Interview summary

Interviewee: Javier Arcos, MD. Chief Medical Officer, Fundación Jimenez Diaz University Hospital; Madrid, Spain; Clinical & Organizational Innovation Unit, Quironsalud 4H Public Hospitals Network, Madrid, Spain.

mHealth Practice: **E-Res Salud**, a value-based healthcare program using patient-reported outcome measurements (PROMs) and Patient-reported experience measurements (PREMs)

Date: March 2021

Topics

E-Res Salud has a successful approach to the following topics:

- Execution:
  - **Integration with eHR**
  - **Patient reported data**

- Monitoring and evaluation:
  - **Monitoring and evaluation**
  - **Outcome-based reporting**
  - **Continuous improvement**

Scope of the mHealth practice

This program arises from the end-results oriented healthcare model of **Quironsalud**, and it comes to incorporate the international innovation initiatives already implemented with the aim of giving voice to patients to co-create the medical assistant process through new technologies such as patient portal accessed through portable devices (laptops, tables, smartphones).

The main objective is to incorporate a new end-results and patient-experienced assessment methodology in the organization with the following principles:

- This end-results patient-oriented strategy is a long-term strategy and not a time-limited pilot study.
- The program is organized in well-defined phases, where different medical and surgical specialities will be joining the program and implementing this methodology in different processes.
- With the application of well-known and validated methodology.
- With cycles of continuous improvement based on learning from acquired knowledge and constant monitoring.
- Use of new eHealth new technologies such as patient portal accessed by app or website.
- Patients' co-creation of their own medical history, providing personal health data through patient portal and integration in the eHR.

DESIGN stage

Scope and timeline

- *How long did it take for the mHealth practice to be implemented?* 3 months per each process
- *What are the key steps that were undertaken?*
  - Building multidisciplinary teams
  - Selection of processes or disease entities to be measured
  - Define the patient journey
  - Review of literature and scientific evidence
  - Selection of PROMs and PREMs tools
  - Identification of clinical end-results indicators
  - Time points interaction with patients
- *What are the strengths and weaknesses of the implementation process?*

The *strengths* are the multidisciplinary team building and the Hospital network approach. All actors involved in the medical process act as a team giving their expertise and not as an individual person, and the program is running in a network of four different hospitals at the same time, that covers the care of 1 million inhabitants in Madrid region. Also, the design is implemented in the patient's portal, so patients can access to them through their smartphones or other portable devices.

The *weakness* is to create strong alliances among all members to cooperate and the lack of evidence in many processes sometimes.

- *Is there a workplan that can be included as a reference? Is there further documentation about the approach?*

We have our own methodology "Guideline for the design and implementation of a value-based healthcare program" (Spanish version).

- *What are the strengths and weaknesses of the solution?*

This guideline helps clinicians to start working before the kick-off meeting with the Clinical & Organizational Innovation Unit (UICO).

Stakeholder involvement

- *What stakeholders needed to be involved for the good practice to work?*

In this step, the stakeholders are the clinicians selected to build the multidisciplinary team.

- *What are the stakeholders' roles and activities/effort?*

They need to meet periodically to work providing their expertise.

- *How was involvement and buy-in of the stakeholders secured?*

There is a structured schedule of meetings and a deadline to present their findings and proposal.

Barriers, success factors, lessons learnt

- *Barriers*

Measurement tools are not free of charge, even those proposed by ICHOM (International Consortium for Health Outcomes Measures). The high cost of many validated tools hampered the implementation of many of them.

- *Success factors*

Commitment of CEO and Chief Medical Officer with clinicians, sharing the same strategic objectives.

- *Lessons learnt*

Leadership of the multidisciplinary team will allow to manage and solve all problems they find in their way.

Outcomes

- *What were the main outcomes of implementing the mHealth solution?*

Team building, new innovative and organizational proposals to be reviewed and assessed by the Manager, see what other institutions do in this field of mHealth solutions to compare with them and do benchmarking.

- *What is the status? (pilot, tested, fully operational).*

Full operational in the first two phases: Hematology, HIV, Orthopedic Surgery, Urology and COVID19 in phase 1; Inflammatory Bowel Disease, Heart Failure and Endometrial Cancer in phase 2.

Continuous learning and outlook

- *What would you have done differently? What can still be improved?*

We would provide better guidance in the measurement tools selection as many of them are not free of charge.

- *What are the future plans for exploiting the mHealth solution?*

To expand this knowledge to other processes in the next steps. The next processes to be explored will be stroke, Cardio-Oncology and Pediatric asthma.

DATA CAPTURE stage

Scope and timeline

- *How long did it take for the mHealth practice to be implemented?* 3-6 months
- *What are the key steps that were undertaken?*
  - Create in the eHR the PROMs and PREMs tools templates
  - Spread the knowledge of the project among all members of the departments
  - Design a project dashboard
  - Implement the questionnaires in the eHR and the Patient Portal
  - Integration of data submitted through the app in their smartphone into the hospital eHR.
  - Start data capturing and continuous monitoring of system fails.
  - Cycles of continuous improvement
  - Patient education and empowerment for a better adherence to the program
- *What are the strengths and weaknesses of the implementation process?*

The main *strength* is that the measurement tools are integrated in the eHR and are part of the medical file.

The main *weakness* is the dependence on the IT Department.

- *Is there a workplan that can be included as a reference? Is there further documentation about the approach?*

We have our own methodology "Guideline for the design and implementation of a value-based healthcare program" (Spanish version).

- *What are the strengths and weaknesses of the solution?*

We need a strong implication of the medical direction and IT department to prioritize this project.

Stakeholder involvement

- *What stakeholders needed to be involved for the good practice to work?*

IT Department.

- *What are the stakeholders' roles and activities/effort?*

IT Department members must be fully dedicated to this task as it is very detailed and very specific.

Barriers, success factors, lessons learnt

- *Barriers*

Technical barriers.
Identification or hiring people dedicated to the project in the IT Department.

- *Success factors*

The motivation of the whole team. Use time in managing change. Team members have protected time from their routine clinical activities to work in this project.

- *Lessons learnt*

To involve IT Department in the design of process in the digital health transformation era.

Outcomes

- *What were the main outcomes of implementing the mHealth solution?*

We are capturing data of more than 8,000 patients in the 8 processes where we have already implemented it.

- *What is the status? (pilot, tested, fully operational).* Fully operational

Continuous learning and outlook

- *What would you have done differently? What can still be improved?*

More in-person meetings with IT Department to better explain what we need and the tools they must work on.

- *What are the future plans for exploiting the mHealth solution?*

To collect more data by adding more specific tools for a better stratification of processes and patients.

DATA ANALYSIS stage

Scope and timeline

- *How long did it take for the mHealth practice to be implemented?*

More than 6 months; still on going. We are developing the data analysis platform using MS Power BI for the Data Mining to be done by clinicians and not by the IT Department to make it easier and faster the data analysis and in an real-time fashion. In this way, the information collected has an earlier impact on the real clinical activity.

- *What are the key steps that were undertaken?*
  - The data analysis platform.
- *What are the strengths and weaknesses of the implementation process?*

Main *strengths*:
- Data analysis platform.
- Clinical leadership.
- A strong IT team available from the beginning.

Main *weakness*:
- The need of a new common language, and new transversal work teams (clinicians, IT members, managers).

- *Is there a workplan that can be included as a reference? Is there further documentation about the approach?*

We have analysed several platforms for this data analysis. At the end, the license to use Microsoft products in the entire organization lead to choose MS Power BI for the data analysis.

- *What are the strengths and weaknesses of the solution?*

The strengths are that this is an accessible platform, already implemented in the organization. The weaknesses could be that we have to manage with the solutions provided and cannot ask for others.

Stakeholder involvement

- *What stakeholders needed to be involved for the good practice to work?*

IT Department, Big Data and AI scientists, patient experience department, and clinical leaders.

- *What are the stakeholders' roles and activities/effort?*

Identification of clinical variables to be cross-matched with the PROMs and PREMs results.

- *How was involvement and buy-in of the stakeholders secured?*

IT Department is part of the team. They belong to the Clinical & Organizational Innovation Unit, and the head of project works closely with the clinical teams.

Barriers, success factors, lessons learnt

- *Barriers*

Technical barriers.

IT Department members belong to the Clinical & Organizational Innovation Unit, and the head of project works closely with the clinical teams. All of them have protected time to work with clinicians in this project.

- *Success factors*

To work in a flexible platform to be allocate all variables needed for each process.

Outcomes

- *What were the main outcomes of implementing the mHealth solution?*

To improve the patient journey and to allocate resources to those patients that need them more. Being able to respond to the needs of patients who are at home, in real time.

- *What is the status? (pilot, tested, fully operational).* It is being tested in the phase 1 processes

Continuous learning and outlook

- *What would you have done differently? What can still be improved?*

To start working in the data capture platform in advance.

- *What are the future plans for exploiting the mHealth solution?*

After data analysis, we will be providing patients a real-time feed-back of their own results, the comparison with people of their same age and sex group, and a set of personalized recommendations based on their need identified in the PROMs questionnaires.

Other aspects highlighted

The strategy is based on giving voice to the patient with a clear, well-defined methodology that encourages their active participation in the care process and stimulate their involvement in planning and implementation of the improvements in the care trajectories based on their experiences and opinions. To do this, we routinely incorporate new outcome indicators into clinical activity that matters to the patient, what help doctors in their daily practice, creating a culture of self-assessment and continuous learning.

Awards

E-Res Salud has been recognised as Role Model by the international prize “EFQM Global Award”, given to Fundación Jiménez Díaz University Hospital.

Quironsalud 4H Public Hospitals Network has received the Top Value Award 2021, given by IQVIA, aimed to hospitals with value-based healthcare programmes in Spain, where E-Res Salud has played a significant role, and the 2021 Salud Digital Award (Digital Health Award), for the best project in Telemedicine at the national level (Spain).

References

- E-Res Salud, medición de resultados en salud y experiencia del paciente (E-Res Salud, measuring health outcomes and patient experience) https://www.youtube.com/watch?v=r9HD9zXnkTk

- E-Res Salud Hematología supera los 500 pacientes y da voz para personalizar la atención ofrecida (E-Res Salud Haematology exceeds 500 patients and gives a voice to personalise the care provided) https://www.youtube.com/watch?v=w6AxllKdOvY

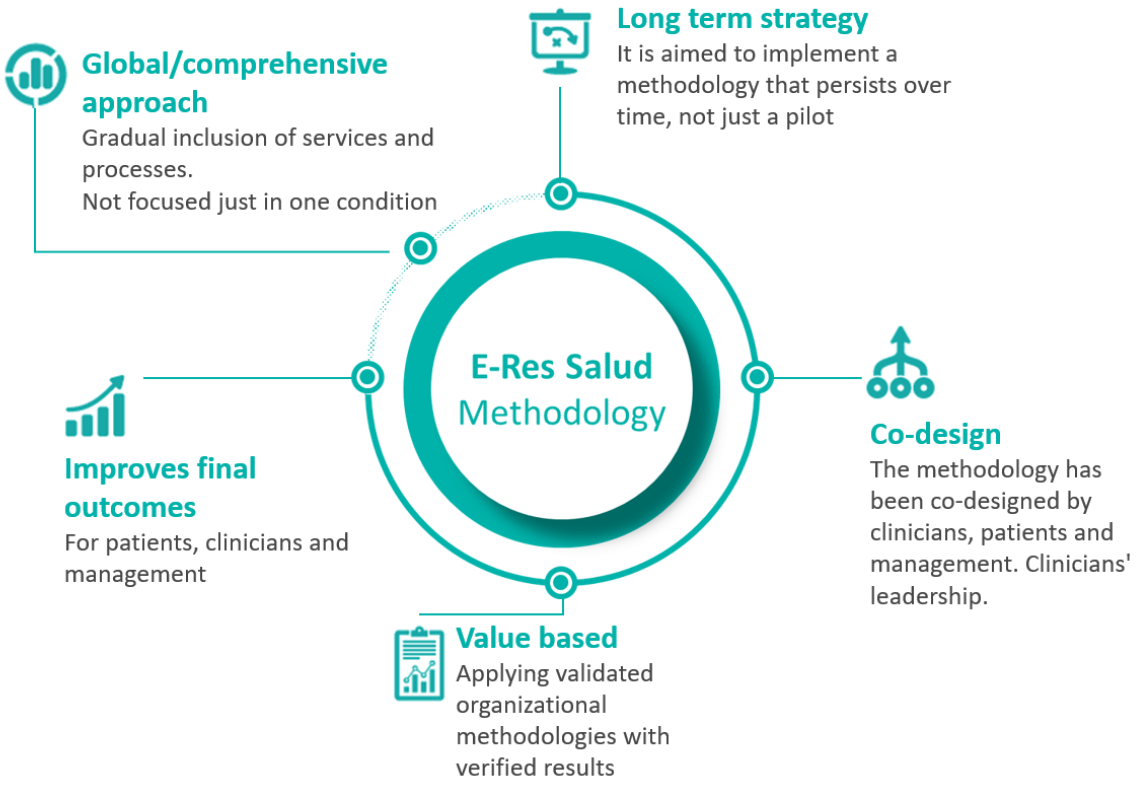
- Poster. ICHOM Annual Conference 2020. E-Res HIV https://conference.ichom.org/wp-content/uploads/2020/11/POSTER-ICHOM-E-Res-HIV-Program.pdf

- Poster. ICHOM Annual Conference 2020. E-Res Hematology https://conference.ichom.org/wp-content/uploads/2020/11/POSTER-ICHOM-2020-E-Res-Hematology.pdf

- To learn more:
    - Javier Arcos, MD. Chief Medical Officer. Fundación Jimenez Diaz University Hospital; Madrid, Spain; Clinical & Organizational Innovation Unit, Quironsalud 4H Public Hospitals Network, Madrid, Spain. jarcos@quironsalud.es
    - Raúl Córdoba, MD, PhD. Head of Lymphoma Unit. Fundación Jimenez Diaz University Hospital; Madrid, Spain; Clinical & Organizational Innovation Unit, Quironsalud 4H Public Hospitals Network, Madrid, Spain.raul.cordoba@fjd.es

Annex: visual materials

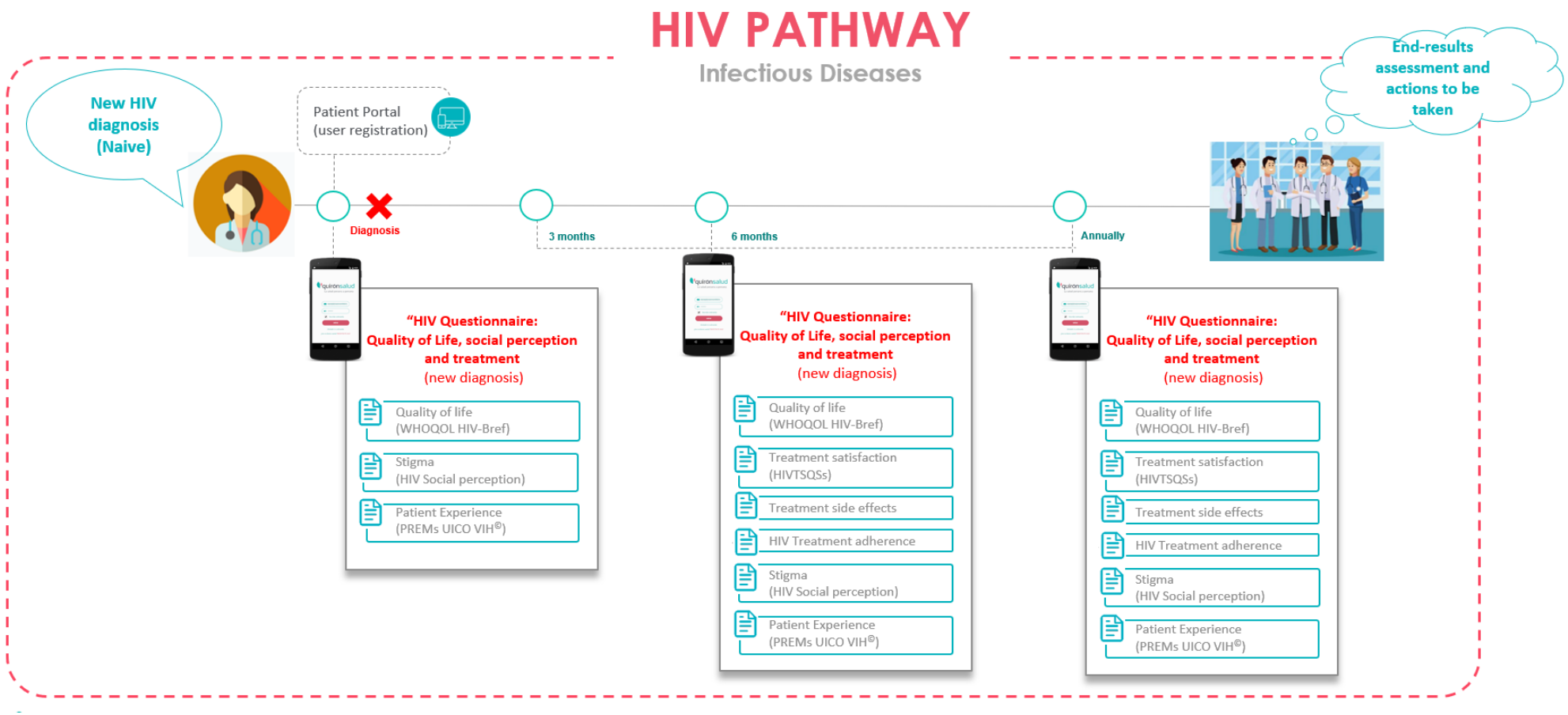
▲ PATIENT VOICE	**E-Res Salud** is an **end-results oriented healthcare** model to incorporate the international **innovation** initiatives already implemented with the aim of **giving voice to patients** to co-create the medical assistant process
▲ OUTCOMES	The main objective is to incorporate a new **clinical outcomes and patient-experienced assessment methodology** in the organization with **PROMs** and **PREMs**
▲ METHODOLOGY	It uses a well-know and **validated methodology**
▲ IMPROVEMENT CYCLE	It counts with cycles of **continuous improvement** based on learning from acquired knowledge and **constant monitoring**
▲ TECHNOLOGY ▲ eHEALTH	Use of eHealth **new technologies** such as **patient's portal** by **apps** or internet access
▲ CO-CREATION	Patients' **co-creation** of their own medical history, providing personal health data through patients' portal and integration in the EMR


Global/comprehensive approach
Gradual inclusion of services and processes.
Not focused just in one condition
Long term strategy
It is aimed to implement a methodology that persists over time, not just a pilot
E-Res Salud
Methodology
Improves final outcomes
For patients, clinicians and management
Co-design
The methodology has been co-designed by clinicians, patients and management. Clinicians' leadership.
Value based
Applying validated organizational methodologies with verified results

- **Create multidisciplinary teams**
- **Select patients by condition**
- Review bibliography and **evidence available**
- **Select PROMs and PREMs scales**
- Select **clinical outcomes** indicators.
- Describe the **patient pathway** and define the **interaction points**

- **Create scales** and data collection system
- **Communicate** information and knowledge amongst all the **clinical teams**
- Create a **process dashboard**
- **Activate the circuit** in Casiopea (EMR) and Patient Portal App (smartphone and internet).
- Define the **information patients are getting** at the beginning of the process
- Continuous improvement cycles to increase the adherence to scales

- **Dashboard design** by individual and by typology
- **Design of ways to access to the information**, integrated into the HER, for (1) Patients (2) Clinicians (3) Organization
- Seek of continuous improvement through **benchmarking** amongst hospitals
- **Cost analysis by process**


HIV PATHWAY
Infectious Diseases
New HIV diagnosis (Naive)
Patient Portal (user registration)
Diagnosis
3 months
6 months
Annually
End-results assessment and actions to be taken
"HIV Questionnaire: Quality of Life, social perception and treatment (new diagnosis)
Quality of life (WHOQOL HIV-Bref)
Stigma (HIV Social perception)
Patient Experience (PREMs UICO VIH©)
"HIV Questionnaire: Quality of Life, social perception and treatment (new diagnosis)
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Treatment satisfaction (HIVTSQSs)
Treatment side effects
HIV Treatment adherence
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LYMPHOMA, CLL, MULTIPLE MYELOMA PATHWAY