

*EU JUST CT* 

## Results of hospital survey and correlation with results

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# Survey of Participating Centres

- Target: Centres participating in the pilot audits (125 in total)
- Aim: understand the implementation of the justification process
- 78 responses received
- Methodology, analysis:
  - Some respondents replied on behalf of multiple centres
  - In cases of more than one respondent answering for the same centre, the more complete answer was considered for analysis
  - Incomplete entries, duplicates as well as answers from respondents from centres that did not participate in the audit were removed



# Overview of responses

Survey responses received and analysed following cleaning

Country	Survey responses received	Removed from analysis	Number of responses considered for analysis	Number of centres reflected by responses	Reasons for removal from analysis
Belgium	12	1	11	11	1 duplicate
Denmark	5	0	5	5	
Estonia	20	3	17	17	1 duplicate, 1 incomplete, 1 respondent has not participated in audit
Finland	2	0	2	17	
Greece	14	2	12	12	1 duplicate, 1 incomplete
Hungary	4	1	3	17	1 duplicate
Slovenia	21	1	20	20	1 respondent has not participated in audit
	<b>78</b>	<b>8</b>	<b>70</b>	<b>99</b>	

# Results

## Public vs private centres

Country	Number of responses considered for analysis	Of which public	Of which private
Belgium *	11	8	3
Denmark	5	4	1
Estonia	17	15	2
Finland	2	1	1
Greece	12	6	6
Hungary	3	3	0
Slovenia	20	16	4
	<b>70</b>	<b>53</b>	<b>17</b>

\* None of the hospitals in Belgium can be considered as fully private or fully public

# Summary of answers to key questions

Country (No. of responses)	Number of diagnostic CT examinations performed per year by centre:						
	<1,000	1,001-10,000	10,001-30,000	30,001-50,000	50,001-100,000	>100,001	No data
<b>Belgium (11)</b>	0	0	3	7	1	0	0
<b>Denmark (5)</b>	1	0	1	2	1	0	0
<b>Estonia (17)</b>	1	8	6	2	0	0	0
<b>Finland (2)</b>	0	1	0	0	0	1	0
<b>Greece (12)</b>	1	7	4	0	0	0	0
<b>Hungary (3)</b>	0	0	2	1	0	0	0
<b>Slovenia (20)</b>	0	14	4	1	1	0	0
<b>Total = 70</b>	<b>3</b>	<b>30</b>	<b>20</b>	<b>13</b>	<b>3</b>	<b>1</b>	<b>0</b>

# Existence of written procedures

Country (No. of responses)	Are there written procedures describing the justification process available in the imaging facility's Quality Assurance system?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
<b>Belgium (11)</b>	6	1	4	0	0	55
<b>Denmark (5)</b>	5	0	0	0	0	100
<b>Estonia (17)</b>	6	1	9	1	0	35
<b>Finland (2)</b>	2	0	0	0	0	100
<b>Greece (12)</b>	4	5	2	1	0	33
<b>Hungary (3)</b>	1	1	1	0	0	33
<b>Slovenia (20)</b>	8	6	4	2	0	40
<b>Total = 70</b>	<b>33</b>	<b>14</b>	<b>19</b>	<b>4</b>	<b>0</b>	



# Issues addressed and described in the procedures: Evaluation of justification and appropriateness of referral

Country (No. of responses)	Evaluation of justification and appropriateness of referral?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
Belgium (11)	7	1	2	0	1	63
Denmark (5)	4	1	0	0	0	80
Estonia (17)	8	0	6	1	2	47
Finland (2)	1	0	1	0	0	50
Greece (12)	4	0	1	0	7	33
Hungary (3)	0	1	1	0	1	0
Slovenia (20)	7	0	5	0	8	35
<b>Total = 70</b>	<b>31</b>	<b>3</b>	<b>16</b>	<b>1</b>	<b>19</b>	



# Previous images or clinical information/ history

Country (No. of responses)	Seek previous images or clinical information/history?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
Belgium (11)	9	1	0	0	1	82
Denmark (5)	5	0	0	0	0	100
Estonia (17)	11	2	2	0	2	65
Finland (2)	2	0	0	0	0	100
Greece (12)	5	0	0	0	7	42
Hungary (3)	1	1	0	0	1	33
Slovenia (20)	9	0	3	0	8	45
<b>Total = 70</b>	<b>42</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>19</b>	



# Contact between referrer and practitioner

Country (No. of responses)	Contact between referrer and radiological practitioner when more information is required?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
<b>Belgium (11)</b>	7	2	1	0	1	64
<b>Denmark (5)</b>	5	0	0	0	0	100
<b>Estonia (17)</b>	12	1	2	0	2	71
<b>Finland (2)</b>	2	0	0	0	0	100
<b>Greece (12)</b>	5	0	0	0	7	42
<b>Hungary (3)</b>	1	1	0	0	1	33
<b>Slovenia (20)</b>	11	0	1	0	8	55
<b>Total = 70</b>	<b>43</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>19</b>	



# Procedures implemented in daily work

Have self-assessments/peer reviews/audits shown evidence or indications that these procedures are implemented in daily work?					
Yes	No	Partly	Don't know	Didn't answer	% Yes
5	1	3	1	1	46
3	1	1	0	0	60
5	4	6	0	2	29
1	0	1	0	0	50
5	0	0	0	7	42
2	0	0	0	1	67
9	1	2	0	8	45
<b>30</b>	<b>7</b>	<b>13</b>	<b>1</b>	<b>19</b>	



# Assignment and documentation of tasks/responsibilities

Country (No. of responses)	Are the responsibilities and tasks for the referring physician clearly assigned and documented?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
Belgium (11)	6	1	2	2	0	55
Denmark (5)	5	0	0	0	0	100
Estonia (17)	10	2	4	1	0	58
Finland (2)	2	0	0	0	0	100
Greece (12)	5	3	2	1	1	42
Hungary (3)	2	0	1	0	0	67
Slovenia (20)	13	3	3	1	0	65
<b>Total = 70</b>	<b>43</b>	<b>9</b>	<b>12</b>	<b>5</b>	<b>1</b>	



# Evaluation of appropriateness of referred examination

Country (No. of responses)	Is the appropriateness of referred examination evaluated before it is performed?					
	Yes	No*	Partly	Don't know	Didn't answer	% Yes
<b>Belgium (11)</b>	9	1	1	0	0	82
<b>Denmark (5)</b>	4	1	0	0	0	80
<b>Estonia (17)</b>	13	1	3	0	0	76
<b>Finland (2)</b>	2	0	0	0	0	100
<b>Greece (12)</b>	10	0	1	0	1	83
<b>Hungary (3)</b>	1	0	2	0	0	33
<b>Slovenia (20)</b>	11	1	7	0	1	52
<b>Total = 70</b>	<b>50</b>	<b>4</b>	<b>14</b>	<b>0</b>	<b>2</b>	

\*The 4 that responded 'no' were: 1 Public University Hospital, 2 Public Large Regional Hospitals and 1 Other (private diagnostic practice)



# Rejection of examination if inappropriate

Country (No. of responses)	If the examination requested is inappropriate, is the examination rejected?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
<b>Belgium (11)</b>	4	0	7	0	0	36
<b>Denmark (5)</b>	5	0	0	0	0	100
<b>Estonia (17)</b>	14	0	3	0	0	82
<b>Finland (2)</b>	2	0	0	0	0	100
<b>Greece (12)</b>	8	1	2	0	1	67
<b>Hungary (3)</b>	1	0	2	0	0	33
<b>Slovenia (20)</b>	11	0	8	0	1	55
<b>Total = 70</b>	<b>45</b>	<b>1</b>	<b>22</b>	<b>0</b>	<b>2</b>	

# Availability of referral guidelines

Country (No. of responses)	Are referral guidelines available at the facility?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
Belgium (11)	8	3	0	0	0	73
Denmark (5)	5	0	0	0	0	100
Estonia (17)	8	4	5	0	0	47
Finland (2)	2	0	0	0	0	100
Greece (12)	3	3	2	3	1	25
Hungary (3)	0	1	2	0	0	0
Slovenia (20)	7	6	3	3	1	35
<b>Total = 70</b>	<b>33</b>	<b>17</b>	<b>12</b>	<b>6</b>	<b>2</b>	



# Awareness of guidelines

Country (No. of responses*)	Regarding the referral guidelines available at the facility: Are the referrers aware of the guidelines?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
<b>Belgium (8)</b>	0	0	6	2	0	0
<b>Denmark (5)</b>	1	1	0	3	0	20
<b>Estonia (13)</b>	7	1	3	2	0	54
<b>Finland (2)</b>	1	0	1	0	0	50
<b>Greece (5)</b>	2	0	1	1	1	40
<b>Hungary (2)</b>	1	0	1	0	0	50
<b>Slovenia (10)</b>	5	0	4	1	0	50
<b>Total = 45</b>	<b>17</b>	<b>2</b>	<b>16</b>	<b>9</b>	<b>1</b>	

\*Respondents must have answered 'yes' or 'partly' to 'Are referral guidelines available at the facility?'



# Evidence of routine use of guidelines

Country (No. of responses*)	Regarding the referral guidelines available at the facility: Is there evidence that the guidelines are in routine use by the referrer?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
Belgium (8)	1	3	2	2	0	13
Denmark (5)	3	1	0	1	0	60
Estonia (13)	3	3	5	2	0	23
Finland (2)	0	2	0	0	0	0
Greece (5)	2	0	2	0	1	40
Hungary (2)	0	1	1	0	0	0
Slovenia (10)	4	2	4	0	0	40
<b>Total = 45</b>	<b>13</b>	<b>12</b>	<b>14</b>	<b>5</b>	<b>1</b>	

\*Respondents must have answered 'yes' or 'partly' to 'Are referral guidelines available at the facility?'





# Implementation of referral guidelines in the CDS

Country (No. of responses*)	Regarding the referral guidelines available at the facility: Are the referral guidelines implemented in the Clinical Decision Support system available to the referrer?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
Belgium (8)	0	6	1	1	0	0
Denmark (5)	3	1	0	1	0	60
Estonia (13)	2	7	1	3	0	15
Finland (2)	0	1	1	0	0	0
Greece (5)	3	0	0	1	1	60
Hungary (2)	0	2	0	0	0	0
Slovenia (10)	4	1	3	2	0	40
<b>Total = 45</b>	<b>12</b>	<b>18</b>	<b>6</b>	<b>8</b>	<b>1</b>	

\*Respondents must have answered 'yes' or 'partly' to 'Are referral guidelines available at the facility?'



# Availability of MRI

Country (No. of responses)	Is MRI available in your facility?					
	Yes	No	Partly	Don't know	Didn't answer	% Yes
Belgium (11)	11	0	0	0	0	100
Denmark (5)	5	0	0	0	0	100
Estonia (17)	9	6	2	0	0	53
Finland (2)	2	0	0	0	0	100
Greece (12)	7	3	0	0	2	58
Hungary (3)	3	0	0	0	0	100
Slovenia (20)	15	4	0	0	1	75
<b>Total = 70</b>	<b>52</b>	<b>13</b>	<b>2</b>	<b>0</b>	<b>3</b>	

# Overall correlation between justification efforts and audit results 1/2

- Results suggest correlation between justification efforts in specific countries and audit results
- Belgium, Denmark, Finland
  - Considerable justification efforts so far
  - Best results: highest scores of appropriate and lowest score of inappropriate exams
  - Very low figures of examinations that could not be scored
- Hungary
  - Some local studies on the contents of the referrals they received, but results were not officially published
  - No further campaigns carried out/planned for near future
  - Hope that EU-JUST-CT project will incentivise authorities to increase efforts to implement justification.

# Overall correlation between justification efforts and audit results 2/2

- Estonia plans to establish body for external audits as well as national procedure for clinical audits.
- Slovenia:
  - Some limited audits re paediatric CT some years ago
  - No systematic audits of justification of radiological procedures performed so far
  - Plan: use the findings of the EU-JUST-CT project as a basis for a formal audit on CT justification
- Greece:
  - No national committee performing audits of justification of radiological examinations
  - Greek NSA not aware whether internal audits are performed at hospital/local level
  - Greece participated in HERCA's European communication campaign "Getting the right image for my patient" in 2019.
- Hope: Results of EU-JUST-CT project to incentivise relevant national authorities to increase efforts to implement justification & to reduce the rate of referrals with no or insufficient data.

# Lessons learned/recommendations for countries wishing to carry out audits

- Quality of the auditors
- Quality of referrals

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# Correlation quality assurance – quality of results?

- Countries with highest % of imaging departments applying QA with written procedures describing the justification process (according to survey responses from centres before project started):

Level of appropriateness of CT examinations was very high

**→ Correlation exists between the availability of written procedures for justification and appropriateness.**



# Correlation: imaging referral guidelines – quality of results

According to survey of departments to be audited:

- CDS at least partially available in only 40% of facilities that have referral guidelines available
- For countries with best results: answers demonstrate that guidelines are not used extensively, especially not in the form of CDS available to referrers.



# Correlation: Availability of MRI – quality of results

- According to survey of centres/institutions: MRI is available in 74% of facilities
- Available in all facilities in BE, DK, FI, HU
- Available in 75% in SI, 58% in GR, 53% of facilities in EE
- The three countries with the best results had MRIs available in all institutions
  - countries with highest numbers of departments with MRI have better results
- BUT: usually, MRI facilities are available in a nearby facility → patient access is most likely not restricted

