

# Report on medeband

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The constant cycle above embodies the flow of data in the MEDeBAND device. The device is evolutionary in converting data into information while at the same time ensuring healthier lifestyle for patients. The device's operating system supports four main functions: (1) input; (2) monitor; (3) storage and processing of data; and (4) output and reporting data.

The device records input involving the blood pressure, pulse rate, and number of steps that the user takes. In addition, the MEDeBAND records the user's position at any given time. The device is fitted with hardware and software that helps detect changes within the user's body and in the location (e. g. the device is built-in with electrostatic and capacitive pressure sensors to trace the user's blood pressure and pulse rate). The band also accepts signals from the body such as the pulse rate per second. MEDeBAND automatically records them. The band is also installed with an altimeter that is useful in recording the number of steps the user has taken in a day. The number of steps a user per day is duly recorded. It is vital because it helps health care professionals (HCPs) analyze the fitness level of the user. The bands make use of motion sensor technology to document daily mirage to ensure the input is precise. The MEDeBAND has a Global position system (GPS) that sends signals to medics on the location of the user. Frequent change of location by the user is an indication that the person is mobile and the risk of becoming ill are minimal.

The input function also involves recording of data that was previously stored in paper format. The data is computerized and compiled to form digital health record for the user. The health record contains data on the user's blood type, blood pressure, allergies and other health records. The digital

health record is encoded into the MEDeBAND and stored in the device's memory. It serves as a reference point regarding the user's health to physicians and other HCPs. In addition, health insurers such as Medibank Private Ltd can rely on the digital health record report to establish the level of health benefit - risk that the patients experience.

## **Monitoring Function**

After data has been input into the system, the MEDeBAND's monitoring system evaluates the data for reliability. Input data contains information on the user's blood pressure, fluctuations in pulse rate, and number of steps the user takes and the location of the client. The monitoring function is significant because it confirms the functionality of the MEDeBAND and ensures data collected is precise and reliable for decision making.

Basic features of the monitoring function include data validation, data entry, data processing, coverage and storage. The device has built-in Software that scans the data for deviations from the standard, and therefore validates the data. On completion of data validation, it is entered into the system where it processes the data. The preliminary processing involves comparing data already stored in the system with the new data that has been recorded. Completion of data processing is followed by temporary storage. It will then be moved to the next process.

**The monitoring function can be summarized by the monitoring triangle below:**

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## **Storing and processing function**

The MEDeBAND has internal storage space that stores 50+ hours of recorded data. The internal storage will be connected to a smart / cellular phone or cloud storage, thereby increasing its storage space. Information preserved in the system's memory is accessed by several users at a time. These users include the consumer, insurance companies, and companies that respond to emergency and distress calls. The internal storage is secure and data stored cannot be altered.

Data stored is processed and transformed to information. The processing function in this stage is different from processing that takes place in the monitoring stage in two ways; first, it uses data that has already been authenticated and ensures data is correct, accurate and valuable. Secondly, the processing function provides useful information as output. In this stage, data is analyzed to detect patterns, and divergence from set standards. In addition, the data is sorted and grouped together based on its input. This means that all data related to blood pressure is aggregated and grouped under one category. The same applies to the other aspects of the MEDeBand. After the data has been aggregated, it is changed to a different configuration that is vital to end-users, i. e. insurance companies, and medical personnel.

## **Data Reporting**

One of the core functions of the MEDeBAND is its SOS function which involves sending alerts to emergency service providers, and providing timely messages to insurance providers. The reporting of output aspect of the MEDeBAND is supporting the SOS function. After data has been processed to

information, the output is relayed to relevant users. The MEDeBAND is fitted with a wireless receiver that is enabled to transmit this information on a timely basis. For instance, if data collected shows that the User's blood pressure is below or above the expected level, data is validated and processed to information. This output is then delivered to the clients through a notification, or to the user's medical providers who then will advise the user on the next course of action.

The reporting function is made easier through use of support software or applications. As a medical identification bracelet, the MEDeBAND is associated to a smart phone or a computer that has installed compatible software. The data processed can then be read through the computer or any other support device. The information can also be accessed by other parties such as doctors and it can be used to make decisions.

**The functions discussed above can be summarized by the following Entity Relationship diagram.**

As previously indicated, the entity relationship diagram (ERD) above shows a summary of the linkages among the various participants in the health care program. The data generated from the patient are checked whether it is accurate or not. Once it is checked, it will be captured in the database.

Afterwards, the physicians double check and approve it. The goal is to make it certain that all collected data from patients is suitably developed. Positive outcomes are the main goals to the health care practitioners, patients, and even family members and friends of the patients. The ERD indicates that patients ought to be seen by doctors to have them diagnosed and assistants such as nurses' help in ensuring patients have entrée to desirable

medication prescribed by the doctors. In-patient clients are admitted in wards and nursed. The ERD is a simplified way of how data from patients can be used to lead to positive outcomes of satisfied and healthy people. The analysis indicates that the model adopted in this context is essential in guarantying that data is well captured by authorized personnel and used for the benefit of the patients. The continuous flow charts indicated in the preceding segments of the paper portray the flow of data in the MEDeBAND device. The device alters data to become integral or vital information to satisfy client needs. The device's operating system supports four main functions. These are input, monitoring and storage, storing and processing and output/ reporting data.