions.)
- Sound output from the speaker prompts, "Do you need any help?"

Modulation scheme	FM(GFSK)
Frequency Band	447.8625 MHz
DC Power Input	12V, 3A (Ø2)
Dimension	92(mm) X 142(mm) X 35(mm)

* (Screen Example)
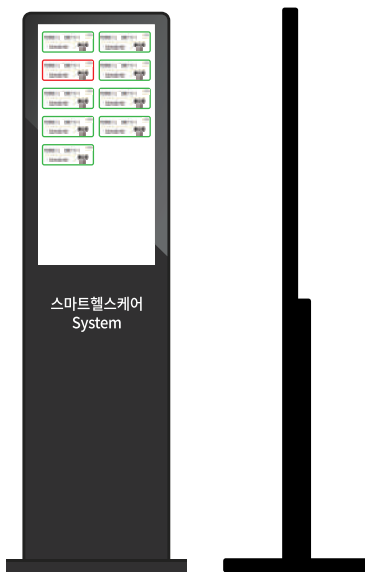
32" Standing
Touch Screen Monitor

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Graphics : Intel® HD Graphics	

* (Screen Example)

Bowel Notification System for Individuals with Disabilities
– Designed for Special

BLE Type Bowel Sensor

- Boosts self-esteem and hygiene.
- Minimizes undressing and changing, fostering dignity.
- Enhances trust among wearers, guardians, and administrators.
- Efficient Defecation Treatment reduces odor and maintains a pleasant environment.
  - Classroom comfort fosters inclusivity for all students.
- Increased satisfaction for patients and guardians.

Smart Device Integration

- Linked with the device of the special class teacher.
- Elevates self-esteem, empowering with prompt assistance.
- Improves the class environment by enhancing learning with quick support.
- Inclusive learning fosters a comfortable atmosphere for all students.

이벤트 알림
1학년 2반
홍길동
학생

* (Screen Example)

Product Configuration for the System

Smart healthcare system additional options
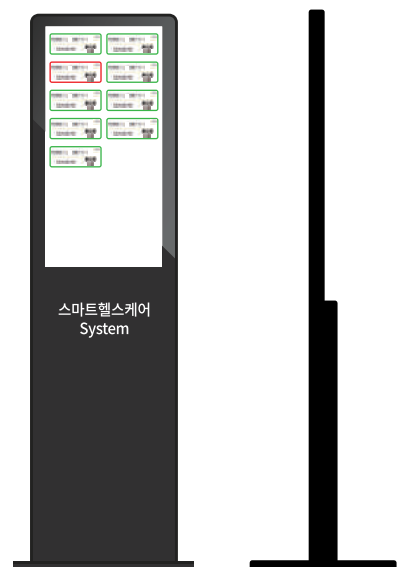
* (Screen Example)

이벤트 알림
1011호실
홍길동
어르신

Option 1
Wrist Type Receiver Device

Displays notifications of bowel movements.

Shows the reception log on the screen
Utilizes wireless RF communication (UHF 900M).
Charges via USB magnetic charging.

Option 2
32" Standing
Touch Screen Monitor

* Classifies wards in hospitals and displays
   notifications for separate management.

스마트헬스케어
System

* (Screen Example)

FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.