

Smart Sensing for Healthcare

Beyond geolocation services, IndoorPlus+ can play the role of a **central IoT platform** collecting, computing and dispatching various BLE-based sensor data to the appropriate recipient.

Typical field of sensor data that can be integrated on IndoorPlus+ are given as example below:

Biometric Sensor Data



Some large hospitals collect biometric data from patients in ICU or emergency rooms. However, in the case of regular inpatients, it is too costly to implement real-time and automatic biometric data collection. With help of smart sensing, temperature, heartbeat, movements

data can be monitored and logged to trigger immediate actions when the value of those biometric data changes drastically. The data can also detect the patients' sleep pattern or be used as a part of CDSS (Clinical Decision Supporting System) to observe the patients' condition more precisely, helping doctors' decision making by providing larger set of patient data.

Environmental Sensor Data



In the hospital storage rooms, many medications and liquid supplies need to be refrigerated.

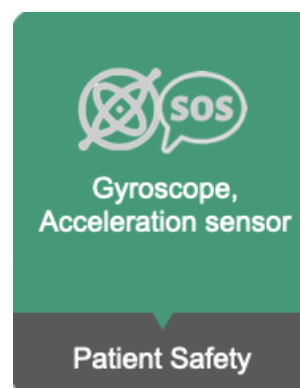
To keep the medication intact, nurses need during their shift to check the temperature of fridges.

To automate this task, BLE temperature sensor can

be put in place to monitor the refrigerator status. Once a problem is detected, an alert is sent to staff or maintenance so they can act immediately.

Another use case for utilizing environmental data is to offer additional services to patient during their stay. Monitoring environmental sensors in their room can make the room more comfortable for patient that want to set their preferences in terms of preferred temperature, humidity and light settings.

Patient or Staff Safety



Some patient tags come with built-in SOS button for emergency call for help. Once triggered, SoS button signal can be captured and notified to the appropriate staff in real time. Aside from patient tracking for safety purpose, sensors and algorithms can detect particular situations (e.g.,

lack of or unusual movement).

Such detection can trigger alert for immediate check and dispatch emergency help to the location detected. This feature can be also used for hospital staff safety, for example in a psychiatric ward as a duress system.

Hospital Safety



Hospital integrates many safety and security equipment to ensure the protection of buildings, goods and of course people: patients, visitors, staffs, workers...

To complement the safety infrastructure in place, sensor data from various devices related to fire, gas leakage or other

specific risks to trigger a particular action or forward it to the central safety operation center.

Automation



Many medical devices like Infusion monitoring systems, Thermometers, Blood pressure meters, Electrocardiogram start to use BLE to transfer data automatically to medical staff. IndoorPlus+ can act as a central platform to collect and dispatch such

data instead of single silos application may help nurses or staff not to be overwhelmed by data or by the number of different applications they need to check.

Key Benefits

- Leverage one platform to centralize the current and future flow of data coming from many sources.
- Combine sensor data and location for immediate and appropriate actions
- Prevent & Minimize human error with additional automation.
- Reduce time to integrate

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