KEEPCARING

Funded by the European Union

Deliverable D5

Data Management Plan

Grant Agreement number	101137244
Project Acronym	KEEPCARING
Project Full Title	Future Proofing Health- and Care Systems Safeguarding Health Care Workers in Hospital Settings
EU Project Officer	Daniela Blihoghe
Horizon Europe Call	HORIZON-HLTH-2023-CARE-04
Project duration	48 months
Deliverable	D5
Version	1
WP	1
Lead Beneficiary	AmsterdamUMC
Authors	Marlies Schijven, Debora van Dam – AmsterdamUMC
Reviewers	Mauro Melli – Chino, Boris Uszko - Nuromedia
Due Date (as in GA)	31-12-2024
Actual Submission date	23-12-2024

1. KEEPCARING Project

Healthcare professionals working in hospitals -and those in training to embark on hospital careers- experience high levels of stress, especially in the surgical pathways. While interventions to improve wellbeing and resilience exist, not much is known about the right (combination of) intervention(s) for this specific setting. KEEPCARING aims to (re-)build wellbeing and resilience of healthcare workforce in EU hospitals by co-creating a multi-faceted non-digital, digital and AI-supported solution package to prevent burnout among (aspirant) healthcare professionals on the individual, team, and organizational level. Our multi-sector and interdisciplinary consortium will (1) study stress and stressors experienced by (aspiring) health care providers in their specific setting, (2) evaluate digital and non-digital solutions to reduce stress at an individual and team level, (3) study job crafting among (aspiring) health professionals as a way to reduce stress, and (4) finally, develop a change management platform that, using explainable AI, helps hospital managers as well as surgical caregivers to choose the solutions that match their context. All solutions as well as the portal will be developed in co-creation with end users, including 2 professional associations in our consortium. In addition, legal and ethical expertise is provided across Partners and in Advisory Board to ensure privacy and ethical guidance in this sensitive context.

KEEPCARING will provide solutions to improve wellbeing among health care professionals and students, thereby reducing burnout and improving the number of health care students entering the workplace. Our organizational solutions will empower individuals and employers to understand and act on stressful situations in their specific setting. Cost-effectiveness analyses will be used for policy recommendations to ensure sustainable uptake among policy makers, funders, and employers.

2. Deliverable 5 - Data Management Plan KEEPCARING

A Data Management Plan was created. The current version of the Data Management Plan is:

Data Management Plan KEEPCARING
Version 1; 23rd of December 2024.

The Data Management Plan in its latest version is inserted here as from page 5.

As it is a dynamic Handbook, we advise to check regularly our KEEPCARING SharePoint Website for updates of the Data Management Plan.

Each version is labelled with version number and date stamp.

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KEEPCARING

DATA MANAGEMENT PLAN

KEEPCARING

Version 1; 23 Dec 2024

Project №	101137244
Project duration	01-07-2024 until 30-06-2028 (48 months)
Work package	1
Deliverable №	D5
Deliverable type	DMP
Dissemination level	Public
Lead beneficiary	AmsterdamUMC
Version	1
Authors	Debora van Dam, Marlies Schijven,– AmsterdamUMC
Reviewers	Mauro Melli – Chino, Boris Uszko - Nuromedia
History of changes	-

Executive summary

Presented to you is the first version of the KEEPCARING Data Management Plan (DMP). This document outlines how participants of the KEEPCARING Project handle their data during and after the Project. It preludes on data sharing and open access, considering how data will be collected, processed, curated and preserved. Also, future publications and the sharing of other resources will be addressed in this plan.

This DMP adheres to the Horizon Europe (HE) DMP guideline on FAIR data management, and includes a specific description for all consortium partners who collect and analyze data. All partners value the EU FAIR data sharing principles highly and are committed to be *as open as possible*.

The DMP is a dynamic document that will be updated throughout the Project's implementation and whenever significant changes occur. During the project updates and communicated clear version numbers will be released as needed. We will include a timetable for updates and communicate clear version numbers. The final version of the DMP will be reviewed and released before the 30th of April 2027.

Abbreviations

AI	Artificial Intelligence
CC	Coordination Center
CC0	Creative Commons Zero
CC BY	Creative Commons Attribution International Public License
CMP	Change Management Platform
D	Deliverable
DDI	Data Documentation Initiative
DMP	Data Management Plan
DoA	Description of Action
DOI	Digital Object Identifier
EOSC	European Open Science Clound
EU	European Union
FAIR	Findable, Accessible, Interoperable, and Reusable principles
GDPR	General Data Protection Regulation
HRV	Heart Rate Variability
IPR	Intellectual Property Rights
N/a	Not applicable
PID	Persistent Identifier
T	Task
TBD	To be decided
UKRI	UK Research and Innovation (a granting authority)
WP	Work Package

List of partners

Participant organization name	Short name	Type
Amsterdam University Medical Centers at the University of Amsterdam	AUMC	University Health care
University of Limerick	UL	University
Nuromedia GMB	NURO	SME
Erasmus University Rotterdam	EUR	University
European Connected Health Alliance Group ECHALLIANCE	ECHA	NGO
Chino Srl	CHINO	SME
The University of Warwick	UoW	University
Zealand University Denmark	RegioZ	Health care
Inland Norway University	INN	University
The National Research Council of Italy	CNR	Research organisation
University of Coimbra	UoC	University
University of Tartu	UoT	University
University of York	UoY	University
Healthy Mind	HM	SME
NOVA University of Lisbon	NOVA	University
University Medical Center Hamburg-Eppendorf	UKE	University Health care
The National Hospital of Denmark	RIGS	University Health care
European Federation of Nurses Associations	EFN	Professional association
European Hospital and Healthcare Federation	HOPE	Hospital association
European Union of Medical Specialists	UEMS	Professional association

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Introduction

The KEEPCARING Project aims to (re-)build wellbeing and resilience of healthcare workforce in EU hospitals by co-creating a multi-faceted non-digital, digital and AI-supported solution package to prevent burnout among (aspirant) healthcare professionals on the individual, team, and organizational level.

The Project will involve the collection, processing, and storage of various data sets related to stress, resilience and well-being of health care professionals in the surgical pathways. As the data identification is still ongoing, and as the collection process has not yet started, this initial version of the Data Management Plan can only offer a preliminary view. Notwithstanding, by this document we intend to lay a solid foundation for all partners of aligned and transparent data management for the upcoming years, using their joined forces.

As described in the Grant Agreement; the dataset architecture will be based on a scalable, ready-to-use and trustworthy data assembly. Data handling procedures and requirements for privacy protection will be implemented.

The data management framework for this Project will adhere to the principles outlined in the GDPR and the Data Protection Law Enforcement Directive (Directive (EU) 2016/679), and the EEA Agreement.

Data Summary

In the context of the KEEPCARING Project, the Data Summary section provides a comprehensive overview of the types of data that will be generated, collected, and managed throughout the Project lifecycle. This section is dynamic as the program involves, and currently outlines the key characteristics of the data, including its format, volume, and the methodologies employed for data collection and analysis.

The KEEPCARING Project aims to produce a diverse array of data, encompassing quantitative and qualitative research outputs derived from clinical studies, surveys, and other investigative methods. Scientific publications and insights are used in the design of the

KEEPCARING studies. Data sets of KEEPCARING will include self-report questionnaires and biomarkers.

This data will be crucial for advancing knowledge in the fields of mental health, social affairs, and digitalization, ultimately contributing to improved healthcare outcomes.

To ensure effective data management, all generated data will adhere to the FAIR principles—Findability, Accessibility, Interoperability, and Reusability. This commitment will facilitate the responsible sharing and re-use of data among researchers, policymakers, and other stakeholders. The Data Summary will also highlight the strategies implemented for data storage, security, and compliance with relevant regulations, including GDPR, ensuring that sensitive information is handled with the utmost care.

By providing a clear and detailed Data Summary, the KEEPCARING Project aims to promote transparency, enhance collaboration, and support the broader dissemination of research findings, thereby maximizing the impact of the Project's outcomes. Data and study results will be shared across different work packages and collaborators within the Project, as there are many interconnections and collaborations between them. Annex A displays the individual data management plans for each partner handling data. The tables in Annex A describe the use and re-use of data, the name conventions of dataset samples[1], details of data origin/provenance, and the partner who is providing this data to the Project. Each partner is responsible for the correct timing and for safeguarding the collection of the data, including the safe processing of the data.

As the Program is in an early stage not all aspects of data management can currently be overseen. Therefore, and as per Grant Agreement, this document is dynamic and will be

[1] The following name conventions for date set samples will be used:

DA	–	[Required] Dataset name or acronym
FC	–	[Required] File content, intent or distribution (e.g. Alignment, Example, User_manual, Release_note, Diff, SKOS, MARC, etc)
VS	–	[Optional] Version ID or date of the dataset
EXT	–	File extension (e.g., RDF, TTL, XML, PDF, CSV, etc.)

File name = DA_FC_VS.EXT

updated as needed by COO. The latest version is always published in the corresponding Sharepoint folder, with version numbers are provided. The GDPR rules and regulations will be taken into account throughout the process.

What formats of data will the Project generate or re-use?

All data collected during KEEPCARING will be anonymized, and collected in CASTOR. CASTOR is a data management platform designed to improve the efficiency and reliability of clinical trials. It provides tools for building electronic case report forms (eCRFs), capturing and managing data, and generating reports.

Expected size of the data

At this moment only generic estimates can be given about the amount and the format of the data. In the updated version of this document, there will be further elaboration and more detailed information.

FAIR data

Making data findable, including provisions for metadata

Persistent identifier (PID) for published data

According to the OpenAIRE FAIR principles, published data should be identified by a persistent identifier. A Persistent Identifier (PID) is a unique identification code attached to a digital object and registered at the agreed online location. It is guaranteed to remain functional even if a web address changes. By using a PID, we ensure that a link to a digital object (a scan, audiovisual file, metadata record etc.) keeps working, even when the object's location or web address may change in the future. Hence, a PID ensures that the data can be easily found, accessed, and cited over time, even if the location of the data changes. In the context of the KEEPCARING Project, implementing persistent identifiers for datasets will facilitate:

- Findability: PIDs make it easier for researchers and stakeholders to locate the data.
- Accessibility: PIDs provide a stable link to the data, ensuring that it can be accessed reliably.

- Interoperability: PIDs can be used across different systems and platforms, enhancing the ability to integrate and use the data in various contexts.
- Reusability: By providing a clear and consistent reference to the data, PIDs support proper citation and re-use of the data by other researchers.

The Project will ensure that all the published datasets are assigned with an appropriate persistent identifier, such as Digital Object Identifiers (DOIs), to comply with the FAIR principles and enhance the overall data management strategy.

Metadata findability

Rich metadata will be provided to allow for the discovery of data in accordance with the aforementioned FAIR principles. The metadata will be designed to ensure that datasets are easily findable, accessible, and also, re-usable by other researchers and stakeholders. Metadata will be created for the outputs such as datasets or literature generated in the KEEPCARING Project, containing information such as:

Descriptive Metadata:

- Title of the dataset
- Description of the dataset (including objectives and methodology)
- Keywords and subject categories
- Author(s) and contributors
- Date of creation and last modification
- Funding information (including Project name, acronym, and grant number)

Technical Metadata:

- Data format and structure (e.g., CSV, JSON, etc.)
- Data collection methods and instruments used
- Data quality and validation measures

Rights Metadata:

- Licensing terms (e.g., CC BY, CC 0)
- Information on access restrictions, if any

- Provenance Metadata:
- Information on the origin of the data
- Changes made to the dataset over time

Persistent Identifiers:

- Assignment of DOIs or other persistent identifiers for datasets, where applicable

Search keywords

Search keywords will be included in the metadata to optimize the possibility for discovery and potential re-use of the datasets generated in the KEEPCARING Project. The inclusion of relevant keywords is a critical aspect of metadata that enhances the findability of research outputs. By providing well-chosen search keywords in the metadata, the KEEPCARING Project aims to facilitate easier discovery and encourage the re-use of its datasets by other researchers and stakeholders. Careful attention will be given to ensure that keywords are stereotype-free and to avoid gender bias.

Details on Keyword Inclusion

- Descriptive Metadata: The **metadata** will contain a section for keywords and subject categories that accurately reflect the content and focus of the datasets. This will help users searching for specific topics to easily locate the relevant data.
- Controlled Vocabulary: A **controlled vocabulary** or standardized list of terms will be used to ensure consistency and improve searchability across different datasets of the KEEPCARING Project. A set of general **keywords** will be defined within the KEEPCARING program, which must be assigned to scientific publications, data, and products by default, apart from the more specific keywords that may be different for each dataset. The definition of the general keywords will take place – in collaboration with the partners - in the first half of 2025.
- Relevance to Research Themes: Keywords will be selected based on their relevance to the research themes and objectives of the Project, ensuring that they align with the interests of potential users and researchers in the field.

Harvesting and indexing

Metadata will be offered in a way that allows it to be harvested and indexed in the most accessible way, supporting the FAIR principles and maximizing the visibility and re-usability of the research outputs generated by the KEEPCARING Project.

This approach ensures that the metadata is machine-actionable and can be easily harvested by various repositories and indexing services. Machine-actionable metadata refers to data that is structured and formatted in a way that allows machines, such as software programs or algorithms, to automatically process, interpret, and act upon it without the need for human intervention. This type of metadata provides information about data that can be easily parsed and understood by automated systems, enabling those systems to take specific actions based on the metadata's content.

To make the data machine-actionable the KEEPCARING Project will make it available in an open format (eg. JSON-L, RDF, XML), facilitating its accessibility and usability by other systems and platforms. The inclusion of persistent identifiers in the metadata further enhances its discoverability and ensures that datasets can be reliably located and cited over time.

Making data openly accessible

Repository:

Data will be deposited in a trusted repository, as soon as they will be ready for publication or at the end of the Project. In the Grant Agreement we stated that datasets will be stored on Zenodo, an EU open research repository. By storing our data at Zenodo, it will automatically become part of OpenAIRE, an EC-funded initiative that supports the Open Access policy. Zenodo is federated in the European Open Science Cloud (EOSC) in compliance with EOSC requirements. Over time, it will be assessed whether other repositories, besides Zenodo, that are more specialized in a specific field, might also be suitable. This topic will be periodically evaluated in future versions of the DMP.

The KEEPCARING Project persists the following requirements for a repository:

- *Trusted Repository:* The data will be stored in a repository that is recognized for its reliability and security, ensuring that the data is preserved and accessible for future use.
- *Compliance with EOSC*: The requirement for the repository to be federated in the EOSC highlights the commitment to open science and the importance of making research data available to the broader scientific community.
- *Timely Deposit*: The emphasis on depositing data within specified deadlines ensures that the data is made available promptly, facilitating timely access for researchers and stakeholders.

The following guidelines will be applied within KEEPCARING for depositing our data:

- Placing unrestricted copies of previously released articles in a public archive (e.g., Zenodo);
- Preprints of all manuscripts will be submitted as soon as possible to publicly accessible repositories, following the online publication date;
- Publishing of peer-reviewed publications in open access journals (preferably gold, at a minimum green open access model);
- Outcomes are validated by proper methodology and tools, evidence from the literature or re-use of valid data;
- Leveraging on the Open Science Framework and the EU-funded OpenAIRE public repository for all data, articles, models, apps and materials to be shared;
- Preregistering studies and reviews in clinicaltrials.gov and Prospero;
- Open access to results and immediate access to result in case of emergency to the community;
- Open access to data, publications, tools, and software as open and as quickly as possible.

An open access database will be developed and integrated into the KEEPCARING Change Management Platform (WP5). This database will be accessible for healthcare professionals. Intellectual Property Rights (IPR) will be handled by KEEPCARING's IPR

manager (WP1, IXA – Innovation Exchange Amsterdam, appointed from AUMC) and the DEC Plan (WP6, ECHA). Access to data owned by a third party will be subject to data usage agreements.

Exploration of appropriate arrangements with the identified repository

To ensure that appropriate arrangements will be in place, the Project Coordinator will engage with Zenodo (and other repositories if applicable) as early as possible in the process to discuss data formats, submission procedures, and any specific requirements for data sharing and access (Q1, 2025). This proactive approach will help to streamline the data deposition process and ensure compliance with all relevant guidelines and standard. Zenodo is part of OpenAIRE, an EC-funded initiative that supports the Open Access policy.

Assigning a data identifier

Zenodo is a general-purpose repository that allows researchers to share and preserve their research outputs, including datasets, publications, and software. It supports persistent identifiers (DOIs – Digital Object Identifiers), provides open access, and is integrated with OpenAIRE, making it a suitable choice for Projects funded by the EU and assuring FAIR compliance. It has also a user-friendly interface, no cost for depositing data, and support for various file types. Furthermore Zenodo provides transparency in versioning of datasets.

Data:

KEEPCARING strives to make all relevant data available, as can inferred from the tables above (A/G) comprising the specific data management information for each partner. For now, an embargo on data does not seem applicable. In the theoretical case an embargo is needed, in succession of advanced insights, we will incorporate it in the adjusted DMP.

When it comes to data sharing, we are striving for an optimal balance of maximum openness within the framework of the GDPR. The sharing of confidential data between partners within the consortium, will be regulated through data processing agreements and data sharing agreements (DSA's}. The exploration and implementation of the necessary agreements will begin in Q1-2025, under the leadership of Work Package 7 (ethical, legal and social aspects).

By using Castor as platform for capturing, processing and integrating data from multiple courses, it is technically possible to provide all partners with access to anonymized datasets. Castor is a platform that uses a compliant electronic data capture system, able to administer eConsent for participants, and also makes it transparent who accessed what data, by an audit trail of actions. A standard instruction for partners will be created by the Project Coordination Center (WP1) for providing and viewing anonymous data in Castor.

At the end of the program, anonymized datasets collected in Castor will be made available to the public by archiving them in Zenodo. The responsibility for uploading datasets to Zenodo lies with the respective work package leaders, as well as for assigning keywords that describe specific characteristics of the dataset.

Communication to interested parties and stakeholders outside the KEEPCARING consortium will take place via the KEEPCARING website and the Change Management Platform). There, an explanation will be provided about the open access policy, and links will be made to (scientific publications) and repositories. Questions regarding datasets and their availability will be centrally handled and coordinated via the KEEPCARING Project management team (keepcaring@amsterdamumc.nl)

Security measures concerning data access are highlighted in the individual data management plans above. In the next version of the DMP they will elaborate the procedure more profoundly. This will also include a description of the data access committee, if applicable. The question of whether a data access committee is needed will be submitted to the members of the Executive Board (Q1-2025), and depending on their advice, the necessary practical steps will be taken.

Metadata accessibility

Metadata will be made openly available and licensed under a public domain dedication (CC0; CCBY) or an equivalent license. This approach is in line with the requirements set forth in the Grant Agreement, which emphasizes the importance of making metadata accessible to enhance the discoverability and usability of research outputs. The metadata will be openly

available, allowing users to access it without restrictions. The use of Creative Commons Zero (CC0) means that the metadata can be freely used by anyone for any purpose, without the need for permission or attribution, thereby maximizing its reusability. The use of Creative Commons Attribution International Public License (CC BY) , allows users to share, remix, and adapt the work as long as proper credit is given to the original creator. Access Information: The metadata will contain essential information that enables users to access the data itself. This includes details such as dataset descriptions, authorship, licensing terms, and persistent identifiers, which are necessary for locating and retrieving the datasets.

By ensuring that metadata is openly available and includes comprehensive access information, the KEEPCARING Project aims to facilitate effective data sharing and re-use within the research community and beyond.

The research data of KEEPCARING will remain available and findable for at least 5 years after Project completion. Our meta-data procedures described in the former, will support the sustainability of metadata, in case the KEEPCARING data may no longer be available. Hereby, details about the data's provenance are described. This includes clear notes on the origin of the data, for instance the use of measuring instruments.

Making data interoperable

Standards to be Followed

The Project will adhere to established metadata standards to ensure consistency and interoperability. The following standards should be considered:

- Dublin Core: A widely used standard for describing a variety of resources, which includes elements for title, creator, subject, and more.
- Data Documentation Initiative (DDI): For social science data, DDI provides a standard for documenting data and metadata.
- ISO 19115: For geospatial data, this standard provides a framework for describing geographic information and services.

Increase data re-use

In the meta data of the KEEPCARING Project we will include information about the data collection process to validate data analysis. Protocol, instruments and ethical considerations will be referred to in Zenodo. Furthermore, data processing steps applied to raw data, the analysis methodology, versioning and provenance and validation techniques will be displayed. Also user guides will be published to enable and facilitate data re-use. As stated in the former, we will use interoperable formats, ensure consistency in file naming and structure and we will use standards to describe our meta-data.

As stated in the Grant Agreement, data will be opened for re-use under CC BY, CC 0, CC BY-NC, CC BY-ND, or ODC-By licences. The right to access and reuse digital research data under the terms set out in the Grant Agreement will be ensured. The next version of the DMP will include more detailed information on licensing of data, their availability, re-use of data, duration of data for re-use, and reproducibility of research outputs, among other issues.

The aim of KEEPCARING is to make data produced in the Project useable by third parties after the end of the Project. Each partner handling data will have to clarify and describe their Data Quality Assurance Process (DQAP), addressing the specific needs and organization of KEEPCARING data to ensure their value. The description of DQAP will be included as a addendum in our final DMP version.

Other research outputs

In the KEEPCARING Project, "Other Research Outputs" encompass significant deliverables such as the Change Management Platform (CMP).

The CMP is an innovative, web-based tool. It aims, on the one hand, to provide information and practical help to healthcare professionals, enabling them to enhance their resilience and better cope with the stress and burnout symptoms associated with the challenges of a complex work environment, such as the surgical care pathway. It supports, on the other hand, the implementation of change management strategies within healthcare organizations. The

CMP is designed to be user-friendly and accessible, acting as a companion app for mobile devices. It provides a data-driven transformation portal that helps healthcare professionals and managers to understand important factors and interventions concerning burnout, stress and resilience. Key features of the CMP include:

- Data Collection and Analysis: The platform collects uniform and ethically sourced data from various activities, enabling real-time insights into employee wellbeing and organizational dynamics.
- Predictive Models: Utilizing explainable AI, the CMP incorporates predictive models that help identify the most effective interventions for individual healthcare professionals and teams based on their specific contexts and characteristics.
- Multilingual Support: The CMP is designed to be multilingual, ensuring accessibility for diverse user groups across different regions.
- Engagement Tracking: The platform tracks user engagement metrics, such as active users and frequency of logins, to assess the adoption and impact of the interventions provided.

Also the knowledge gained within the Project about the necessary conditions for effective Project management and implementation will be captured in a Framework. It offers a comprehensive guide that outlines the methodologies, principles, and best practices for implementing a Project as KEEPCARING integrating interdisciplinary approaches (healthcare, legal, ethics, communication).

Outputs as the CMP and the Framework are important research outputs of the KEEPCARING Project. These outputs not only contribute to the Project's immediate goals but also lay the groundwork for future (international) research and interventions in the healthcare sector.

Allocation of resources

Costs

Costs for FAIR data collection, storage and management are budgeted in WP 6 of the Grant Agreement. These include considerations for building the CMP, the KEEPCARING website, copyright licencing, publications and the use of databases.

The use of Zenodo is free of charge, and costs for the use of Castor are covered by AmsterdamUMC. Project beneficiaries will be responsible for applying for reimbursement for costs related to the FAIR data principles. Publication fees can only be reimbursed if the publication is in a "gold" open access journal. If applicable, cost-sharing arrangements for multiple authors will be determined on an individual basis by the authors.

Responsibility of datamanagement

In the Project, data management responsibilities will be distributed among several key roles and teams to ensure effective oversight, compliance, and implementation of data management practices aligned with FAIR principles. A dedicated Data Management Team headed by AmsterdamUMC will be established (Q1-2025), comprising Project's partner Chino, with the periodic consultation of the Advisory Board, to ensure privacy and ethical guidance in this sensitive context, and to oversee the overall data management strategy. The responsibilities will include:

- Developing and implementing the Data Management Plan (DMP) in accordance with FAIR principles.
- Ensuring compliance with data protection regulations, such as GDPR.
- Monitor adherence to ethical guidelines and legal requirements related to data management and sharing.
- Provide guidance on the ethical implications of data use and ensure that participant consent is properly managed.
- Coordinating data storage, archiving, and security measures.
- Facilitating data sharing agreements among consortium partners.

Decisions on what data to retain and for how long will be made by the Project consortium, guided by data protection officers. They will evaluate the relevance of data for future research and adhere to legal requirements. Typically, anonymized data will be kept for 5-10 years post-Project, ensuring valuable insights remain accessible for ongoing research and improvement in healthcare practices

Data security

The Project is dedicated to maintaining the highest standards of data security to protect sensitive information throughout its lifecycle. To achieve this, a comprehensive set of provisions has been established.

The Project utilizes Castor as the primary data capturing system, during the program. In their security statement they declare that Castor is certified for ISO 27001 (Standards for Information Security Assurance), and is secured according to the most recent standards in order to protect research data.

Also ,data will be hosted on the KEEPCARING Change Management Platform (CMP) This platform is designed to act as a data-driven transformation portal that collects uniform and ethically sourced data from various activities undertaken in the Project. The CMP is web-based, responsive, and capable of functioning as a companion app for mobile devices, allowing for active interaction with end-users and participative scenarios. The CMP will consider secure storage and archiving practices. All sensitive data is encrypted both at rest and in transit, ensuring that it remains unreadable without the appropriate decryption keys. Access to this data is strictly controlled through role-based access mechanisms, allowing only authorized personnel to access specific datasets. To further enhance security, strong authentication methods, including multi-factor authentication (MFA), are employed to verify the identities of users accessing sensitive information. Data is stored on secure institutional servers, and when necessary, in reputable cloud storage environments that comply with data protection regulations.

When it comes to data transfer, the Project utilizes secure protocols such as HTTPS and SFTP to protect data during transmission. Formal data transfer agreements are established whenever data is shared with external partners, ensuring that security responsibilities are clearly defined. Additionally, sensitive data is anonymized or pseudonymized wherever feasible to minimize the risk of exposing personal information during transfers.

To address data recovery, the KEEPCARING Project implements regular automated backups of all sensitive data, with offsite storage solutions in place to protect against data loss due to physical disasters. A comprehensive disaster recovery plan outlines the procedures for data recovery in the event of data loss or corruption, including defined recovery time and point objectives to ensure swift restoration of services.

Monitoring and auditing are integral to the data security strategy. Regular security audits and vulnerability assessments are conducted to identify and address potential weaknesses in data management systems. Access logs are meticulously maintained to monitor data access and modifications, ensuring accountability and transparency. In the event of a data breach, an incident response plan is in place, outlining the steps to be taken to ensure preparedness and effective remediation.

For the long-term preservation of published data, Zenodo will be used as the repository. It prioritizes the security of the Projects' data. Files are stored in the high-security CERN Data Center, protected by robust physical and digital safeguards. Regular security audits and software updates ensure a fortified defence against potential threats. Invenio, the underlying software, is a battle-tested repository system used by numerous research institutions worldwide. It provides a solid foundation for data integrity and confidentiality. By combining these elements, Zenodo offers a reliable and secure environment for long-term data preservation.

Through these robust data security measures, the KEEPCARING Project aims to protect the integrity, confidentiality, and availability of sensitive data, ensuring compliance with relevant data protection regulations and fostering trust among all stakeholders involved.

Ethics

In the Project, addressing ethics and legal issues related to data sharing is paramount to ensuring the integrity of the research and the protection of participants. To begin with, the Project team prioritizes informed consent by crafting clear and comprehensive informed consent for data sharing and long-term preservation, that will be included in the questionnaires that handle personal data in the KEEPCARING Project. Participants will receive clear information about the purpose of data collection, the conditions under which their data may be shared, and the plans for long-term data preservation. They will be informed of their rights regarding data access and the ability to withdraw consent at any time. This approach ensures transparency, respects participants' rights, and complies with ethical and legal standards.

Compliance with the General Data Protection Regulation (GDPR) is another cornerstone of the Project. The team implements robust data protection measures, such as anonymization and pseudonymization, to safeguard personal information. Formal data sharing agreements are established among consortium members, detailing the ethical and legal terms under which data can be shared, thereby maintaining confidentiality and integrity.

Engagement with ethics committees is initiated early in the Project, allowing for thorough reviews and approvals for research involving human subjects. The team documents all ethical considerations and risk assessments, ensuring transparency and accountability throughout the research process. Additionally, methodologies are employed to assess and mitigate biases, particularly in the development of artificial intelligence systems, promoting fairness and inclusivity.

Ongoing monitoring and auditing of data management practices are established to ensure compliance with ethical standards, while thorough documentation of all processes is maintained for review by ethics committees and regulatory bodies.

Through these proactive measures, the KEEPCARING Project not only upholds the highest ethical standards but also builds trust with participants, ensuring that their rights and privacy are respected throughout the research journey.

Other issues

Two of our partners are outside the European Union, hence labelled as our associate Partners, and are funded by UK institution UKRI:

- University of Warwick (WP7)
- University of York (WP3)

ANNEX A: Individual Data Management plans[2]

University of Limerick	
Work Package	WP2
Role in the Project	Scientific partner - University
Services/ activities in the Project	Study A: Survey design and development, ethics, recruitment & analyses, report writing, dissemination.
Data set type	Survey Qualitative interviews
Data set identifier	Keepcaring_Surveyxxx_WP2_SA_UL.ext Keepcaring_Interviewsxxx_WP2_SA_UL.ext Keepcaring_Biomarkersxxx_WP2_SA_UKE.ext Keepcaring_Biomarkersxxx_WP2_SA_AMS.ext
Data set description	Online survey: 12-minute long, aiming to recruit 650 respondents. Semi-structured interviews: 30-45 minutes each, aiming to recruit 20-30 participants WP2, study A biomarkers: Pulse, HRV and other (TBD).
Data utility	Survey data is needed to know the current- and predicted level of burnout and also the predictors of resilience among healthcare professionals in the EU (T2.3-T2.4). Qualitative interviews (N= 20) are performed to add further depth to the quantitative data from the survey, addressing the nuances (T2.2).
Data subjects	Hospital-based doctors and nurses, and trainee doctors and nurses (surgical pathways).
Source of data	Data collected from (aspiring) health care professionals on previously validated questionnaires. Of consented

[2] All partners handling data

	respondents, non-invasive biometric data (hearth rate and heart rate variability) will be collected.
Data set used in	T2.2, T2.3, T2.4, T5.1. Primary data collected via survey to be used for WP2 and WP5 (*Findings but not data will be used to inform WP3). Semi-structured Interviews will be used in WP2 only (*Findings but not data will be used to inform WP3).
Publicity	Results from Project are to be published in academic and non-academic publications, newsletters, the CMP and the KEEPCARING website.
Reason not to publish	N/a
Relevant publication	Anticipated publications will be published in open-access academic journals or similar. Institutional open access repository and stakeholder newsletters for public engagement.
Dimension of the Data	TBD
Associated software	Qualtrics for data collection, SPSS for data analysis. Software is accessible via UL encrypted laptops to UL employees partnering in this Project. Data is stored in Microsoft One Drive, associated to the respective UL Partner Employee accounts, and later further transferred to Castor for storage and to support associated research within Project.
Standards and Metadata	SPSS, MPEG/mp4, Word, Nvivo. See also the FAIR data paragraph (p.26)
Where data is captured/ stored	UL server via researcher's encrypted laptop, stored in One Drive of UL researcher and in Qualtrix and Castor. Data will be deposited in a trusted repository (see p.28).
Security measures applied on data	Data stored in encrypted computers only to UL researchers of this Project. Final data will be anonymized and stored in Castor.

Purposes for collection	SCIENTIFIC RESEARCH
Legal basis for collection	9(2)(a) Explicit Consent
Data processors who have access to data Partners or 3rd parties involved in any activity or processing of these data	Partners of the Project access anonymized data. For data sharing GDPR rules and regulations will be followed (e.g. using data sharing agreements). The email addresses of participants signing up for the follow up studies (qualitative interviews, or biomarker study) will be accessible for UL. Participants will give informed consent before their addresses will be shared with other partners, and in case of sharing email addresses with the other partners GDRP rules and regulations will be followed (e.g. using data sharing agreements). Information about the recruitment flow of the follow-up studies will be elaborated in the study proposals. Based on the current status, it is expected that data sharing agreements will be signed by NOVA, UKE and UC.
Data processing location	Ireland, EU
Data storage location	Ireland, EU
Final users (end users)	KEEPCARING Researchers

Table A

Amsterdam UMC	
Work Package(s)	WP3, WP2
Role in the Project	Clinical partner - University hospital
Services/ activities in the Project	WP2, study A (biomarkers): data collection. WP3, study B: data collection, processing and analyzing. WP3, study C: data collection, processing and analyzing.
Data set type	Questionnaires (stress, participant satisfaction and feasibility) Biomarkers (pulse, HRV and other - TBD).
Data set identifier	Keepcaring_Questionnairexxx_WP3_SB_AMS.ext Keepcaring_Questionnairexxx_WP3_SC_AMS.ext Keepcaring_Biomarkersxxx_WP3_SB_AMS.ext Keepcaring_Biomarkersxxx_WP3_SC_AMS.ext Keepcaring_Biomarkersxxx_WP2_SA_AMS.ext
Data set description	WP3, study B: Self-report measures - Stress – Tabular data. WP3, study B: Pulse, HRV and other (TBD) - Time series from sensors WP3, study C: Self-report measures (VAS scores on stress, participant satisfaction with environment, feasibility when, how, what) - Tabular data. WP3, study C: Pulse, HRV and other (TBD). WP2, study A: Pulse, HRV and other (TBD).
Data utility	WP3, study B and C: Self-report questionnaires are used to measure stress, participant satisfaction and feasibility. Data generation with questionnaires is needed to collect data of volunteers on pre- and post-stress scores following VR use (T3.2), to offer insight on VR user satisfaction across various end-user groups (T3.3), and to provide data on the feasibility of implementing the intervention in daily practice and T(3.3).

	Biomarkers will give information about pulse and HRV pre-post and during the VR intervention. For WP2, study A, AUMC will perform a follow up study with biomarkers, to compare physiological stress between nurses with higher and lower outcomes for resilience (*N*= TBD) (T2.4). Names and emails of the subject will be collected by UL as described in table A.
Data subjects	WP3, study B: Caregivers: interns, residents, OR nurse (in training), anesthesiology nurse (in training), anesthetist (in training), surgeon (in training). WP3, study C: mainly nurses (in training), along with doctors (interns, residents, surgeons (in training)) working at the medical ward. WP2, study A: nurses.
Source of data	Healthcare professionals of the surgical pathways of AUMC. WP3, study B: VAS scores on stress (Castor). WP3, study B: The VR set will adapt the environment by using a smartwatch based on HRV. Besides that, participants will wear a Hexoskin which is able to measure HR and HRV (Castor). WP3, study C: VAS scores on stress, participant satisfaction with environment, feasibility (when, how, what) (Castor). WP2, study A: Hexoskin.
Data set used in	T2.4, T3.3, T3.4, T6.4 and TBD: T5.1.
Publicity	Within KEEPCARING program: In pseudonymized form for Consortium goals only, only to be accessed by Partners. Also, to train the AI algorithm for the Portal (TBD). For the public: The data will be published in (non) academic papers, but the data is not traceable to an individual.
Reason not to publish	N/a

Relevant publication	Scientific literature, web portal of Project.
Dimension of the Data	TBD
Associated software	Data are sent to Castor and SPSS or R will be used to analyse the data.
Standards and Metadata	CVS, txt, Rdata, png. See also the FAIR data paragraph (p.26)
Where data is captured/ stored	Castor Data will be deposited in a trusted repository (see p.28)
Security measures applied on data	Participants receive an anonymous and unalterable code. Only the AUMC have insight in all anonymous data. Castor has a standard audit trail.
Purposes for collection	SCIENTIFIC RESEARCH
Legal basis for collection	9(2)(a) Explicit Consent.
Data processors who have access to data	Only the AUMC has insight in all data.
Data processing location	Netherlands, EU
Data storage location	Netherlands, EU
Final users (end users)	KEEPCARING Researchers

Table B

Rigshospitalet	
Work Package(s)	WP3
Role in the Project	Clinical partner - University hospital
Services/ activities in the Project	WP3, study D: data collection, processing and analysing.
Data set type	Questionnaire(s) (psychological safety and resilience). Observational (video_audio). Biomarkers (pulse, HRV and other - TBD).
Data set identifier	Keepcaring_Questionnairexxx_WP3_SD_RIGS.ext Keepcaring_Audiovideoxxx_WP3_SD_RIGS.ext Keepcaring_Biomarkersxxx_WP3_SD_RIGS.ext
Data set description	Self-report measures: predefined assessment tools (psychological safety and resilience) – Tabular data. Observational: De-identified video and sequences of maximum 3 minutes. Faces and voices are blurred and personal identifiables are beeped out. Electronic health record description of what type of surgery, length of surgery, wheels in and wheels out, HL7Data. NO identifiable for patient. Data storage and transfer approved by Danish regulatory research body. Biomarkers: pulse, HRV and other (TBD) – Time series from sensors.
Data utility	Provide objective, quantifiable data about psychological and physiological responses to debriefing after surgery – with or without de-identified video and audio sequences - and to associate them with the relationship between stress and resilience. Validated assessment tools will be used.

Data subjects	Surgical residents, OR nurse, anesthesiology nurse, anesthesiologist, anesthesia residents, surgeons, perfusionists.
Source of data	Staff from the participating hospitals; UKE, Rigs, and AUMC (TBD) Self-report measures: via Castor. Observational: Video and audio from the operation room through the OR Black Box platform, provided by supplier Surgical Safety Technologies, Canada. Biomarkers: Pulse rate and HRV directly collect from the output of the biomarker measurement device (Castor).
Data set used in	T3.4.
Publicity	The data will be published in academic peer reviewed papers after ICMJE standards. Final dataset will be stored in Castor. Processed data to be published in academic and non-academic publications derived from the data, newsletters and KEEPCARING website.
Reason not to publish	N/a
Relevant publication	Anticipated publication will be on open access academic journals.
Dimension of the Data	Questionnaires and biomarkers: TBD. Observational: cloud based (European cloud).
Associated software	Data are sent to Castor and R will be used to analyse the data.
Standards and Metadata	CVS, txt, Rdata, png, MPEG. See also the FAIR data paragraph (p.26)
Where data is captured/ stored	Questionnaires and biomarkers: Castor. Observational: Cloud bases solution (European cloud). Only staff invited by principal investigator can access and this with a two-factor identification code. In the cloud is only de-

	identified video material and OR health data, no person identifiables. Data will be deposited in a trusted repository (see p.28).
Security measures applied on data	Questionnaires and biomarkers: Data stored in encrypted computers only to participant researchers of this Project. Final data will be anonymized and stored in Castor. Observational: Only RIGS researchers can access this platform.
Purposes for collection	SCIENTIFIC RESEARCH
Legal basis for collection	9(2)(a) Explicit Consent, oral and written.
Data processors who have access to data	Questionnaires and biomarkers: RIGS, AUMC, UKE. Observational: Only RIGS researches.
Data processing location	Questionnaires and biomarkers: Denmark, EU. Observational: Surgical Safety Technologies (the supplier of the OR Black Box), Toronto, Canada.
Data storage location	Denmark, EU.
Final users (end users)	Questionnaires and biomarkers: KEEPCARING Researchers. Observational: Project manager and research group at Rigshospitalet, Denmark.

Table C

Hamburg-Eppendorf	
Work Package(s)	WP2, WP3
Role in the Project	Clinical partner - University hospital
Services/ activities in the Project	WP2, Study A (biomarkers): data collection, processing and analysing WP2, Study A (survey and interviews): Data processing and analysing (re-use).

	WP3, Study B: Data collection, processing and analysing. WP3, Study C: Data collection, processing and analysing. WP3, Study D: Data collection, processing and analysing.
Data set type	Survey (re-use). Biomarkers: pulse, HRV and other (TBD). Questionnaires.
Data set identifier	Keepcaring_Surveyxxx_WP2_SA_UL.ext (re-use) Keepcaring_biomarkers_WP2_SA_UKE.ext Keepcaring_Biomarkersxxx_WP2_SA_AMS.ext (re-use) Keepcaring_Questionnairexxx_WP3_SB_AMS.ext (re-use) Keepcaring_Biomarkersxxx_WP3_SB_AMS.ext (re-use) Keepcaring_Questionnairexxx_WP3_SB_UKE.ext Keepcaring_Biomarkersxxx_WP3_SB_UKE.ext Keepcaring_Questionnairexxx_WP3_SC_AMS.ext (re-use) Keepcaring_biomarkersxxx_WP3_SC_AMS.ext (re-use) Keepcaring_Questionairexxx_WP3_SC_UKE.ext Keepcaring_biomarkersxxx_WP3_SC_UKE.ext Keepcaring_Questionnairexxx_WP3_SD_UKE.ext Keepcaring_biomarkersxxx_WP3_SD_UKE.ext Keepcaring_Questionnairexxx_WP3_SD_RIGS.ext (re-use) Keepcaring_biomarkersxxx_WP3_SD_RIGS.ext (re-use)
Data set description	WP2, study A: Survey (re-use). WP2, study A: Pulse, HRV and other (TBD). WP3, study B: Self-report measures - stress. WP3, study B: Pulse, HRV and other (TBD). WP3, study C: Self-report measures (VAS scores on stress, participant satisfaction with environment, feasibility when, how, what). WP3, study C: Pulse, HRV and other (TBD).

	WP3, study D: Questionnaires - predefined assessment tools. (psychological safety and resilience). WP3, study D: Biomarkers (pulse, HRV and other) (TBD).
Data utility	Survey data and biomarker data generated in study A, B and C by AUMC, UL, Rigs and UKE will be further analysed by UKE, focusing on the operating room and surgeons. For study D UKE will collect data for the control condition (questionnaires and biomarkers) while Rigs collects data for the experimental condition.
Data subjects	Healthcare workers in the OR.
Source of data	Staff from the three participating hospitals (AUMC, UKE, Rigs) Self-report measures: via Castor. Biomarkers: Pulse, HRV and other (TBD) directly collect from the output of the biomarker measurement device (Castor).
Data set used in	T2.2 (TBD), T2.3, T2.4, T3.2, T3.3, T3.4 , T3.5 and T5.1
Publicity	Data will be published in (non) academic papers, but the data is not traceable to an individual.
Reason not to publish	N/a
Relevant publication	Publication in international peer reviewed journals.
Dimension of the Data	TBD
Associated software	SPSS or R will be used to analyse the data.
Standards and Metadata	TBD
Where data is captured/ stored	Castor. Data will be deposited in a trusted repository (see p.28).
Security measures applied on data	Participants of study D receive an anonymous and unalterable code. Only participant researchers of this Project (RIGS, AUMC, UKE) have insight in the data. Castor has a standard audit trail.

Purposes for collection	SCIENTIFIC RESEARCH
Legal basis for collection	9(2)(a) Explicit Consent.
Data processors who have access to data	Partners of the project access anonymized data.
Data processing location	Germany, EU.
Data storage location	Germany, EU.
Final users (end users)	KEEPCARING Researchers.

Tabel D

NOVA	
Work Package(s)	WP2, WP5
Role in the Project	Technical partner - University
Services/ activities in the Project	WP2, Study A (biomarkers): data processing and analysing. WP5, Machine learning developer.
Data set type	Biomarkers: pulse, HRV and other (TBD) Framework's AI models.
Data set identifier	Keepcaring_biomarkers_WP2_SA_UKE.ext Keepcaring_biomarkers_WP2_SA_AMS.ext Keepcaring_Surveyxxx_WP2_SA_UL.ext
Data set description	WP2, study A: Time series from sensors and tabular data from questionnaires. WP5: Data from WP2 (and WP3 TBD) will be integrated into the models to predict the risk of burnout.
Data utility	WP2, study A: Provide objective, quantifiable data about physiological responses to stress to associate them with the relationship between stress and resilience. WP5: Models training and test.

Data subjects	Hospital-based doctors and nurses, and trainee doctors and nurses.
Source of data	WP2, study A: Health care professionals who have agreed to participate in the study. WP5: Consortium.
Data set used in	T2.4, T5.1. WP2, WP3 (TBD), WP5.
Publicity	WP2, study A: In case of a publication, data will be duly anonymized following the FAIR guidelines. WP5: The matter must be discussed with the partners, but the FAIR principles must be followed.
Reason not to publish	N/a
Relevant publication	WP2, study A: Nature's list of recommended data repositories or NIH-supported domain-specific repositories. WP5: Publication in international peer reviewed journals. Nature's list of recommended data repositories or NIH-supported domain-specific repositories.
Dimension of the Data	TBD
Associated software	Python
Standards and Metadata	txt, CVS, wav, and json formats. See also the FAIR data paragraph (p.26)
Where data is captured/ stored	One drive via researchers' laptop on protected EUR data servers and Castor database. Data will be deposited in a trusted repository (see p.28).
Security measures applied on data	WP2, study A: Data encryption, role-based access control (only NOVA researchers associated with the Project), and keep all systems and software up to date. WP5: Anonymized data set stored on protected servers only accessible by the core researchers of WP5.

Purposes for collection	WP2, study A: SCIENTIFIC RESEARCH WP5: SCIENTIFIC RESEARCH, training and testing of classification/prediction models.
Legal basis for collection	9(2)(a) Explicit Consent.
Data processors who have access to data Partners or 3rd parties involved in any activity or processing of these data	WP2, study A: Data acquisition: Data AmsterdamUMC, Rigshospitalet, and Hamburg-Eppendorf; Data processing for AI: NOVA WP5: Partners of the Project access anonymized aggregate data. Only UC will have access to emails of participants (under the condition that participants give explicit informed consent).
Data processing location	WP2, study A: NOVA's server in Portugal and one drive via researchers' laptop. WP5: EUR server and one drive.
Data storage location	Portugal, EU.
Final users (end users)	WP2, study A: KEEPCARING Researchers. WP5: KEEPCARING Researchers or only WP5 researchers.

Table E

Erasmus University	
Work Package(s)	WP4
Role in the Project	Clinical partner - University.
Services/ activities in the Project	1. To identify and test key predictors of co-work design and the exchange of job demands and resources. 2. To test a team-level intervention.
Data set type	1. Short daily surveys/ questionnaire. 2. Pre and post intervention questionnaires
Data set identifier	Keepcaring_Surveysxxx_WP4_SE_EUR.ext

	Keepcaring_Questionnairexxx_WP4_SE_EUR.ext
Data set description	1. Participant (employees, not patients) will fill out short daily questionnaires for a number of successive workdays. 2. Participant (employees, not patients) will fill out a T1 questionnaire and a T2 questionnaire after the intervention.
Data utility	1. Employee data to identity the predictors of co work design that may serve as input for the intervention study that is scheduled later. 2. Employee data comparing an intervention group with a control group to find out whether the intervention is effective.
Data subjects	Healthcare professionals
Source of data	Healthcare professional in hospitals.
Data set used in	WP4 (T4.2, T4.3, T4.4)
Publicity	Has to be discussed with the partners but will be clear before data collection so that we include information about it in the informed consent for participants.
Reason not to publish	N/a
Relevant publication	Publication in international peer reviewed journals
Dimension of the Data	TBD
Associated software	Qualtrics for data collection, multi-level software for data analysis. Data are sent to Castor.
Standards and Metadata	TBD
Where data is captured/ stored	One drive via researchers' laptop on protected EUR data servers. After data collection, it will be captured in Castor. Data will be deposited in a trusted repository (see p.28).

Security measures applied on data	Anonymized data set stored on protected servers only accessible by the core researchers of WP4.
Purposes for collection	SCIENTIFIC RESEARCH and, 1. input for the intervention; 2. valorisation to support hospital staff.
Legal basis for collection	9(2)(a) Explicit Consent.
Data processors who have access to data	Partners of the Project, accessing anonymized data.
Data processing location	EUR server and one drive.
Data storage location	EUR server and one drive.
Final users (end users)	KEEPCARING Researchers.

Table F

University of Coimbra	
Work Package(s)	WP5
Role in the Project	Clinical partner - University
Services/ activities in the Project	WP5, study F: To test the efficacy of the iWork.COMP program, an intervention aimed to mitigate toxic leadership styles.
Data set type	Questionnaires.
Data set identifier	Keepcaring_Questionnairexxx_WP5_SF_UC.ext
Data set description	Tabular data from Questionnaires. Participants (employees in both leader and non-leader roles), assigned to treatment and waiting-list control groups, will fill out questionnaires at four assessment points: pre-, middle-, post-, and follow-up intervention.

Data utility	Data is crucial to test the efficacy of the iWork.COMP program across time, comparing intervention effects between treatment and waiting-list control groups.
Data subjects	Healthcare professionals.
Source of data	Healthcare professional in hospitals.
Data set used in	WP5 (T5.7).
Publicity	Has to be discussed with the partners but will be clear before data collection so that we include information about it in the informed consent for participants.
Reason not to publish	N/a
Relevant publication	Publication in international peer reviewed journals
Dimension of the Data	TBD
Associated software	Qualtrics for data collection, SPSS and MPlus for data analysis Data are sent to Castor.
Standards and Metadata	TBD
Where data is captured/ stored	During data collection: One drive via researchers' laptop on protected EUR data servers. After data collection, it will be captured in Castor. Data will be deposited in a trusted repository (see p.28).
Security measures applied on data	Anonymized data set stored on protected servers only accessible by the core researchers of WP5.
Purposes for collection	SCIENTIFIC RESEARCH and input on the efficacy of the iWork.COMP intervention.
Legal basis for collection	9(2)(a) Explicit Consent
Data processors who have access to data Partners or 3rd parties involved in any activity	Partners of the Project access anonymized aggregate data. Only UC will have access to emails of participants in those explicitly give access.

or processing of these data	
Data processing location	EUR server and one drive.
Data storage location	Portugal, EU.
Final users (end users)	KEEPCARING Researchers.

Table G

CNR-IRPPS	
Work Package(s)	WP5
Role in the Project	Research partner
Services/ activities in the Project	Co-design framework and User requirements for CMP
Data set type	Observational (video_audio)
Data set identifier	Keepcaring_Co-designUserRequirement_WP5_UR_CNR.ext
Data set description	Data from co-design event. Participants at the co-design event will be invited to share their knowledge on the online Change Management Platform, and the event will be documented online. Participants in the co-design event are volunteers, they are hospital managers, healthcare team members, decision-makers, manager staff members, and healthcare professionals. The project does not involve people such as children or minors unable to give informed consent for being a participant in the co-design event.
Data utility	Data will be used to define user requirements related to the Change Management Platform.

Data subjects	Hospital managers, healthcare team members, decision-makers, manager staff members, and healthcare professionals.
Source of data	Data are collected from discussions among stakeholders during the co-design event. The co-design events are conducted in a hybrid format, combining online and face-to-face participation. Stakeholder discussions are collected using the SLIDO tool.
Data set used in	WP5 (T5.2).
Publicity	Has to be discussed with the partners but will be clear before data collection so that we include information about it in the informed consent for participants.
Reason not to publish	N/a
Relevant publication	Publication in international peer reviewed journals
Dimension of the Data	TBD
Associated software	SLIDO (https://www.slido.com/)
Standards and Metadata	TBD
Where data is captured/ stored	One drive via researchers' laptop on protected EUR data servers and Castor database. Data will be deposited in a trusted repository (see p.28).
Security measures applied on data	Anonymized data set stored on protected servers only accessible by the core researchers of WP5.
Purposes for collection	SCIENTIFIC RESEARCH and design of the CMP.
Legal basis for collection	9(2)(a) Explicit Consent
Data processors who have access to data	Partners of the Project access anonymized aggregate data. Only CNR will have access to emails of participants in those explicitly give access.

Partners or 3rd parties involved in any activity or processing of these data	
Data processing location	Italy and one drive.
Data storage location	Italy, EU
Final users (end users)	KEEPCARING Researchers and technical partner.

Table H

HISTORY OF CHANGES		
VERSION	PUBLICATION DATE	CHANGE

Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.