

EU JUST CT

Introduction to the EU-JUST-CT Project Overview of Project Scope and Work Plan

Boris Brkljačić

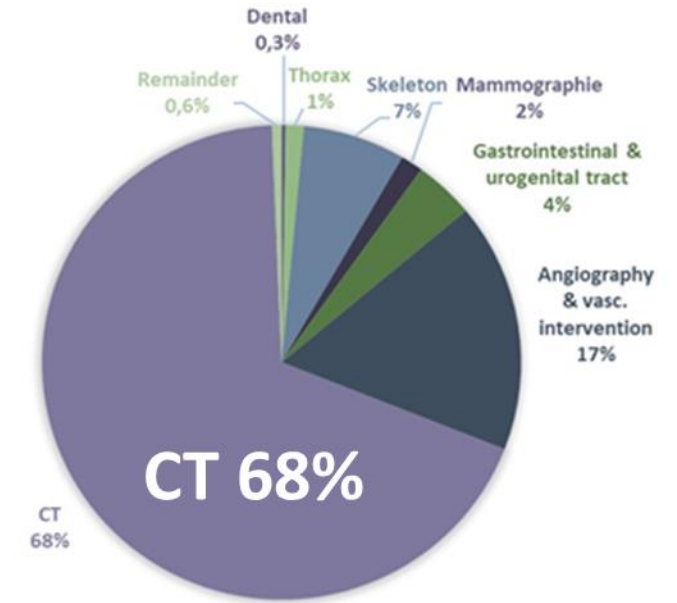
Project lead, ESR EuroSafe Imaging Chair, former ESR president



Computed Tomography

- In computed tomography, the number of procedures and the collective dose have risen markedly. The number of procedures has increased by about 80% and the collective dose has increased by around 70%.
- While there is evidence of some reduction in the average dose per procedure, use of computed tomography continues to grow

• UNSCEAR 2020/21



2018 Data, Germany
Bundesamt für Strahlenschutz

Importance/ legal aspects of justification of imaging procedures

- The BSSD requires individual radiological procedures to be justified in advance, taking into account the specific objectives of the procedure and the patient's characteristics, and prescribes a justification process under the clinical responsibility of a radiological practitioner and involving the referring physician.
- The Directive requests Member States to introduce referral guidelines for medical imaging, which should be made available to the referrers.
- EU-JUST-CT project is embedded in the broader Strategic Agenda for Medical Ionising Radiation Applications (SAMIRA) of the European Commission

ESR guidelines

- 2,300 indications with associated exams incl. appropriateness ratings for defined patient groups
 - Age range: 0-150 years
 - Sex: male, female, either
- Appropriateness ratings
 - 1-3 (**red**): usually not appropriate
 - 4-6 (**yellow**): may be appropriate
 - 7-9 (**green**): usually appropriate

DEVELOPMENT OF EUROPEAN IMAGING REFERRAL GUIDELINES

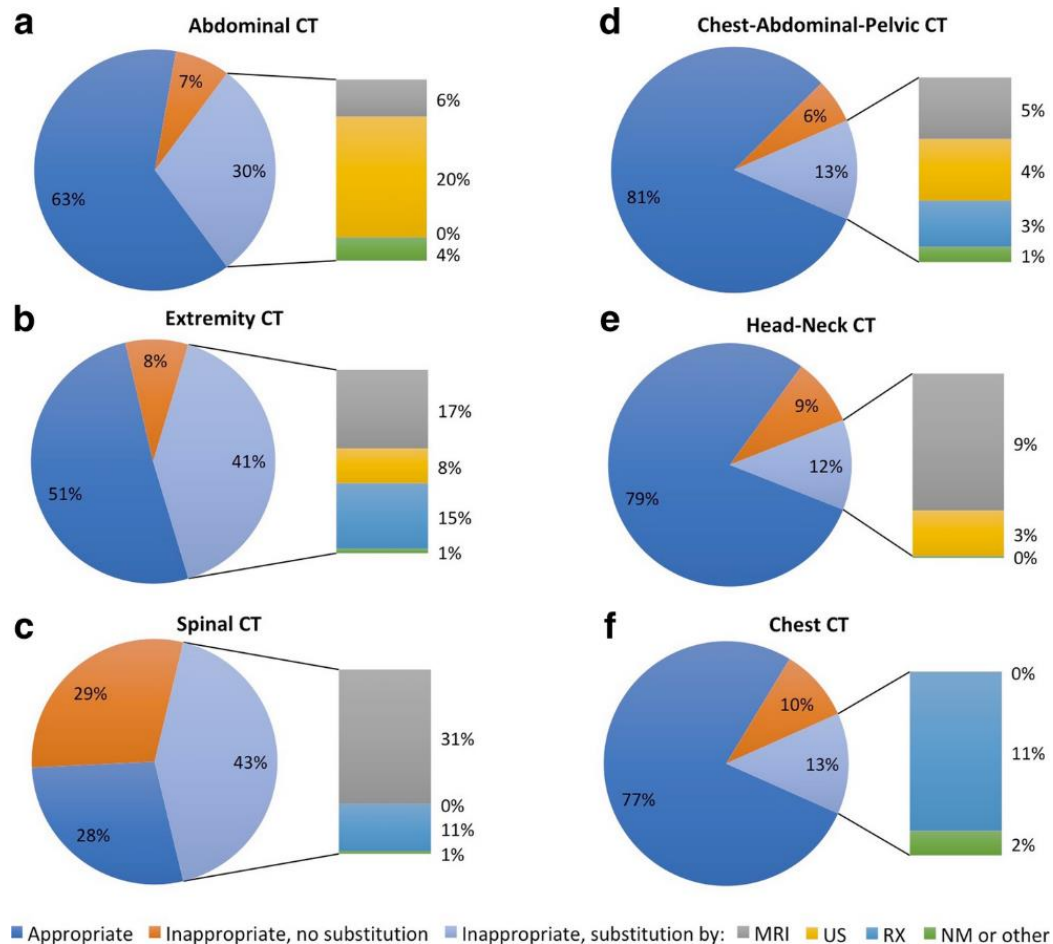
ESR experts review and adapt the content for **ESR iGuide** from the ACR Appropriateness Criteria, consisting of clinical scenarios and indications and associated imaging exams, for ten topics:



ESR iGUIDE
EUROPEAN SOCIETY OF RADIOLOGY

- Breast Imaging
- Cardiac Imaging
- Gastrointestinal Imaging
- Musculoskeletal Imaging
- Neurologic Imaging
- Paediatric Imaging
- Thoracic Imaging
- Urologic Imaging
- Vascular Imaging
- Women's Imaging

CT & MRI Audit, Luxembourg (2019)



A HIGH PROPORTION OF CT (39%) AND MRI (21%) REQUESTS ARE INAPPROPRIATE

INAPPROPRIATE REFERRALS: ANOTHER EXAM WOULD HAVE BEEN APPROPRIATE IN 67% (CT) AND 58% (MRI) OF CASES

35% OF CT AND 55% OF MRI REFERRALS LACKED CLINICAL INFORMATION TO ASSESS APPROPRIATENESS

EU-JUST-CT Project

EU JUST CT 

EU-JUST CT (European co-ordinated action on improving justification of computed tomography)

- EU-funded audit project led by the ESR (36 months)
- Project lead: Boris Brkljačić /HR
- Project co-lead: Alexandra Karoussou-Schreiner/ LUX
- **ESR iGuide** web portal used by auditors to assess appropriateness of CT referrals
- 7 participating countries, 145 participating centres



Objectives

The 36-month project aims to improve justification of computed tomography in Europe through co-ordinated action.

The project will meet the following specific objectives:

- a) Collect up-to-date information about justification of CT examinations in Europe.
- b) Develop a common methodology for auditing justification of CT examinations.
- c) Carry out co-ordinated pilot audits of justification of CT examinations.
- d) Discuss the status of justification of CT examinations with the Member States and identify opportunities for further action.

Project duration: 36 months

- Project start date: 7 April 2021
- Project end date: 31 March 2024

Overview of the project status

Consortium

The project is carried out by the European Society of Radiology as contractor, represented by the following experts:

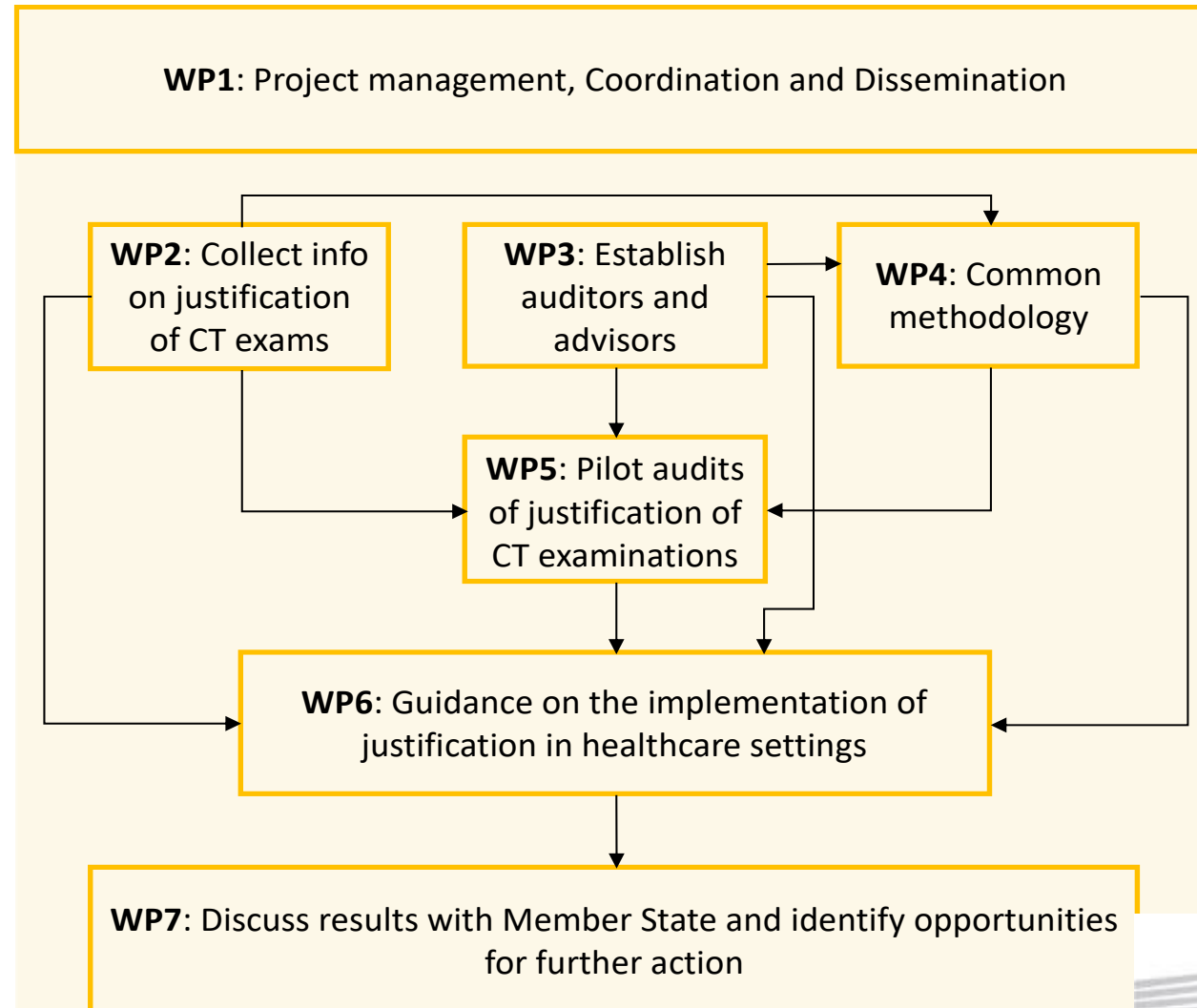
- Boris Brkljačić, HR (project manager, WP1, 3, 6, 7 lead, WP4, 5 co-lead)
- Alexandra Karoussou-Schreiner, LU (project co-manager, WP4 lead, WP1, 7 co-lead)
- Ritva Bly, FI (WP2 co-lead)
- Adrian Brady, IE (WP3 co-lead)
- Steve Ebdon-Jackson, UK (WP6 co-lead)
- Shane Foley, IE (WP2 lead)
- Jacob Sosna, IL (WP5 lead)
- Florian Demuth, AT (ESR iGuide expert)
- Monika Hierath, AT (lead, project office)

Overview of the project status

Project duration: 36 months

- Project start date: 7 April 2021
- Project end date: 31 March 2024

Current Project Month: 30



WP3: Advisory Group

The EU-JUST-CT Advisory Group consists of:

Prof.	Hubert	Ducou Le Pointe	FRANCE
Prof.	Caroline	Ewertsen	DENMARK
Dr.	Martijn	Grieten	BELGIUM
Prof.	Zoltan	Harkanyi	HUNGARY
Prof.	Franz	Kainberger	AUSTRIA
Prof.	Goran	Roić	CROATIA
Prof.	David	Howlett	UNITED KINGDOM

WP3: Steering Group

The EU-JUST-CT Steering Group consists of:

Dr.	Thorsten	Cederlund	Sweden
Prof.	Guy	Frija	France
Dr.	Eva G	Friberg	Norway
Dr.	Juergen	Griebel	Germany
Mrs	Sarah	Peters	United Kingdom (resigned in Apr 2023)
Dr	Katrien	Van Slambrouck	Belgium
Dr	Jenia	Vassileva	IAEA (retired as of Sept 2023)

Continuous involvement of Steering Group and Advisory Group

SG/AG have been consulted on all deliverables submitted to EC so far and their input is documented as part of each deliverable



- The Auditor Pool was established by inviting NCAs from the 7 participating countries to nominate 4 auditors each (plus min. 2 alternatives in case of dropouts) from their countries.
- Auditors were contacted and agreements signed with each of them in March 2022. Where necessary (e.g., for health reasons) alternatives were appointed to ensure each country had at least 4 auditors in place.
- Auditors were provided training in the use of the ESR iGuide and a test audit was carried out on referrals provided by NCAs from HU and EE.
- Auditors began receiving referrals from their NCAs in May 2022 and the audit was finalised in all countries by February 6, 2023.

WP4: Develop common methodology and tools

WP4: Develop common methodology and tools

Lead:	A. Karoussou-Schreiner
Co-Lead:	B. Brkljačić
Contributors:	J. Sosna, R. Bly, S. Ebdon-Jackson, F. Demuth, S. Bhumbra; Project Office; additional contributors: A. Bouëtté, D. Pfeffermann Steering Group
Duration:	M2 – M14



WP5: Carry out co-ordinated pilot audits of justification of CT examinations

WP5: Carry out co-ordinated pilot audits of justification of CT examinations

Lead:	J. Sosna
Co-Lead:	B. Brkljačić
Contributors:	A. Brady, S. Foley, A. Karoussou-Schreiner, R. Bly, S. Ebdon-Jackson, F. Demuth; external contributors: D. Pfeffermann, M. Saban, C. Singer Project Office Steering Group Advisory Group
Duration:	M2-M32



List of participating centres

Country	Level of Participation (country/region)	No. of participating hospitals/ centres	Of which public/ private
BE	Representative selection of centres across the country	11	8 public, 3 private
DK	Region of Southern Denmark	11	10 public, 1 private
EE	Entire country	19	17 public, 2 private
FI	Helsinki district	2 (17)	1 public, 1 private
GR	Thessaloniki region	26	8 public, 18 private
HU	4 counties: Baranya, Csongrád, Hajdú-Bihar, Borsod-Abaúj-Zemplén	4 (21)	4 public, 0 private
SI	Entire country	20	16 public, 4 private

Overview of referrals provided to the auditors

Country	Total number of referrals provided to the auditors	Referrals from public centres	Referrals from private centres	Percentages Public / Private referrals
Belgium	1006	614	392	61% / 39%
Denmark	1001	991	10	99% / 1%
Estonia	1013	971	42	96% / 4%
Finland	745	729	16	98% / 2%
Greece	909	288	621	32% / 68%
Hungary	1027	1027	0	100% / 0%
Slovenia	1021	801	220	78% / 22%

- Random sample of CT requests
- Two auditors per referral, four auditors per country
- Referrals assessed using ESR iGuide web portal
- Structured appropriateness assessment using Excel forms

- Key parameters
 - Completeness & clarity of reason for exam
 - Appropriateness of requested exam
 - Existence of more appropriate alternative exams

EU-JUST-CT Audit Form (sample)



	A	B	C	D	E	F	G
1	Referrer Specialty	Patient Age	Patient Sex	Patient Clinical Background	Reason for Exam/Clinical Indication	ESR iGuide Structured Reason(s) for Exam	Prior exams (if known)
2	Family Medicine/Gen	63	Female	Hypertonia, Arthrosis gen.l.u. Arthrosis subta	Please request a Cardio CT. Patient at	Dyspnea, cardiac origin suspected	Cardiac Ultrasound
3							
4							

	H	I	J	K	L
1	Exam requested original referral	Would you have requested the same exam	ESR iGuide exam name	Appropriateness origin	Highest recommended alternate exam in ESR iGuide
2	Cardiac CT angiography	Yes	CT, angiography, heart, coronary art		CT, angiography, chest, pulmonary arteries, w iv contrast 7 US, echo, heart, transthoracic rest
3					
4					

	M	N	O
1	Appropriateness alternate exam	Decision Support Number	Auditor comments/assessment
2		8	2888982
3			
4			



WP6: Develop guidance on the implementation of justification in healthcare settings

WP6: Develop guidance on the implementation of justification in healthcare settings

Lead:	B. Brkljačić
Co-Lead:	S. Ebdon-Jackson
Contributors:	A. Brady, J. Sosna, S. Foley, A. Karoussou-Schreiner, R. Bly; Project Office Steering Group, Advisory Group
Duration:	M10-M32



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WP7: Discuss results with Member State and identify opportunities for further action

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Lead:	B. Brkljačić
Co-Lead:	A. Karoussou-Schreiner
Contributors:	A. Brady, J. Sosna, R. Bly, S. Ebdon-Jackson, S. Foley; Project Office Steering Group
Duration:	M18 – M32



EU JUST CT 

*Justification of CT exams in Europe
Discuss Results with Member States and
Identify Opportunities for Further Action*

Workshop, September 28-29, 2023
Luxembourg

