CAREPATH

Newsletter

Welcome to the latest edition of the CAREPATH Newsletter!

Over the past few months, our team has been hard at work conducting lab tests on the CAREPATH Platform components as we prepare for the upcoming Technical and Validation Study. We've also been updating the clinical investigation protocol and securing ethics approvals across all pilot sites. In this issue, we're excited to share key updates on our current progress and what's planned for the next phase of the project.

Blogs and News

Project Highlights

**Milestone Achieved: Successful Lab Testing Paves the Way for the TVU Phase**

The fully integrated CAREPATH platform has successfully completed the critical laboratory testing phase, ensuring its performance will be reliable, secure, and user-friendly for the target users. This milestone, achieved after extensive discussions among all partners, involved the development of a detailed protocol to simulate platform usage by clinicians and patients in a controlled environment. An excerpt from this comprehensive protocol is presented below.

- Create 1 patient, 1 caregiver and 1 clinician. Send batch messages to patient and clinician (separately and together). Check AICP and PEP as detailed in ANNEX 01
- Import CSV into AICP
  - Check whether CSV on AICP has been imported correctly (see ANNEX 02)
- Create a care plan (see ANNEX 02) and
  - The care plan should include daily tasks for:
    - every health measurement type and medication intake (usual medication prescription options, e.g., daily, every other day, etc.)
    - physical exercise
    - nutrition
  - Check all steps on AICP as detailed in ANNEX 02 and ANNEX 06
- Follow the care plan on PEP
  - Respond to medication intake with YES, YES BUT DIFFERENTLY and NO
  - Respond to diet by: confirm that you met the diet goals, that you have not met the diet goals, document that you drank water

The protocol lasts 14 days and involves 2-3 employees from the clinical partners who play the role of patients and informal caregivers and 1-2 clinicians who follow the "patients" as foreseen for the actual clinical studies. The recommendation for all evaluators involved in the laboratory testing was to fully immerse themselves in the role of the intended end users. For instance, PEP is to be used by multimorbid older patients with dementia, ICAP by their informal caregivers, and AICP by different groups of health professionals such as nurses, therapists, and physicians. In addition to following the protocol, evaluators were also instructed to extensively test the various functionalities of the platform, even in unforeseen ways, to anticipate the potentially random approach of a curious but not necessarily digitally skilled user.

The laboratory testing conducted between November 2023 and July 2024 in Romania, Germany, Spain, and the UK was a collaborative effort between the clinical partners of the CAREPATH consortium and all the technical teams. The beginning of the testing was challenging, with multiple issues surfacing. However, the collective commitment of all participants to improve the platform's reliability was demonstrated as 300 issues were reported and promptly addressed. Issues included communication between the hardware components and several modules of the platform, data transfer and data visualization, system crashes, non-intuitive features, etc. The platform improved gradually in robustness throughout the laboratory testing. The best performance was recorded in the UK, which completed the testing after several issues were resolved.

CAREPATH proved its potential in offering day-to-day support to patients regarding their daily tasks, medication, diet, and physical exercises while providing physicians with a tool to adapt their clinical interventions. To fully reach this potential, laboratory testing revealed that initial training is needed for all intended users to use the vast range of functionalities offered through CAREPATH efficiently.

Published Blogs
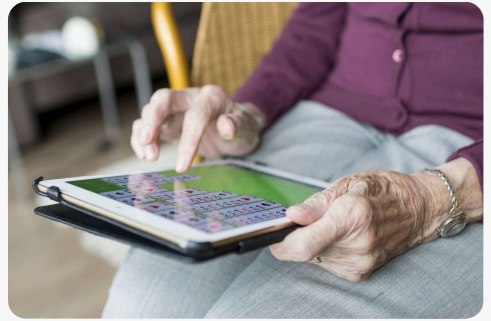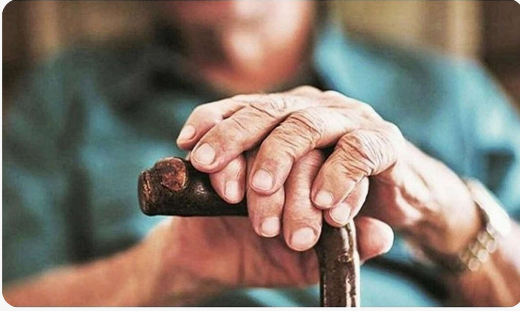
The need for new guidelines in multimorbid older adults

As the global population ages, it is estimated that by 2030, 1 in 6 people will be over 60, with the number of those aged 80 and older tripling by 2050. This demographic shift is occurring worldwide creating new challenges for healthcare systems. With over 50% of those aged 60-69 and 70% of those over 70 living with multimorbidity, healthcare systems must adapt to meet these growing needs.

Read the full article.

Economic evaluation of technology-based interventions for people with dementia care support and their caregivers

Start and end in Buenos Aires! With the Hiking & Trekking tour Hike Patagonia In Depth, you have a 14 days tour package taking you through Buenos Aires, Argentina and 4 other destinations in Latin America.

Read the full article.

The relevance of digital accessibility for seniors

Despite the recognized acceptance barrier when considering technology usage among those who have reached 65 and above, European statistics are starting to present encouraging figures. According to Eurostat, in 2017, almost half (48%) of the EU population aged 65-74 years did not use the internet during the three months preceding the Community survey on ICT usage. In contrast, the 2020 Eurostat reported improved internet usage with only two fifths (39%) of the EU population aged 65-74 years not using the internet during the three months preceding the survey. The difference of 9% in the span of 3 years needs to be acknowledged, as does the beginning of the global Covid-19 pandemic which is believed to have contributed to the difference. The lack of social interaction among seniors managed to determine this part of the population to use the internet and, thus, digital devices, to a greater extent than before. The digital divide between this part of the population and the youth is decreasing which represents a great improvement, as a higher level of digital acceptance leads to seniors recognizing the positive impact technology could have on their lives.

Read more in the full article.

The CAREPATH Approach for Enhancing Medication Management for Older Adults with Cognitive Impairment: Innovations and Challenges
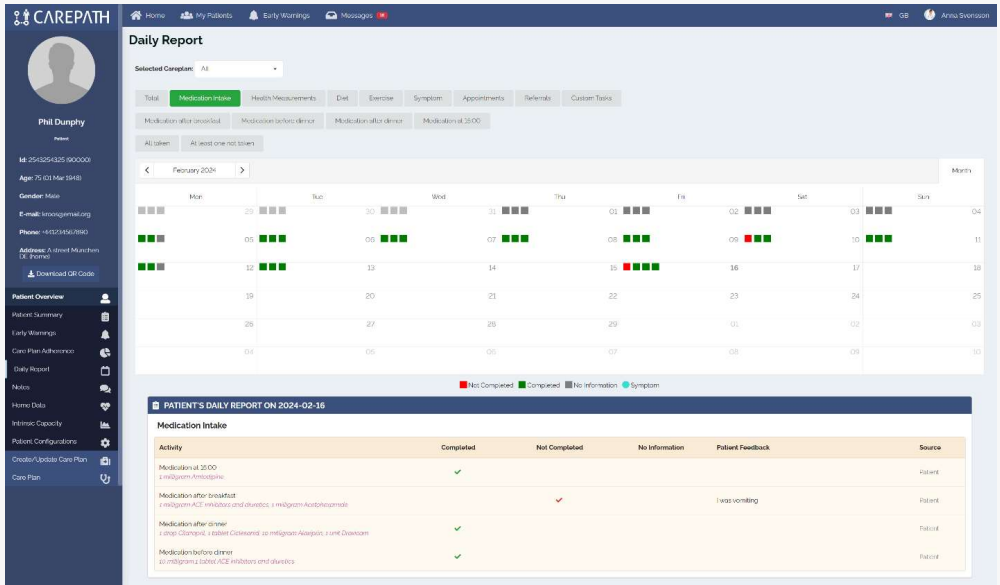
Managing medications is quite challenging for older adults who have mild dementia or cognitive impairment. Memory lapses and cognitive decline make it difficult for them to keep track of their medication schedules, and that can lead to missed doses or accidental overdoses. The complexity of multiple medications further complicates the situation, overwhelming individuals with cognitive impairments. Moreover, physical limitations and difficulties in reading prescription labels exacerbate the problem. It is crucial to find effective strategies to simplify medication regimens and address these challenges collaboratively among healthcare providers, caregivers, and patients themselves.

Read more in the full article.

Safeguarding eHealth: Cybersecurity in IoT

In recent years, the integration of Internet of Things (IoT) devices in the eHealth sector has revolutionized healthcare delivery. These interconnected devices, ranging from wearable fitness trackers to implantable medical devices, have enhanced patient care, diagnosis, and treatment. However, with the benefits of IoT come significant cybersecurity challenges that must be addressed to ensure the privacy and safety of patient data and the reliability of healthcare services.

Besides, most IoT manufacturers don't give enough importance to security aspects of their products. This situation makes causes additional work and costs to developers and implementers who rely on these products.

Explore more

Exploring the Top Smart Bracelets with Open Data Access

In a world where health and wellness take center stage, smart bracelets have become essential tools for tracking our well-being with remarkable accuracy. But not all smart bracelets offer the same level of access to the valuable data they collect. In this post, we'll dive into some of the best smart bracelets that provide open data access via APIs or SDKs, allowing users greater control over their health information for personalized insights and innovations.

Read the full article.
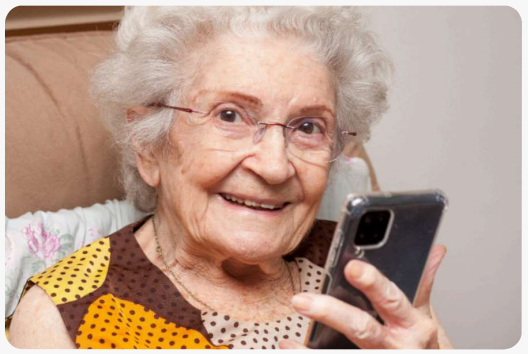
Usability of eHealth Apps for Elderly and Persons with Disabilities

As the number of elderly and disabled individuals grows, so does the need for accessible and integrated healthcare that supports them, regardless of their living situation or abilities. Advances in healthcare and information technology are enabling new, tailored services through innovations like health analytics, IoT solutions, machine learning, and high-performance computing. are transforming the way for smarter, more personalized care.

Read the full article.

Digitalization in the healthcare sector in Germany: current status

The Digital Act (DigiG), which came into force on March 26, 2024, brings with it fundamental innovations in the provision of digital solutions, such as the introduction of the electronic patient file (ePA) and the e-prescription as well as telemedical services.

A central concern of the DigiG is also to promote the further development of care with digital health applications (DiGA) on a health insurance certificate, i.e. the costs are covered by the health insurance company. DiGAs are to be better integrated into care processes and also enable more complex treatment processes.

Read the full article.

Enhancing Elderly Care with Home Automation and Environmental Sensors

Caring for elderly individuals with mild cognitive dementia (MCD) and multiple conditions presents unique challenges, especially for those who wish to live independently at home. The CAREPATH project is leveraging advancements in home automation and environmental sensors to address these needs. By integrating these technologies, the project aims to enhance safety, security, and overall well-being for MCD patients in their own homes. In this blog, we dive into how these innovations can support elderly care and promote independent living.

Read the full article.
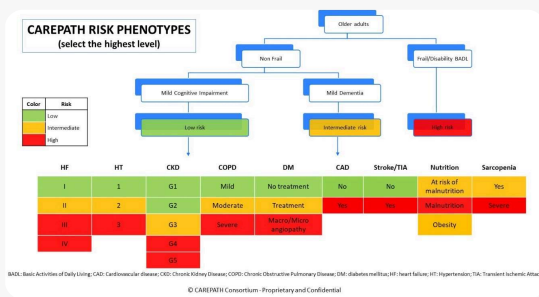
Integration of Risk Stratification Models in CAREPATH

The risk of adverse events in older adults, such as mortality, disability, hospitalizations, and increased healthcare costs, is influenced by age-related conditions like frailty, chronic diseases, and cognitive status. However, the exact impact of different multimorbidity patterns on these risks is not fully understood. Recent research suggests that analyzing multimorbidity patterns alongside frailty, disability, and cognitive status could provide better insights into predicting poor outcomes in vulnerable populations. In this edition of the CAREPATH Newsletter, we explore how these factors interact and how they can enhance our understanding of healthcare risks in older adults.

Read the full article.

Elderly Care in Europe: Conditions and Costs

As Europe braces for a demographic shift, projections indicate that by 2050, the largest segment of the population will be aged between 60 and 64. This shift poses significant challenges for the elderly care system, particularly as early estimates suggest a shortfall of 320,000 nursing home beds in Germany and 250,000 in Belgium by 2030.

Care conditions in nursing homes vary by country. In the UK, for example, nursing homes not only provide accommodation but also personal care and support, with qualified nurses on duty to address complex medical needs.

Read the full article.
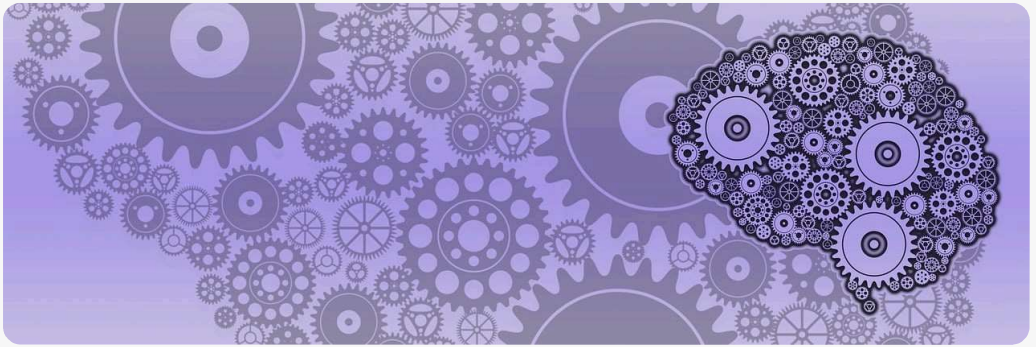
The role of Library & Knowledge Services in Modern Healthcare Research

Delivering an innovative digital health solution requires more than just cutting-edge technology; it must be grounded in strong evidence and reliable processes. The CAREPATH project, focused on developing clinical guidelines for elderly patients with dementia and co-morbidities, emphasizes the importance of this foundation. As part of the effort to ensure the project's success, healthcare professionals, including clinical librarians, play a crucial role in providing accurate, timely evidence that shapes replicable guidelines for future use.

Explore more

Navigating the Complex Terrain of Drug-Drug Interactions: Leveraging ICT and CDS for Safer Prescribing

In the complex world of healthcare, patients often have different health issues and take several medications at once. This can increase the risk of drug-drug interactions (DDIs), where one medicine affects how another one works. These interactions can cause anything from minor problems to serious health issues. Healthcare providers work hard to keep patients safe by learning about and preventing these interactions.

Explore more

Interoperable E-Health System Using Structural and Semantic Interoperability Approaches in CAREPATH.

Dr Omid Pournik from the University of Birmingham - School of engineering presented parts of our findings in the CAREPATH PROJECT on "Interoperable E-Health Systems Using Structural and Semantic Interoperability Approaches in CAREPATH." at the International Conference on Informatics, Management, and Technology in Healthcare (ICIMTH) 2023.

If you're interested in learning more, you can find the full paper here.

Implementation of HL7 FHIR-Based Interoperability Profiles to Manage Care Plans for Multimorbid Patients with Mild Dementia, presented in MIE 2023

Gothenburg, Sweden. 22-25 May 2023

Medical Informatics Europe 2023.

Mert Genkturk, SRDC, presented the paper "Implementation of HL7 FHIR-Based Interoperability Profiles to Manage Care Plans for Multimorbid Patients with Mild Dementia".

The conference theme 2023 was "Caring is Sharing", and this was closely connected to the rapid development of health data sharing taking place both in Europe and globally. It focused on the opportunities of health informatics and the research within the EFMI community to enable trustworthy sharing of health data to improve human health.

Upcoming Events

International Conference on Informatics, Management, and Technology in Heealthcare. ICIMTH 2024. 13-15 December 2024

EFMI Special Topic Conference 2024, Timișoara, Romania
27-29 November 2024

[EFMI-STC 2024](#)

DSAI'24

Software Development and Technologies for Enhancing Accessibility and Fighting Info-exclusion

Past Events

<u>MIE 2024</u>

34th Medical Informatics Europe Conference

Digital Health & Informatics Innovations for Sustainable Health Care Systems

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We will be back in the Autumn with more news from the CAREPATH project!

Email us: carepath.newsletter@eclexys.com

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