Project title: Radiation risk appraisal for detrimental effects from medical exposure during management of patients with lymphoma or brain tumour (SINFONIA)

Grant Agreement: 945196

Call identifier: NFRP-2019-2020

Topic: NFRP-2019-2020-14 Improving low-dose radiation risk appraisal in medicine

Deliverable D7.1 - Intermediate report on SINFONIA dissemination activities

Lead partner:	SKANDION (7)
Author(s):	Alexandru Dasu (SKANDION), Andreea Bucur (EIBIR)
Work Package:	7
Delivery as per Annex I:	Month 24 (31.08.2022)
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Type:	Report
Dissemination level:	Public

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Abbreviations

ALLIANCE	The European Radioecology ALLIANCE
BFS	Federal Office for Radiation Protection Germany
COCIR	European Trade Association representing the medical imaging, radiotherapy, health and electromedical industries
CT	Computed tomography
DOI	Digital Object Identifier
EAB	External Advisory Board
EFOMP	European Federation of Organisations for Medical Physics
EFRS	European Federation of Radiographer Societies
EIBIR	European Institute for Biomedical Imaging Research
ESR	European Society of Radiology
EURADOS	The European Radiation Dosimetry Group
MELODI	Multidisciplinary European Low Dose Initiative
MOOC	Massive Open Online Courses
NERIS	European Platform on Preparedness for Nuclear and Radiological Emergency Response and Recovery
SHARE	European platform for Social Sciences and humanities research relating to ionizing radiation
WP	Work Package

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1. Introduction

Deliverable 7.1 (Intermediate report on SINFONIA dissemination activities) is part of WP7 – Dissemination and recommendations. WP7 is focused on activities to ensure dissemination and public engagement of the results from SINFONIA through several channels customised to the target audiences. The overall aim is that all the project outputs are discoverable, accessible and assessable. To achieve the best result, the dissemination and communication activities are adapted to the target audiences. These include Open Access publication of scientific articles, presentations at annual meetings of national and international professional organisations, social media presence for the promotion of the results of the project to professionals, patients, carers and the general public.

2. Progress summary

SINFONIA has pursued the scheduled activities for communication and dissemination, fulfilling all the milestones and deliverables of the work package for the first half of the project. Thus, SINFONIA has created and updated its Plan for Communication and Dissemination. The SINFONIA visual identity was developed, including a presentation video, and an open access website for the project has been set up. Various communication and dissemination activities were carried out, e.g., distribution of press releases and news articles, participation in meetings and conferences, and open access publication of papers in scientific journals. Information materials for the non-expert audience (general public) were produced and made available via the project's website. A working External Advisory Board (EAB) has been set up to act as a multiplier of dissemination activities to relevant stakeholders, and also as an advisor to identify possible risks related to the dissemination of project results and advise on suitable mitigation actions.

The submitted deliverables and reached milestones in the first half of the project are illustrated in Table 1 (Deliverables) and Table 2 (Milestones).

Table 1. Submitted WP7 deliverables

Deliverable number	Deliverable title	Lead beneficiary	Type	Dissemination level	Submitted
D7.1	Intermediate report on SINFONIA dissemination activities	7 - Skandion	Report	Public	24
D7.3	Plan for Communication and Dissemination	1 - EIBIR	Report	Confidential	24
D7.4	Factsheets and other information for the general public on doses from medical exposure and their impact on the risk for patients	1 - EIBIR	Report	Public	14
D7.5	Updated Communication and Dissemination Plan and updated video	1 - EIBIR	Report	Confidential	24

Table 2. WP7 milestones reached

Milestone number	Milestone title	Lead beneficiary	Reached
MS1	Kick-off meeting	1 - EIBIR	1
MS3	Visual identity, project website	1 - EIBIR	3

3. Results

Several overarching dissemination activities have been carried out in the first half of the project. A Plan for Communication and Dissemination has been set up and submitted on 23 November 2020 as Deliverable D7.3 (Plan for Communication and Dissemination). D7.3 is a living document that provides a framework for the project's communication and dissemination activities and will be revised and updated regularly. The core stakeholders and target groups for dissemination activities are outlined in this deliverable, as well as respective dissemination objectives and strategies. The Plan has been updated and will be submitted before the end of August 2022 as Deliverable D7.5 (Updated Plan for Communication and Dissemination).

The EAB (Table 3) has been formed from representatives of relevant stakeholders for the project, namely professional societies, industry and radiation protection bodies. The EAB has had a first meeting on 20-21 September 2022 when its members gave feedback on the results achieved in the project until the respective date and on the proposed course of action throughout the project's lifetime.

Table 3. External Advisors for the SINFONIA project

First name	Last name	Institution
Ricardo	Corridori	European Trade Association representing the medical imaging, radiotherapy, health ICT and electromedical industries (COCIR)
Constantinos	Koutsojannis	European Federation of Organisations for Medical Physics (EFOMP)
Franz	Kainberger	European Society of Radiology (ESR)
Shane	Foley	European Federation of Radiographer Societies (EFRS)
Astrid	Liland	European Platform on Preparedness for Nuclear and Radiological Emergency Response and Recovery (NERIS)
Hildegarde	Vandenhove	The European Radioecology ALLIANCE (ALLIANCE)
Marie	Davidkova	The European Radiation Dosimetry Group (EURADOS)
Helmut	Schlattl	Federal Office for Radiation Protection Germany (BFS)
Simon	Bouffler	Multidisciplinary European Low Dose Initiative (MELODI)
Lina	Vieira	European platform for Social Sciences and humanities research relating to ionizing radiation (SHARE)

3.1 Task 7.1 Dissemination

This task is concerned with the dissemination of the SINFONIA's outputs through publications, presentations, reports and recommendations. Open Access is recommended for publications in order to make them discoverable, accessible and assessable. For the same purpose, other outputs of the project like reports and recommendations are made available through the project website.

Several scientific articles have been published or submitted for publication in the first 24 months of the project (Table 4). The details of the publications are also available on the project website together with their respective Digital Object Identifier (DOI).

Table 4. SINFONIA publications

Year	Authors	Publication title	Journal	Publication details	DOI
2021	Y. Salimi et al	Deep learning-based fully automated Z-axis coverage range definition from scout scans to eliminate overscanning in chest CT imaging	Insights into Imaging	Volume 12 Article ID 162	10.1186/s13244-021-01105-3
2022	Domingo et al	Peripheral organ equivalent dose estimation procedure in proton therapy	Frontiers in Oncology	Volume 12 Article ID 882476	10.3389/fonc.2022.882476
2022	Romero-Expósito et al	Determining out-of-field doses and second cancer risk from proton therapy in young patients – an overview	Frontiers in Oncology	Volume 12 Article ID 892078	10.3389/fonc.2022.892078
2022	Eliasson et al	Range-shifter effects on the stray field in proton therapy measured with the variance-covariance method	Frontiers in Oncology	Volume 12 Article ID 882230	10.3389/fonc.2022.882230
Submitted	Thierry-Chef et al	Medical applications of ionizing radiations and radiation protection for European patients, population and environment	EPJN - Nuclear Sciences & Technologies		
Submitted	Salimi et al	Fully Automated Acurate Patient Positioning in Computed Tomography Using AP Localizer Images and a Deep Neural Network: A Dual-Center Study			
Submitted	Myronakis et al	Rapid estimation of patient-specific organ doses using a deep learning network			

Dissemination was also achieved through participation in various meetings and events relevant for the objectives and research activities of the project. These are summarised in Table 5 together with additional dissemination activities.

Table 5. Other dissemination activities of SINFONIA

Year	Type of dissemination activity	Details (Name, presentation)	Target audience
2021	Organisation of a Conference	Physics and dose optimization in CT: present and the future (2021) (https://www.efie.gr/index.php/gr/informations-3/video/item/540-diadiktyaki-imerida-fysikes-arxes-kai-veltistopoiisi-apeikonisis-me-ypologistiki-tomografia-yt-to-paron-to-mellon)	Scientific Community
2021	Participation to a conference	Deep Learning-based Fully Automated Scan Range Detection in Chest CT Imaging, at 2021 Virtual IEEE Nuclear Science Symposium and Medical Imaging Conference (https://nssmic.ieee.org/2021/)	Scientific Community
2021	Participation to a conference	Automated deep learning-based calculation of water equivalent diameter from 2D CT localizer images, at 2021 Virtual IEEE Nuclear Science Symposium and Medical Imaging Conference (https://nssmic.ieee.org/2021/)	Scientific Community
2021	Participation to a conference	Deep learning-based Dosimetry in Radionuclide Therapy: Is It Worth the Effort?, at 2021 Virtual IEEE Nuclear Science Symposium and Medical Imaging Conference (https://nssmic.ieee.org/2021/)	Scientific Community

2021	Participation to a conference	Artificial Intelligence in Medical Imaging: Challenges and Opportunities, at MEFOMP Medical Physics Conference 2021 (https://mefomp-conference.com)	Scientific Community
2021	Participation to a conference	Precise CT Dosimetry in Diagnosis and Radiotherapy: Why it Matters? at MEFOMP Medical Physics Conference 2021 (https://mefomp-conference.com)	Scientific Community
2021	Participation to a conference	The SINFONIA project, at European Congress of Radiology (ECR) 2021 (https://insightsimaging.springeropen.com/track/pdf/10.1186/s13244-021-01014-5.pdf)	Scientific Community
2021	Participation to a conference	Personalized CT dosimetry and radiation-induced risk assessment at 19th Asian Oceanian Congress of Radiology 2021 (https://aocr2021.com/dwnlds/AOCR_Detailed_Programme.pdf)	Scientific Community
2021	Participation to a conference	Extremity and Whole-Body Dose Monitoring of Staff with Thermoluminescent and Real-Time Detectors during Treatments of Neuroendocrine Tumours with 177Lu-Dotatate (Luthatera), at 5th European Radiation Protection Week (ERPW) 2021 (https://www.euramed.eu/wp-content/uploads/2021/10/5th-European-Radiation-Protection-Week_draft-programme.pdf)	Scientific Community
2021	Participation to a conference	IA/Big data vs. real world - Sociedad Oncológica de Galicia	Scientific Community
2021	Participation to a conference	Investigation of Monolithic and Pixelated Detectors and Two-Layer Geometry for Hemispheric PET Systems: A Simulation Study	Scientific Community
2022	Participation to a conference	Comparison of low distortion methods to calculate ADC in metastatic brain tumours and normal tissue, ESTRO Congress 2022 (https://www.estro.org/Congresses/ESTRO-2022)	Scientific Community
2022	Participation to a conference	Medical Applications of Ionizing Radiation And Radiation Protection for European Patients, Population and Environment (Joint presentation of several projects: HARMONIC, MEDIRAD, SINFONIA and EURAMED rocc-n-roll) FISA 2022 (https://www.sfen.org/evenement/fisa-2022-euradwaste-22/)	Scientific Community
2022	Participation to a conference	Predictive value of dose metrics from 99mTc-MAA compared to 90Y SPECT/CT in Dosimetry-Guided Personalized SIRT of Hepatocellular Carcinoma, SNMMI Annual Congress 2022 (https://am.snmmi.org/iMIS/SNMMI-AM)	Scientific Community
2022	Participation to a conference	Session on Hot Topics in X-ray Imaging Radiation Protection World Congress on Medical Physics and Biomedical Engineering (https://wc2022.org/)	Scientific Community
2022	Participation to a conference	The SINFONIA project, at European Congress of Radiology (ECR) 2022 (connect.myesr.org/event/ecr-2022-july/)	Scientific Community
2022	Participation to a conference	Occupational doses during management of therapeutic (Lu177-DOTATATE) and diagnostic (Ga68-DOTATOC) radiopharmaceuticals for theranostics, 4th European Congress of Medical Physics (https://www.ecmp2022.org/)	Scientific Community
2022	Participation to a conference	Neutron dose equivalent increase due to range shifter in active proton therapy, 4th European Congress of Medical Physics (https://www.ecmp2022.org/)	Scientific Community
2022	Participation to a conference	Extremity dosimetry and real-time monitoring of nuclear medicine workers during management of Ga68-DOTATOC, 35th Annual Congress of the European Association of Nuclear Medicine (https://eanm22.eanm.org/)	Scientific Community
2021	Organisation of a workshop	Artificial Intelligence and medical physics: The initial experience of the SINFONIA Horizon project, at International Medical Physics Week (IMPW) 2021 (https://www.iomp.org/iomp-school-on-impw-2021-day-2/)	Scientific Community
2021	Participation to a workshop	A guided tour of x-ray CT through dosimetry and image quality assessment, at European Federation of Organisations for Medical Physics - EFOMP-EUTEMPE Webinars 2021 (https://www.efomp.org/index.php?r=pages&id=webinars)	Scientific Community
2021	Participation to a workshop	Mejora de tratamientos en Radioterapia (Improving treatments in radiotherapy) - 5th Meeting of Research Groups of The Iis Galicia South (IISGS)	Scientific Community
2021	Participation in activities	Start of collaboration with H2020 CHAIMELEON project (GA no. 952172) (online meeting).	Industry

	organised jointly with other H2020 project(s)		
2021	Participation to an event other than a conference or workshop	Women in Science – Lectures for schools, Galicia, Spain	General Public
2020	Press release	Article "Arranca o proxecto SINFONIA". CESGA-published magazine Dixitos, December 2020, pg 7. (https://www.cesga.es/en/download/dixitos-december-2020/)	Scientific Community
2020	Press release	Article "La Supercomputación ayuda a evaluar riesgos de exposición a radiación médica" on CESGA's web (https://www.cesga.es/en/sinfonia-riesgos-por-exposicion-a-radiacion-medica-2/) (in Spanish)	General Public
2020	Press release	El IIS Galicia Sur participa en un estudio europeo sobre el riesgo de la radiación al tratar linfomas o tumores cerebrales (http://www.fundacionbiomedica.org/el-iis-galicia-sur-participa-en-un-estudio-europeo-sobre-el-riesgo-de-la-radiacion-al-tratar-linfomas-o-tumores-cerebrales/)	Policy makers
2022	Press release	SNMMI International Best Abstract Award received for the work "Predictive value of dose metrics from 99mTc-MAA compared to 90Y SPECT/CT in Dosimetry-Guided Personalized SIRT of Hepatocellular Carcinoma" (https://www.elespanol.com/quincemil/articulos/vivir/premian-un-trabajo-del-sergas-para-minimizar-los-efectos-de-la-exposicion-a-la-radiacion)	General Public
2020	Other	NCBJ, presentation of the project on the beneficiary's website in progress (https://www.ncbj.gov.pl/sinfonia-radiation-risk-appraisal-detrimental-effects-medical-exposure-during-management-patients)	General Public
2021	Other	SCK CEN PhD day	Scientific Community
2020	Other	ALLIANCE General assembly 2020 http://www.er-alliance.eu/	Scientific Community
2021	Other	ALLIANCE General assembly 2021 http://www.er-alliance.eu/	Scientific Community

Three working panels were set up on radiation therapy, diagnostic radiology and nuclear medicine. The panels were created to work on recommendations and other information and communication materials in their respective areas. Their members are listed in Table 6.

Table 6. WP7 panels Radiation Therapy, Diagnostic Radiology and Nuclear Medicine

Topics/Panels		
A. Radiation Therapy	**B. Diagnostic Radiology**	**C. Nuclear Medicine**
Alexandru Dasu (SKANDION)	John Damilakis (UoC)	Habib Zaidi (UNIGE)
Mercedes Riveira Martín (SERGAS)	John Stratakis (UoC)	Mercedes Riveira Martín (SERGAS)
Antonio López Medina (SERGAS)	Habib Zaidi (UNIGE)	Manuel Salgado Fernández (SERGAS)
Andreea Bucur (EIBIR)	Andreea Bucur (EIBIR)	Klaus Bacher (UGENT) Andreea Bucur (EIBIR)

3.1 Task 7.2 Public engagement and outreach

The main objectives of task 7.2 are focused on raising awareness and increasing the visibility of the project.

Within the first three months of the project, a visual identity (project logo, document templates), a promotional video (available on YouTube and on the project's website) and the project's website were created; this work was reached as part of milestone MS3 in accordance with the provisions of the Grant

Agreement. SINFONIA's promotional video will be updated and submitted in M47 and will present the final results of the project.

The project logo and presentation template are available via the Teamwork platform for the entire consortium. The logo was provided in multiple formats for easy and quick use in print or digital media ranging from folders with background information and the project website to scientific posters and social media activities.

The visual identity and online presence comply with all communication requirements set forth by the European Commission. The funding source and Grant Agreement number are mentioned on the website, as well as on other communication materials developed during the first period. The visual identity of the project was developed to ensure a clear, consistent and recognisable brand for all communications.

The SINFONIA website (https://www.sinfonia-appraisal.eu/) was launched in November 2020 and features a modern, user-friendly, responsive design using the latest web standards. This ensures that the website can be accessed not only from a computer, but also works well on mobile devices such as tablets and smartphones. The design is in line with the visual identity of the project (e.g., colour scheme). Given the targeted audience (both experts and general audience), the information is offered as much as possible in a non-expert language. The website presents the project's overall aims (**Project**), the project partners (**Partners**) and gives information on the objectives of each work package. A **News** section with regular updates informs visitors about the latest project developments and relevant events. In addition, the following sections are also available on the site: **Publications** – under which the scientific publications will be available for download, **Education** – under which details are given about the training programme and Massive Open Online Courses (MOOC) developed under WP6, **Contact** – any visitor can contact the project via the online form, **Press and Media** – under which promotional materials of the project are available, **Legal notice**, Twitter logo - redirects to the EIBIR's Twitter account which manages the project's related announcements. The promotional video is also available on the main page (homepage) of the website and on YouTube at this address: https://www.youtube.com/watch?v=opdN_SNuPVA.

Table 7 present screenshots of the elements of the visual identity and of the website.

Table 7. Visual identity and website of the SINFONIA project

1. Logo	2. Template: presentations slides
	
3. Promotional video	**4. Website (homepage)**
	

The website is easily discoverable (as of 2022-08-23):

- First result when searching for “Sinfonia risk” in search engines (e.g., Google, Bing)
- First result when searching for “Sinfonia appraisal” in search engines (e.g., Google, Bing)
- Among first results when searching for “risk appraisal medical exposure” (e.g., Google, Bing)

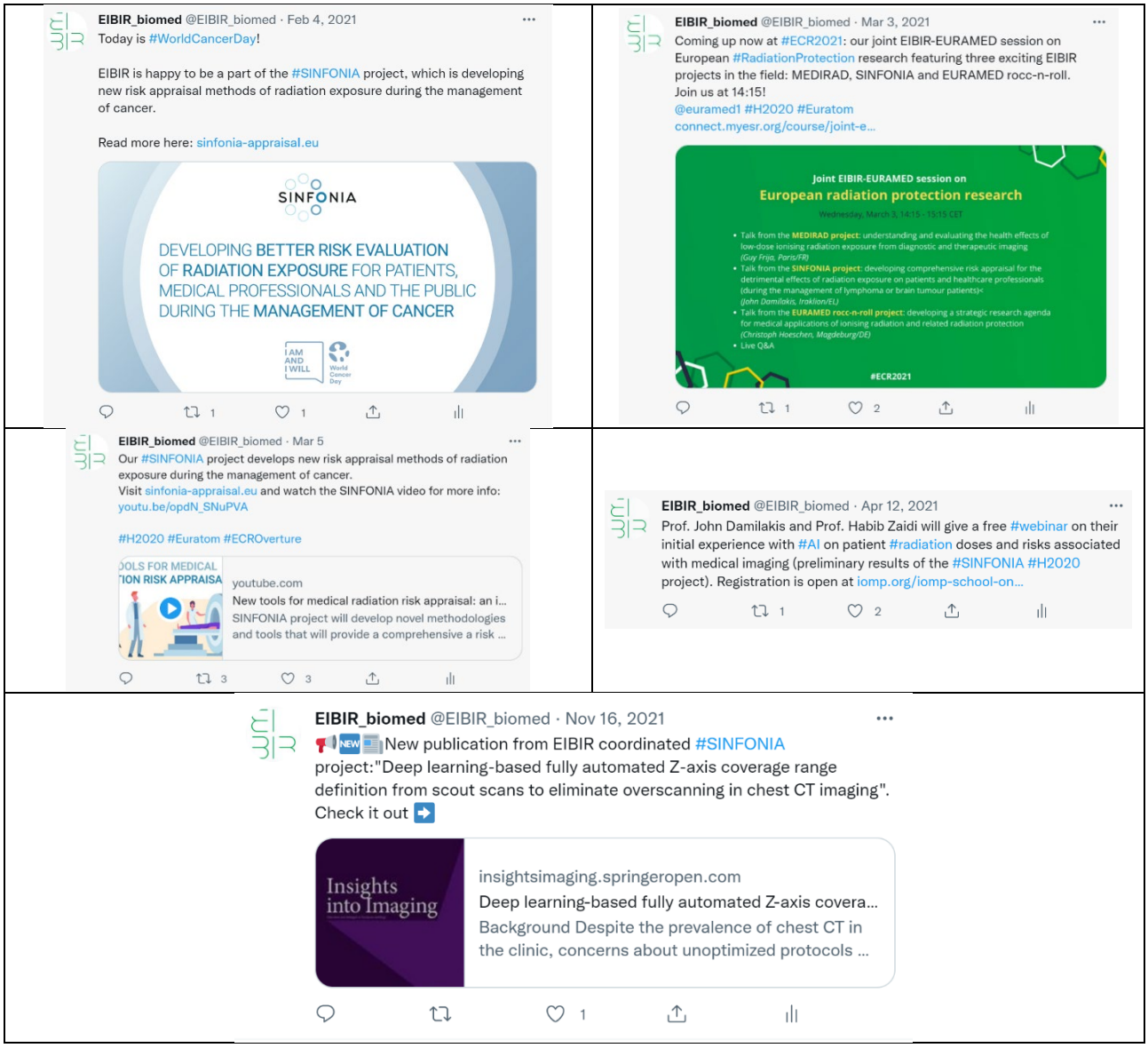
In order to track the impact of public outreach and engagement via the project’s website the analytics tool MATONO was implemented in June 2021. Thus, over the period **June 2021 – August 2022**, the website received **5093 pageviews**, of which **1744 unique pageviews**; the visit duration was on average of **2:00 minutes with 4.5 actions** (e.g., page views, downloads, clicks) per visit. The visits were made from **87 countries world-wide** and the geographical distribution of the top 10 countries in presented in Table 8. The 3 main search engines used to find the SINFONIA website were: Google (571), Baidu (69) and Bing (46).

Table 8. Statistics for the SINFONIA website

Country	Visits	Actions	Actions per visit	Average time on site
1. Spain	293	1318	44	10 min 9s
2. Austria	273	2069	204	25min 6s
3. United States	163	447	19	1 min
4. Sweden	142	733	22	5min 40s
5. Poland	137	849	99	8 min 6s
6. Germany	128	645	38	4min 9s
7. Netherlands	126	412	20	2min 7s
8. Belgium	109	549	36	3min
9. China	96	179	4	10s
10. Switzerland	80	371	37	2min 6s

The project has not set up dedicated social media accounts but is using the available accounts of the project partners (e.g., EIBIR's account). In the first period, SINFONIA was promoted on the Twitter platform with posts about events at which the project was presented or informed about new scientific publications. The posts are showcased in Table 9.

Table 9. SINFONIA activities on social media



Under Task 7.2, the dedicated panels on the three chosen topics have produced three fact sheets in the first half of the project. These have been submitted in month 14 of the project as Deliverable D7.4 (Factsheets and other information for the public on doses from medical exposure and their impact on the risk for patients). The fact sheets give information about different radiation procedures and potential associated-risks in an accessible non-expert language targeting the public and patients; this is part of the tailored communication materials as described in the Grant Agreement under task 7.2, and in line with the overall objectives of the communication strategy of the project seeking to present the scientific results and information beyond the professional and specialist communities in the field of medical radiation. To facilitate their dissemination the fact sheets were prepared in a leaflet format (with copyrighted design and images) that can be printed. The fact sheets are accessible freely via the project's website (https://www.sinfonia-appraisal.eu/sinfonia-research-results/). They have also been distributed to the public relations departments

of hospitals and/or clinics in project's partners networks to be considered for further inclusion in regular information materials.

The first SINFONIA Newsletter (screenshot in Table 10) was prepared and circulated in May 2022 to over 1000 subscribers from the EIBIR's database which includes medical professionals as well as members of the general public. In addition, the members of the External Advisory Board have further circulated the newsletter among the members of their respective organisations (as listed in Table 3).

Table 10. 1st SINFONIA Newsletter.

View this email in your browser

SINFONIA

Radiation riSk appraIsal for detrimeNtal eFfects from medical expOsure during maNagement of patIents with lymphomA or brain tumour

NEWSLETTER 1 / 2022

In this Newsletter:

- The SINFONIA project
- First results
- Training courses
- Information for the general public
- Publications

SINFONIA project

SINFONIA's main ambition is to introduce a paradigm shift by going from the current generalised approach in risk appraisal to a personalised-driven methodology which will significantly improve the state-of-the-art of medical radiation protection. Project

With a multidisciplinary team of 14 partners from 8 European countries, **SINFONIA**, a 4-year EURATOM funded project, aims to develop novel methodologies and tools that will provide a comprehensive a risk appraisal for detrimental effects of radiation exposure on patients, workers, carers and comforters, the public and the environment during the management of patients suspected or diagnosed with lymphoma and brain tumours.
The scientific work will (1) develop novel AI-powered personalised dosimetry and risk appraisal methods and tools to estimate the radiation burden on patients undergoing state-of-the-art radiological, nuclear medicine and radiation therapy procedures, (2) reinforce risk appraisal for exposed staff, comforters, the public and the environment during nuclear medicine and proton therapy procedures, (3) determine the degree of patient variability in radiation sensitivity for the risk of developing secondary malignancies and (4) design and develop data management techniques for managing data from imaging and non-imaging examinations and radiation therapy sessions. A data repository will be developed for storing data as well as for the deployment of AI algorithms on an online platform. SINFONIA research outcomes for the two clinical examples, lymphoma and brain tumours, will be also applicable to other diseases. AI-powered personalised dosimetry tools will provide advanced knowledge on parameters affecting radiation detriment. This will help balancing risks and benefits of ionising radiation procedures and developing dose optimisation strategies. Additionally, radiation biology studies will identify individuals with increased susceptibility of developing cancer from ionising radiation exposure. SINFONIA also will organise high-level multidisciplinary training in the field of radiation dosimetry, risk appraisal and radiation protection and develop recommendations on radiological protection.

SINFONIA research outcomes for the two clinical examples, lymphoma and brain tumours, will be also applicable to other diseases. AI-powered personalised dosimetry tools will provide advanced knowledge on parameters affecting radiation detriment. This will help balancing risks and benefits of ionising radiation procedures and developing dose optimisation strategies. Additionally, radiation biology studies will identify individuals with increased susceptibility of developing cancer from ionising radiation exposure. SINFONIA also will organise high-level multidisciplinary training in the field of radiation dosimetry, risk appraisal and radiation protection and develop recommendations on radiological protection.

Progress

The work up to now, has been devoted to the establishment and approval of studies, literature review, data collection and data processing for the development of tools and training of AI models. First results

Patient radiation risk appraisal through personalised dosimetry and AI: Patient data have been collected and personalized Monte Carlo simulations have been performed to develop tools for the estimation of patient dose from various X-ray modalities. Research on PET/CT has been focused on the development of tools for patient-specific internal radiation dosimetry calculations using deep learning techniques. Moreover, an analytical method for stray dose calculations from megavoltage radiation therapy has been identified and is under implementation.

Staff dosimetry: An AI-assisted computational system for real time staff dose assessment in nuclear medicine is under development. Data is being collected on detecting laboratory objects, tracking position and posture of medical staff, as well as for the 3D reconstruction of the workers and their surrounding environment. For the evaluation of the risk to which staff is exposed in nuclear medicine, measurements at 7 hospitals in 3 countries (Spain, Switzerland and Belgium) are

medicine patients after injection with radiopharmaceuticals, the performance and accuracy of a computational framework based on Monte Carlo simulations is being evaluated. In addition, a field survey on staff dosimetry practices and doses measured on staff working in proton therapy centres in Europe has been carried out and the results have been analysed.

Environmental detriment: The impacts on human and biota from the release of radiopharmaceuticals by hospitals in sewers are currently assessed with the help of a transfer and biosphere models. The biological species considered are: Pelagic and Benthic Fish, Crustacean, Bivalve mollusc, Vascular plant, Phytoplankton and Zoplankton; while the radionuclide for which data has been collected are: 89Zr, 90Y, 99Mo, 99mTc, 131I, 131mXe, 133Xe, 177Lu, 177mLu, 223Ra, 225Ac, 226Ra and 227^{Th}.

Assessment of variation in radiation sensitivity among patients: The collection of blood samples to determine the degree of intra-, and inter-individual variability in the level of RT-induced, SMN-related mutations is ongoing. A viable freezing of peripheral blood lymphocytes procedure has been established and successfully testes allowing for transfer of blood samples between different laboratories. The group of patients with primary cancers has been extended by including breast cancer patients.

Storing and accessing patient data in a centralised repository infrastructure: The prototype repository has been released providing the SINFONIA partners a usable data sharing tool.

Education and training: A survey has been carried out in order to analyse at EU level the gaps and good practices in dosimetry, radiobiology and radiation protection education and training. Furthermore, 5 high-level training courses have been prepared and currently accepting applications from professionals within EU. The framework and initial prototype for the context-aware training module has been created and will be integrated into the interactive and multidisciplinary MOOC (Massive Open Online Course) on dosimetry/radiobiology/ radiation protection produced by SINFONIA.

Training courses

A training programme is currently being developed to train young clinicians, medical physicists, radiobiologists and other healthcare professionals as a team, which will stimulate the exchange of skills and knowledge within Europe. Information about the courses is available on our website: https://www.sinfonia-appraisal.eu/education/. Training courses

	Course	Organiser	Dates
1	Cellular effects of ionising radiation – introduction to radiation biology	SU	Autumn 2022 (exact dates to be determined soon)
2	Patient dosimetry and occupational radiation exposure assessment arising from Lu-177, Ga-68, I-131 and Y-90 procedures	SERGAS	pre-course, online: 19.09.2022 - 21.09.2022 onsite: 28.09.2022 - 30.09.2022
3	Theoretical and practical fundamentals of radiation therapy	SCO	Autumn 2022 (exact dates to be determined soon)
4	Introduction to Machine Learning / Deep Learning	CESGA	12.09.2022 - 16.09.2022
5	Course on personalized dosimetry and quantitative radiation risk assessment	UGENT	To be determined

Factsheets Information for the general public

SINFONIA is seeking to present the scientific results and information beyond the professional and specialist communities in the field of medical radiation. Thus, the fact sheets give information about different radiation procedures and potential associated risks in an accessible non-expert language targeting the public and patients.

- Diagnostic radiology
- Radiation therapy
- Nuclear medicine

3.1 Task 7.3 Recommendations

This task starts in month 25 of the project. However, dedicated working panels (Table 6) have already been set up.

4. Summary of significant results

The main activities undertaken within the first 24 months of the project are as follows:

- Creation of the project's visual identity; setting up and ongoing maintenance of the project's website (MS3)
- Preparation and submission of the first version of the Plan for Communication and Dissemination (D7.3); the revised plan will be submitted before the end of August 2022 as Deliverable D7.5
- Preparation and submission of the first information for the public – fact sheets on doses from medical exposure and their impact on the risk for patients (D7.4); ensure free accessibility via the project's website
- Summarising the dissemination activities in the first 24 months of the project and preparing the present report that will be submitted before the end of August 2022 as Deliverable D7.1
- Dissemination through participation in important national, European and international scientific events
- Publication of research results in peer-review journals
- Communication of ongoing results via media channels (e.g., Twitter)
- Preparation and circulation of the 1st SINFONIA Newsletter