



Incontinence management with dignity, using Wireless Passive Sensors

KEYWORDS

Incontinence
Stroke
Dementia
Dignity
Sensor
Battery-free
Low-cost
Disposable

ESSENTIAL POINTS

Unable to affect own care
Significant LTC cost reduc.
Data improves labor costs
Reduced injury & re-admits

OVERVIEW

Adult incontinence is a problem that affects millions of elderly Americans. Quality of life is severely affected, care providers have a time-consuming job with sometimes difficult patients, and facilities face rising costs with significant penalties. Axzon’s technology and products enable a Smart Brief™ solution that allows a caregiver to remotely detect if a garment has reached a “full” status. This allows care providers to check on a patient without disturbing them and allows care facilities to reduce costs and penalties. The solution can be attached to any adult brief by minimally-trained assisted living or nursing staff. The solution can also be integrated by brief manufacturers directly into the brief or pad during manufacturing. Data collected from the solution can be analyzed to help in early detection of other conditions.

BENEFITS

- Wirelessly detects incontinence events
- No need to disturb or disrupt patients and residents
- Improved quality of care and greater dignity
- Reducing unneeded brief checks/changes
- Data-driven incontinence management, logging events, tracking
- Intelligent trend analysis and patient care decision making
- Lower total cost of care



The Problem: A Silent Epidemic

Adult incontinence is a problem that affects more than half of Americans aged 65 and older with serious implications on quality of life, care-giving, and service delivery. In addition to physical discomfort, incontinence may combine with various forms of dementia, adding to the difficulty of care. These challenges fall to the staff and facility for remedy.

Care guidelines specify that a resident's soiled garments should be changed and skin cleansed in a timely fashion. Otherwise, skin disorders can occur. Increases in skin wetness ultimately cause the skin to breakdown. In the United States, the cost of urinary incontinence among adults is projected to grow to \$82.6 billion in 2020. A majority (50%-75%) of the costs are attributed to resources used for incontinence management or "routine care" such as absorbent pads, protection, and laundry.

KEY FACTS

Nearly 51% of Americans aged 65 and over suffer from incontinence¹

Approximately 13 million Americans are incontinent²

Incontinence is expected to cost more than \$80 Billion in 2020³

Skin disorders correlate with the frequency of Incontinence

¹ Vital and Health Statistics, U.S. Centers for Disease Control and Prevention, National Center for Health Statistics report, Prevalence of Incontinence Among Older Americans, June 25, 2014

² Illinois Department of Public Health, Women's Health, Facts about Incontinence. www.idph.state.il.us/about/womenshealth/factsheets/inc.htm

³ Coyne KS1, Wein A, Nicholson S, Kvasz M, Chen CI, Milsom I. Economic burden of urgency urinary incontinence in the United States: a systematic review. *J Manag Care Pharm.* 2014 Feb;20(2):130-40.

Nursing Homes and Assisted Living Facilities

As part of their Nursing Home Quality Initiative [NHQI], the Centers for Medicare and Medicaid Services (CMS) has made Urinary Tract Infections (UTIs) a quality indicator to give consumers insight into the quality of care delivered by nursing homes. Deficient institutions and caregivers can face a variety of sanctions including monetary penalties, termination of participation in government funded programs, or closure of the facility. Nursing homes and assisted living facilities are in need of an incontinence management solution that provides a safe and easy way to monitor incontinence problems of patients.

Axzon's Smart Brief Solution

Axzon has developed a new, low cost, wireless, battery-free sensor that turns any standard adult brief or absorbent pad into a smart brief or pad allowing a caregiver to remotely and noninvasively detect patient incontinence events. The solution includes a simple self-adhesive, disposable sensor that is flexible and attaches to any off-the-shelf brief or pad. A simple handheld RF reader wirelessly accesses the sensor and determines if the garment is wet or dry. The sensor itself does not need to be wet. It just needs to be near the liquid. The moisture sensor is approximately the size of a Band-Aid®, and the handheld reader is similar in size to a cell phone. Using the RFM2120 sensors and the RFM5105 reader system, healthcare system integrators enable healthcare providers with new capabilities that improve quality of care in a cost efficient manner.

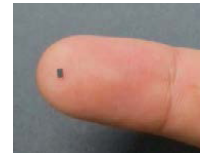
The sensor can also be integrated directly into adult briefs by their manufacturer to differentiate their products. The sensor is comprised of Axzon's Magnus S2 Smart Passive Sensor combined with an antenna designed specifically to be affected by nearby moisture. The Magnus IC harvests energy from the radio waves transmitted by the reader and powers the IC allowing the presence of liquid to be detected wirelessly and battery-free. Axzon's smart brief has been independently tested at a long term elderly care facility to reliably detect incontinence events and has been successfully deployed in multiple facilities. Axzon's incontinence management sensors are powered and communicate over the industry-standard RAIN/UHF RF reader using the ISO 18000-6C UHF protocol, which is the same technology used by billions of RF price tags in retail and apparel stores. The technology is safe and the sensors are considered a Class 1 medical device, just like an elastic bandage or tongue depressor.

Better Data Enables Better Healthcare

Incontinence management data collected with Axzon's Smart Passive Sensing technology improves broader healthcare decisions and identifies changes in health status before they might otherwise be detected. For example, changes in urination frequency or mismatches between liquid input and output can easily be detected to generate alerts that indicate possible changes in health conditions that need to be explored.

Better Quality of Life

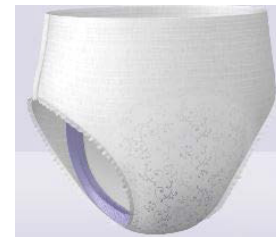
The benefits of Axzon's non-intrusive smart briefs apply not only the resident/patient, but also extend benefits to the family, the caregiver, and facility/provider.



Magnus S2 Smart Passive Sensor IC



RFM2120 Non-Contact Moisture Sensor



Patient Garment or Pad

Smart Passive Sensors™

- Wireless
- Battery Free
- Detect as little as 50ml
- Low cost
- Disposable
- Easy to apply

Capabilities

- Wet vs. Dry
- Moisture
- Temperature
- Easy to apply

Benefits to the Resident/Patient

- Improved quality of life
- Reduces embarrassment
- Reduces awkward interactions
- Early detection of other conditions

Benefits to the Family

- Peace of mind
- Knowing the best care is provided

Benefits to Caregiver

- Improved dignity of care
- More attention provided to resident
- Reduces confrontations
- Reduces human error
- Improved efficiency

Benefits to Provider/Facility

- Eliminates the guesswork
- Decreases preventable re-admissions
- Reduces governmental penalties
- Reduces cost of care
- Differentiate based on quality of care



To learn more about Axzon's incontinence management solutions or other Smart Passive Sensor solutions, go to www.Axzon.com/incontinence

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