# **Normal monitoring (Case 1)**

Patient walks away from carer and becomes lost in unfamiliar or forgotten surroundings. Quite confused, the patient doesn't know what to do. Their wearable health monitor continues to transmit data when polled by the base station.

The base station relays the patient's location and health information to their carer. The carer is able to locate the patient.

# **Patient has problems (Case 1)**

A patient has wandered away from their carer and for whatever reason has suffered some form of health decline. Possibly a heart attack, possibly dehydration, possibly a fall. The wearable health device recognizes the symptoms of trouble and transmits data to the base station along with a request for patient help.

The base station sends a message, and the data, to the carer saying that their patient needs help. If there is no response from the carer, the base station raises the alarm.

# **Abnormal symptoms (Case 1)**

A patient's wearable health device has recorded data that the base station has compared to that patient's normal data for that time of day and activity and concluded that the patient needs attention. The base station sends a message to the patient's carer alerting them to the unusual data and suggesting that they check the patient, and alerts the duty doctor.

The duty doctor calls up the patient's data to make an initial diagnosis. If necessary after diagnosis the doctor calls the carer to give advice.

# **Abnormal symptoms 2 (Case 1)**

A patient's wearable health device has recorded data that is not unusual for the patient but is outside the normal range of people of their age engaged in the activity they are supposed to be doing. The wearable health device does nothing unusual. The base station performs its normal analysis of the incoming data, finding that it is unusual so alerts the duty doctor. The duty doctor reviews the patient's data. If the data suggest the patient needs attention the duty doctor notifies the patient's carer.

# **Mining the data (Case 1)**

With all that data coming available there is an opportunity to look for trends, to find new information and to check assumptions about "normal" such as heartbeat, breathing rate, blood pressure for a range of demographics and activities. Periodically the accumulated data is examined for just that; trends, outliers, and "normal" symptoms for a range of demographics and activities. Any changes to normal symptoms are recorded in the "normal symptoms" to provide a means to check whether a patient is normal or needing attention.

Trends and patterns, especially of symptoms preceding some health incident, are recorded to provide a means to check whether variations in patient symptoms are early warnings or simply normal variation.

Case 1

* Patient Walks away
* Moves out of range of carer
* Patient confused and lost
* Activates alarm (?)
* WHD transmits when polled
* Carer Find patient

END

Case 2

* Patient Walks away
* Patient has a decline in health
* WHD transmits decline in health
* WHD transmits Health data
* Base Station sends message to carer
* Base station sends data to carer
* (If carer doesnt respond) **Alarm**
* (If carer does respond) no further action

END

Case 3

* Base station polls WHD
* Base station compares results with Historical data
* (If normal) Store Data , no further Action
* (If Abnormal) Sends Message to Carer to check patient
* (If Abnormal) Sends Message to Doctor
* (If Abnormal) Doctor reviews data
* (If Abnormal and an issue) Doctor calls carer
* (If Abnormal and no issue) No further Action (Store new normals?)

END

Case 4

* Base station polls WHD
* Base station compares results with Demographic data
* (If normal) Store Data, no further Action
* (If Abnormal) Sends Message to Doctor
* (If Abnormal) Doctor reviews data
* (If Abnormal and an issue) Doctor calls carer
* (If Abnormal and no issue) No further Action (Store new normals?)

END

Case 5

* Base station polls WHD
* Base station compares results with Demographic data
* Base station compares results with Historical data
* (If normal) Store Data
* Check for new normals/trends