



## *Newsletter*

Summer 2025

**Welcome to the latest edition of the CAREPATH Newsletter!**

Stay tuned for more updates as we continue to innovate and lead in the integration of technology and healthcare.

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## **Project Highlights**

### **CAREPATH in Action: Final Steps and Lasting Impact**

Over the past months, the CAREPATH system has moved from early testing to full real-world use across our pilot sites, marking the culmination of years of collaborative effort. In Spain, the Clinical Investigation (CI) phase successfully followed the Technical Validation and Usability (TVU) phase, with six participants, their informal carers, and healthcare professionals actively engaging with the platform in their daily care routines.

Throughout this phase, CAREPATH has supported the creation, monitoring, and adjustment of personalised care plans, enabling carers and clinicians to respond quickly to changes in participants' needs. Feedback from both clinical and technical partners has led to further refinements, ensuring the system is not only functional but truly user-centred.

Across the consortium, similar milestones have been achieved, validating the integrated platform, refining interoperability features, and demonstrating the potential of CAREPATH to improve care coordination for people with cognitive impairment and multiple chronic conditions.

As we close this chapter of the CAREPATH project, the results speak for themselves: a tested, validated, and impactful solution with the potential to extend far beyond the project's lifetime.

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# Project Lessons Learned

## CAREPATH in Action: Final Steps and Lasting Impact

Every project brings its share of insights—some technical, some operational, and some deeply human. As CAREPATH reaches its conclusion, our partners share the experiences and discoveries that will shape future work.

### Building Flexible, Scalable Technology

From a technical perspective, partners highlighted the game-changing role of Dockerization in managing deployments across different pilot sites. Using flexible Docker images allowed the team to adapt quickly to site-specific needs, such as Germany's unique appointment management rules, while maintaining consistency across environments. Equally important was adopting HL7 FHIR as a common language for data exchange. This not only simplified integration and reduced mapping effort, but also positioned CAREPATH for future interoperability with other healthcare platforms.

### Navigating Real-World Implementation

Clinical partners in Spain and Romania shared valuable lessons from the Technical Validation and Usability (TVU) and Clinical Investigation (CI) phases. Ethical approvals were secured in both countries, enabling recruitment of eight participants (six in Spain, two in Romania). The findings underscored that the current interface best suits users with medium-to-high digital literacy and mild cognitive impairment, while those with mild dementia required sustained caregiver support. Key recommendations for future iterations include:

- Expanding digital literacy support with voice guidance, context-sensitive help, and caregiver dashboards.
- Automating device pairing and adding visual cues for easier setup.
- Personalising content delivery with adaptive advice and flexible communication options.
- Extending evaluation timelines to capture long-term clinical benefits.

### Understanding Regulatory Realities

The German pilot site's experience, led by SKB, brought home the complexities of Medical Device Regulation (MDR EU 2017/745) compliance. Despite European Commission approval and success in Spain, the German ethics committee rejected the study due to Class IIa device requirements, leading to significant unplanned costs and delays. This highlighted the gap between EU-level harmonisation ambitions and national-level regulatory practices—a reality that future EU-funded projects must factor in early.

### The Human Side of Collaboration

Beyond the technical milestones and regulatory hurdles, partners consistently noted the collegial, trust-based environment within the consortium. As SKB put it, "it was like working with friends." For many, this collaborative spirit was not just a pleasant byproduct—it was a catalyst for overcoming challenges and finding creative solutions together.

## Looking Ahead

These lessons (spanning technology, usability, ethics, regulation, and teamwork) are not just reflections on the past; they are a roadmap for future digital health innovations. While CAREPATH as a project is ending, the knowledge and relationships forged here will carry forward into new initiatives.

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# Blogs and News

## Published Blogs



### **Minds gone astray and how to bring them back**

Being diagnosed with dementia or cognitive impairment is not easy to manage, neither for the patient, nor for the caregiver or the family.

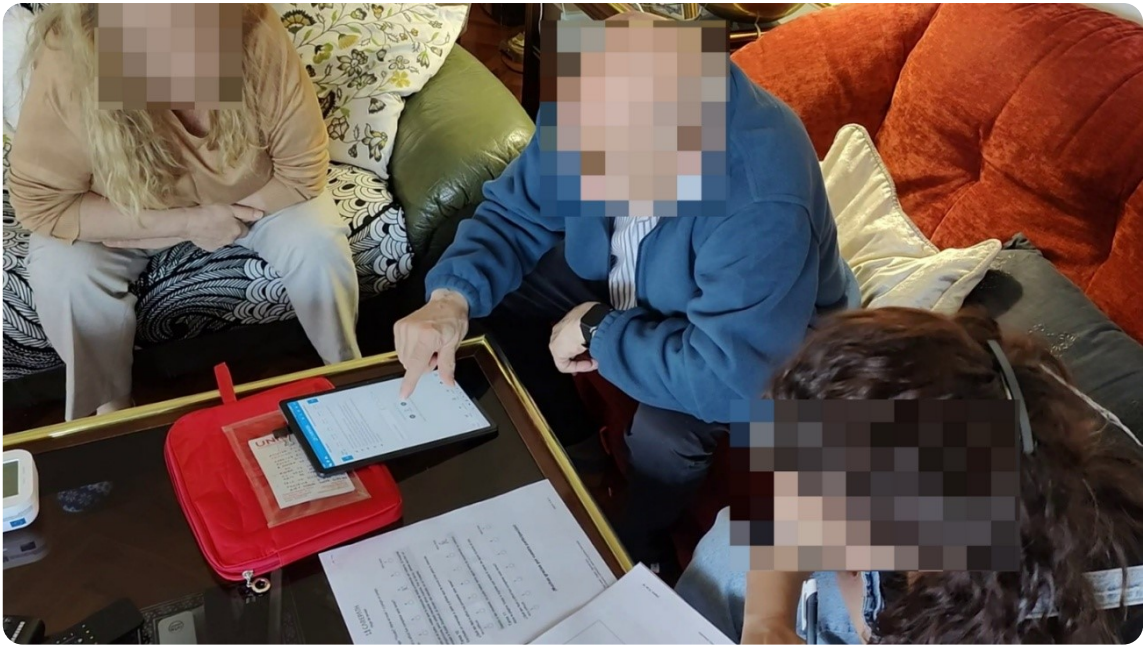
[Explore more](#)



## **Would CAREPATH-intervention be economically efficient? An approach to an Economic analysis using different simulation scenarios**

Because resources are scarce and budgets are limited, it is necessary to make decisions on how to invest these resources in the most efficient way. It is in this situation where the role played by economic evaluations represents a very important instrument to take decisions about the implementation of certain strategies/policies.

[Explore more](#)



## Evaluating Usability in Digital Health Systems for Older Adults: The CAREPATH Case Study

The integration of digital technologies in the care of older adults with Mild Cognitive Impairment (MCI) or Mild Dementia (MD) is transforming how personalised care plans are designed and implemented.

[Explore more](#)



## Event Participation

### On the Road: CAREPATH's Final Showcase

#### From Glasgow to Athens, our results turned heads and sparked conversations

In its final months, CAREPATH stepped into the spotlight at MIE 2025 in Glasgow and ICIMTH 2025 in Athens, presenting our achievements, lessons learned, and vision for the future of digital health. Packed sessions, engaged audiences, and vibrant discussions confirmed the project's impact, and built momentum for the story to continue beyond its official close.

#### 35th Medical Informatics Europe Conference, Intelligent Health Systems: From Technology to Data and Knowledge (MIE2025), Glasgow, UK, May 2025


A dedicated CAREPATH workshop featuring presentations from SESCAM, SRDC, Fraunhofer, and UoB, drawing strong interest and positive feedback from healthcare and digital health experts.



#### ICIMTH 2025 (Athens, Greece - July 2025)

Consortium members presented on the technical architecture, clinical outcomes, and user experience insights, engaging with a diverse audience of academics, clinicians, and policymakers.

A. Emre Akpınar from SRDC attended the ICIMTH 2025 Conference, and presented our paper, "User Experience and Usability Evaluation of the CAREPATH Adaptive Integrated Care Platform," co-authored with Mert Gençtürk, Omid Pournik, Theodoros Arvanitis, and Gokce Banu Laleci Erturkmen.

 [Read the paper here](#)



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## Project's meetings

## **CAREPATH Final General Assembly Meeting – Consortium-Wide Collaboration in Birmingham, June 2025**

The final CAREPATH General Assembly was held in Birmingham in June 2025, bringing together all consortium partners for two days of strategic discussion, coordination, and reflection. As the last full consortium meeting, it provided a platform to present the final outcomes of each work package, address outstanding integration tasks, and align on the remaining dissemination, exploitation, and sustainability actions. The event featured plenary presentations, breakout sessions, and interactive demonstrations of technical components. It also enabled in-person collaboration across technical, clinical, and administrative teams, reinforcing the shared vision and cross-disciplinary spirit that has shaped CAREPATH throughout its implementation. This milestone meeting marked a key moment in consolidating project results and preparing for post-project impact.



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## **Delphi Validation Workshop on CAREPATH Clinical Guidelines – Birmingham, June 2025.**

In June 2025, the CAREPATH consortium successfully organised a Delphi validation session in Birmingham as part of Task 6.4 (WP6), focusing on the review and finalisation of the consolidated clinical guidelines for multimorbid elderly patients with MCI or mild dementia. The workshop brought together a diverse panel of clinicians, including general practitioners, geriatricians, pharmacists, and specialists, from both consortium clinical partners and external expert organisations. The session enabled structured, consensus-driven feedback on the proposed guideline framework, ensuring its relevance, clarity, and applicability in real-world integrated care settings. This collaborative validation process marks a critical step toward the standardisation and adoption of CAREPATH's clinical pathways across European healthcare systems.



# CAREPATH Publications (2022-2025)

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**Over the course of the CAREPATH project, our consortium has contributed an extensive body of peer-reviewed publications, conference papers, and proceedings. These works document our journey, from initial concepts and architecture to clinical validation and usability results, and ensure our methods, findings, and lessons learned remain accessible for future research and innovation.**

## 2025

- User Experience and Usability Evaluation of the CAREPATH Adaptive Integrated Care Platform
  - AE Akpinar, M Gencturk, O Pournik, TN Arvanitis, GB Laleci Erturkmen
  - Presented and published at ICIMTH 2025, Digital Health and Informatics Innovations for Sustainable Health Care Systems.

## 2024

- The CAREPATH Study for Personalized Management of Multimorbidity in Elderly with Mild Cognitive Impairment and Mild Dementia
  - Gokce B Laleci Erturkmen, Mert Gencturk, A Emre Akpinar, O Pournik, TN Arvanitis, et al.
  - Medical Research Archives, 2024/8/29.
- Developing a Help Desk Service for Enhanced Coordination in Health Informatics Projects: A SharePoint and Power Automate Approach
  - O Pournik, B Ahmad, S Gour, A Peake, C Tong, J Churm, TN Arvanitis
  - Digital Health and Informatics Innovations for Sustainable Health Care Systems, 2024.
- Advancing Healthcare Through Interoperability: Implementing Scalable Solutions for Patient Data Integration
  - S Gour, A Peake, C Tong, J Churm, B Ahmad, O Pournik, TN Arvanitis
  - Digital Health and Informatics Innovations for Sustainable Health Care Systems, 2024.
- Accessible, Smart and Integrated Healthcare Systems for Elderly and Persons with Disabilities
  - Y Mohamad, CA Velasco
  - Springer Nature, 5 July 2024.
- Transforming Evidence-Based Clinical Guidelines into Implementable Clinical Decision Support Services: The CAREPATH Study for Multimorbidity Management
  - M Gencturk, G B Laleci Erturkmen, A E Akpinar, O Pournik, B Ahmad, TN Arvanitis, et al.
  - Frontiers in Medicine, 2024/5/27.

## 2023

- Interoperable E-Health System Using Structural and Semantic Interoperability Approaches in CAREPATH
  - O Pournik, B Ahmad, SN Lim Choi Keung, A Peake, S Rafid, C Tong, G B Laleci Erturkmen, M Gencturk, A E Akpinar, TN Arvanitis
  - In Healthcare Transformation with Informatics and Artificial Intelligence, IOS Press, 2023, pp. 608–611.

## 2022

- Key Scenarios, Use Cases & Architecture of an E-health Homecare Instance
  - Y Mohamad, H Gappa, N Heiba, M Yuksel, CA Velasco, M Gencturk, P Abizanda, G B Laleci Erturkmen, A Steinhoff, J Ayadi, TN Arvanitis, B Ahmad, O Pournik, I Kyrou, G Despotou, T Robbins, SN Lim Choi Keung, K Le, W Schmidt-Barzynski
  - In Proceedings of the 10th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion, 2022, pp. 25–30.
- Protocol for Creating a Single, Holistic and Digitally Implementable Consensus Clinical Guideline for Multiple Multi-Morbid Conditions
  - T D Robbins, D Muthalagappan, B O'Connell, J Bhullar, L-J Hunt, I Kyrou, TN Arvanitis, SN Lim Choi Keung, H Muir, O Pournik, A Steinhoff, W Schmidt-Barzynski, O Cramariuc, C Ciobanu, G B Laleci Erturkmen, M Gencturk, M Yuksel, E Gómez Jiménez, A Ayendaño

- Erturkmen, M Gencturk, M Yuksel, E Gómez-Jiménez, A Avendaño Céspedes, E B Cortés Zamora, R A Córcoles, P Abizanda, Y Mohamad, J Ayadi, H Randeva
- In Proceedings of the 10th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion, 2022, pp. 1–6.
- The Design of a Mobile Platform Providing Personalized Assistance to Older Multimorbid Patients with Mild Dementia or Mild Cognitive Impairment (MCI)
  - M Gencturk, G B Laleci Erturkmen, H Gappa, W Schmidt-Barzynski, A Steinhoff, P Abizanda, T Robbins, O Pournik, B Ahmad, H Randeva, O Cramariuc, TN Arvanitis, J Ayadi, Y Mohamad, M Yuksel
  - In Proceedings of the 10th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion, 2022, pp. 37–43.
- CAREPATH Methodology for Development of Computer Interpretable, Integrated Clinical Guidelines
  - O Pournik, B Ahmad, G Despotou, SN Lim Choi Keung, Y Mohamad, H Gappa, G B Laleci Erturkmen, M Yuksel, M Gencturk, W Schmidt-Barzynski, A Steinhoff, T Robbins, I Kyrou, H Randeva, J Ayadi, TN Arvanitis, R A Córcoles, P Abizanda, K Le, E Gómez Jiménez, A Avendaño Céspedes, E Kaba, H Muir
  - In Proceedings of the 10th International Conference on Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion, 2022, pp. 7–11.
- CAREPATH: Developing Digital Integrated Care Solutions for Multimorbid Patients with Dementia
  - O Pournik, B Ahmad, SN Lim Choi Keung, O Khan, G Despotou, A Consoli, J Ayadi, L Gilardi, G B Laleci Erturkmen, M Yuksel, M Gencturk, H Gappa, M Breidenbach, Y Mohamad, CA Velasco, O Cramariuc, C Ciobanu, E Gómez Jiménez, A Avendaño Céspedes, E B Cortés Zamora, R A Córcoles, A Steinhoff, W Schmidt-Barzynski, T Robbins, I Kyrou, H Randeva, L Ferrazzini, TN Arvanitis
  - Advances in Informatics, Management and Technology in Healthcare, IOS Press, 2022, Vol. 295, pp. 487–490.
- Making Person-Centred Health Care Beneficial for People with Mild Cognitive Impairment (MCI) or Mild Dementia – Results of Interviews with Patients and Their Informal Caregivers
  - H Gappa, Y Mohamad, M Breidenbach, P Abizanda, W Schmidt-Barzynski, A Steinhoff, T Robbins, H Randeva, I Kyrou, O Cramariuc, C Ciobanu, TN Arvanitis, SN Lim Choi Keung, G B Laleci Erturkmen, M Gencturk, M Yuksel, J Ayadi, L Gilardi, A Consoli, L Ferrazzini, CA Velasco
  - In ICCHP-AAATE 2022, LNCS 13341, Springer, Cham, pp. 468–474.

## Looking Ahead

While this marks the final list of publications produced during the CAREPATH project, our work doesn't stop here. Several additional manuscripts are already in preparation or under review, ensuring that the insights, evidence, and innovations from CAREPATH will continue to reach the scientific, clinical, and technical communities well beyond the project's official end.

Although this is the final edition of the CAREPATH newsletter, our journey does not end here. Stay connected with us as we continue this story.




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