D1.1 – COMMUNICATION AND DISSEMINATION PLAN

Project Full Title: *AcceleRating the Translation of virtual twins towards a pErsonalised Management of steatotic liver patients*
Project acronym: *ARTEMIs*
Project type: Horizon Europe | RIA (Topic HORIZON-HLTH-2023-TOOL-05-03)
Grant agreement no: 101136299

Document information:

Deliverable no.	**D.1.1**
Title	Communication and Dissemination Plan
Work Package	WP 1
Dissemination level	Public
Nature	Report
Responsible partner	ELPA
Main Contact person	Marko Korenjak
Deliverable due submission date	30.6.2024
Deliverable actual submission date	**28.6.2024**

Document validation:

Validated by	Name	Organisation short name	Visa
Responsible	Marko Korenjak	ELPA	OK
Reviewer 1	Amelia Suarez	MATICAL	OK
Reviewer 2	Nicolas Lanthier	CUSL	OK

Disclaimer

History of changes:

Change explanation	Pages affected	Change made by (Name & surname)	Date

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INTRODUCTION

The Communication and Dissemination plan will give a summary on the different communication and dissemination activities that will be organised to maximise the impact of the project and make sure the findings and the developed tools reach a diverse audience. The plan also identifies the main target groups, the most effective channels for each one of them, as well as the different strategies that will be in place to keep them engagement throughout the entirety of the ARTEMIs project to ensure maximum relevancy for the patients, the general public and healthcare providers.

The main goal of the ARTEMIs project is to co-design, develop, and evaluate a clinical decision support system (CDSS) for managing MASLD (Metabolic dysfunction-Associated Steatotic Liver Disease) patients. This involves collaboration between technologists, clinicians, and patients. The CDSS will:

-Provide an instant overview of a patient's multimodal data.
-Use integrated virtual twin models to predict disease progression, cardiovascular outcomes, and responses to treatments or lifestyle changes.
-Enable personalized management of MASLD through dynamic representations of tissues or organs.
-Serve as an educational tool for both physicians and patients to promote better nutrition, lifestyle habits, and treatment adherence.

The development of the CDSS is driven by the needs of clinical practitioners and involves a multidisciplinary team, including model developers, clinical researchers, and social science and humanities (SSH) experts. This team will ensure that the CDSS meets clinical needs, is compatible with healthcare IT systems, and uses both existing and newly collected data.

By the end of the decade, it is expected that this integrated solution will be in routine clinical practice, supported by funding from the Next Generation Europe and Digital Europe Programme.

A federated data exploration platform will be used to access multicentric, multimodal, longitudinal data. This platform will help adapt machine-learning and mechanistic models to address critical clinical questions about MASLD progression and its cardiovascular risks. Multidisciplinary clinical panels will assess the utility and relevance of the CDSS prototype.

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1. METHOD

Dissemination and communication (D&C) activities, alongside patient engagement efforts, are crucial for driving impact within the project both during the period funded by the European Commission and beyond. The primary objectives of these activities are to share knowledge, raise awareness of the project's results, and encourage their adoption. Achieving these goals hinges on effectively reaching relevant stakeholders across Europe with the appropriate messages, thereby ensuring the project's success.

To accomplish this, a well-defined communication and dissemination methodology is essential. The guiding principles for these efforts include: maintaining an ambitious and unified vision, ensuring value is delivered efficiently and effectively, and fostering strong and cohesive teamwork. This approach involves ensuring continuity through specific activities undertaken by partners and providing a cohesive action plan. This plan will employ a variety of powerful tools to stimulate impact and engagement.

1.1. Main objectives of the Communication and Dissemination plan

The main objectives of the communication are:

- To convey the project's objectives in an accessible manner to stakeholders, ensuring the project achieves maximum visibility.
- To empower patients with dedicated and relevant lifestyle advice and information, fostering a self-reliant community where patients can connect and support each other.
- To raise awareness and interest among primary healthcare providers about the newly developed technologies and tests, as well as the increasing number of (undiagnosed) MASLD patients.

The main objectives of the dissemination are:

- To share, exchange, and align the knowledge developed within the initiative with stakeholders and end-users.
- To transfer knowledge and results to those who can best utilize them.
- To maximize the impact of research by increasing awareness of the potential benefits of early detection, prevention, and treatment of MASLD.
- To stimulate the uptake of the project results by the relevant stakeholders.

1.2. An interdisciplinary approach

ARTEMIs follows an interdisciplinary approach, incorporating expertise from multiple fields to tackle a range of complex challenges. These include collecting and processing multicenter multimodal health data, developing, evaluating, and refining models to simulate the pathophysiological mechanisms of MASLD progression, and conducting proof-of-concept evaluations in clinical settings. The consortium's interdisciplinarity is crucial for the co-design process of the CDSS, taking into account the needs and requirements of clinicians, patients, technologists, ethics, and regulatory experts.

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The diverse expertise of our team members enables us to address challenges that have hindered the clinical uptake of virtual twins. By focusing the consortium's efforts on specific use cases and clinical questions of high relevance and potential impact, we aim to make significant strides in the field. Additionally, 7 of our 13 clinical partners have a longstanding history of collaboration with computational experts or possess internal capabilities in AI and data science, setting a solid foundation for productive multidisciplinary work.

In summary, the consortium brings together various disciplines:

- *Virtual Twin Models development:* collaborating with world-leading groups in the field of liver diseases.
- *Clinical knowledge:* engaging 13 leading university hospitals and medical research centers across 8 countries, including hepatologists, cardiologists, radiologists, and surgeons experienced in managing MASLD patients and conducting research projects.
- *Health data processing:* expertise in legal aspects from the Coordinator and clinical partners participating in major European health data sharing initiatives within federated environments for AI model training.
- *Software tool development:* Designing, developing, certifying, and deploying software tools for healthcare management.
- *Social sciences and humanities (SSH):* Assessing the societal impact of research activities, with active involvement from patients, psychologists, and education experts from ELP
- *Socio-economic analysis:* Conducted by health technology assessment experts to evaluate the socio-economic implications.
- *Intellectual property and innovation:* Assessing the potential for commercial exploitation of key results.

This comprehensive, interdisciplinary collaboration ensures that the ARTEMIs project can effectively address the multifaceted challenges associated with MASLD, promoting innovative solutions and facilitating clinical uptake.

1.3. Identification of target groups

Below are detailed all the external stakeholders that are relevant the project, for whom a communication and dissemination strategy has been defined.

Target Group 1: **Clinical Researchers and Physicians in MASLD**
Key Interests: Peer-reviewed publications in high-impact medical journals.
Channels:
-Publications in journals such as Journal of Hepatology, The Lancet Gastroenterology and Hepatology, Hepatology, and other open-access medical journals.
-Presentations at scientific conferences like the EASL Congress, European Society for Medical Oncology, and annual meetings of medical societies (EASL, ESC, ESR, ESMO, AFEF).
-Contribution of datasets and models to EDITH's federated pan-European infrastructure.
-Participation in training secondments and Joint Doctorates to foster transnational research cooperation.

Target Group 2: **Academic and industrial researchers in virtual physiological human**
Key Interests: Peer-reviewed publications in computational research journals.
Channels:
-Publications in journals such as Bioinformatics and other high-impact open-access computational

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research journals.
-Presentations at the VPH conference and other relevant scientific conferences.
-Integration with the federated pan-European infrastructure planned in EDITH.
-Engaging in training secondments and Joint Doctorates.

Target Group 3: **Patients along the MASLD spectrum**
Key Interests: Understanding the direct impact of ARTEMIs on health outcomes.
Channels:
-Interviews and updates on the Project website and social media managed by ELPA.
-Referrals on ELPA's and clinical partners' websites.
-Informative videos featuring Principal Investigators (PIs) discussing the clinical impact of ARTEMIs.

Target Group 4: **International medical societies, research networks, and flagship projects**
Key Interests: Collaborative research and network strengthening.
Channels:
-Active participation by ARTEMIs PIs in prominent initiatives like the Virtual Physiological Human Institute, EDITH, LITMUS, BAVENO, and ESR.
-Leveraging existing networks to disseminate project outcomes and foster collaboration.

Target Group 5: **Healthcare services, HTAs, and regulatory bodies**
Key Interests: Cost-effectiveness and health economics of ARTEMIs adoption.
Channels:
-Reports on cost-effectiveness and health economics aspects by BETT.
-Meetings with management boards of participant clinical centers.
-Communication through networks like EUnetHTA to national HTAs and public health bodies.
-Early dialogues with regulatory authorities like ANSM for post-project planning.

Target Group 6: **High-Tech Industry (IT/Biotech/Pharma)**
Key Interests: Business development and industrial collaboration.
Channels:
-Business development actions led by BC PLATFORMS, engaging existing and potential clients.

-Networking within the European med tech sector.

Target Group 7: **Policy makers, including funding bodies**
Key Interests: Public health initiatives and funding opportunities.
Channels:
-Networking within the EC portfolio with other funded projects in the Virtual Twins call.
-Collaboration with linked projects like EDITH, LITMUS, and LiverScreen.
-Engagement in public health initiatives related to MASLD prevention and management.

Target Group 8: **Students and young researchers**
Key Interests: Educational opportunities and career inspiration.
Channels:
-Dissemination events in high schools to attract female talent into engineering and medicine.
-Participation in INRIA training programs on computational simulations for medical students, incorporating ARTEMIs developments.

Target Group 9: General public
Key Interests: General awareness and understanding of ARTEMIs' impact.

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Channels:
-Project website and social media content in easily understandable language.
-Informative videos and infographics.
-Laymen events organized by ELPA to communicate project achievements to the wider society.

By tailoring dissemination strategies to each target group, ARTEMIs can effectively communicate its research findings, foster collaborations, and ensure the project's impact reaches a wide and relevant audience.

1.4. Communication and Dissemination strategy

1.4.1 Communication and dissemination channels

The table below illustrates the different communication and dissemination channels that will be used to communicate to each target audience.

Measure	Objective/Target audience	Content	KPI
Open-access publications. Presentations in international conferences.	**Objective:** Inform on results, motivate scientific collaborations, motivate further validation and research. **Target Audience:** TG1, 2, 4, 6	Scientific results in high impact journals and in international conferences. Project position paper in Horizon ORE platform.	28 papers; 24 contributions to conference; 4 theses; data infrastructure with >10 nodes.
Open-source code repository	**Objective:** Share achievements, accelerate scientific advancement, promote synergies. **Target Audience:** TG1, 2, 4, 6	SW code, architecture and methodologies, documented and updated, shared under public licenses.	ARTEMIs Github, with most analytics tools and models contributed as open source.
Informative pills (interviews, audio-visual content, infographics) + laymen events	**Objective:** Inform patients and society at large, of progress. Inform on co-design approaches for system design and assessment. **Target Audience:** TG3, 9	Interviews of Coordinator and PIs. Summary of project achievements and their expected mid- and long-term impacts.	2 laymen events. 6 interview videos with PIs. Monthly updates of website.
Project website, and Social Media official account (Twitter and Linkedin)	**Objective:** Raise awareness about the project, its aims and the value of collaborative European research. **Target Audience:** All	Monthly posts in social media and web, with updates on publications, events, interviews, open science contributions, project portfolio.	Web with above 100 tracked visits per week. Twitter & Linkedin >500 followers.
Press releases to regional and national media. End of project	**Objective:** Explain social and economic outcomes, new	Press releases in English and consortium national	3 press releases (several languages). 20 media.

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policy event in Brussels	enabled interventions and cost analysis results to healthcare policy makers and hospital managers. **Target Audience:** TG3, 5, 6, 7, 8,9	languages, informing on project aims, in year 1, and on achievements, in year 4.	1 event in Brussels. 7 1-to-1 meetings with hospital managers.
Press releases to regional and national media. End of project policy event in Brussels	**Objective:** Explain social and economic outcomes, new enabled interventions and cost analysis results to healthcare policy makers and hospital managers. **Target Audience:** TG3, 5, 6, 7, 8,9	Press releases in English and consortium national languages, informing on project aims, in year 1, and on achievements, in year 4.	3 press releases (several languages). 20 media. 1 event in Brussels. 7 1-to-1 meetings with hospital managers.
Technical Workshops	**Objective:** Share results and generate collaborations **Target Audience:** TG1, 2, 6	Workshops on ARTEMIs virtual twin for the MASLD and the VPH community	2 workshops in year 3 and 4. 50 attendees.
Training sessions / /Training programes	**Objective:** to train clinicians in the use of the CDSS **Target Audience:** TG1, 5 / TG8	Remote sessions with participants in the POC study / engineering.-medicine training programmes	10 sessions, > 30 trainees > 5 students trained

1.4.2 Communication and dissemination: social media channels

In the table below are detailed the social media channels that our partners owns and where the information for the ARTEMIs project will be broadcast.

Partner	YouTube	Linkedin	X	Instagram	Facebook
BC Platforms		BC Platforms : Présentation | LinkedIn	https://twitter.com/BCPlatforms		BC Platforms | Zürich | Facebook
Institute of Cardiometabolism and nutrition	ICAN - Institute of Cardiometabolism And Nutrition - YouTube	IHU ICAN | LinkedIn	ICAN		
AP-HP	AP-HP, Assistance Publique - Hôpitaux de Paris - YouTube	AP-HP, Assistance Publique - Hôpitaux de Paris :	AP-HP (@APHP) / X	AP-HP (@hopitauxdeparis)	AP-HP | Paris | Facebook
Jena University Hospital	Universitätsklinikum Jena - YouTube				Universitätsklinikum Jena | Jena | Facebook

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Vall d'Hebron research institute	Fem Vall d'Hebron amb tu - Vall d'Hebron Barcelona Hospital Campus (youtube.com)	Vall d'Hebron Institute of Research (VHIR) - Vall d'Hebron Institut de Recerca : Présentation | LinkedIn	Vall d'Hebron Institut de Recerca (@VHIR_) / X	Vall d'Hebron (@vallhebroncampus)	Vall d'Hebron Research Institute (VHIR) | Barcelona | Facebook
Heidelberg University Hospital	Neonatologie am Universitätsklinikum Heidelberg (youtube.com)	Universitätsklinikum Heidelberg (UKHD) : Présentation | LinkedIn	https://twitter.com/uniklinik_hd	Uniklinik Heidelberg (@ukhd_heartbeat)	Universitätsklinikum Heidelberg | Heidelberg | Facebook
Cliniques universitaires Saint-Luc	Cliniques universitaires Saint-Luc (youtube.com)	Cliniques universitaires Saint-Luc : Présentation | LinkedIn	http://twitter.com/ClinUnivStLuc	Cliniques univ. Saint-Luc (@cliniques_saint_luc)	Cliniques universitaires Saint-Luc | Facebook
La Fe Health Research Institute	Instituto de Investigación Sanitaria La Fe de Valencia - YouTube	La Fe Health Research Institute | IIS La Fe : Présentation | LinkedIn	https://www.twitter.com/IISLaFe	IIS La Fe (@iislafe)	Instituto de Investigación Sanitaria La Fe | Facebook
Sheba Hospital					Global Patient Services at Sheba Medical Center-Tel Hashomer | Ramat Gan | Facebook
Charité	ADHS bei Erwachsenen einfach erklärt – Mit PD Dr. Julian Hellmann-Regen im Charité-Hörsaal (youtube.com)	Charité - Universitätsmedizin Berlin : Présentation | LinkedIn	Charité - Universitätsmedizin Berlin (@ChariteBerlin) / X	Charité Berlin (@chariteberlin)	Charité - Universitätsmedizin Berlin | Berlin | Facebook
Sapienza University of Rome	#IoScelgoSapienza perché… (youtube.com)			Sapienza Università di Roma (@sapienzaroma)	Sapienza Università di Roma | Rome | Facebook
Imperial College London	Imperial College London - Science for Humanity (youtube.com)	Imperial College London : Présentation | LinkedIn	Imperial College London (@imperialcollege) / X	Imperial College London (@imperialcollege)	Imperial College London | Facebook
Medical University of Vienna	Willkommen in der Zukunft der Medizin | Die MedUni Wien stellt sich vor (youtube.com)	Medizinische Universität Wien : Présentation | LinkedIn	MedUni Wien (@MedUni_Wien) / X	Medizinische Universität Wien (@meduniwien)	Medizinische Universität Wien | Wien | Facebook
Bournemouth University	Bournemouth University - To learn is to change (youtube.com)	Bournemouth University : Présentation | LinkedIn	Bournemouth Uni (@bournemouthuni) / X	Bournemouth University (@bournemouthuni)	Bournemouth University | Facebook
National Institute for Research in Digital Science and Technology	Inria - YouTube	Inria : Présentation | LinkedIn	Inria (@Inria) / X	Inria (@inria_officiel)	

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The German Cancer Research Center	DKFZ - Der Film (youtube.com)		DKFZ (@DKFZ) / X	DKFZ (@dkfzheidelberg)	Deutsches Krebsforschungszentrum (DKFZ) | Facebook
Freiburg University	Das Leitbild der Universität Freiburg (youtube.com)	Albert-Ludwigs-Universität Freiburg : Présentation | LinkedIn	https://twitter.com/UniFreiburg	Universität Freiburg (@unifreiburg)	Albert-Ludwigs-Universität Freiburg | Freiburg im Breisgau | Facebook
Leipzig University	Meine Uni Leipzig (youtube.com)	Universität Leipzig : Présentation | LinkedIn	UNIVERSITÄT LEIPZIG (@UniLeipzig) / X	Universität Leipzig (@unileipzig)	UNIVERSITÄT LEIPZIG | Leipzig | Facebook
Matical Innovation		MATICAL INNOVATION : Présentation | LinkedIn	https://twitter.com/matical2014		
European Liver Patients' Association		European Liver Patients' Association - ELPA : Présentation | LinkedIn	European Liver Patients' Association (@EuropeLiver) / X		European Liver Patients' Association | Brussels | Facebook
Betthera		Betthera : Présentation | LinkedIn	https://twitter.com/betthera		

2. PATIENT ENGAGEMENT

The success of the ARTEMIs project hinges on a strong commitment to patient engagement throughout its entire lifecycle. By prioritizing the active involvement of patients, healthcare providers, researchers, and other key stakeholders, the project can effectively address the needs of individuals suffering from metabolic dysfunction-associated steatotic liver disease (MASLD) and improve overall health outcomes.

Patient engagement activities employ various strategies to foster comprehensive collaboration between the project team and patients. These strategies include stakeholder analysis to identify and understand the needs and perspectives of all parties involved, as well as targeted activities such as kick-off meetings and patient experience mapping.

These efforts establish a foundation for open communication and collaboration, enabling patients to be actively involved in shared decision-making and crucial aspects of the research. This approach creates an inclusive and empowering environment where patients play an integral role in shaping the project's direction, ensuring that research outcomes, decision-support tools, and training activities align with their needs.

Moreover, patient engagement activities focus on identifying key interaction points between patients and the care process, providing deeper insights into patients' experiences and emotional journeys. This knowledge guides the development of customized, patient-centered solutions that enhance the patient experience and contribute to the overall success of the ARTEMIs project.

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2.1 Patient engagement activites: strategy for comprehensive involvement

Key activities in this task include:

-Engaging patients in shared decision-making to ensure their perspectives and preferences are considered in their care plans.
-Organising online interactive question-and-answer sessions, webinars, and workshops to educate and engage patients, providing them with valuable information and direct access to experts.
-Supporting patients at the primary care level to ensure they receive consistent, personalized care and guidance throughout their healthcare journey.

Through these initiatives, we aim to enhance patient involvement, bolster the credibility of the ARTEMIs CDSS, and ensure that patient perspectives are prioritized. By focusing on patient engagement and participation, we can better meet the needs of our target audiences and improve health outcomes for individuals affected by MASLD.

2.1.1 Patient engagement: key elements

The co-creation of the patient engagement, dissemination, and communication plan for the ARTEMIs CDSS project aims to build an environment of trust and credibility among patients and healthcare professionals. This is achieved by providing transparent, reliable information that establishes a reputable platform through consistent, evidence-based communication.

The key elements of the plan are the following:
-*Active patient engagement:* by actively involving patients throughout the research and implementation processes, ensuring their voices and experiences shape the project's direction, we create an open and inclusive dialogue that empowers patients, making them feel involved and informed about their condition, treatment options, and participation in the research.
-*Maximizing impact and outreach* through the development of strategies to extend the project's findings, tools, and activities within the Consortium Partners' institutions and among key target groups. Targeted dissemination efforts aim to reach a broader audience, including patients, healthcare professionals, and the general public, ensuring information is clear, accessible, and effectively communicated.
-*Effective communication and stakeholder engagemen*t to facilitate effective communication by hosting interactive events such as webinars, workshops, virtual focus groups, online meetings, feedback surveys, and polls. These events offer opportunities for direct engagement with the project's findings and activities, allowing for knowledge and experience exchange.
-*Prioritization of supporting patients at the primary care level* by providing resources and assistance to enhance awareness and understanding of MASLD and its management. Collaborate with primary care providers to ensure patients receive comprehensive care and guidance, leading to improved healthcare outcomes.

The desired outcomes from the patient engagement is to empower patients by actively contributing their insights and experiences to the project, fostering a sense of involvement and ownership, fostering a seamless collaboration between the consortium, patient representatives, and other stakeholders, resulting in the successful co-creation and implementation of patient-centered initiatives.

By achieving these goals, the ARTEMIs project aims to foster positive outcomes for both patients and healthcare providers, contributing to the overall success of the initiative. This approach not

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only builds credibility for the ARTEMIs CDSS but also ensures that patient perspectives and needs are at the forefront of the project's development and implementation.

2.1.2 IP Management of Key Exploitable Results (KER)

This specific task will be managed by MAT in cooperation with the legal departments of participant entities. IP will be owned by the participants who generate the results. During the project, the access rights to foreground results needed for project implementation will be granted royalty-free to all project participants, as established in the Consortium Agreement (CA) signed at the project's start. The access rights for use purposes after project end will be granted either royalty-free or on fair and reasonable terms, as outlined in the Exploitation Plan and related agreements.

The partners are obligated to exploit the project results and they will commit resources for analysis and planning of exploitation routes, which include:
-Commercial exploitation
-New research avenues
-Contributions to international technical standards or clinical guidelines
-Use in education and training

2.1.3 Establishing foundations: initial steps for effective patient engagement

To effectively implement the patient engagement strategy for the ARTEMIs project, the process begins with establishing a robust foundation for meaningful collaboration and patient involvement. This initial effort sets the framework for sustained engagement throughout the project and defines the approach for working with patients.

Key Steps for Effective Implementation:

-*Relationship building:* identify and establish relationships with key patient advocacy groups and organizations representing individuals affected by MASLD. Engaging with these groups early on provides valuable insights into patients' needs and concerns. Building partnerships with these organizations facilitates collaboration and opens lines of communication for exchanging information and perspectives.
-*Patient advisory board:* create a patient advisory board comprising individuals with MASLD and representatives from patient organizations. The board will offer input on various aspects of the project, including research plans and decision-making processes. Regular meetings with the board ensure that patient perspectives are integrated into the project's development.
-*Communication plan:* develop a clear communication plan to keep patients informed and engaged. This plan should specify how and when patients will receive updates and project information. Utilize diverse formats such as email newsletters, videos, social media, and webinars to provide accessible and engaging content. Ensure that communication materials are clear, concise, and tailored to the specific needs and preferences of the patient audience.
-*Educational workshops and resources:* organize educational workshops and provide resources to help patients understand MASLD, the project, and their role in it. Collaborate with healthcare providers to ensure consistent messaging and support for patients, creating a cohesive experience across the project's different touchpoints.
-*Feedback mechanisms:* establish channels such as surveys, focus groups, and online forums to collect patients' experiences and suggestions. Regularly analyze this feedback to identify trends

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and areas for enhancement in patient engagement efforts. Use this input to make informed adjustments to the project.
-*Continuous monitoring and adjustments:* continuously monitor the engagement strategy and make adjustments based on patient feedback and project outcomes. Being open to change and making necessary modifications ensures that the project remains aligned with patients' needs and expectations. Share progress and outcomes with patients and stakeholders to promote transparency and trust.

By following these initial steps, the ARTEMIs project can create a strong foundation for patient engagement, fostering ongoing collaboration and contributing to the overall success of the project.

2.2 Planned activities

In the ARTEMIs project, we strive to integrate patient engagement at every stage. By collaborating with patients and patient organizations, we aim to develop initiatives that closely align with their needs and expectations. Here is an overview of key activities designed to actively involve patients and gather their insights:

-*Organizing focus groups with patients:* focus groups allow us to better understand patients' needs, concerns, and suggestions, providing valuable insights into their experiences and expectations.
-*Involving patients in research development:* actively involving patients in developing research protocols and solutions ensures that outcomes align with their needs and preferences.
-*Establishing a patient advisory board:* setting up a patient advisory board facilitates regular consultations and feedback collection, maintaining an open dialogue with patients and continuously gathering their input.
-*European patient council and co-creation processes:* organizing a European patient council and co-creation processes fosters collaboration between European patients and project partners, enabling a shared understanding of project developments and the co-creation of solutions.
-*Feedback loops and regular consultations:* creating feedback loops and holding regular consultations with patients ensure continuous engagement and dialogue, allowing us to gather insights regularly and make necessary adjustments.
-*Usability testing (UAT) with patients:* conducting usability tests with MASLD patients actively using the platform helps us observe their interactions and gather feedback on usability and effectiveness.
-*Partnerships with patient organizations:* collaborating with patient organizations facilitates the inclusion of their members in ARTEMIs activities, ensuring the co-creation and validation of tailored decision-support tools.

By involving patients and collaborating with patient organizations, the ARTEMIs project ensures its initiatives are patient-centric, addressing their needs and promoting active involvement in the project.

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3. OPEN SCIENCE MANAGEMENT PLAN

3.1 General principles of the plan

The ARTEMIs Project adheres to the Horizon Europe guidance on Open Science principles, which advocate sharing of knowledge and tools as early and widely as possible. The Open Science practices recommended by the EC are the following:

- pre-registration, registered reports, data deposition in shared repositories, open pre-prints.
- immediate and unrestricted open access to scientific publications, research data, models, algorithms, software, protocols, notebooks, workflows, and all other research outputs
- ensuring verifiability and reproducibility of research outputs
- practicing responsible research output management in line with the FAIR (Findable, Accessible, Interoperable, and Reusable) principles
- promoting public engagement in research and innovation.

In ARTEMIs, the task T1.3 "Open Science management" runs during the whole duration of the project as part of the Project Coordination WP. This task will monitor the compliance with the Open Science management plan, seeking the right balance between promotion of open research and feasibility of future commercial exploitation of the Project results, attending to the strategies of the different partners. The consortium will apply the "as open as possible, as close as necessary" principles, ensuring a fair balance between large dissemination and data protection and commercial exploitation.

ARTEMIs will generate data corresponding to models, software codes and technical documentation for the different developments, including the CDSS tool design and specifications, deliverable reports, videos and other materials for dissemination, among others. ARTEMIs will also collect and curate health data for different patient groups. Depending on the type of data and the choice of the partners involved in their generation or gathering, appropriate mechanism will be selected for facilitating their accessibility to the scientific community.

The availability of the ARTEMIs Project contributions to Open Science, will be announced in the project website, social media, conferences, etc. and relevant keywords will make them easily findable.

3.2 Action plan per category

Open Access to scientific publications: ARTEMIs will use the Open Access model for all the scientific publications arising from the project, aligning with Horizon Europe's Open Science Policy. The project will use Gold Open Access for the publication of scientific papers, ensuring immediate and unrestricted open access. A budget has been allocated to cover the cost of Gold Open Access publishing for the scientific partners. The Open Research Europe publishing and repository platform will be evaluated for use, in

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particular it will be considered for the publication of a position paper for the Project. In all publications, authors will acknowledge the financial support received from the ARTEMIs project. Furthermore, the scientific partners belong to universities and research institutes with an open-access strategy, including self-archiving of publications in open access repositories, either institutional or centralised ones such as OpenAIRE.

Public project deliverables: All project deliverables of public nature will be accessible from the project website, for immediate and unrestricted open access.

Open Source software: Some of the project activities will utilize Open Source software and release the related new developments under applicable open licenses. Project partners ULEI, INRIA, DKFZ, ALUFR, and BU have previously used open-source libraries and contributed to Open Source communities such as RSNA CTP and the Open Health Imaging Foundation (OHIF). General-purpose Open Source repositories, such as GitHub, and specific Open Source communities will be used to share the resulting software, including source codes, technical specifications, reports on assumptions and methodologies, and links to underlying datasets if applicable. Each developer will determine the appropriate Open Source license for their results. Some developers may opt for commercial licenses if these are deemed more suitable for the exploitation model intended to maximize the societal impact of the results.

Datasets: The Consortium plans to provide access to some health data from the project to serve the scientific community in several goals, such as enhancing research in liver diseases, promoting health data sharing for research purposes, leveraging data and results, and facilitating reproducibility studies and benchmarking of models and tools.

The ARTEMIs health data will be GDPR-compliant and FAIR, using standard ontologies for data and associated metadata. Further details are provided in the Data Management Plan (DMP). A DOI may be used for each dataset, to facilitate bibliographic referencing and acknowledgment.

The ARTEMIs Project will in part, reuse data from existing cohorts, which conditions for access have been established in the original study. ARTEMIs will also use real world data (mostly retrospective) from the standard clinical care which will be processed and curated as part of this project. In consequence, some datasets are expected to remain private or subject to restricted access, either for an embargo period only, or permanently, while others will be accessible for reuse in research whenever possible, most likely once the results from this Project have been published. The data sharing conditions will be determined on individual basis. The access to health data for external users will be under controlled access (registered users only) in line with the European Health Data Space regulation.

ARTEMIs project is committed to contributing to EDITH's efforts to support the development of ecosystems for digital twins in healthcare in Europe. In particular, to the cloud-based federated repository of computational models and data that EDITH is planning.

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3.3 Monitoring of the action plan

Task T1.3 will work closely with T1.1 on project coordination (led by MEDEX), T1.7 on dissemination and communication (led by ELPA) and WP9 on data sustainability and planning for exploitation of results (led by MAT). Together, they have a complete overview of the status of publication of public results and scientific articles, progress in achieving results (software development for models and tools and health data collection) and updates to the project website. The monitoring of compliance with the Open Science management plan will be carried out through close coordination between these partners.

4. COMMUNICATION, DISSEMINATION AND PATIENT ENGAGEMENT TOOLS

4.1 Visual identity

The logo of the ARTEMIs project has been developed, its shapes and colours making it easily identifiable, effective and legible. All communication materials will display the logo, to form a coherent and recognisable visual identity.

For all dissemination of results, all materials should include the EU flag with the following text: “This project has received funding from the European Union within the Horizon Europe program under the grant agreement No. 101136299.

4.2 Website

The ARTEMIs website (artemis-euproject.eu) has been launched and serves as the primary platform for communication, dissemination, and interaction with the public. It will host key information, project news, results, scientific publications, public deliverables, and other reports produced by the project. Additionally, the website will function as a central communication portal for trainings, learning activities, and patient engagement, acting as a comprehensive knowledge hub for all stakeholders. The website introduces the objectives and the methodology of the project, details the different work package and gives exhaustive overview of all the partners. Resources and explicative materials around the project have already been made available to download for the general public, with more resources to come as the project progresses.

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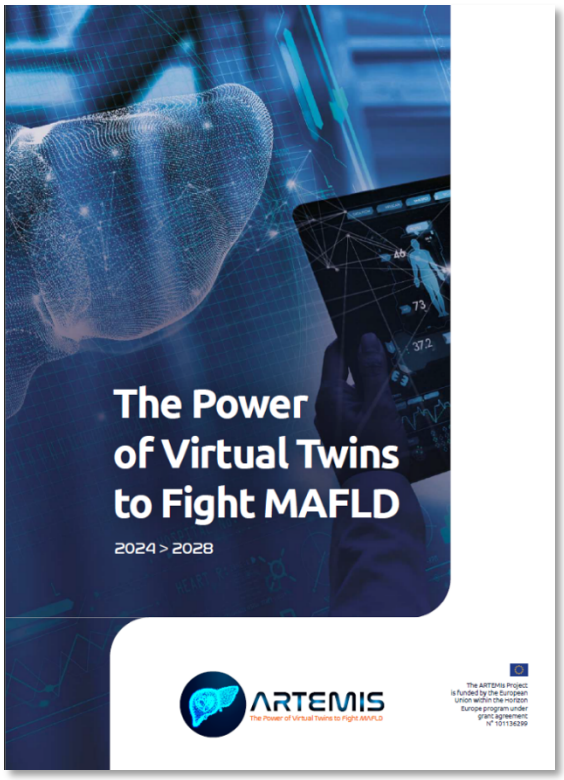
4.3 ARTEMIs brochures



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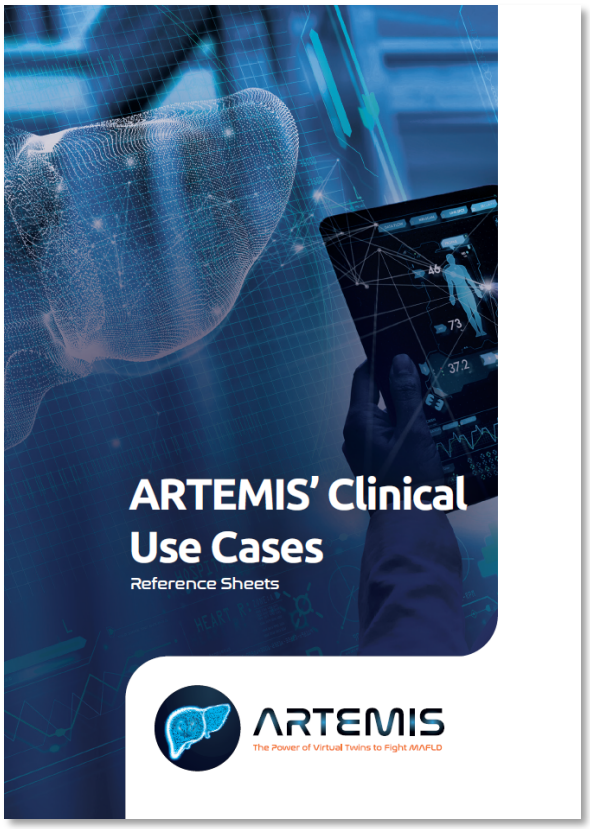
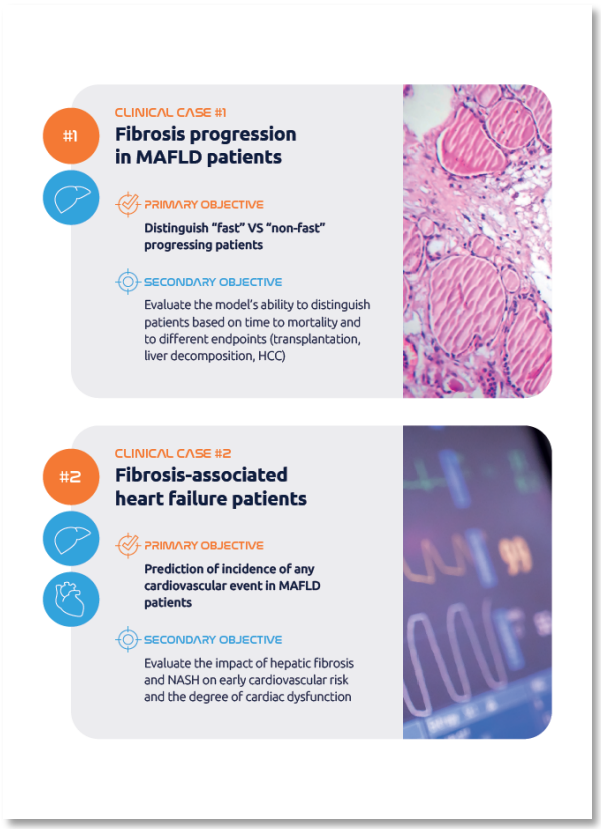
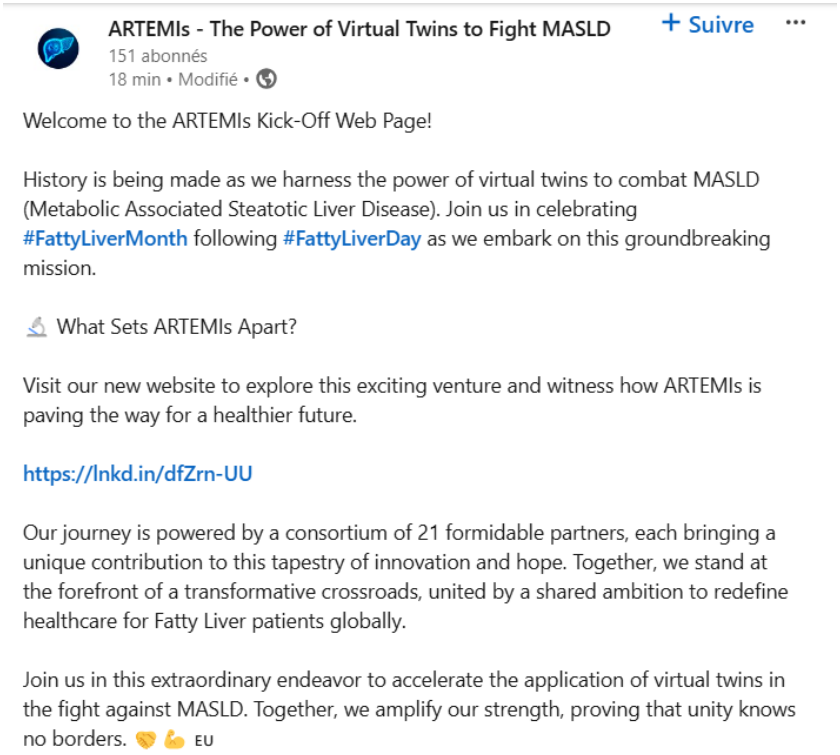




4.4 Social media

LinkedIn (ARTEMIs - The Power of Virtual Twins to Fight MASLD) and X (formerly Twitter, ARTEMIs | X) will be our exclusive social media channels for business and healthcare news. We will use it to publish updates on project progress and share important insights relevant to our followers in a language that is easily understandable by the general public.



ARTEMIs - The Power of Virtual Twins to Fight MASLD
+ Suivre
151 abonnés
18 min • Modifié •

Welcome to the ARTEMIs Kick-Off Web Page!

History is being made as we harness the power of virtual twins to combat MASLD (Metabolic Associated Steatotic Liver Disease). Join us in celebrating #FattyLiverMonth following #FattyLiverDay as we embark on this groundbreaking mission.

🔬 What Sets ARTEMIs Apart?

Visit our new website to explore this exciting venture and witness how ARTEMIs is paving the way for a healthier future.

https://lnkd.in/dfZrn-UU

Our journey is powered by a consortium of 21 formidable partners, each bringing a unique contribution to this tapestry of innovation and hope. Together, we stand at the forefront of a transformative crossroads, united by a shared ambition to redefine healthcare for Fatty Liver patients globally.

Join us in this extraordinary endeavor to accelerate the application of virtual twins in the fight against MASLD. Together, we amplify our strength, proving that unity knows no borders. 🤝 💪 EU

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Our partners' social media channels will also be in use to relay news related to the ARTEMIs project. They have been detailed in 1.4.2.

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4.5 Press releases

Regular press releases will be issued during crucial parts of the project. To attract media attention, these releases will be linked to project or public events, with information about the accomplishment of a milestone, some specific project activities or the publication of a major deliverable.

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4.6 Events and congresses

The ARTEMIs project team was present during the EASL International Liver Congress in Milan in June 2024. The Professeur Raluca Pais presented a session on “Measuring Progression and Monitoring Treatment in MASLD”, and the Doctor Vlad Ratziu led a talk on “From MAFLD to MASLD: Where we are after one year.”

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ARTEMIs - The Power of Virtual Twins to Fight MASLD
155 abonnés
1 sem. • Modifié •

It was an incredible experience at #EASLCongress!

A big shoutout to #ARTEMIS PIs and Prof.Dr. Raluca Pais for the enlightening session on "Measuring Progression and Monitoring Treatment in MASLD."

Prof.Dr. Vlad Ratziu delivered an insightful talk on "From #MAFLD to #MASLD: Where We Are After One Year."

Special thanks to Dr. Hodie Zigmon and our partners from the European Liver Patient Association, Vice-President Julio Burman, and ELPA Director MSc Milan Mishkovikj, M.A., for their invaluable contributions.

Together, we're making strides in liver health! 💪

#LiverHealth #MASLD #EASL #ARTEMIS #ELPA #MedicalResearch MATICAL INNOVATION BC Partners European Liver Patients' Association - ELPA EASL | The Home of Hepatology ARTEMIs - The Power of Virtual Twins to Fight MASLD Cristina d'Almeida Milan Mishkovikj Veronika Všetíčková Marko Korenjak EU Health and Food Safety WHO Regional Office for Europe Medexprim Cliniques universitaires Saint-Luc European Liver Patients' Association - ELPA Bournemouth University Imperial College London AP-HP, Assistance Publique - Hôpitaux de Paris IHU ICAN La Fe Health Research Institute | IIS La Fe Vall d'Hebron Barcelona Hospital Campus MATICAL INNOVATION Sheba Medical Center, Tel Hashomer CHARITE UNIVERSITATSMEDIZIN BERLIN Heidelberg University Biochemistry Center Universität Freiburg Universitäts-Klinikum Universität Leipzig DKFZ German Cancer Research Center Betthera Medizinische Universität Wien Sapienza Università di Roma Inria

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During the EASL Congress in Milan, communication around the ARTEMIs project was disseminated at the ELPA booth through the scientific brochure and the project flyer detailing all the projects supported by ELPA.

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ELPA
European Liver
Patients' Association

ELPA a
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ARTEMIs

AcceleRating the Translation of virtual twins towards a pErsonalised Management of fatty liver patients

The ARTEMIs project aims to consolidate existing computational mechanistic and machine-learning models at different scales to deliver 'virtual twins' embedded in a clinical decision support system (CDSS). The CDSS will provide clinically meaningful information to clinicians, for a more personalised management of the whole spectrum of Metabolic Associated Fatty Liver Disease (MAFLD). MAFLD, with an estimated prevalence of about 25%, goes from an undetected sleeping disease, to inflammation (hepatitis), to fibrosis development (cirrhosis) and/or hepatocellular carcinoma (HCC), decompensated cirrhosis and HCC being the final stages of the disease. However, many MAFLD patients do not die from the liver disease itself, but from cardiovascular comorbidities or complications.

The ARTEMIs will contribute to the earlier management of MAFLD patients, by prognosing the development of more advanced forms of the disease and cardiovascular comorbidities, promoting active surveillance of patients at risk. The system will predict the impact of novel drug treatments or procedures, or simply better life habits. The system will therefore not only serve as a clinical decision aid tool, but also as an educational tool for patients, to promote better nutritional and lifestyle behaviors. In more advanced forms of the disease, therapeutic interventions include TIPPS to manage portal hypertension, partial hepatectomy, partial or complete liver transplant. ARTEMIs will contribute to predict per- or post-intervention heart failure, building on existing microcirculation hemodynamics models. The model developers will benefit from a large distributed patient cohort and data exploration environment to identify patterns in data, draw new theories on the liver-heart metabolic axis and validate the performance of their models. The project includes a proof-of-concept feasibility study assessing the utility of the integrated virtual twins and CDSS in the clinical context.

Grant agreement ID
101136299

Start date
1 January 2024
End date
31 December 2027

Funded under
HORIZON.2.1.5

Overall budget
€ 9 365 096,00
EU contribution
€ 9 365 095,00

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A-Tango Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 945096

ARTEMIs Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101136299

DECISION Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 847949

ESCALON Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 825510

FiSPlat Project has received funding FisPlat has received funding from the EIT Health under grant agreement No. 20508

GALAXY Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 668031

GENIAL Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101096512

GRIPonMASH Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101132946

HL4EU Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101155775

IPCure-B Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 847939

LEOPARD Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101080964

LIVERAIM Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101132901

Liveration Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101104360

LiverHope Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 731875

LIVERSCREEN Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 847989

Micro8-Predict Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825694

THRIVE Project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101136622

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5. FUTURE WORK

5.1 Communication and dissemination

This section will detail the upcoming project communication and dissemination strategy and outline a comprehensive set of actions to effectively engage with various stakeholders.

Online presence and visual content: ELPA (European Liver Patients Association) is designated as the task leader, responsible for the creation and management of the project website and social media channels. The website will feature regular updates, downloadable resources, and interactive elements to engage visitors. ELPA will also manage the development of project visuals, informative videos featuring Principal Investigators (PIs) to explain project goals, progress, and outcomes, and the organization of key events. A robust social media strategy will be implemented to disseminate project updates and findings. Platforms such as Twitter, LinkedIn, and Facebook will be utilized to reach a broad audience, to enhance understanding and engagement, including researchers, clinicians, patients, and the general public.

Event organization: ELPA will organize two events specifically targeted at patients and the general public. These events will aim to raise awareness about the project's objectives and findings, fostering community engagement and knowledge dissemination. A final policy event will be organized in Brussels, aimed at policymakers and key stakeholders to discuss the project's impact and future implications. This event will facilitate the translation of project findings into policy recommendations.

Annual Reporting: ELPA will be responsible for preparing annual reports on dissemination and communication activities. These reports will detail the outreach efforts, engagement metrics, and feedback received, ensuring transparency and continuous improvement.

Dissemination of S&T Results: All project partners are committed to disseminating scientific and technological (S&T) results. This will be achieved through: publishing research findings in peer-reviewed journals, presenting at relevant conferences and organizing workshops to share insights and foster collaboration, engaging with open-source communities and participating in open challenges to promote innovation and application of project results, activities aimed at the general public to increase awareness and understanding of the project's significance.

Scientific and Technical Workshops: Supported by MAT (Medical Advanced Technologies), the workshop focused on the Virtual Physiological Human (VPH) community will be held in month 36 and will focus on the community. It will serve as a platform for discussing project findings and fostering collaborations. Scheduled for month 46, this particular workshop will target the clinical community focused on Metabolic dysfunction-Associated Steatotic Liver Disease (MASLD) and will aim to translate research findings into clinical practice and explore future research directions.

This comprehensive communication and dissemination strategy will ensure effective engagement with diverse stakeholders, facilitate the widespread dissemination of project results, and foster meaningful interactions between researchers, clinicians, patients, policymakers, and the general public.

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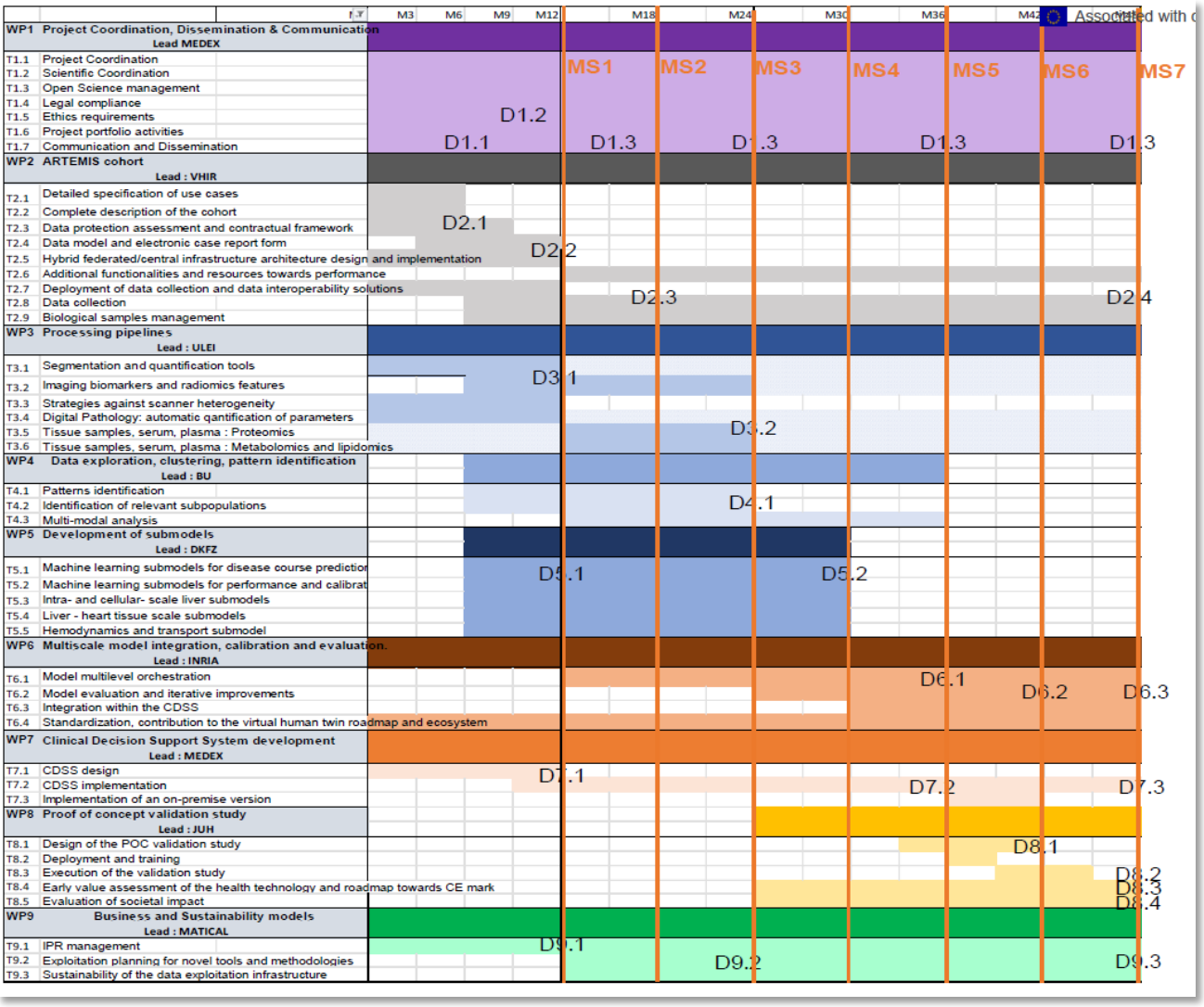
5.2 Work plan



6. CONCLUSION

This Communication, Dissemination, and Patient Engagement Plan outlines all current and future initiatives to ensure ARTEMIs achieves extensive exposure for the project, its research, and its content. To maximize exposure, we have deliberately provided ample feedback and messaging to partners, ensuring they are well-equipped to spread the message comfortably.

The ARTEMIs project is dedicated to engaging and empowering patients with MASLD. Through strategic planning and collaboration with patient organizations, the project aims to improve early detection and stratification of MASLD patients and provide personalized lifestyle advice. By prioritizing patient engagement and offering clear, accessible communication, ARTEMIs strives to enhance patient experiences and outcomes. This approach is designed to lead to a successful, impactful project that positively contributes to patients' lives and healthcare overall.

Since the project is still in its initial phase, communication efforts have been limited but are expected to increase significantly as the project progresses.

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