



ICT4Life

Final Conference

**Better communication and coordination
of care for health professionals**

Federico Álvarez, Assistant Professor

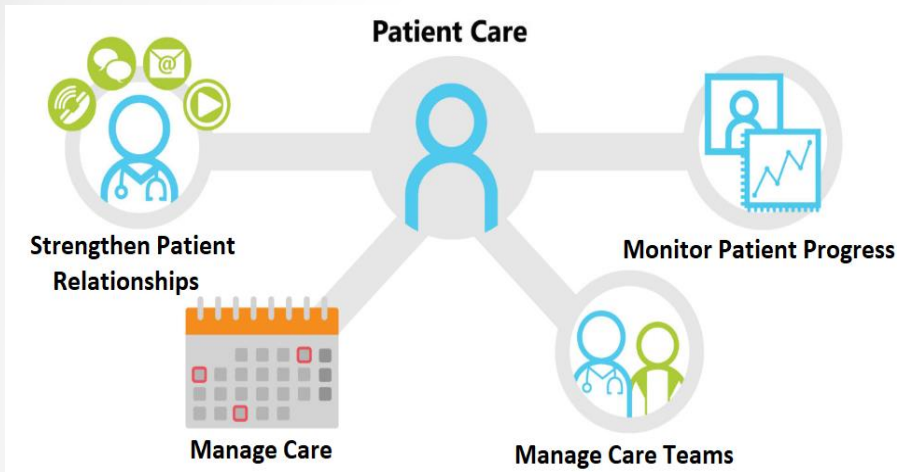
*(Telecommunications Engineering School, Polytechnic
University of Madrid)*



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Better Coordination of care

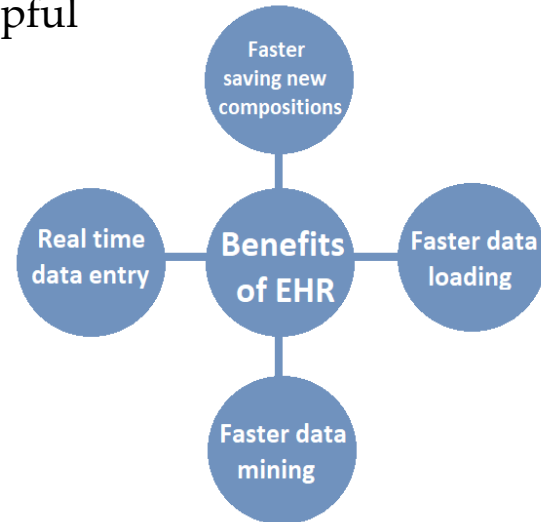
Care today is **uncoordinated**. **Automation** ensures better and safer information change for all involved. **ICT solutions** are proving to be a helpful



Source: Microsoft www.microsoft.com/health

Electronic health Record (EHR) systems are the cornerstone of any coordinated care effort to:

- **integrate** and **organize** patient health information.
- ensure its **distribution** among relevant practitioners.



Source: ICT4LIFE Project

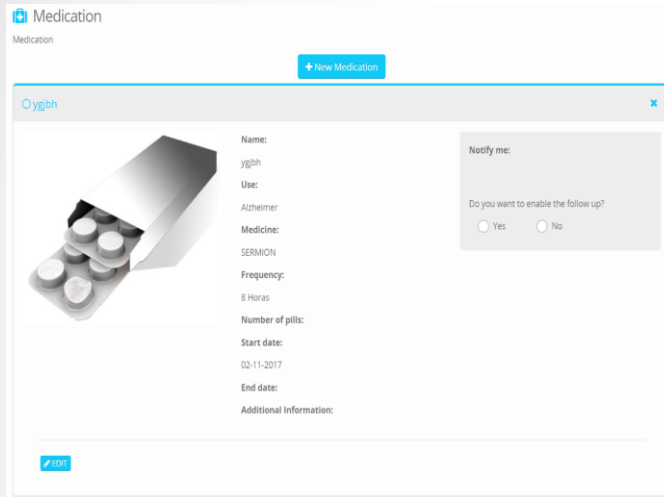
ICT4LIFE EHR:

Ubiquity: Information is everywhere but protected

Accessibility: Professionals can access data with privacy by design

Consistency: Data sorted, organised and equal to all

ICT4LIFE premise: “providers need less fragmented views of patients”



Medication

Medication

+ New Medication

Oygbh

Name: oygbh

Use: Alzheimer

Medicine: SERMION

Frequency: 8 Horas

Number of pills:

Start date: 02-11-2017

End date:

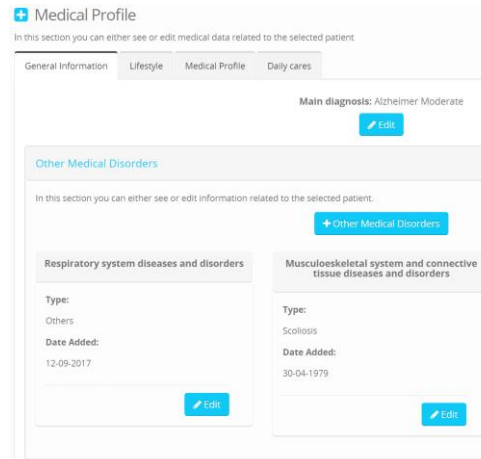
Additional Information:

Notify me:

Do you want to enable the follow up?

Yes No

Done



Medical Profile

In this section you can either see or edit medical data related to the selected patient.

General Information Lifestyle Medical Profile Daily cares

Main diagnosis: Alzheimer Moderate

Edit

Other Medical Disorders

In this section you can either see or edit information related to the selected patient.

+ Other Medical Disorders

Respiratory system diseases and disorders

Type:

Others

Date Added: 12-09-2017

Edit

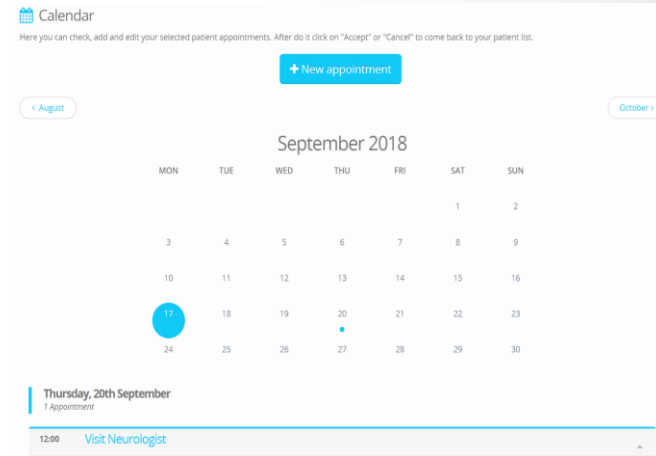
Musculoskeletal system and connective tissue diseases and disorders

Type:

Scoliosis

Date Added: 30-04-1979

Edit



Calendar

Here you can check, add and edit your selected patient appointments. After do it click on "Accept" or "Cancel" to come back to your patient list.

+ New appointment

< August

September 2018

| MON | TUE | WED | THU | FRI | SAT | SUN |
|-----|-----|-----|-----|-----|-----|-----|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |

Thursday, 20th September

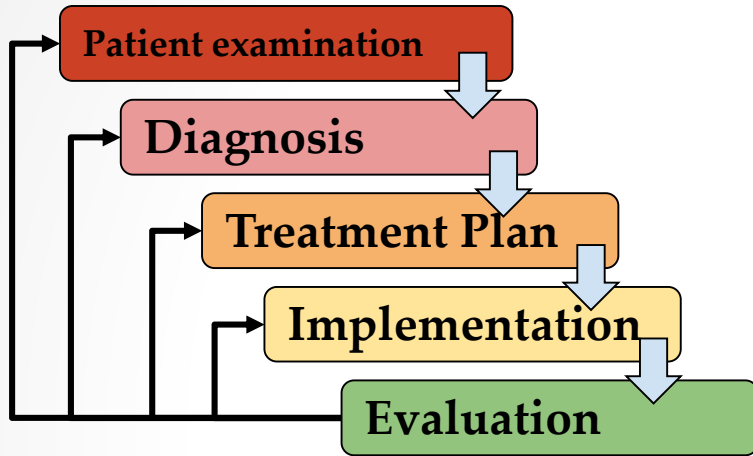
1 Appointment

12:00 Visit Neurologist

October >

- **Common platform** for patients and specialists (Holistic).
- Medical information is everywhere (**EHR**).
- **Social communication services** are integrated:
 - Medication, medical profile, calendar, scales, sensor data analysis and training content are available.

Better planning of therapies



Source: ICT4LIFE



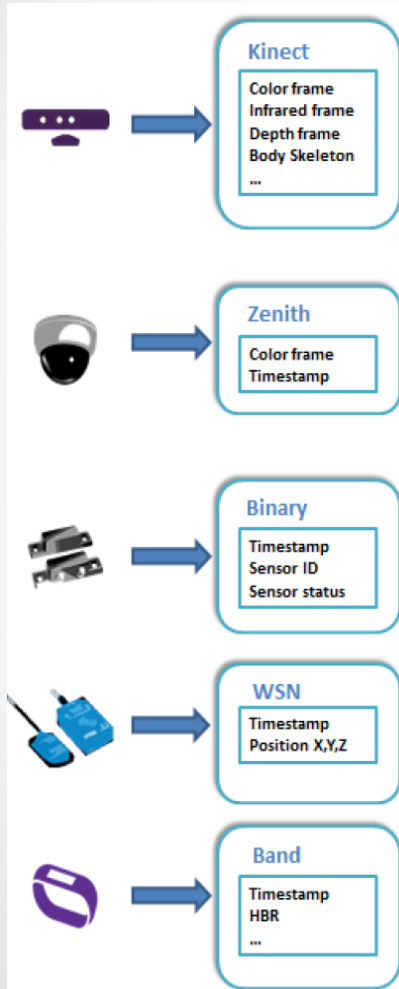
Source: ICT4LIFE

- Therapies need a **big effort** from specialist side to determine the best treatment.
- **Not enough data** about patient daily situation is available.

Data analysis is the **added value**.

- Exploring data to extract hidden patterns (trends) and relationships of interest.
- Mid-term predictions are good for future therapy plans.
- Support to better adjustment of therapies.

ICT4LIFE deploy sensors for daily data acquisition and perform data analysis.



The information obtained from the sensory system allows to:

- Abnormal Events Detection: fall down, festination, freezing
- Patient movement monitoring.
- Qualify the appropriateness of Rehabilitation therapies

Periodic follow-up reports are presented to health professionals in the ICT4LIFE platform.

WHY? it allows to:

- Monitoring of patient health status evolution
- Assess the impact of treatment

Improving Data Access

Problem: multiple information sources (G.P., specialists), medical tests, settings (i.e. Day-care center activities, logotherapies, physioterapies)

ICT4LIFE Added value:

Use of novel technologies to facilitate data access to health professionals providing relevant results.

Exploring data to:

- Understanding symptoms correlation
- Better Understanding of related Comorbidities

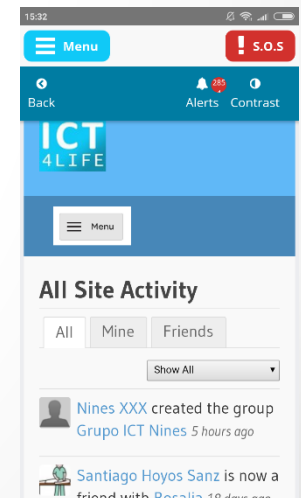
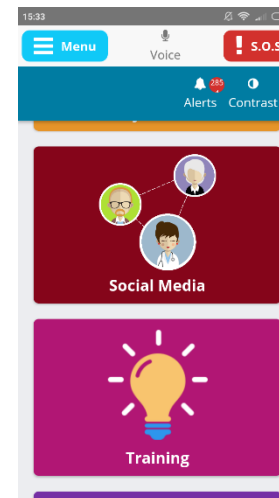
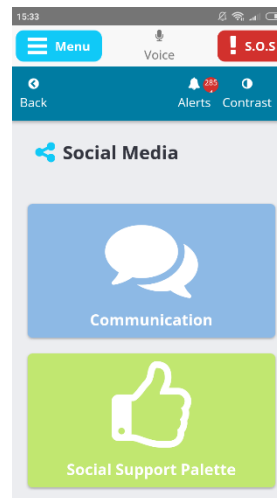


ICT4LIFE Added value:

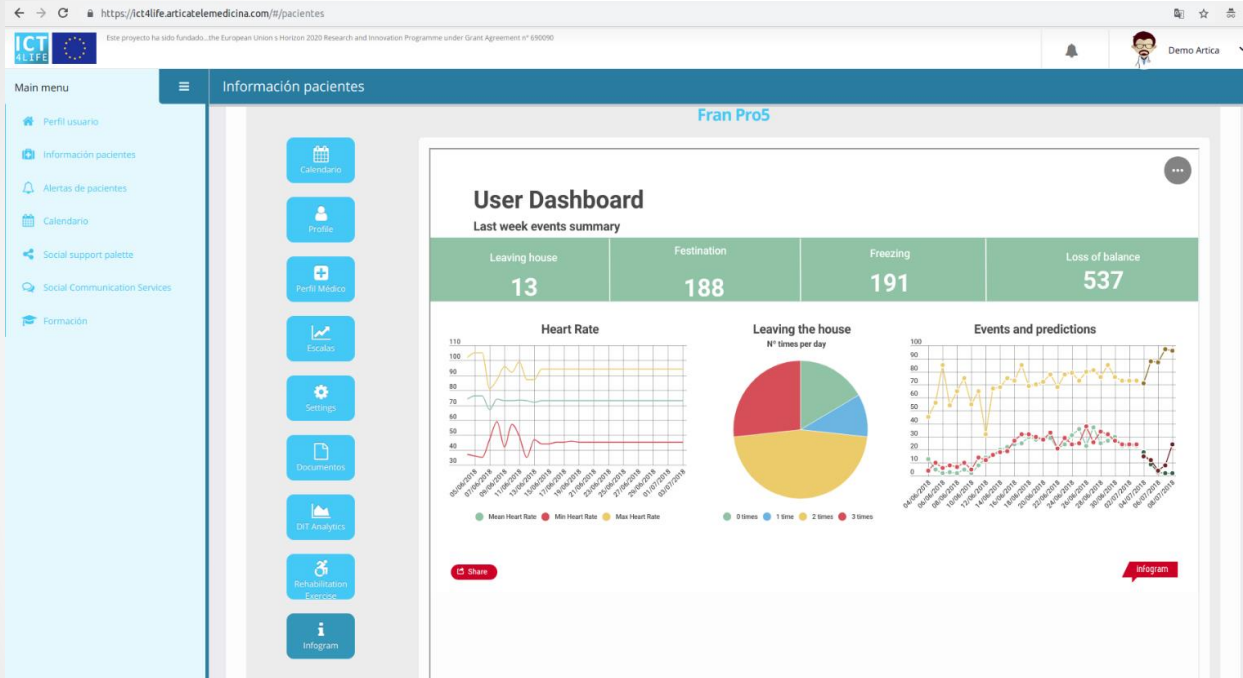
- Communication Service breaks barriers between Health Professionals and patients.
- Information is presented to health professionals in a summarized formats.
- ICT4LIFE reports can help Health Professionals to get update info about patients condition:
 - Reduce the number of appointments.
 - Save time by getting objective measures about the status
 - NOT AIMING TO REPLACE DOCTORS OPINION!!!, just providing more info for decision-making.



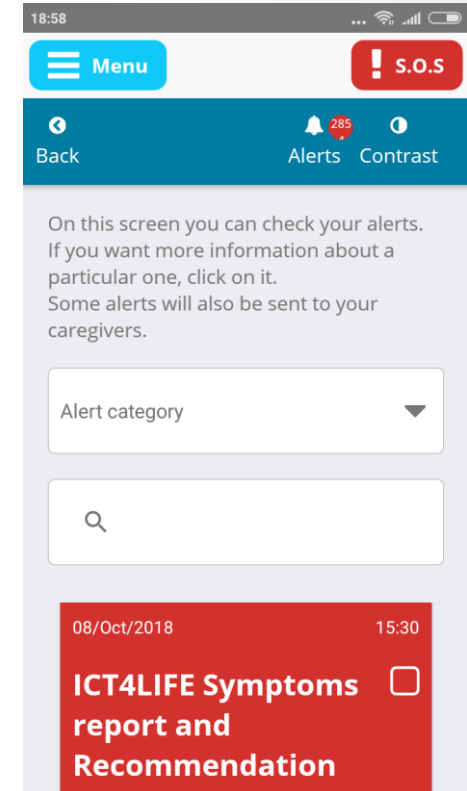
Source: <https://pmtips.net>



Improving Data Access and Time-Management



Extracted information from a patient and its representation in the ICT4LIFE platform.



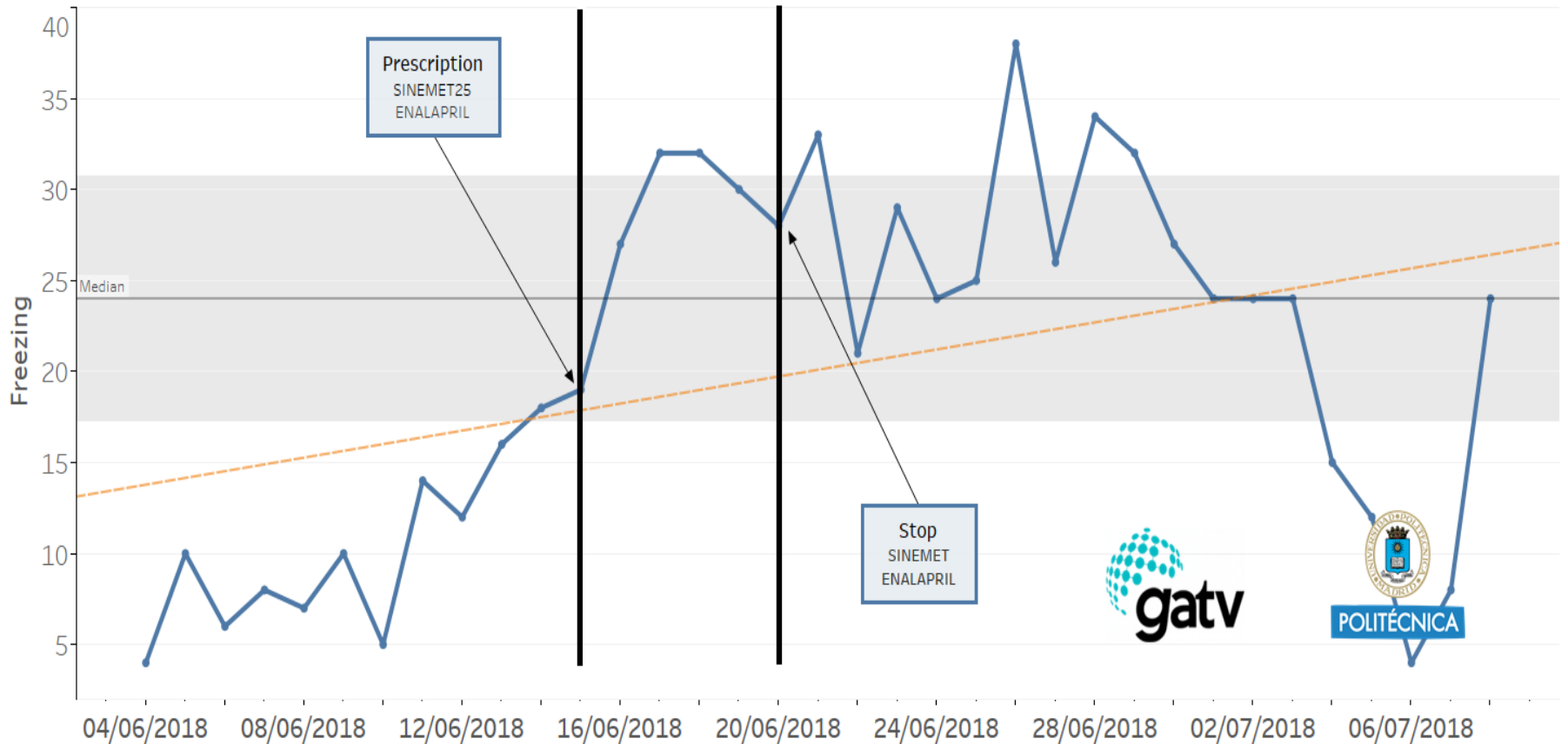
Notifications received in the ICT4LIFE mobile app.



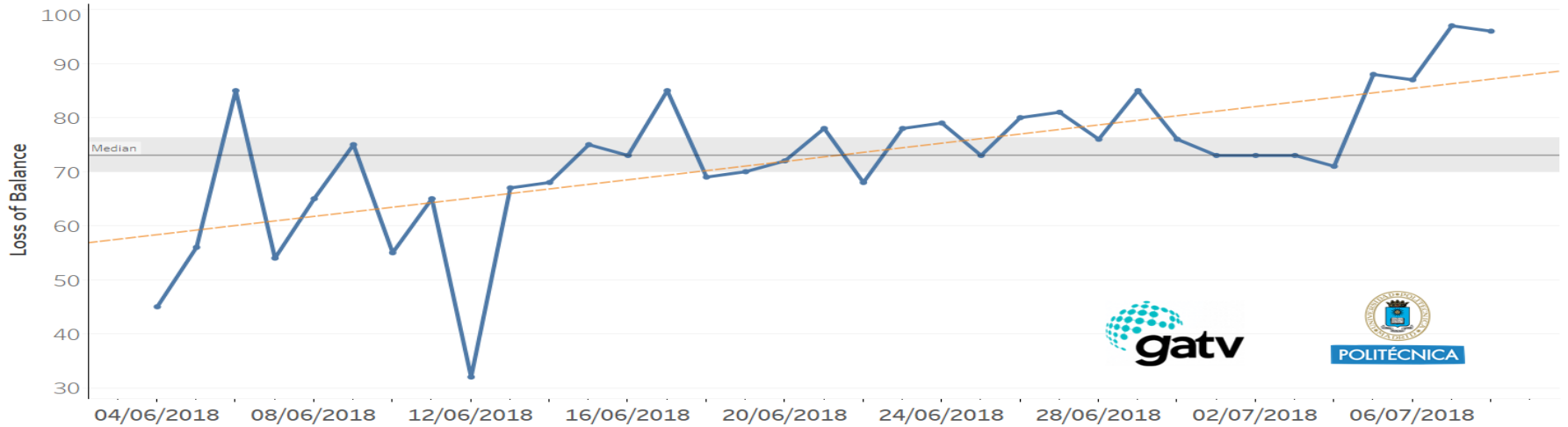
ICT4LIFE takes the potential of novel algorithms for complex data analysis and present results in an easy way

- **Multimodal fusion and Decision Support Tool** analyze data to obtain knowledge about more complex behaviors:
 - Correlation and statistical procedures among the different sources of data.
 - Temporal analysis by making predictions of future events based on the current and past status of the patient.
- Simple and brief reports with the main characteristics of the patient.
- Recommender system for supporting decision making
 - Reduces time spent in patient analysis.
 - Optimized professional decisions providing meaningful information.
 - Increases quality of the service.

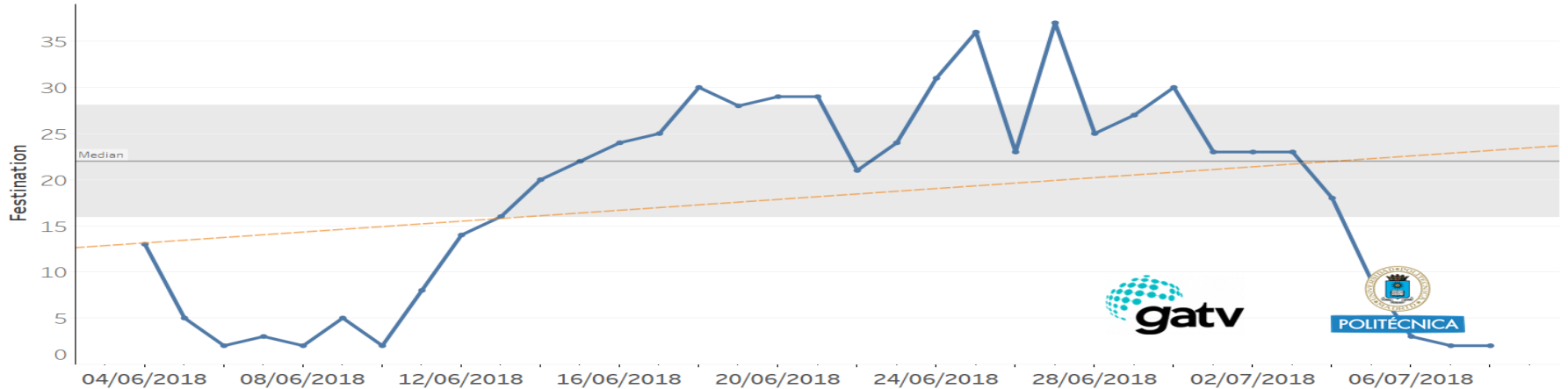
Freezing Events Analysis



Loss of Balance Events Analysis



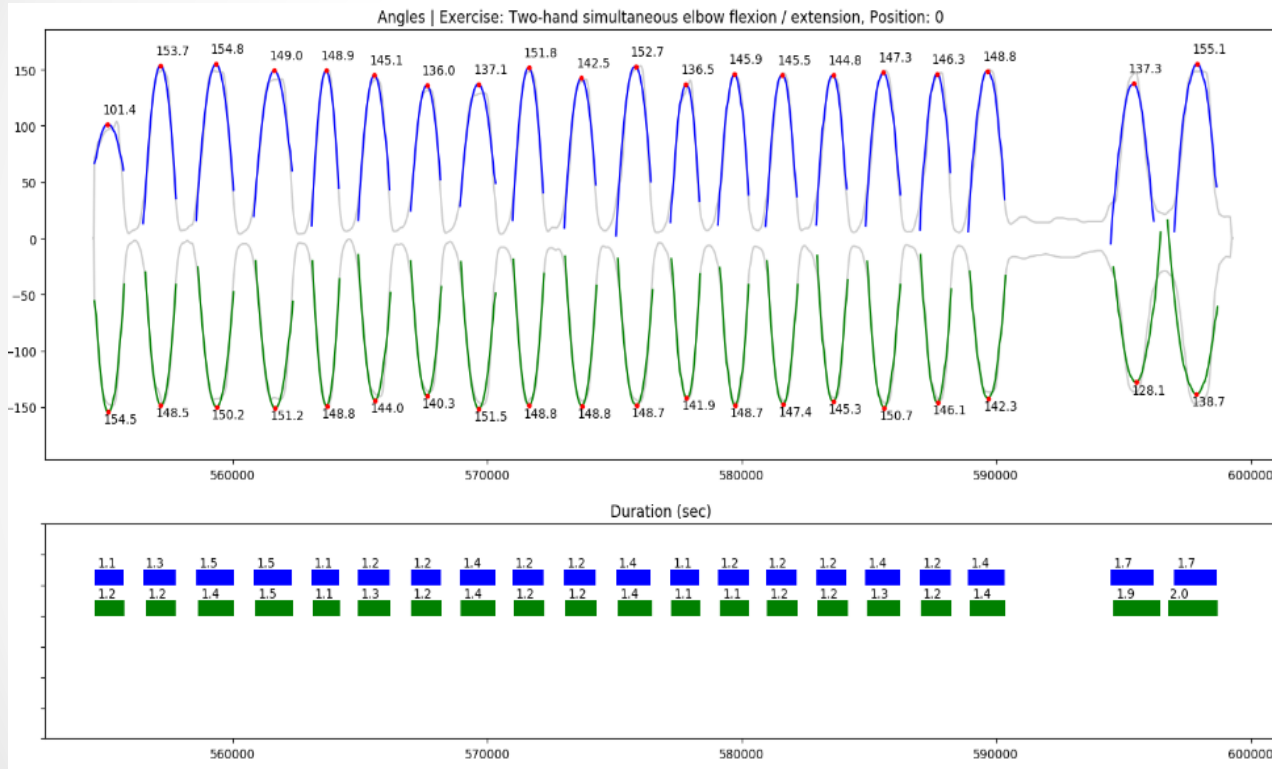
Festination Events Analysis



Also for Rehabilitation Therapies in Parkinson Patients...



Also for Rehabilitation Therapies in Parkinson Patients...



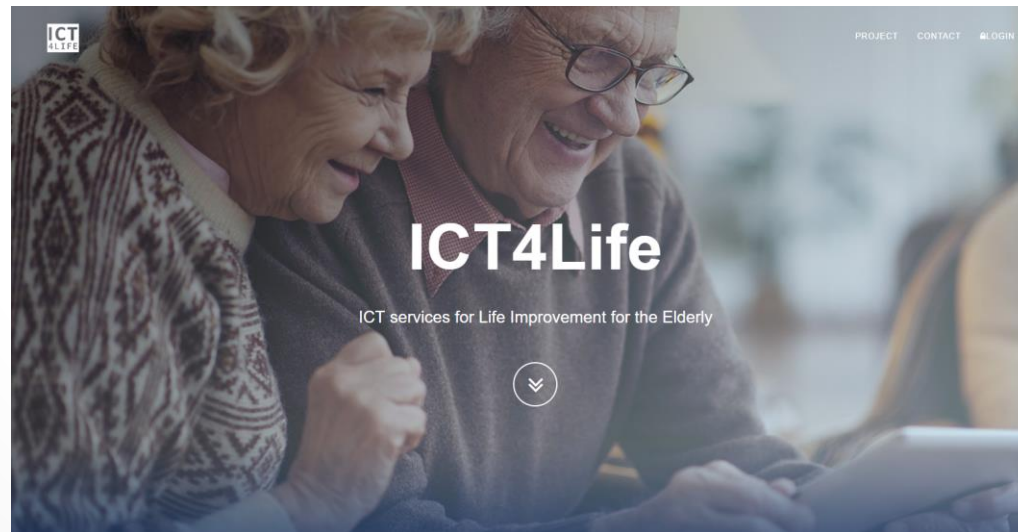
Therapy Analysis:

According to the info detected by the system, patient: **UUIDXXXXXXXXX** has performed well his/her therapy.

Summary

ICT4Life platform in better communication and coordination of care for health professionals provides:

- Data summarization (We know time is limited)
- Clarity of visualization (Easy to understand)
- User Experience (Design and visualization consensuated)
- Data harmonization (All data is standardized to be presented)



THANK YOU FOR YOUR ATTENTION!

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