

# Improving Patients Health With IoT

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## HEALTHCARE

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CONNECTED TRANSPORT

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MANUFACTURING

---

ENERGY AND UTILITIES

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BUILDINGS & INFRASTRUCTURE

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OPEN INDUSTRY

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ENABLING IoT

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European  
Reference  
Networks



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# PATIENTS' EXPERIENCE

**“You celebrate  
every step”**

**“You learn to  
trust in your  
doctor”**

**“I don’t know how many time he will live and in which conditions...”**

## GOALS OF PEDIATRIC NEUROLOGY UNIT?

Our goals are to improve the health and quality of life of children with **neurological diseases** and offer better care through collaboration across multidisciplinary teams.





A small but growing population of children with complex health needs that warrant our focus and attention.

Children with medical complexity have been defined as those with complex chronic conditions **requiring 24h care.**

**Initiatives to improve their health outcomes and decrease costs need to focus on the entire continuum of care**



Having a child with a chronic disorder is extremely hard. It causes a big chronic stress in caregivers and management of their children's disease.

However, **caregivers do not have any resources to detect, manage and prevent high levels of stress.**

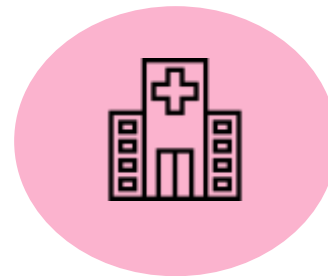


## The global Economic impact



Means:  
**41% of all pediatric expenses  
for the hospital.**

## The economic impact for the Hospital



Means:

- Readmissions
- Medical error
- Inadequate care coordination
- Stress for the caregivers





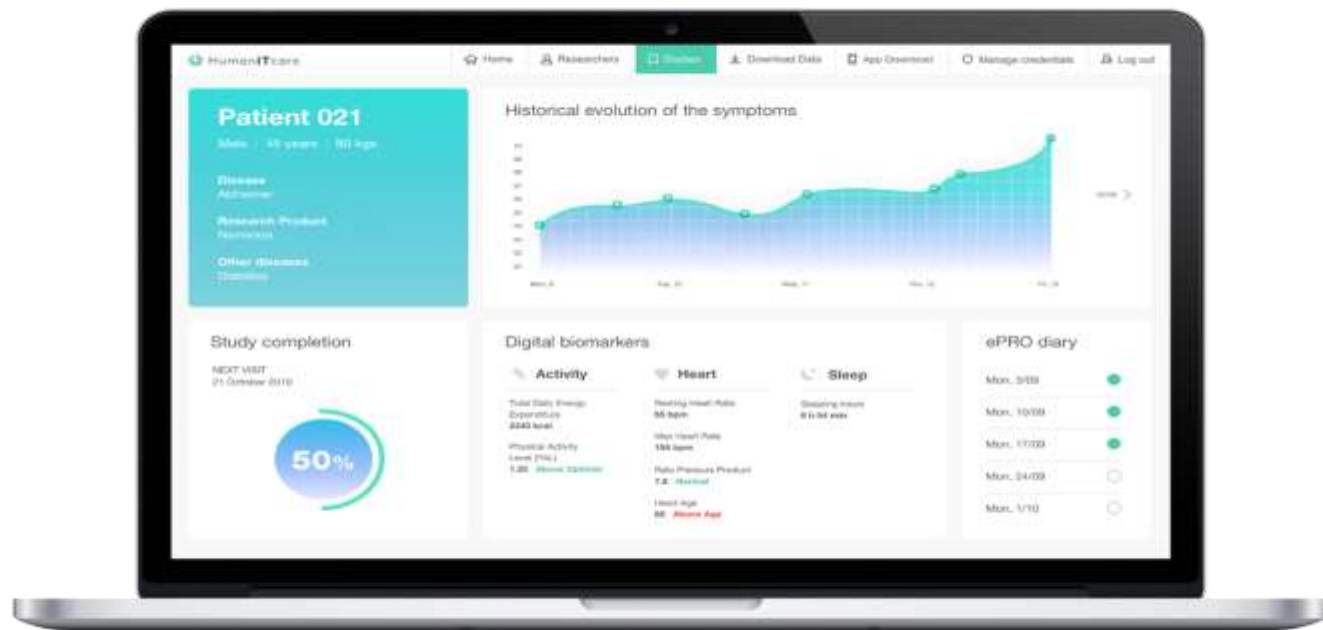
# HOW IS TECHNOLOGY MAKING AN IMPACT?

## Traditional



## HumanITcare









### Selecting Data Collection:

Personalize the data you want to track (sensor and e-Pro)



### Data Gathering:

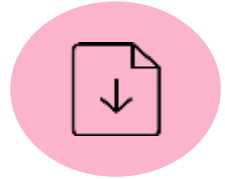
Collect Medical Data from:

- Sensors: activity, mobility, sleep, heart rate, physical activity..
- Medical Health Records.
- Self-reported questions.



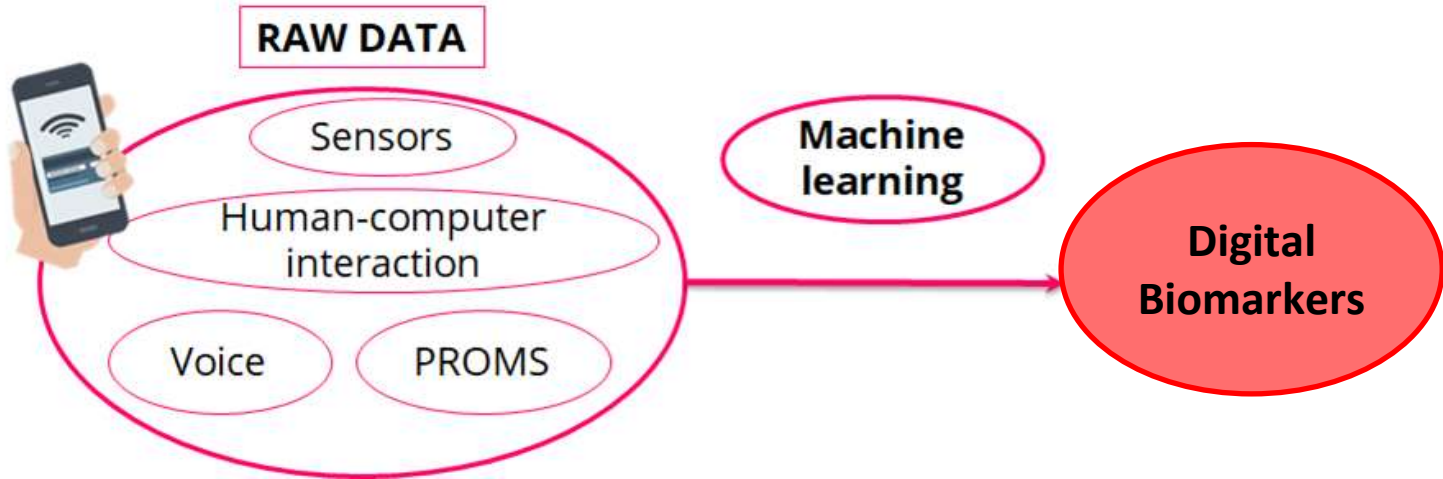
### Data Analysis:

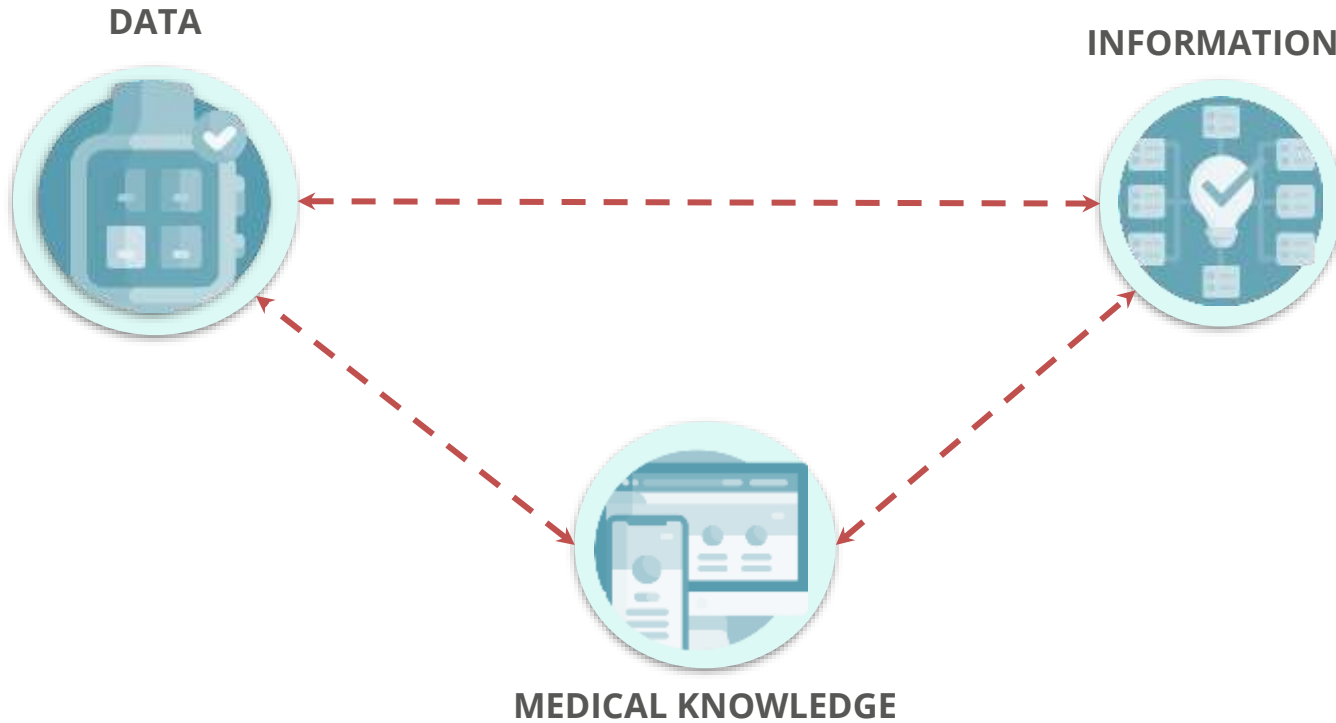
Generate new knowledge of data.



### Data Report:

Making data meaningful







• Approved by the Ethics Committee of lead Hospitals.

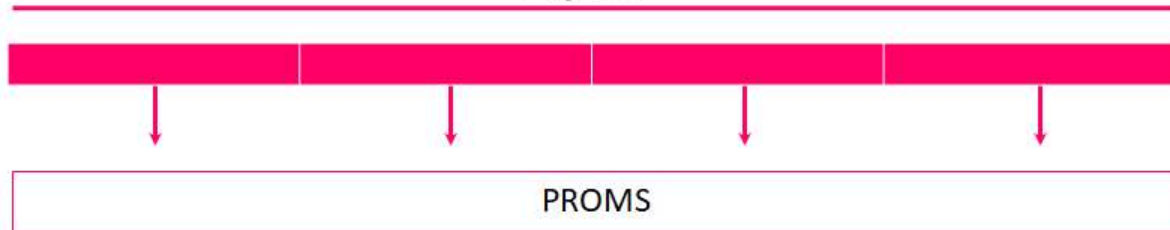
• GDPR and HIPPA compliance.

## Taking care of caregivers: Monitoring Telemedicine Platform in Children with Neurological Disorders and they caregivers

Analysing digital patterns



1 year



## **Main goals of the study:**

Remote monitoring pediatric patients children with neurological disorders, and their families.

## **Sample of patients:**

120 patients and caregivers that accomplish the inclusion criteria.

## **Data collected and analyzed:**

- Sensors: activity, mobility, sleep, heart rate, physical activity., to extract the stress of caregivers.
- Medical Health Records.
- Electronic Patient Reported Outcomes

## **Outcomes:**

- Value-based healthcare approach to predict the risk of hospitalization of stress.
- Important insights of the best treatment for patients depending of their disease.

## General Outcomes:

- Remote monitoring, decreasing the costs of follow-up.
- Value-based healthcare approach to predict the risk of hospitalization of stress.
- Important insights of the best treatment for patients depending of their disease.

**310**  
patients

**6**  
lead  
hospitals  
in EU

**5**  
clinical  
studies

It's putting patient outcomes first.  
It's holding providers to a standard of excellence  
It's optimizing the healthcare industry to streamline  
doctors' rushed days and allow **patients the time  
they need with their healthcare professionals.**



# NEW BUSINESS MODELS FOR THE HEALTHCARE SYSTEM

- The patient's safety
- Evidence-based algorithms
- The integration of services
- Efficiency of the system
- Focus on the patient





## New business model?

Value-based care, is a health care delivery model where providers are paid based on **successful outcomes rather** than for individual services.

# CHALLENGES



**To make all the ecosystem work**



## Patient's Value



## Data Integration



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<http://es.vhir.org/portal1/homepage.asp>

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29 - 31 October 2019



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