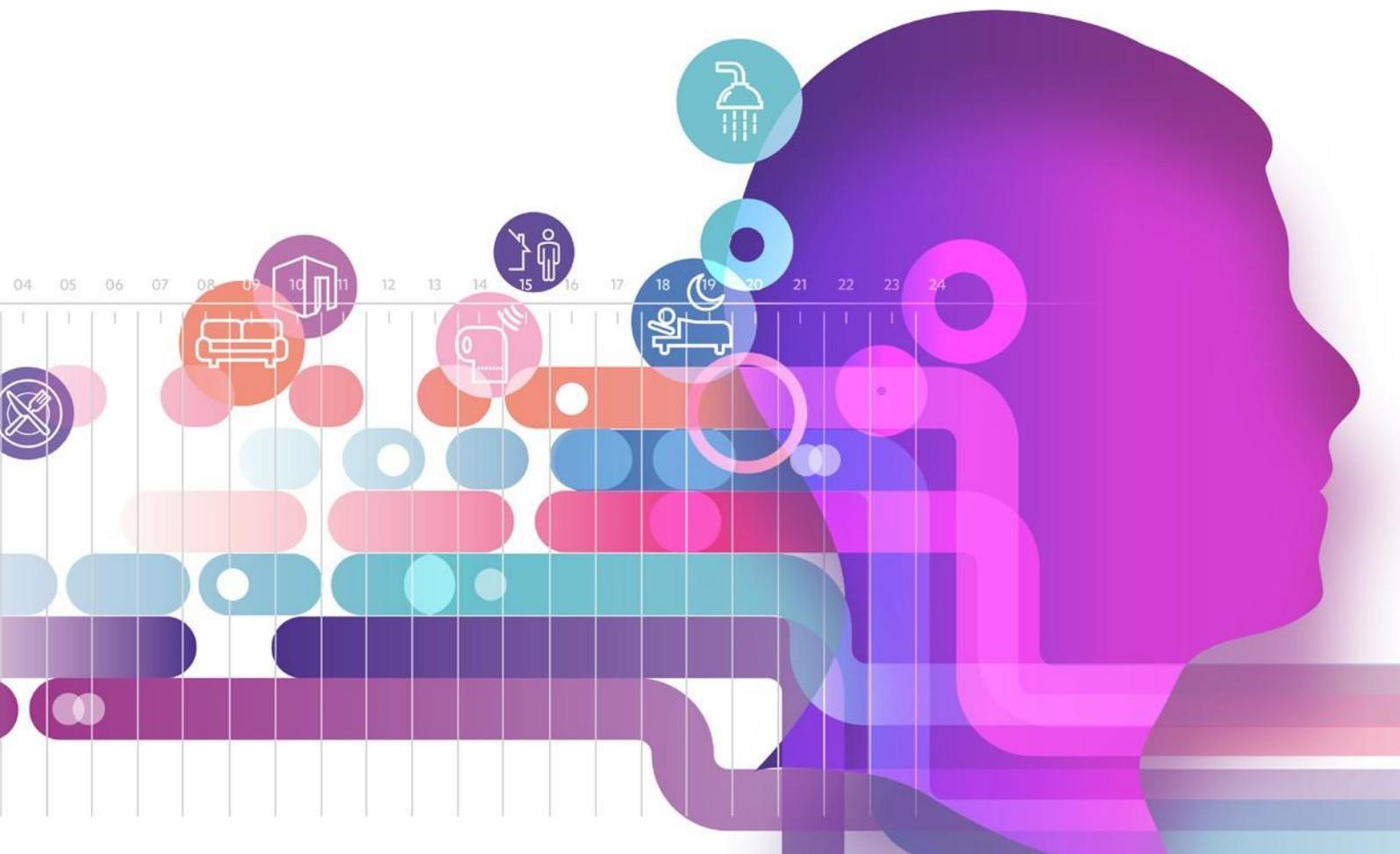


# EILA CONNECT PRO

## Activity Monitoring



# 1. Using Artificial Intelligence to aid independent senior living

## From Passive to Active

The world of senior monitoring must, and has, developed from an industry in which the elderly customer is expected to initiate emergency calls to one where services have developed to a stage where service providers can be more proactive in their ability to protect their customers. In this world, technology is creating scenario where reactive response becomes a thing of the past and we are able to proactively and even predictively prevent emergency situations from occurring.

These services are enabled by intelligent use of activity data from the home that can be analyzed and create alerts that move the paradigm of the industry thus:



## What are the benefits of AI for senior



Meaningful alerts are being detected with indications for Fall, Sickness and Wandering



Enabling quick Response

- Prevent additional deterioration
- Avoid hospitalization
- Managing the aging process

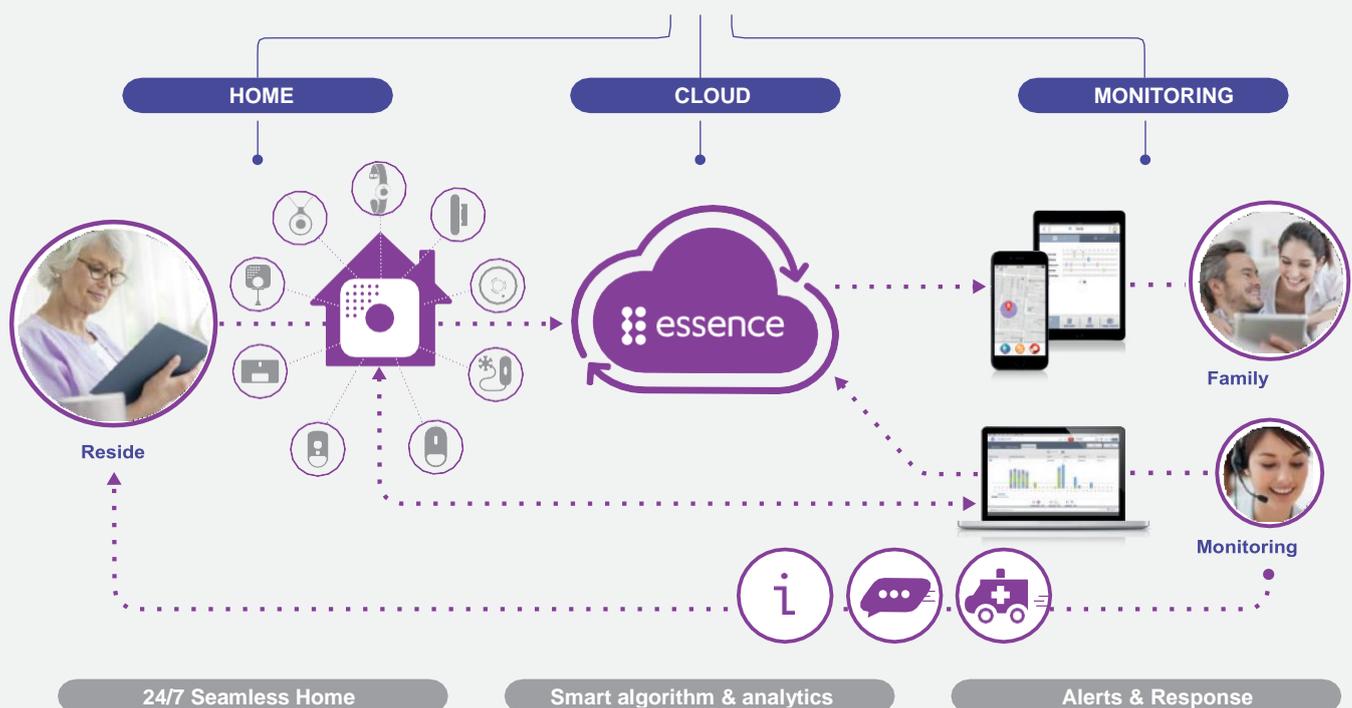
## 2. Eila Connect Pro Activity Monitoring

Eila Connect Pro™ Activity Monitoring platform is a comprehensive end-to-end aging-in-place solution that allows seniors to live independently and safely in their own home, knowing that help will be at hand when needed. Using non-intrusive sensing and detection devices and dedicated software, the system can follow a senior's daily activities and build a profile of them, allowing unusual activity or inactivity to be highlighted. Using the profile and continuing sensor readings, Eila Connect Pro™ identifies when there may be a need for assistance, and triggers an alarm to a monitoring center, family and caregivers.

Eila Connect Pro™ Activity Monitoring also offers the possibility to set Smart Rules to receive notifications of specific behavior of interest according to user defined parameters that are not dependent on regular patterns.



### The Eila Connect Pro™ Cloud



The Eila Connect Pro™ system consists of three main elements, each of which are to the overall functionality of the system in equal parts:



## 1. Detection and collection hardware:

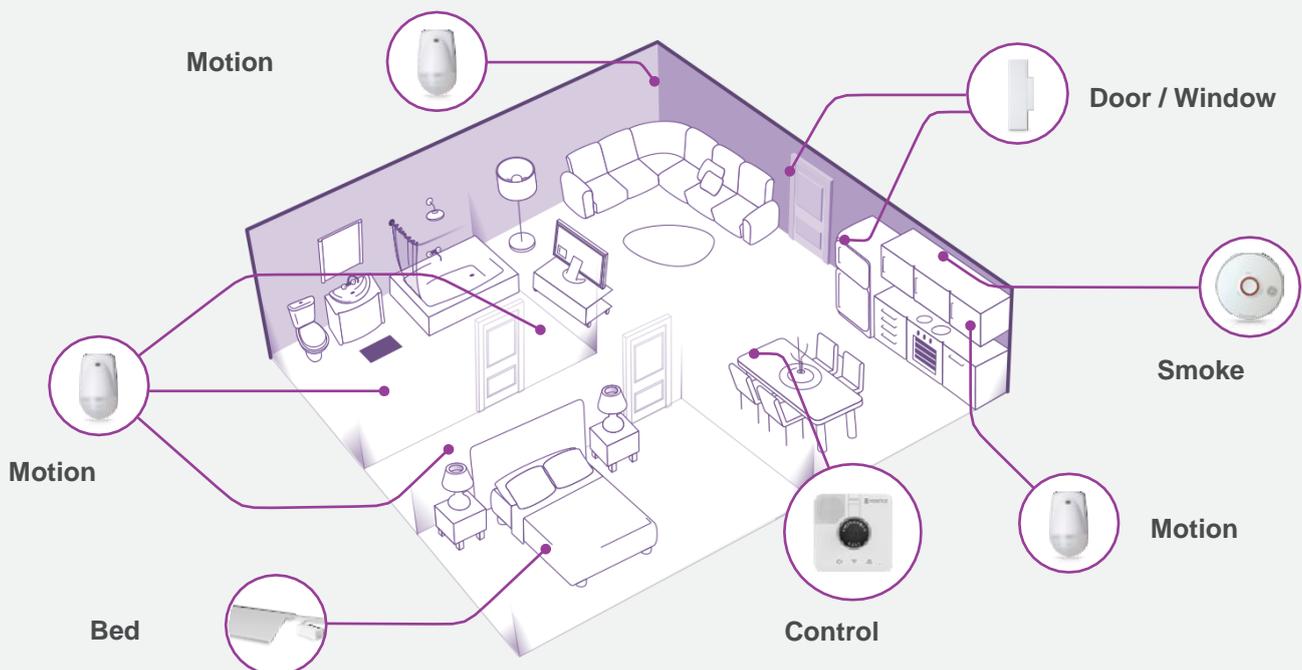
The Eila Connect Pro control panel and sensors are certified worldwide for use in the Social Alarm and PERS industry.

With correct installation, the motion detectors and door and window open/close sensors ensure accurate detection of movement and activity in the home. These readings provide the data that is used to create daily patterns of behavior that form the backbone of the intelligence used in the activity monitoring algorithms as explained later.



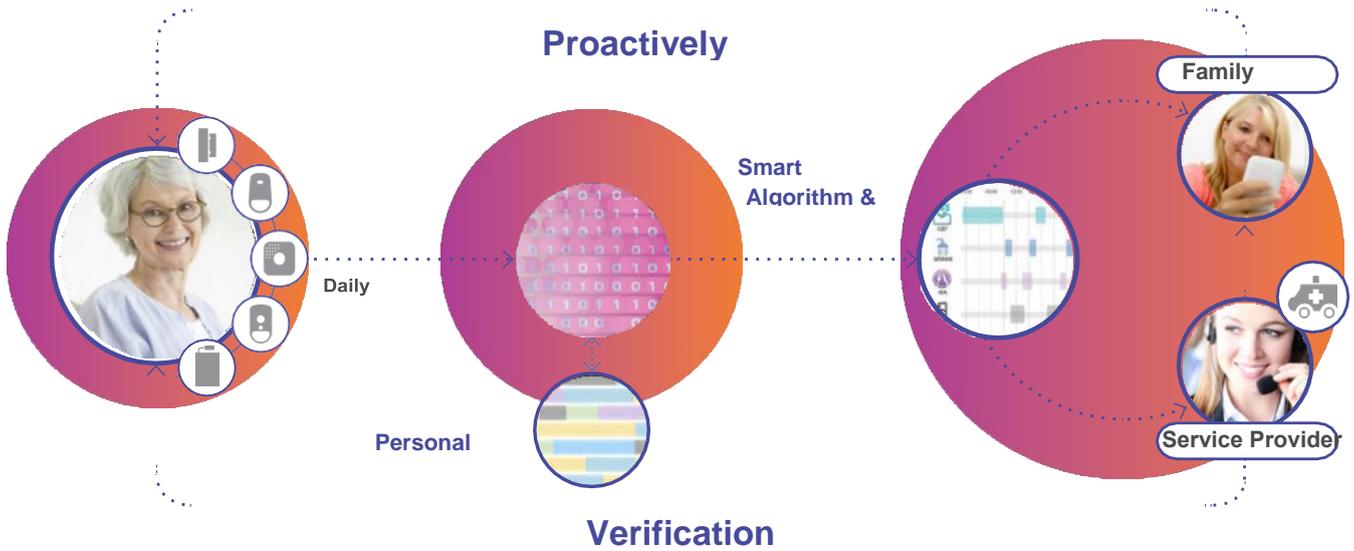
The Eila Connect Pro control panel, is certified worldwide for use in the monitored telecare industry (Social Alarm in Europe and PERS in the USA). It has several communications options with PSTN, GSM and Ethernet capabilities and also a backup power source.

The data from the various sensors is collected and aggregated on the control panel and





## 2. Cloud based analytics and rules



# Eila Connect Pro Pro Algorithm Overview

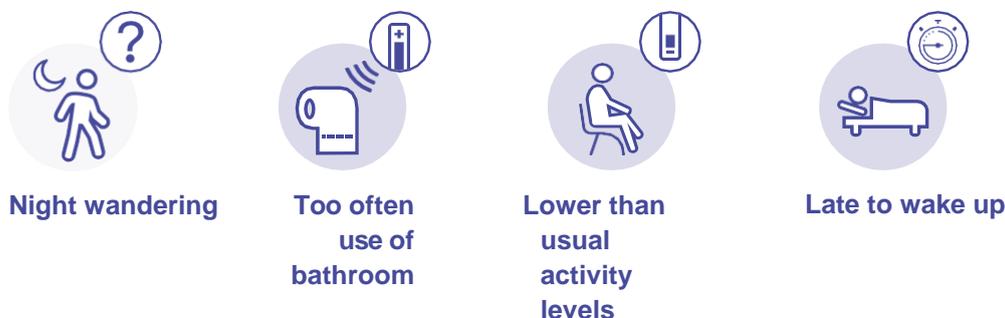
The basis of the Eila Connect Pro™ system is the ability to create a personal behavioural pattern that constantly learns the movement of individuals through passive sensors strategically placed throughout the home. These sensors collect data from user movement and doors opening/closing and uses it to establish a pattern detailing how the individual has spent their day. This includes exactly at what hours they have slept, when they have eaten, bathed, rested, in the living room, and spent time outside the house.

With the accumulated learned knowledge of the residents' behavioral patterns, the system is able to use its algorithm to detect when an event, or series of events occur

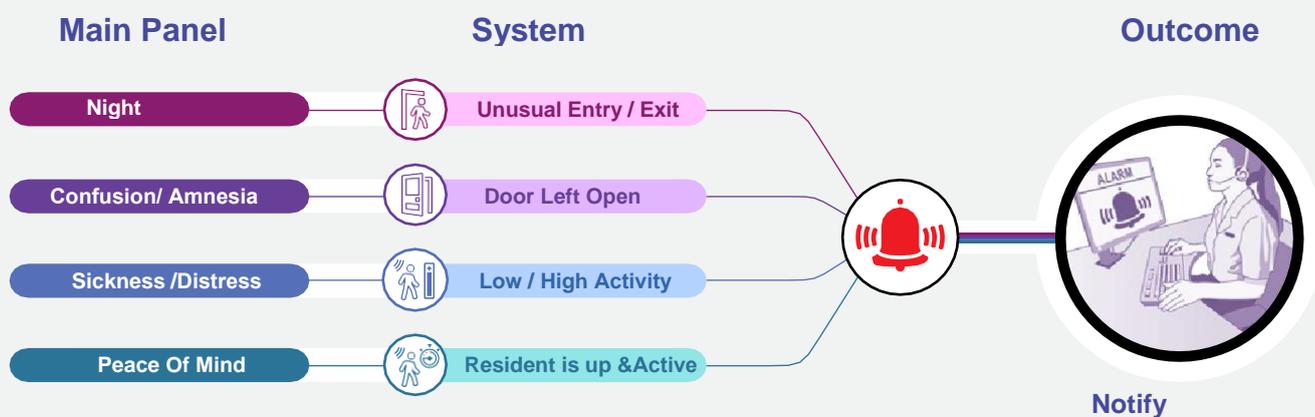


**Sudden increased  
Bathroom usage  
Sleep duration**

Eila Connect Pro recognizes that there are instances in which service providers, carers, family members and even seniors themselves want to receive more customized alerts based on specific needs. Examples of these can be to receive notifications of:



Therefore, Eila Connect Pro allows service providers and carers to set Smart Rules that will send alerts pertaining to specific activities using several parameters. These rules can be used instead or in conjunction with the Eila Connect Pro behavioral pattern analytics described above to solve specific pain points.



## Rules Configuration

Per each resident the admin/master user can add/ edit the following rules:

- Out of home
- Wake & Well
- No. of visits
- Low/high usage in defined rooms
- Door left open
- Weekly activity index
- Unexpected entry/exit
- Panic button

When rule is activated the system will generate alert to a family member.

# System Output: Intelligent Alerting

The central aim of the Eila Connect Pro™ activity monitoring system is to provide timely alerts that avoid health deterioration and the resulting outcomes both in terms of resident's wellbeing but also in terms of cost. The financial burden of avoidable hospital stays or the need to move to a long term assisted living facility is a heavy one both for the individual and their family and also to the private or public health systems that provide the support. Below are some examples from actual patient cases that show a direct correlation between system output with the benefit of avoiding the need for further care.

## Case Study 1:

### Resident's unusual activity level detected

In this situation, of an 83 year-old female resident, an alert was raised when, over a sustained period, a number of events were recorded that were not part of her regular activity pattern.

Using all of these events in unison, the system decided that it was a signal that the lady in question was probably experiencing poor health and had not notified anyone. The event was sent to her care provider who, after contacting her, decided that it was not an immediate emergency situation, however, it was necessary in this case to send a doctor to check on her.

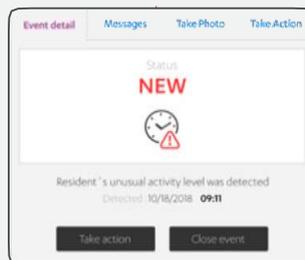
The doctor determined that the resident had been getting sick for a number of days and took action to prevent further deterioration.



Female,



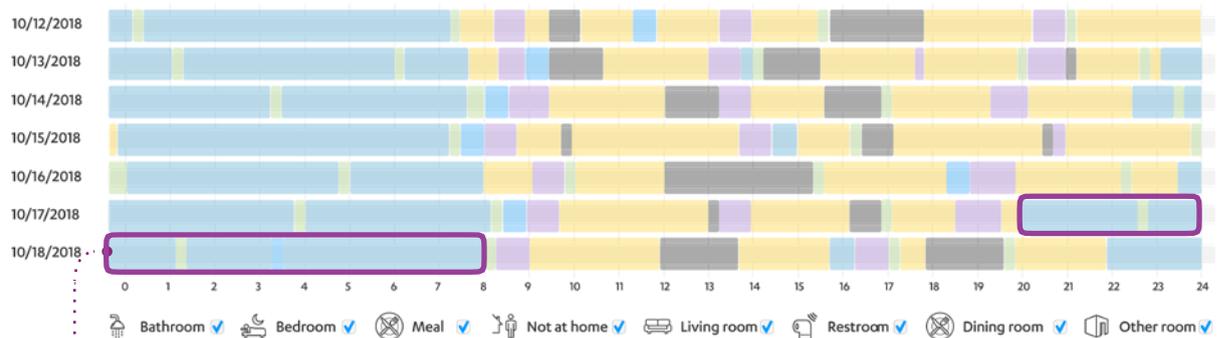
An Abnormal activity alert was received on



Events

- 19:58:00-08:00:00
    - Went to sleep at 19:58:00
    - Woke up 2 times
    - Woke up at 08:00:00
    - Slept for 11.78 hours, which is more than usual
  - 22:35:00-08:00:00
    - Spent 10.02 minutes in the restroom at night
    - Went to restroom 3 times at night, which is more than usual
- 03:14:00-03:30:00

### Weekly Activity



## Case Study 2:

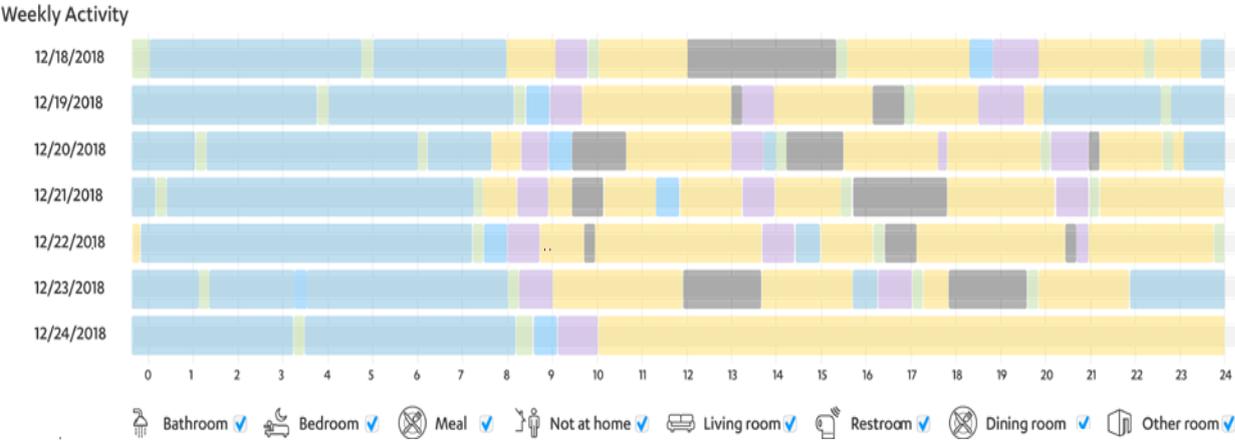
### Resident's partially incapacitated

The senior male is generally very active, even for his relatively advanced age, as can be seen from his personal “day story”. He moves often around his home, eating and bathing on a regular basis.

On the morning in question, he began normally. However, as can be seen on this diagram, the gentleman stopped his regular activity and seemingly did not move for many hours during that day. After a certain time period had elapsed, it can be seen that he had not eaten his regular meal and had not moved to use the facilities or go to his bedroom as his regular behavior pattern indicates that he would do.

Following a certain time period, his family was notified, and it was discovered that he had a minor leg injury that was preventing him from going about his regular daily activities. Aside from the obvious need to treat the injury, extended inactivity in seniors can leave to other complications which have been avoided in this situation.

Eila Connect Pro gives professional carers a global view of their clients condition through a visual display via their portal and allows for efficient use of resources and prioritisation of attention via both a visual graphic of activity as well as warnings of change in activity / behaviour using the AI Technology which is In - Built



## Summary



- Eila Connect Pro provides a basis for monitoring senior activity from manual emergency alerts all the way to intelligent activity analytics
- By tracking a resident's activities the system can notify caregivers of that important daily event have, or have not, happened.
- Using data analysis, the system can prevent emergency situations and identify a change in general condition
  - Improving residents' safety and wellbeing
  - Ensuring their families' peace of mind
- Eila Connect Pro Activity monitoring offers obvious social and financial benefits:
  - Keep seniors living independently at home for longer
  - Prevents costly hospitalizations and the need to move into elderly care facilities prematurely

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