6TH SPX INTERNATIONAL COLLOQUIUM

6 — 8 OCT
LUXEMBOURG

PATIENT EXPERIENCE AT THE HEART OF ALL CARE

A shared challenge across all models of support

FONDATION ROBERT SCHUMAN
HÔPITAUX ROBERT SCHUMAN
REHAZENTER LUXEMBOURG
fhl
HWL HEALTHCARE WEEK LUXEMBOURG

COMMUNICATION SESSION

Digital transformation to improve patient experience within continuum of care - 3 questions

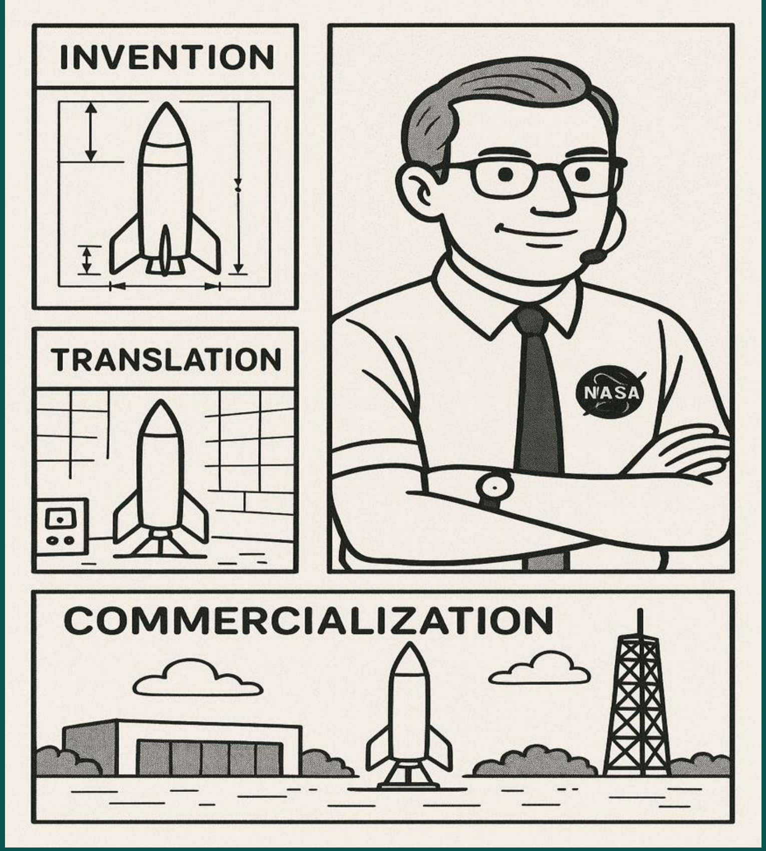
SXP INTERNATIONAL COLLOQUIUM

PULSO-HEALTH-TECH

Olga Rubio*, Elisenda de la Torre, Cristina Montané, Laura Sampietro-Colom, María Araceli Camacho, Imma Grau-Corral

Head of Pateient Experience team in Hospital Clinic

Technology Readiness Level



TRL	Technology Readiness
1	Need
2	Idea
3	Proof of concept (PoC)
4	Proof of Feasibility (PoF)
5	Proof of Value (PoV)
6	Initial Clinical Trials (ICT)
7	Validation of Solution (VoS)
8	Approval & Launch (A&L)
9	Clinical Use (Use)

CIMIT EIT-Health

COMMERCIALIZATION

10 Standard of Care (SoC)
The solution is recognized as the standard of care

9 Clinical Use (Use)
The solution is used successfully in day-to-day clinical practice

8 Approval & Launch (A&L)
Institutional and regulatory approval received and sales launch

7 Validation of Solution (VoS)
The solution is shown to be effective and its value to all stakeholders is validated

6 Initial Clinical Trials (ICT)
Regulated production of prototypes and collection of clinical and economic data

TRANSLATION

INVENTION

1 Need
Insights into unmet clinical needs and available solutions

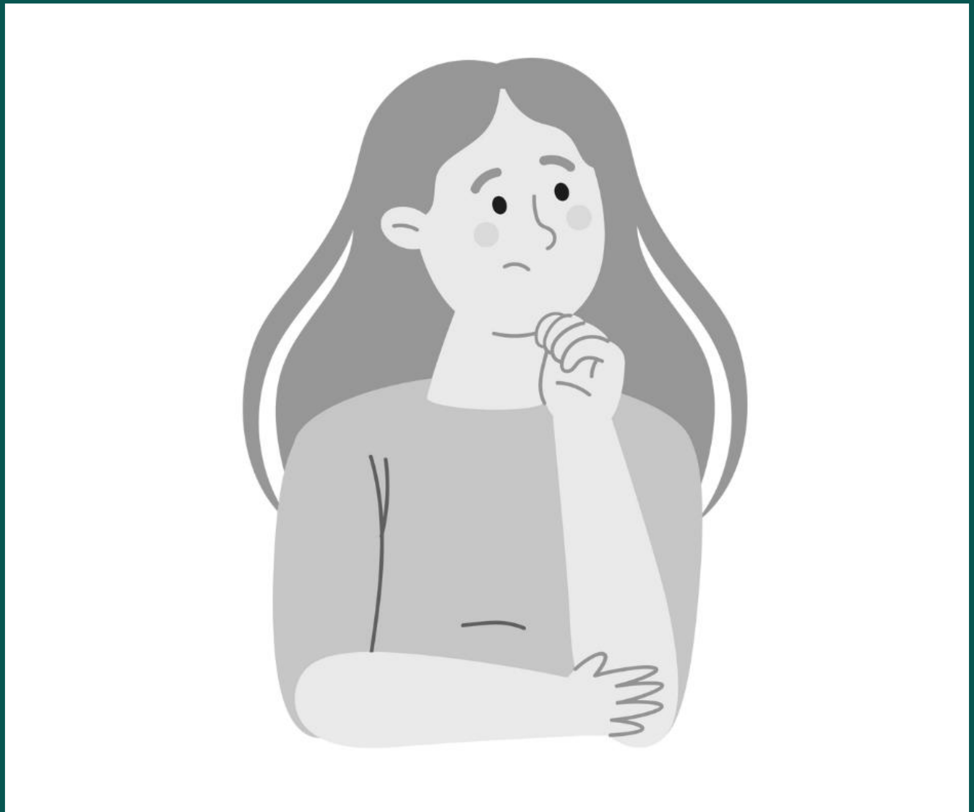
2 Idea
Potential solution described to an unmet need

3 Proof of Concept (PoC)
Key component concepts validated in models and value proposition articulated

4 Proof of Feasibility (PoF)
Feasibility of whole solutions demonstrated in models and with stakeholders

5 Proof of Value (PoV)
The potential of the solution to work and create value for all stakeholders is demonstrated

And… What 's the patient?



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Research Team

A multidisciplinary team of six (6) researchers with

- **2 patient advocates** one with a technology background and one without
- **2 clinicians** one focused on patient participation and one on technology assessment
- **2 engineers** specializing in digital health—participated.."

Delphi Experts

A multidisciplinary panel of twenty (20) panelists with

- 6 clinicians (30%),
- 6 experts in patient experience or participation (30%),
- 2 patient advocates (10%),
- 2 professionals from innovation and industry (10%),
- 1 ethics expert (5%),
- 1 global health consultant (5%), and
- 2 academic researchers (10%)

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Patient Perspective in TRLs for Digital Health

RESEARCH

1.Need

Inclusive identification and stratification of the patient and caregiver, taking into account aspects such as the stage or degree of the disease, gender, age, socioeconomic resources, etc.

2. Idea

Co-create the project with patients taking into account stratification. Emphasize the involvement of patients and family members in the documentation of the project.

3. Proof of concept (PoC)

Design and validate the "proof of concept" with the target group of patients and caregivers by actively involving them in the process. Systematically record their input

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4. Proof of feasibility (PoF)

Co-create the project with patients taking into account stratification. Emphasize the involvement of patients and family members in the documentation of the project.

5. Proof of value (PoV)

Prepare the evaluation process with patients and caregivers. Test the improved solution with a representative group of them. Work together to create the instructions for use, check the clarity of legal texts and consents, and prepare PREMs and PROMs questionnaires, if necessary.

6. Initial clinical trials (ICT)

Involve patients and caregivers in the design of the clinical trial protocol. Invite target patients to participate in early clinical trials

7. Validation of solution (VoS)

Involve patients and/or caregivers in study design, clinical effectiveness, and stress testing of technology development, and measurement of usability, adherence, and PREMs and PROMs to ensure that results are relevant and meaningful to the community that will benefit.

TRANSLATION

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COMMERCIALIZATION

8. Approval and launch (A&L)

Joint review with patient associations and advocates, including a monitoring mechanism to assess adoption and adherence. Assessment of clinical efficiency outcomes, as well as patient experience and quality of life. Ongoing monitoring to detect problems allowing for continuous improvement.

9. Clinical use (Use)

Dissemination among patient and caregiver associations. Implement feedback tools that allow for identifying opportunities for improvement, as well as identifying barriers for those who do not use it, in order to adapt and improve the solution.

- PARTICIPATION
- USABILITY
- LITERACY
- SYSTEM
- OBSERVATORY

10. Standard of care (SoC)

Recommendation by public bodies and at patient conferences.

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de la Torre E, Montane C, Rubio O, Sampietro-Colom L, Camacho-Mahamud A, Grau-Corral I, Integrating Patient Perspectives Into the Digital Health Technology Readiness Framework: Delphi Study. J Med Internet Res 2025;27:e71600. doi: 10.2196/71600

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TRL 2 - Idea. Concepto tecnológico formulado [2]. Solución potencial descrita para una necesidad insatisfecha [1]. "Prototipo en papel" e "Idea" (IP) institucional inicial y revisión de diseños experimentales de hipótesis para abordar las cuestiones técnicas de los componentes clave [1]. Descripción del escenario del flujo de trabajo clínico [1]. *

<u>PROPUESTA</u>: Co-crear el proyecto con los pacientes teniendo en cuenta la estratificación. Dedicar una apartado en la documentación a recoger las aportaciones de los pacientes.

	1	2	3	4	5	6	
Totalmente en desacuerdo	○	○	○	○	○	○	Totalmente de acuerdo

Delphy Metodology

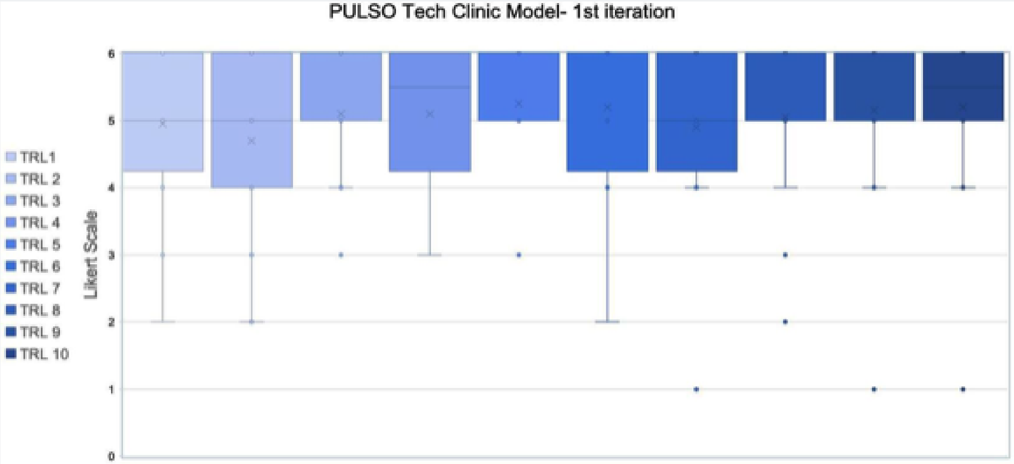

Figure 2. Box-and-whisker plot showing Likert scale ratings (1-6) for the PULSO Tech Clinic Model across 10 technology readiness levels (TRLs) during the first Delphi iteration. Boxes represent the interquartile range, horizontal lines indicate medians, and "X" marks the mean values. Whiskers show non-outlier ranges, with outliers plotted individually.

Although there was a high consensus in the first round, there were also several outliers and concordant proposals to improve the text, which were incorporated into the proposal, and we proceeded to the second round.

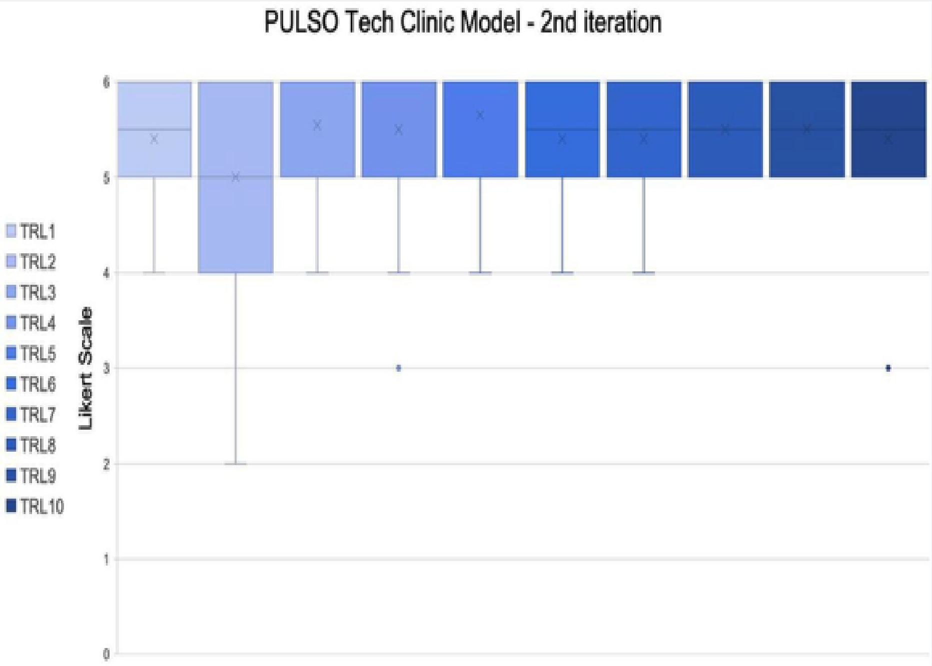

Figure 3. Box-and-whisker plot showing Likert scale ratings (1-6) for the PULSO Tech Clinic Model across 10 technology readiness levels (TRLs) during the second Delphi iteration. Boxes represent the interquartile range, horizontal lines indicate medians, and "X" marks the mean values. Whiskers display non-outlier ranges, with reduced variability compared to the first iteration, indicating improved consensus across all TRLs.

The last 2 rows summarized the median and mean values for each TRL: The median values for all TRLs were consistently high, with TRL3, TRL4, TRL5, and TRL10 having a median of 6, and the rest of the TRLs having a median of 5.5 or 5. This indicated that the experts generally rated the stages as satisfactory or better. The mean values for the TRLs ranged from 5.00 (TRL2) to 5.65 (TRL5), with TRL3 having a mean of 5.55. This suggested a generally positive evaluation across all TRLs, with no TRL falling below a mean value of 5.00.

SHARED PATIENT EXPERIENCE

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Integrating Patient Perspectives Into the Digital Health Technology Readiness Framework: Delphi Study

Elisenda de la Torre[1]; Cristina Montane[1]; Olga Rubio[2]; Laura Sampietro-Colom[2]; Araceli Camacho-Mahamud[2]; Inmaculada Grau-Corral[2, 3, 4]

- Abstract
- Introduction
- Methods
- Results
- Discussion
- References
- Abbreviations
- Copyright

Abstract

Background:
Digital health technologies—including mobile applications, telemedicine platforms, artificial intelligence, and eHealth tools—are transforming health care delivery by enhancing access, personalization, and efficiency. However, traditional technology readiness levels (TRLs), while widely used to assess technological maturity, do not explicitly account for patient involvement—an essential factor in usability, acceptability, and real-world effectiveness.

Objective:
This study aimed to integrate patient perspectives into the TRLs framework, specifically tailoring it for applications in digital health innovations. By developing a patient-centered dimension using a Delphi methodology, this study provides actionable insights to enhance usability, acceptance, and real-world effectiveness of digital health technologies such as mHealth apps, telemedicine

Nexts Steps.

Describe the part of XPA

"Use case" and scale the project

Provide advice and consulting.

Integrating Patient Perspectives into the Digital Health Technology Readiness Framework: A Delphi Study

Elisenda de la Torre, elisendadelatorre@gmail.com

Cristina Montané, crismontane@gmail.com

Olga Rubio, orubio@clinic.cat

Laura Sampietro-Colom, lsampiet@clinic.cat

Maria Araceli Camacho, mcamachom@clinic.cat

Imma Grau-Corral, imma.grau.corral@gmail.com

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