

EDITION 2015

European Association of Cardiovascular Imaging

HIGHLIGHT BOOK

The current practice of cardiovascular imaging in ESC Member countries



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www.escardio.org/EACVI



Preface

The EACVI "Highlight Book" 2015: first edition (a first step to better know the imaging community)

Cardiovascular imaging (CVI) is evolving rapidly, placing new demands on our profession for training, education and advocacy. It is likely that the need for CVI will continue to increase over the coming years due to the changes in cardiovascular disease epidemiology and ageing of the population. However, reliable statistics on the current CVI practice in Europe are lacking.

The current leadership of the EACVI agreed in December 2012 on the importance of obtaining as much current information as possible concerning the use of CVI in Europe. Prof. Patrizio Lancellotti, President of the EACVI 2012-2014, and Prof. Edyta Płonska-Gosciniak, chair of the European Communities Committee 2012-2014, with the help of the EACVI board and the Chairs of National Societies prepared a questionnaire with the most relevant items to be featured. After a final revision in 2013, the questionnaire was sent out to all the chairs of the National Societies. Data were then gathered and compiled into the "Highlight Book" after secondary cross check.

The present edition involved 46 nationalities of the European Society of Cardiology. The EACVI "Highlight Book" provides each National Society with their own data on the use of Transthoracic and Transoesophageal Echocardiography, Stress Echocardiography, Cardiac Magnetic Resonance Imaging, Cardiac Computed Tomography, Cardiac Nuclear Imaging and Vascular Ultrasound procedures based on the Healthcare, Education, Training, Certification and available Reimbursement Systems.

We wish to thank all the National Societies who participated in the creation of the "Highlight Book", which remains an ongoing project that needs to be updated on a regular basis.

We hope the EACVI "Highlight Book" 2015 becomes the first step in imaging data collection, useful for improving the diagnosis and management of cardiac patients in Europe.

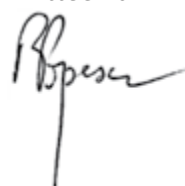
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Cardiovascular imaging practice in Europe: a report from the European Association of Cardiovascular Imaging

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The need for cardiovascular imaging (CVI) is expected to increase over the coming years due to the changes in CV disease epidemiology and ageing of the population. However, reliable statistics on CVI practice in Europe are lacking. Establishing the current status of the use of CVI across Europe has become the first comprehensive project of the European Association of Cardiovascular Imaging and the European Society of Cardiology Taskforce on CVI. In 2013, a survey with relevant information regarding CVI was sent to all National Imaging/Echocardiography Societies and Working Groups. Representatives from 41 countries returned the questionnaire. The present report provides key results of the survey, relating to existing education, training, certification and national accreditation programmes, healthcare organizations, and reimbursement systems.

Keywords cardiovascular imaging • certification • accreditation • training • survey

Background

Cardiovascular imaging (CVI) is evolving rapidly, placing new demands on our profession for training, education, and advocacy.^{1–11} Functional and anatomical CVI is pivotal to modern health care and is an essential component in the management of patients with cardiovascular conditions.^{12–18} It is thus likely that the need for CVI will continue to increase over the coming years due to the changes in CV disease epidemiology and ageing of the population.^{19–22} However, reliable statistics on CVI practice in Europe are lacking. Establishing the current status of the use of CVI in Europe has thus become a priority for the Imaging Taskforce of European Association of Cardiovascular Imaging (EACVI) and the

European Society of Cardiology (ESC). The present report aimed to provide information on the practice of transthoracic and transoesophageal echocardiography (TTE, TOE), stress echocardiography, cardiovascular magnetic resonance imaging (CMR), cardiac computed tomography (CT), cardiac nuclear imaging, and vascular ultrasound procedures based on the national health care, education, training, certification, and available reimbursement systems.

Methodology

The 2012 leadership of the EACVI agreed upon the importance of obtaining as much current information as possible concerning the practice of

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CVI in Europe. P.L., President of the EACVI 2012–2014, and E.P.-G., chair of the European Communities Committee 2012–2014, with the help of the EACVI board and the Chairs of National Societies prepared a

Questionnaire with the most relevant items to be featured. After a final revision in 2013, the Questionnaires were sent out to all the national imaging/echocardiography societies/working groups in Europe. Each

Table 1 List of countries who participated in the survey

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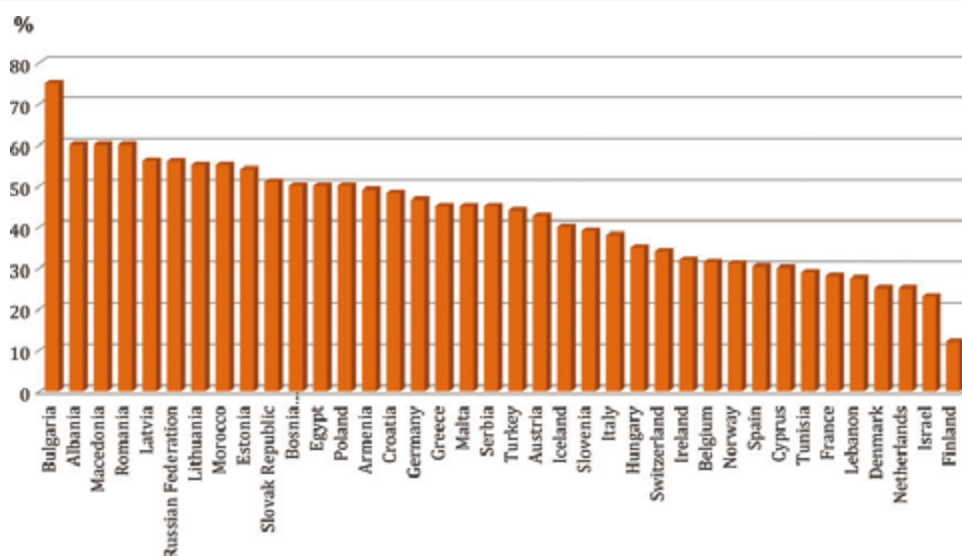


Figure 1 Percentage of death resulting from cardiovascular disease in 2012 (most of the data come from the Ministry of Health).

chairperson was then asked to compile information about his/her country. The data gathered by the societies and Working Groups were from a number of national sources. Some countries, however, did not have available data for all of the sections of the survey. A random cross-check of the data quality was conducted with the help of the EACVI board members and some national volunteers. Once the crosscheck was completed, the National Societies or Working Groups were asked to verify and authorize the publication of the information. All data were entered into a central database. In case of missing or incomplete data, the national representatives were reminded repeatedly for completion or amendment. All the information was then compiled into the 'EACVI Highlight Book' presented during the 2014 EuroEcho-Imaging in Vienna. Results were reported as absolute numbers and percentages in the graphs.

Results

The questionnaire was returned by representatives of 41 ESC National Countries (Table 1). The rate of CV disease remained a major healthcare burden in Europe, with substantial differences in CV mortality rates between East and North (Figure 1). A national registry on the practice of CVI was present in a very few countries (Albania, Armenia, Denmark, Germany, Greece, Hungary) (Table 2). There was a wide variety of healthcare systems, which involve public or private insurances, including mixed solutions, and co-payments.

Performance and examination costs

The performance and reimbursement of CVI strongly depended on the type of imaging technique used. In most countries, echocardiography is in the hands of cardiologists while radiologists mainly performed/reported the CMR and CT examinations. Specialists in nuclear medicine were in charge of most PET and SPECT examinations (Figure 2). Interestingly, cardiologists performed/reported one-third of CMR and CT examinations. Vascular ultrasound was done by almost the same percentage of cardiologists and radiologists. The general financial cost profile per CVI technique was very heterogeneous. The highest costs were found for PET, CT, and CMR. TOE and stress echocardiography costs were however in the highest range in about one-fifth of the countries (>200€). Vascular ultrasound was by far the cheapest examination (<50€).

Education, certification, and accreditation

The percentage of countries with a national certification in CVI for cardiologists was different between imaging modalities. TTE and TOE were commonly certified techniques. About one-third of the countries had a certification programme for the other imaging modalities. The majority of national societies recommended the EACVI certification, but one-fifth of them had their own national certification system (Figure 3). Whatever the CVI modality, a national accreditation for centres/laboratories was not required for practice in most countries (Figure 4).

Training requirements and guidelines adherence

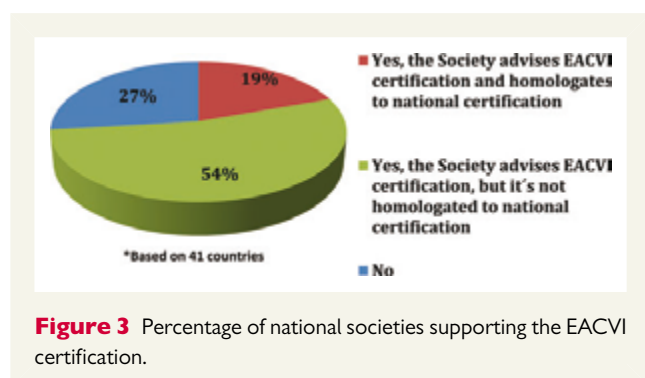
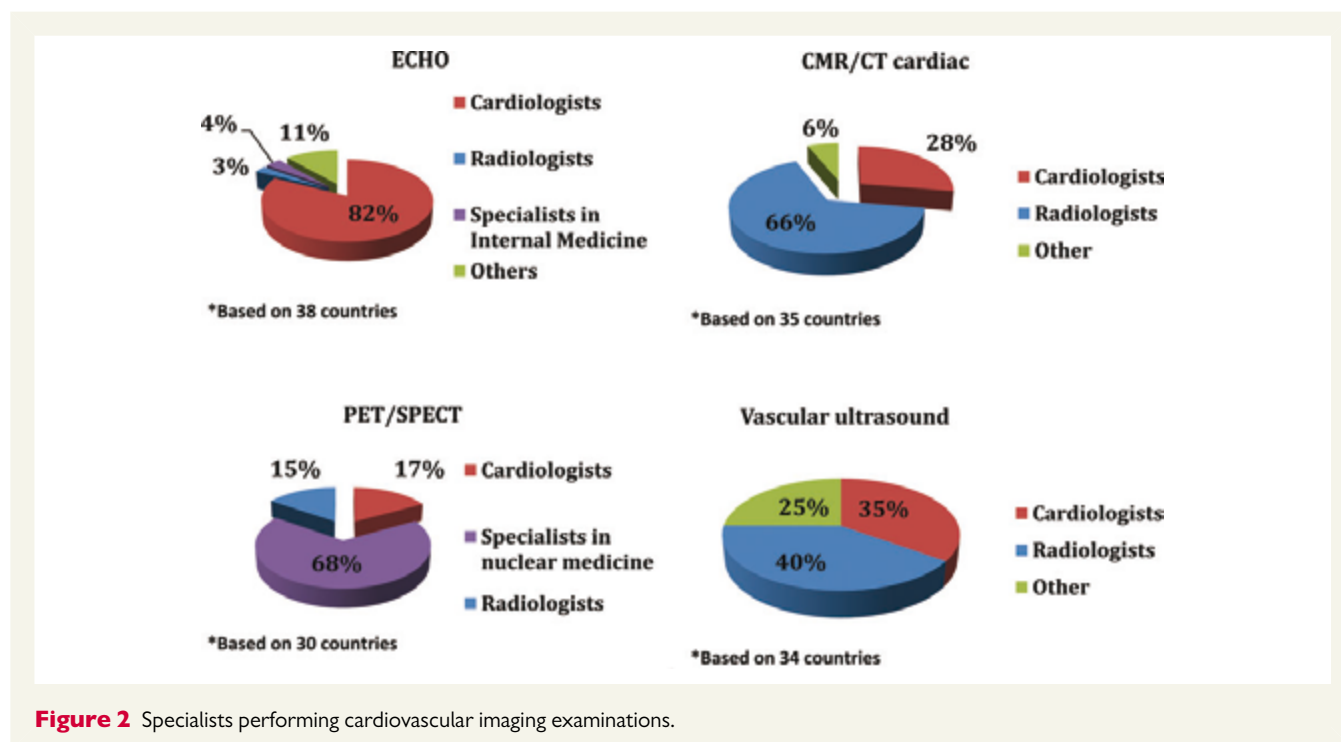
A specialty training (e.g. cardiology, radiology, nuclear imaging specialist, others) to perform CVI examinations was required in most countries. A minimum period of training was also required but with significant differences between CVI modalities. As examples, ~30%

Table 2 National registry, certification, and competency guidelines

<i>n</i> = number of countries	No (%)	Yes (%)	NA (%)
National registry (<i>n</i> = 41)			
ECHO	85	10	5
CMR/CT	83	7	10
SPECT/PET	78	2	20
Vascular ultrasound	88	2	10
National certification for cardiologists			
TTE (<i>n</i> = 40)	47	53	–
TOE (<i>n</i> = 39)	59	41	–
STRESS ECHO (<i>n</i> = 38)	68	32	–
CMR (<i>n</i> = 36)	67	33	–
CT (<i>n</i> = 36)	67	33	–
SPECT (<i>n</i> = 35)	69	31	–
PET (<i>n</i> = 33)	70	27	3
Vascular ultrasound (<i>n</i> = 36)	64	36	–
Specialty required to perform imaging (<i>n</i> = 41)			
ECHO	17	83	–
CMR/CT	12	85	3
SPECT/PET	20	76	4
Vascular ultrasound	27	69	4
Required period of training to perform CVI examinations			
TTE	37	63	–
TOE	37	63	–
STRESS ECHO	37	56	7
CMR	46	39	15
CT	39	42	19
SPECT	37	41	22
PET	34	39	24
Vascular ultrasound	36	44	17
National competency guidelines to perform CVI examinations (<i>n</i> = 41)			
TTE	66	32	2
TOE	66	29	5
STRESS ECHO	76	19	5
CMR	71	15	14
CT	68	15	17
SPECT	66	15	19
PET	66	10	24
Vascular ultrasound	73	10	17

Echo, echocardiography; NA, not available; TTE and TOE, transthoracic and transoesophageal echocardiography; CMR, cardiac magnetic resonance imaging; CT, cardiac computed tomography; SPECT, single photon emission computed tomography; PET, positron emission tomography.

of respondent countries did not report a specific period of training for TTE or TOE. This percentage was even higher for the other imaging modalities. Similarly, official national certification guidelines to perform CVI examinations existed in less than one-third of countries. However, missing data also increased with non-echo imaging techniques. Interestingly, about half of the countries adhered to European guidelines for CVI examinations while one-fifth used national guidelines (Figure 5). The need for ESC/EACVI guidelines translation



was claimed by 50% of countries. Of note, the average waiting time for examinations in public healthcare system varied among techniques but was less than a month for most (Table 3).

Discussion

The current mapping of the practice of CVI techniques across Europe represents the first comprehensive project of the ESC/EACVI Taskforce on CVI. While practice variations can reflect patient preferences, local demographics, and a host of other factors, availabilities of techniques, educational platform, training requirements, certification guidelines, and reimbursement systems also significantly contribute to the current differences observed between European countries in terms of CVI practice. Overall, there were diverse country-specific regulations to perform CVI and a widespread lack of national certification/accreditation in CVI. However, the majority of countries recommended the EACVI certification and one-fifth of them

applied it as a national certification. Cardiologists commonly performed echocardiography but not CT, CMR, or nuclear imaging. However, medical imaging performance required a specialist license (e.g. cardiologist, radiologist, nuclear imaging specialist) in most countries. Unexpectedly, a predefined period of training in CVI during the specialty was absent in one-third of the countries. In addition, barely a few countries offered official national certification guidelines to perform CVI examinations. Interestingly, the adherence to ESC/EACVI guidelines in CVI was reported in a high number of European countries. Finally, the access to CVI examinations in public healthcare system was marked by a long waiting period in some countries.

Limitations

Some general cautions should be taken into account when interpreting our data. The process of gathering the data for the present report was complex and necessarily involved different sources among which the National Societies played a major role. As a result, some items were not reported or were based upon 'best estimation' by the National Society. Also the majority of the National Working Groups focussed on echocardiography at the time of the survey (less than 1/3 was multi-imaging). As a result, missing or unreported data mostly related to non-echocardiography imaging modalities and vascular ultrasound imaging.

Future directions and perspectives

The present report symbolises a preliminary step for further data collection and networking with national imaging societies and working groups. It denotes a first valuable resource for those who seek European data on the current CVI practice across the continent. It provides some key figures about existing education, certification, and national

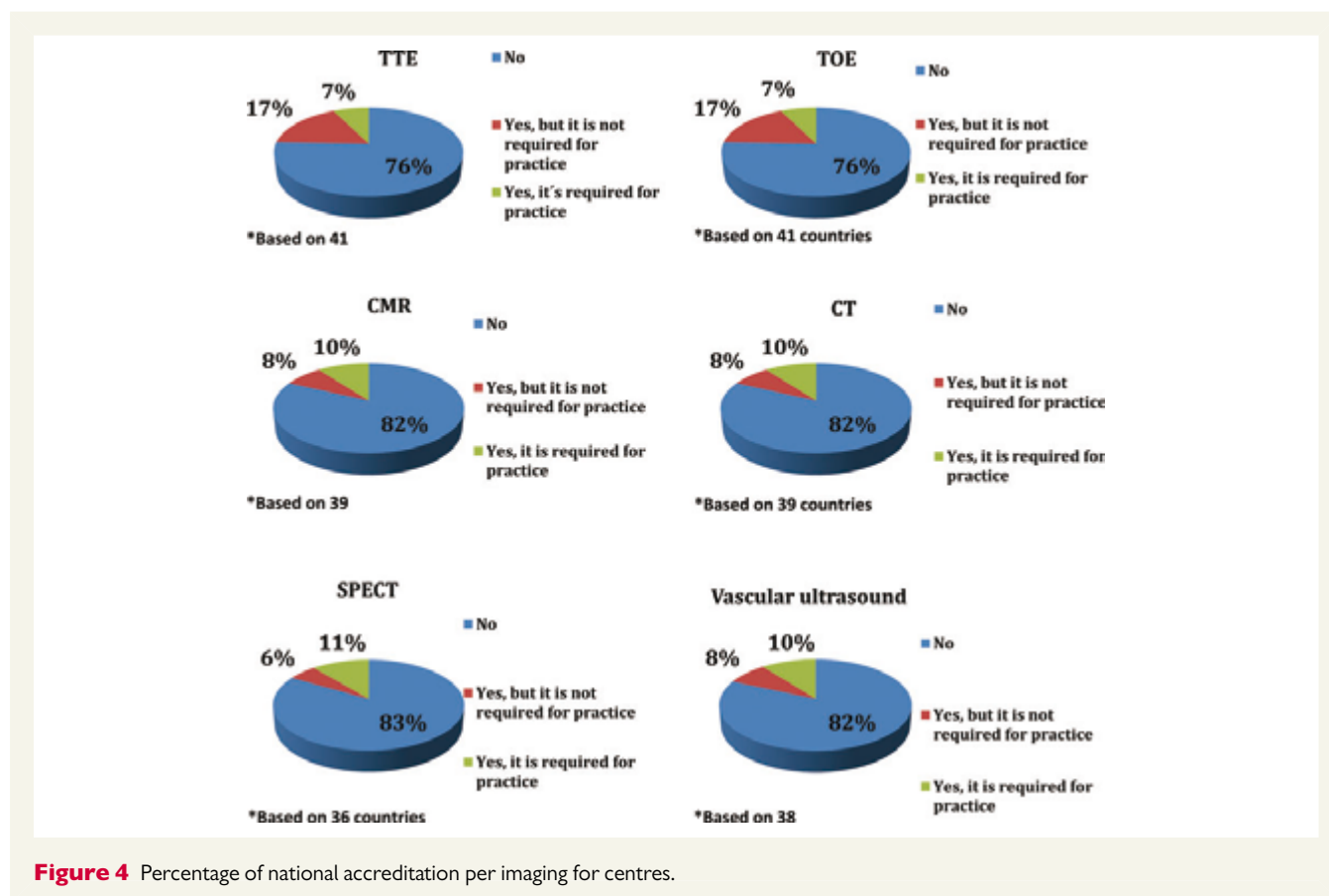
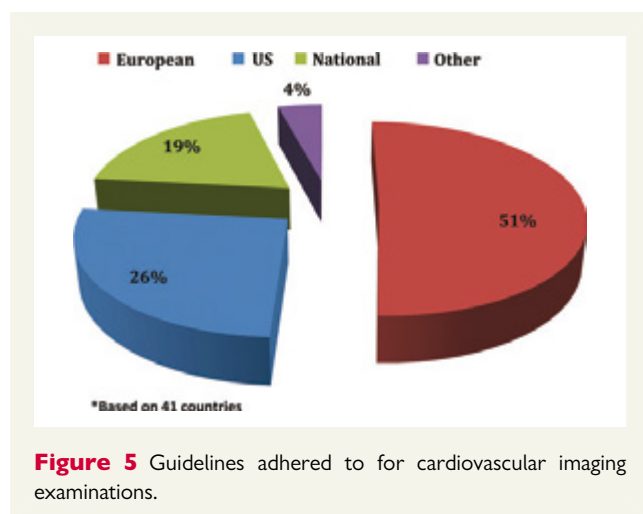


Figure 4 Percentage of national accreditation per imaging for centres.



accreditation programmes. It also highlights the lack of national CVI registries, which could facilitate the process of gathering data and improve their 'certainty'. To feed this overall picture, future action should aim at collecting information on current procedures and current equipment, ordering procedure, indications, and impact on treatment. In the future, direct comparison among the different ESC countries should help standardize healthcare resources by promoting

Table 3 Average waiting time for examinations in public healthcare system

	1–30 days (%)	>30 days (%)	>60 days (%)
TTE	62	20	18
TOE	65	27	8
STRESS ECHO	45	45	10
CMR	36	39	25
CT	58	24	18
SPECT	40	30	30
PET	30	44	26
Vascular ultrasound	68	13	19

Echo, echocardiography; NA, not available; TTE and TOE, transthoracic and transoesophageal echocardiography; CMR, cardiac magnetic resonance imaging; CT, cardiac computed tomography; SPECT, single photon emission computed tomography; PET, positron emission tomography.

knowledge of the status and bringing it to the attention of all public authorities. Hopefully such a data collection will contribute to improved quality of care through better use of resources (avoid unnecessary procedures and expenses) and consequent reduction in waiting time and increase the availability of CVI, when needed.

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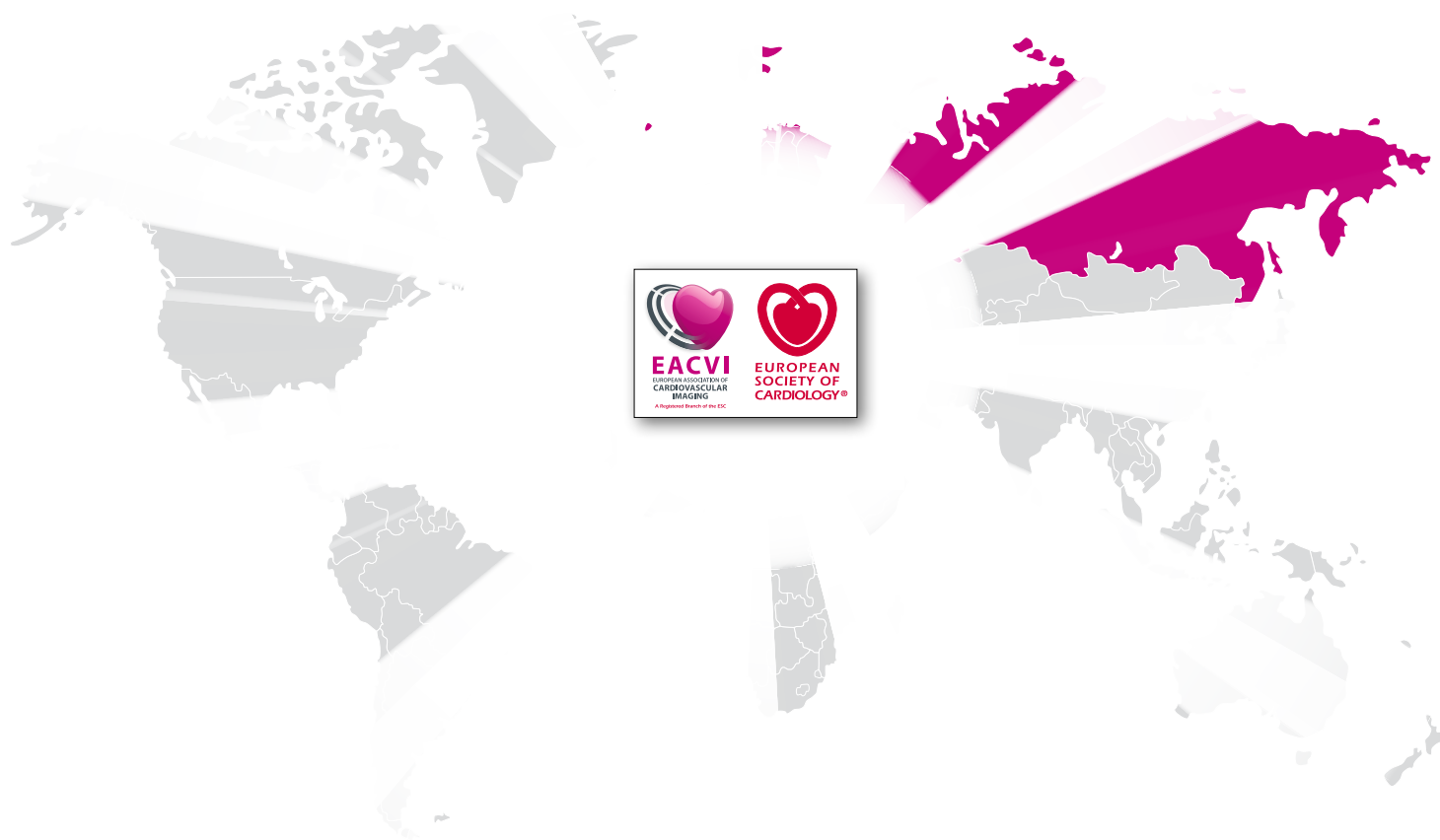
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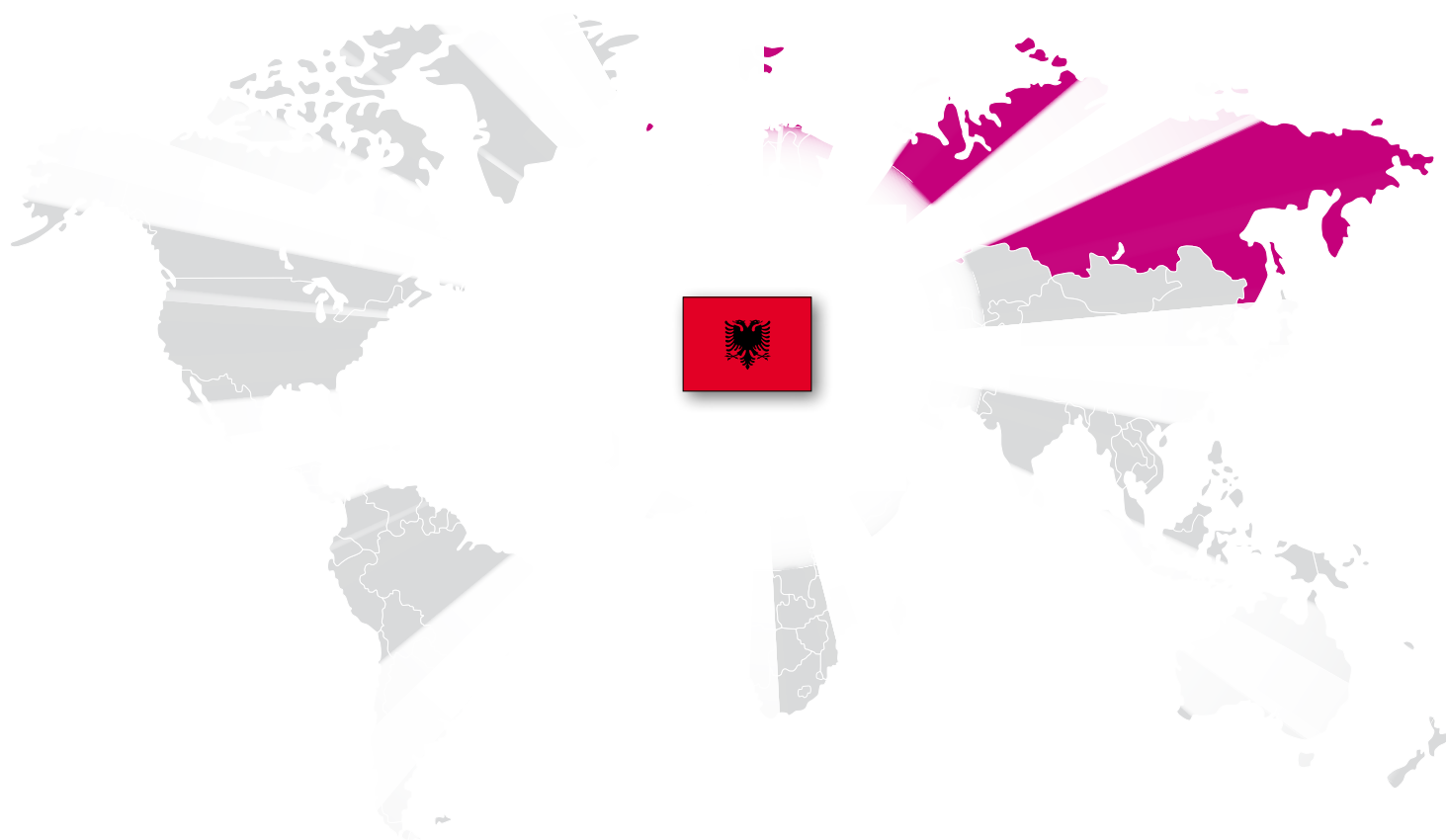
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ESC COUNTRIES OVERVIEW



ALBANIA - ARMENIA - AUSTRIA - BELARUS - BELGIUM - BOSNIA AND HERZEGOVINA - BULGARIA - CROATIA - CYPRUS - CZECH REPUBLIC - DENMARK - EGYPT - ESTONIA - FINLAND - FRANCE - GEORGIA - GERMANY - GREECE - HUNGARY - ICELAND - IRELAND - ISRAEL - ITALY - KOSOVO - LATVIA - LEBANON - LITHUANIA - MACEDONIA - MALTA - MOROCCO - NETHERLANDS - NORWAY - POLAND - PORTUGAL - ROMANIA - RUSSIAN FEDERATION - SAN MARINO - SERBIA - SLOVAK REPUBLIC - SLOVENIA - SPAIN - SWITZERLAND - TUNISIA - TURKEY - UKRAINE - UNITED KINGDOM

ALBANIA



Proportion of deaths resulting from cardiovascular disease

55%

2. Healthcare system

National Health System

Insurance availability

Basic	Yes
Private	No

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Dept of Cardiology UHC "M.Teresa" Tirana	<input type="checkbox"/>
TOE	Official name: Dept of Cardiology UHC "M.Teresa" Tirana	<input type="checkbox"/>
Stress ECHO	Official name: No examination in Albania	<input checked="" type="checkbox"/>
CMR	Official name: Dept of Diagnostic Imaging, UHC "M.Teresa"	<input type="checkbox"/>
CT	Official name: Dept of Diagnostic Imaging, UHC "M.Teresa"	<input type="checkbox"/>
PET	Official name: No examination in Albania	<input checked="" type="checkbox"/>
SPECT	Official name: No examination in Albania	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: Dept of Diagnostic Imaging, UHC "M.Teresa"	<input type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologists	<input type="checkbox"/>
CMR/CT	Cardiologist, Radiologist	<input type="checkbox"/>
PET/SPECT	These examinations are not performed in Albania	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Cardiologist, Neurologist, Radiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 1	<input type="checkbox"/>
TOE	Number of years: 1	<input type="checkbox"/>
CMR	Number of years: 1	<input type="checkbox"/>
CT	Number of years: 1	<input type="checkbox"/>
Vascular ultrasound	Number of years: 6 months	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes	No
ECHO	100% Cardiologists	<input type="checkbox"/>
CMR/CT	40% Cardiologists / 60% Radiologists	<input type="checkbox"/>
PET/SPECT	Not performed in Albania	<input checked="" type="checkbox"/>
Cardiovascular ultrasound	70% Cardiologists / 30% Radiologists	<input type="checkbox"/>

Availability of a National registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name: Not provided	<input type="checkbox"/>
CMR/CT	Official name: Unknown	<input type="checkbox"/>
PET/SPECT	Official name: Unknown	<input type="checkbox"/>
Vascular ultrasound imaging	Official name: Unknown	<input type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Official name: Unknown	<input type="checkbox"/>
PET/SPECT	Official name: Unknown	<input type="checkbox"/>
Vascular ultrasound imaging	Official name: Unknown	<input type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Type of institution: Not provided	<input type="checkbox"/>
PET/SPECT	Type of institution: Not provided	<input type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens
CMR	Name: GE
CT	Name: GE, Philips
Vascular ultrasound	Name: GE, Philips, Siemens

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

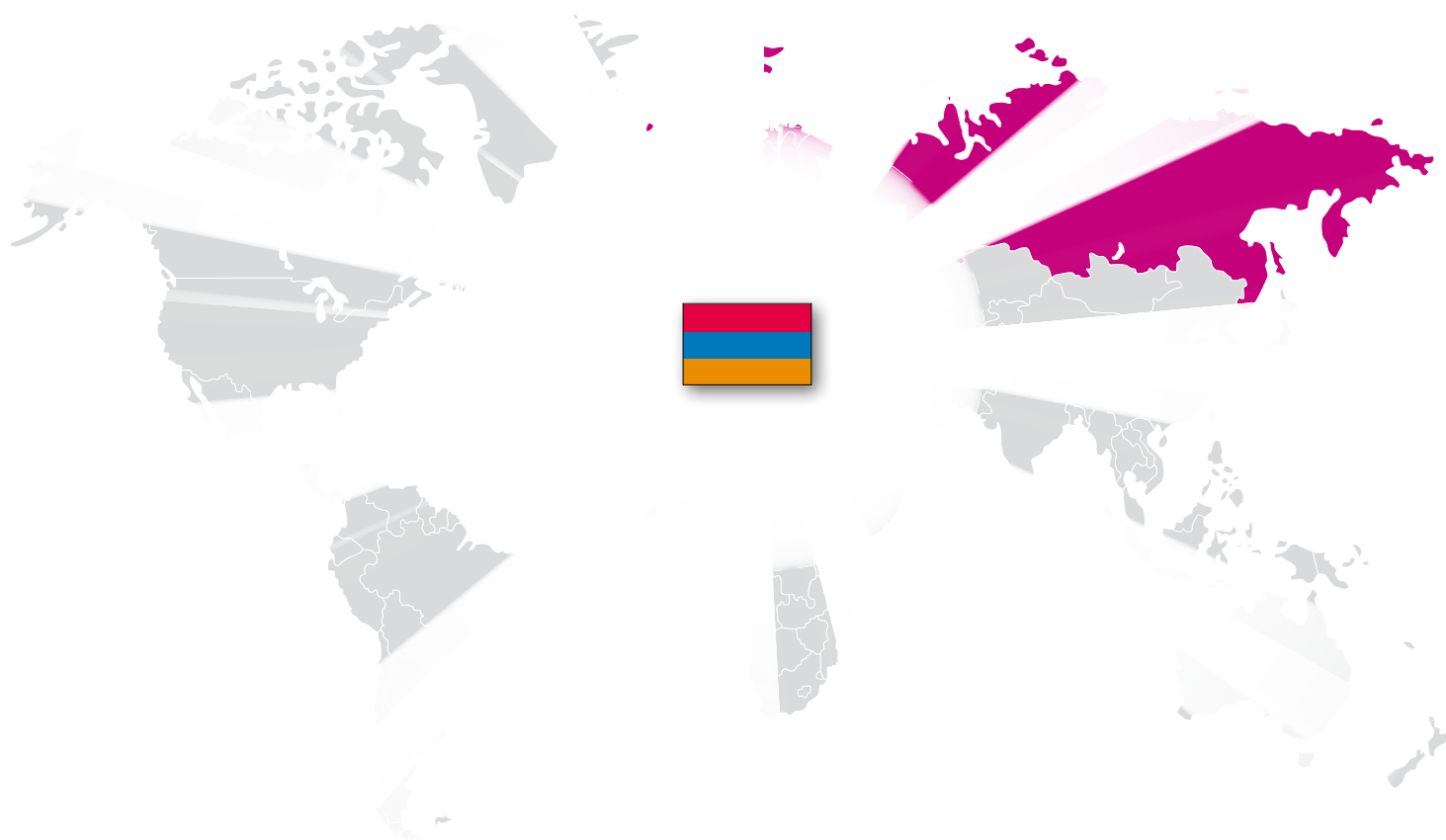
Necessity of guidelines in the national language

Yes

Are guidelines translated in the national language

No

ARMENIA



1. Country:

Armenia

Proportion of deaths resulting from cardiovascular disease

30%

2. Healthcare system

National Health System, insurance company and patients. In our country patients mainly pay for health care by themselves, limited number by the National Health System and insurance companies.

Insurance availability

Basic No
Private Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Yerevan State Medical University	<input type="checkbox"/>
TOE	Official name: Yerevan State Medical University	<input type="checkbox"/>
Stress ECHO	Official name: Yerevan State Medical University	<input type="checkbox"/>
CMR	Official name: Yerevan State Medical University	<input type="checkbox"/>
CT	Official name: Yerevan State Medical University	<input type="checkbox"/>
PET	Official name: Yerevan State Medical University	<input type="checkbox"/>
SPECT	Official name: Yerevan State Medical University	<input type="checkbox"/>
Vascular ultrasound	Official name: Yerevan State Medical University	<input type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologists, Ultrasound specialists	<input type="checkbox"/>
CMR/CT	Radiologists	<input type="checkbox"/>
PET/SPECT	Specialist of nuclear medicine	<input type="checkbox"/>
Vascular ultrasound imaging	Cardiologists, ultrasound specialist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 5	<input type="checkbox"/>
TOE	Number of years: 5	<input type="checkbox"/>
Stress ECHO	Number of years: 5	<input type="checkbox"/>
CMR	Number of years: 5	<input type="checkbox"/>
CT	Number of years: 5	<input type="checkbox"/>
PET	Number of years: 5	<input type="checkbox"/>
SPECT	Number of years: 5	<input type="checkbox"/>
Vascular ultrasound	Number of years: 5	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	80% Cardiologists / 20% ultrasound specialists
CMR/CT	100% Radiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	80% Cardiologists / 20% radiologists

Availability of a National registry

	Yes	No
ECHO	Official name: Working Group of Echocardiography	<input type="checkbox"/>
CMR/CT	Official name: Not answered	<input type="checkbox"/>
PET/SPECT	Official name: Not answered	<input type="checkbox"/>
Vascular ultrasound	Official name: Not answered	<input type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: Institute of Cardiology, Yerevan State Medical University	<input type="checkbox"/>
CMR/CT	Type of institution: Not answered	<input type="checkbox"/>
PET/SPECT	Type of institution: Not answered	<input type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Hewlet Packard, Siemens, Philips
CMR	Name: Siemens, Philips
CT	Name: Siemens, Philips
PET	Name: Siemens, Philips
SPECT	Name: Siemens, Philips
Vascular ultrasound	Name: GE, Hewlet Packard, Siemens, Philips

5. Guidelines

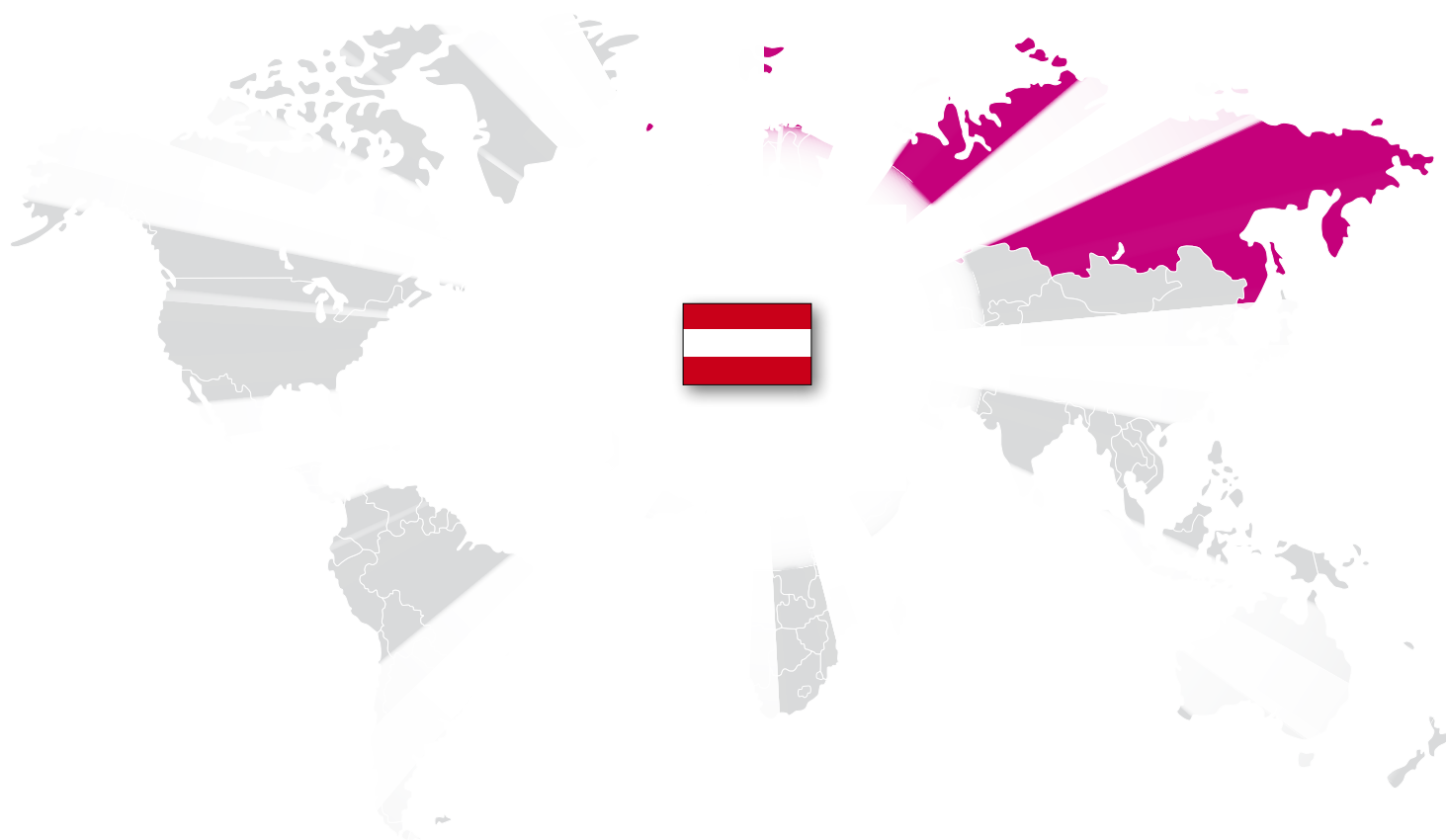
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	No
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AUSTRIA



Proportion of deaths resulting from cardiovascular disease

42.9% (2013)

2. Healthcare system

National health care in Austria is characterised by the cooperation of a large number of actors. Competencies in the health care sector are generally regulated by federal law, with many competencies delegated to provinces or social security institutions.

Public health services and administration are jointly provided by federal, provincial and local authorities. In addition, the provinces are in charge of ensuring hospital care for their inhabitants as well as offering health promotion and prevention services. The local governments are in charge of social welfare benefits and services.

Insurance availability

Basic	Yes
Private	Yes

Comments

For Basic: National insurance system (22 social security institutions with the Main Association of Austrian Social Security (HVB) as their umbrella organization). Compulsory social insurance, based on legislation. Austrian health care system is based on statutory social insurance, deducted automatically from income. Apart from a few exceptions, it is not possible for an insured person to choose their social security institution. The amount of insurance contributions to be paid is independent of the personal risk of the insured. Access to services is regulated by law, and free of charge for the insured.

For Private: About 76% of total health expenditure is generated from public sources. This includes expenditure by social health insurance funds as well as the Federal Government, the provincial and the local governments. The remaining 24% is accounted for by private health expenditure: out-of-pocket payments by households, expenditure of private health insurance companies and other private non-profit organizations as well as expenditure by companies for services provided by occupational health physicians.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the National guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comments	If urgently needed, examinations can be performed earlier.		

3. Education

National certification availability

	Yes	No
TTE	Official name: Diploma of the Austrian Society of Cardiology	<input type="checkbox"/>
TOE	Official name: Only teaching courses	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name: Included in radiology specialization	<input type="checkbox"/>
CT	Official name: Included in radiology specialization	<input type="checkbox"/>
PET	Official name: Included in nuclear medicine specialization	<input type="checkbox"/>
SPECT	Official name: Included in nuclear medicine specialization	<input type="checkbox"/>
Vascular ultrasound	Official name: Included in nuclear medicine specialization	<input type="checkbox"/>
Comments	CMR, CT, PET, SPECT, Vascular Ultrasound are part of the specialization in cardiology, radiology, angiology or nuclear medicine.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Procedures are trained during the specializations for cardiology, radiology or nuclear medicine or angiology.		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Comments Primarily, physicians perform the national diploma, a requirement for physicians outside the hospital for reimbursement by the social health insurance.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Internal medicine specialization or Cardiology specialization	<input type="checkbox"/>
CMR/CT	Performed in cooperation with radiology and cardiology specialization	<input type="checkbox"/>
PET/SPECT	Cardiology or nuclear medicine	<input type="checkbox"/>
Vascular ultrasound imaging	Cardiology or angiology or neurology	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

		No
TTE	Performed according to EACVI guidelines	<input checked="" type="checkbox"/>
TOE	Performed according to EACVI guidelines	<input checked="" type="checkbox"/>
Stress ECHO	Performed according to EACVI guidelines	<input checked="" type="checkbox"/>
CMR	WG CMR/CT of the Austrian Society of Cardiology	<input type="checkbox"/>
CT	WG CMR/CT of the Austrian Society of Cardiology	<input type="checkbox"/>
PET		<input checked="" type="checkbox"/>
SPECT		<input checked="" type="checkbox"/>
Vascular ultrasound	ÖGUM (Austrian Society of Ultrasound in Medicine)	<input type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

		No
TTE	Number of years: National (or EACVI) has to be passed	<input checked="" type="checkbox"/>
TOE	Number of years: If performed, usually 3-6 months	<input checked="" type="checkbox"/>
Stress ECHO	Number of years: If performed, usually 3-6 months	<input checked="" type="checkbox"/>
CMR	Number of years: If performed, usually 3-6 months	<input checked="" type="checkbox"/>
CT	Number of years: If performed, usually 3-6 months	<input checked="" type="checkbox"/>
PET	Number of years: If performed, usually 3-6 months	<input checked="" type="checkbox"/>
SPECT	Number of years: If performed, usually 3-6 months	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	70% Cardiologists / 30% Specialists in Internal Medicine with Echo diploma
CMR/CT	40% Cardiologists / 60% radiologists
PET/SPECT	40% Cardiologists / 60% Specialists in nuclear medicine
Cardiovascular ultrasound	20% Cardiologists / 50% radiologists / 30% Angiology specialists, Neurology specialists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name: Audits are performed of the echo labs	<input type="checkbox"/>
CMR/CT	Official name: ISO certification for the radiology departments	<input type="checkbox"/>
PET/SPECT	Official name: ISO certification for the nuclear labs	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Siemens, Toshiba, Philips, Aloka & others
CMR	Name: Siemens, Philips
CT	Name: Siemens, Toshiba
PET	Name: Siemens, GE
SPECT	Name: Siemens, Adac, Philips
Vascular ultrasound	Name: Siemens, GE, Zonare, Philips, Siemens & others

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

No

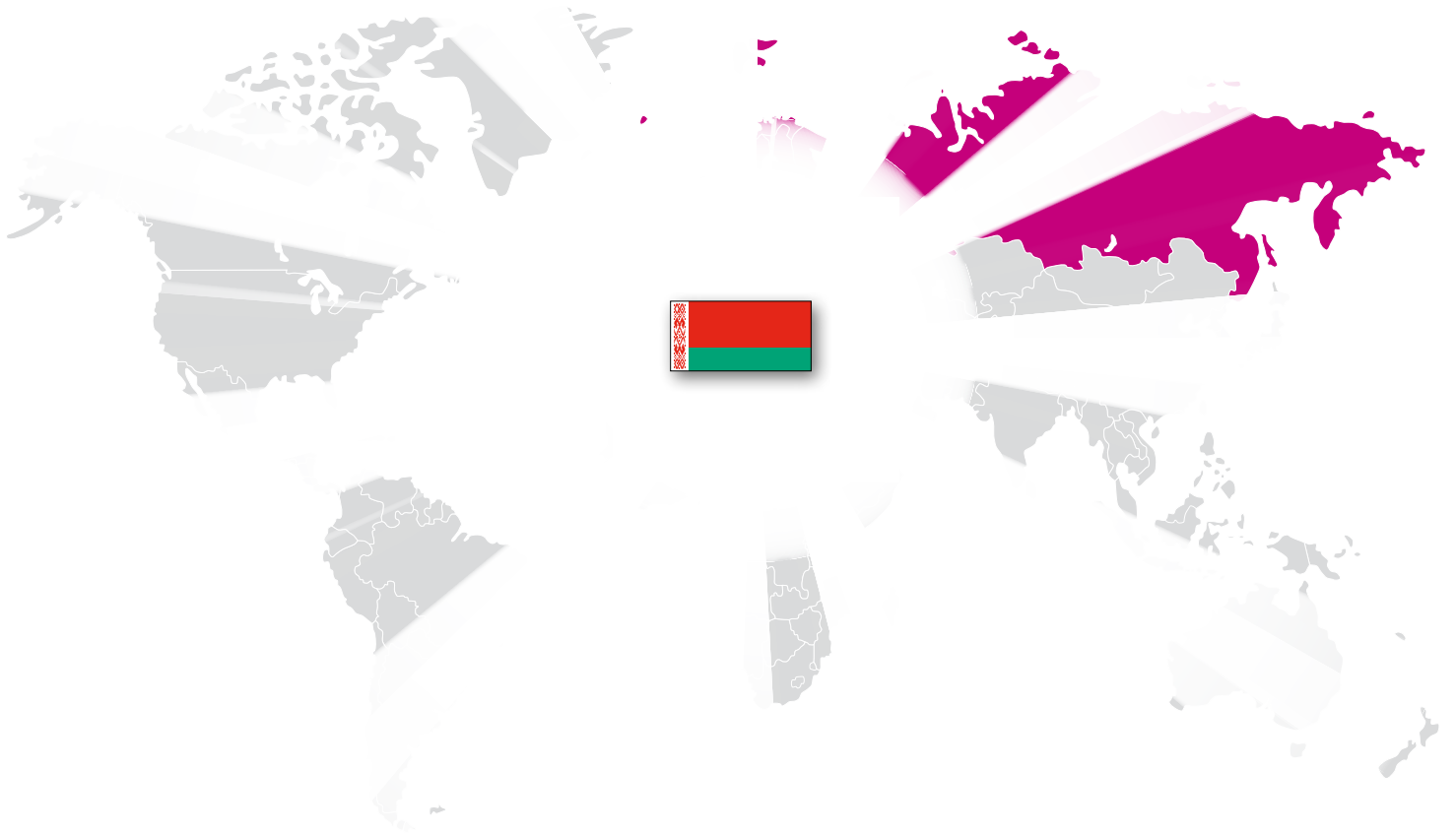
Comments Although it is helpful if they are available in the national language.

Are guidelines translated in the national language

Yes

Comments Not all of them.

BELARUS



1. Country:

Belarus

Proportion of deaths resulting from cardiovascular disease

55.3%

2. Healthcare system

National Health System.

Insurance availability

Basic No
Private Yes

Comments Private Insurance can cover health expenses which are extras of the national diagnostic and treatment protocols (like covered stents in non diabetic patients).

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	We have no PET (actual information till August 2015).		

Treatment availability

No, there are no restrictions, but the indications have to follow the National guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	TTE, TOE, stress echo and vascular ultrasound are parts of the certification general ultrasound exam. CMR, CT, PET and SPECT are parts of the certification exam of radiology.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Doctors of general ultrasound diagnostics & of functional diagnostics	<input type="checkbox"/>
CMR/CT	Radiologist	<input type="checkbox"/>
PET/SPECT	Radiologist	<input type="checkbox"/>
Vascular ultrasound imaging	Doctors of general ultrasound diagnostics	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes
TTE	Number of years: 4 months
TOE	Number of years: 4 months
Stress ECHO	Number of years: 4 months
CMR	Number of years: 4 months
CT	Number of years: 4 months
PET	Number of years: 4 months
SPECT	Number of years: 4 months
Vascular ultrasound	Number of years: 4 months
Comments	TTE, TOE, stress echo and vascular ultrasound are parts of general ultrasound course with duration 4 months totally. 4 months radiology course also includes CMR, CT, PET and SPECT as parts.

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	56% physicians / 18.7% Paediatricians / 17.1% Gynaecologists / 4.1% Surgeons / 3.1% Cardiologists
CMR/CT	67% physicians / 23% Paediatricians / 6.7% Radiologists / 3.3% Surgeons
PET/SPECT	67% physicians / 23% Paediatricians / 6.7% Specialists in nuclear medicine / 3.3% Surgeons
Cardiovascular ultrasound	54.6% physicians / 21.7% Paediatricians / 21.7% Gynaecologists / 4.6% Surgeons / 1% Radiologists / 1% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input type="checkbox"/>
CMR/CT	Official name:	<input type="checkbox"/>
PET/SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input type="checkbox"/>
Comments	All direct medical costs due to complication of diagnostic procedure are covered by the National Health System.	

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: Ministry of Health	<input type="checkbox"/>
CMR/CT	Type of institution: Ministry of Health	<input type="checkbox"/>
PET/SPECT	Type of institution: Ministry of Health	<input type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips, GE, Siemens, Toshiba, Mindray, Aloka, Esaote, Medison
CMR	Name: Philips, GE, Siemens, Toshiba
CT	Name: Philips, GE, Siemens, Toshiba
PET	Name: GE (in installation stage)
SPECT	Name: Philips
Vascular ultrasound	Name: Philips, GE, Siemens, Toshiba, Mindray, Aloka, Esaote, Medison

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

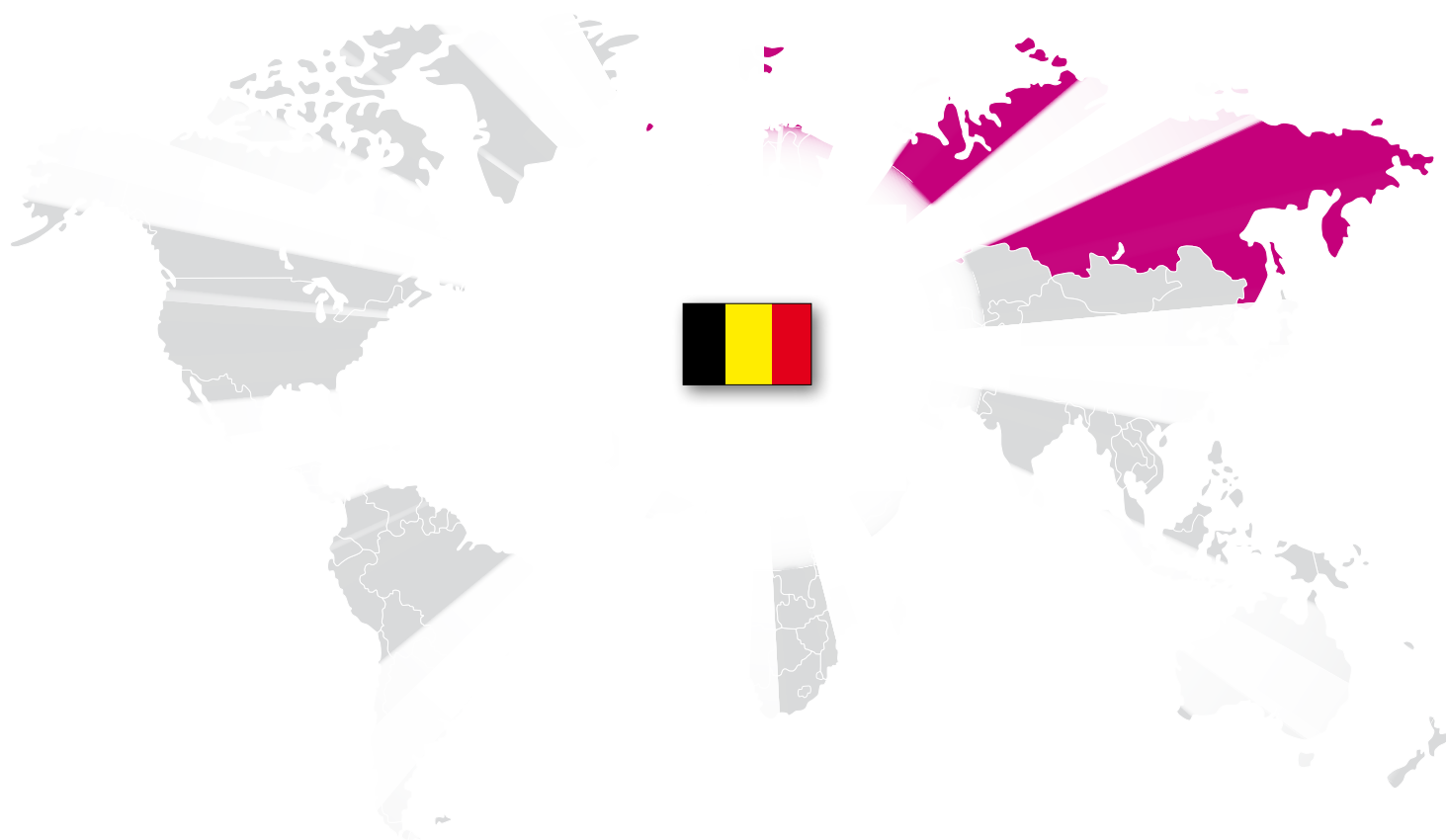
Yes

Are guidelines translated in the national language

No

Comments There are two state languages in Belarus: Russian and Belarusian. The majority of official papers are written in Russian.

BELGIUM



1. Country:

Belgium

Proportion of deaths resulting from cardiovascular disease

31.4% (2010)

2. Healthcare system

National Health System. Basic healthcare for everyone including (partial) reimbursement of (para) medical care.

Insurance availability

Basic Yes
Private Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist, internist (only transthoracic echo), anaesthesiologist (only "limited" Transesophageal echo e.g. hemodynamic monitoring)	<input type="checkbox"/>
CMR/CT	Cardiologist may perform examination (if local agreement with radiologist), but radiologist must sign the protocol to obtain reimbursement	<input type="checkbox"/>
PET/SPECT	Specialty in nuclear medicine is mandatory	<input type="checkbox"/>
Vascular ultrasound imaging	Radiologist, cardiologist, internist, surgeon	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: Decoodt P, Gillebert TC. European certification of clinical competence in adult echocardiography issued in Belgium. Acta Cardiol 1995;50:265-71	<input type="checkbox"/>
TOE	Official name: Decoodt P, Gillebert TC. European certification of clinical competence in adult echocardiography issued in Belgium. Acta Cardiol 1995;50:265-71	<input type="checkbox"/>
Stress ECHO	Official name: Not available yet	<input type="checkbox"/>
CMR	Official name: Not available yet	<input type="checkbox"/>
CT	Official name: Not available yet	<input type="checkbox"/>
PET	Official name: Not available yet	<input type="checkbox"/>
SPECT	Official name: Not available yet	<input type="checkbox"/>
Vascular ultrasound	Official name: Not available yet	<input type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	There is no strict defined required period of training "as such". Training period of echocardiography is integrated in the global cardiology training. However, absolute training period for echocardiography may differ between trainees.	<input type="checkbox"/>
TOE	Training period of TOE is integrated in the global cardiology training	<input type="checkbox"/>
Stress ECHO	Training period for stress echo may be integrated in the global cardiology training	<input type="checkbox"/>
CMR	Number of years: not defined	<input checked="" type="checkbox"/>
CT	Integrated in radiology training	<input type="checkbox"/>
PET	Integrated in nuclear medicine training	<input type="checkbox"/>
SPECT	Integrated in nuclear medicine training	<input type="checkbox"/>
Vascular ultrasound	Integrated in training radiologist, may be integrated in training cardiologist, internist and surgeon	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	No data available (majority performed by cardiologists)
CMR/CT	No data available but officially 100% (because reimbursement is only possible if performed by radiologist)
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	No data available

Availability of a National registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

No reimbursements available yet for stress echo (is considered transthoracic

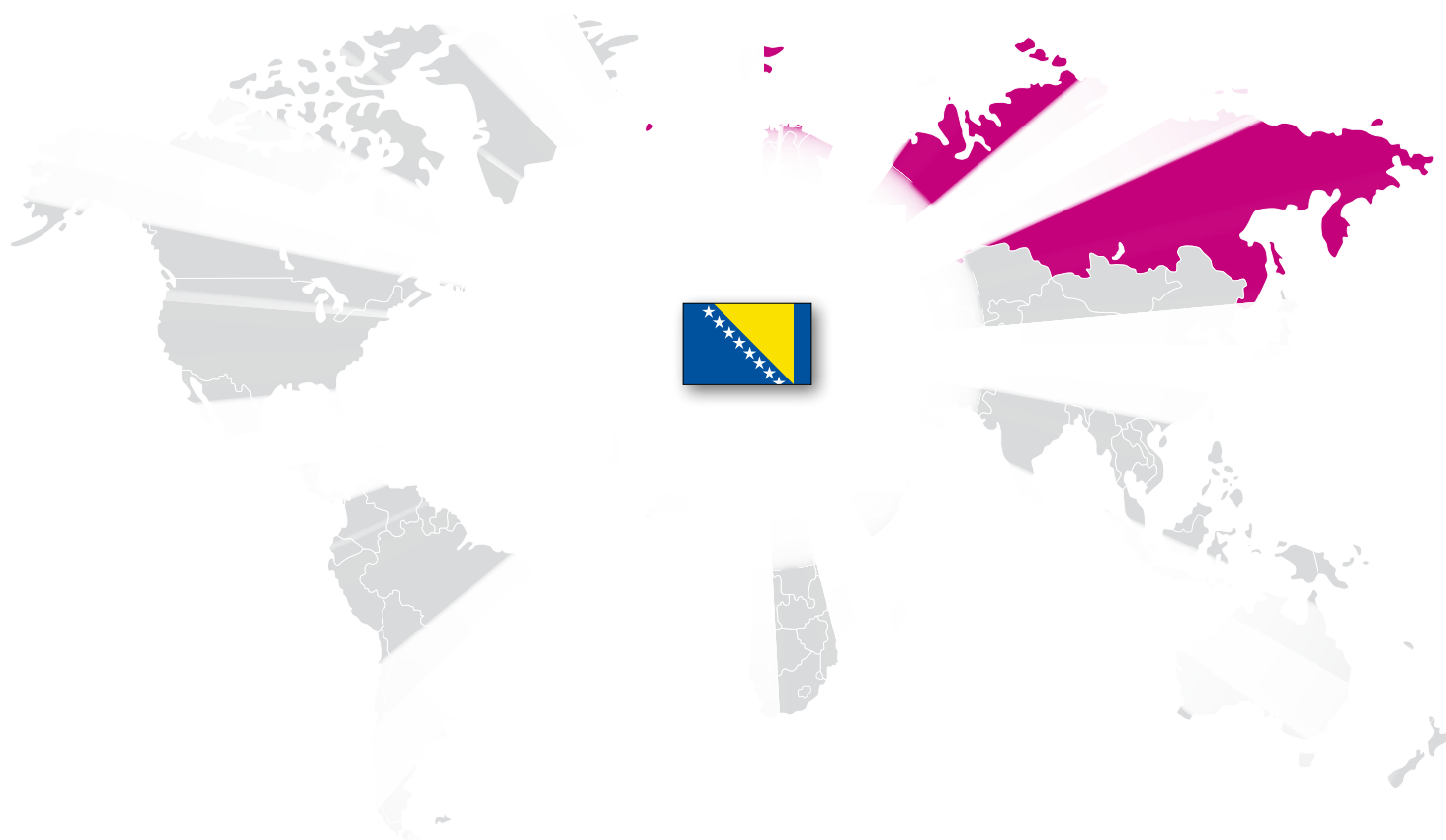
Machine Brand use	
	Systems
ECHO	Name: Aloka, GE, Philips, Siemens, Toshiba
CMR	Name: GE, Philips, Siemens, Toshiba
CT	Name: GE, Philips, Siemens, Toshiba
PET	Name: GE, Philips, Siemens
SPECT	Name: GE, Philips, Siemens
Vascular ultrasound	Name: Aloka, GE, Philips, Siemens, Toshiba

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations		
	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
Are guidelines translated in the national language	No

BOSNIA AND HERZEGOVINA



1. Country:

Bosnia and Herzegovina

Proportion of deaths resulting from cardiovascular disease

Over 50%

2. Healthcare system

National Social Health System. Social Health care system, everybody pays from their pay check 17%.

Insurance availability

Basic	Yes
Private	No

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Treatment availability

Yes, it is not funded.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

In most centres PET, SPECT and vascular ultrasound were not done in 2014 due to missing equipment.

3. Education

National certification availability

	Yes
TTE	Official name: Association of cardiologists in B&H Workgroup for echocardiography
TOE	Official name: Association of cardiologists in B&H Workgroup for echocardiography
Stress ECHO	Official name: Association of cardiologists in B&H Workgroup for echocardiography
CMR	Official name: Association of cardiologists in B&H Workgroup for echocardiography
CT	Official name: Association of cardiologists in B&H Workgroup for echocardiography
PET	Official name: Association of cardiologists in B&H Workgroup for echocardiography
SPECT	Official name: Association of cardiologists in B&H Workgroup for echocardiography
Vascular ultrasound	Official name: Association of cardiologists in B&H Workgroup for echocardiography

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Certificate is provided after finishing Echocardiography course in UKC Tuzla (intensive course of 1 month for TTE, TOE and stress ECHO; for CMR, PET and SPECT at the moment we haven't given any certificate due to lack of equipment).		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	National accreditation for centres is in progress.		

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	No
ECHO (TTE, TOE, Stress ECHO)	<input checked="" type="checkbox"/>
CMR/CT	<input checked="" type="checkbox"/>
PET/SPECT	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 6 months	<input type="checkbox"/>
TOE	Number of years: 6 months	<input type="checkbox"/>
Stress ECHO	Number of years: 6 months	<input type="checkbox"/>
CMR	Number of years: 6 months	<input type="checkbox"/>
CT	Number of years: 6 months	<input type="checkbox"/>
PET	Number of years: 6 months	<input type="checkbox"/>
SPECT	Number of years: 6 months	<input type="checkbox"/>
Vascular ultrasound	Number of years: 6 months	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	100% Cardiologists
CMR/CT	50% Cardiologists / 50% Radiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	50% Cardiologists / 50% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE Vivid 7
CMR	Name: Phillips 1.5 T MRI Avanto
CT	Name: Siemens 64 slice
PET	Name: None
SPECT	Name: None
Vascular ultrasound	Name: GE Vivid 3 and Vivid 7

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Our National guidelines are translated European guidelines.	

Necessity of guidelines in the national language

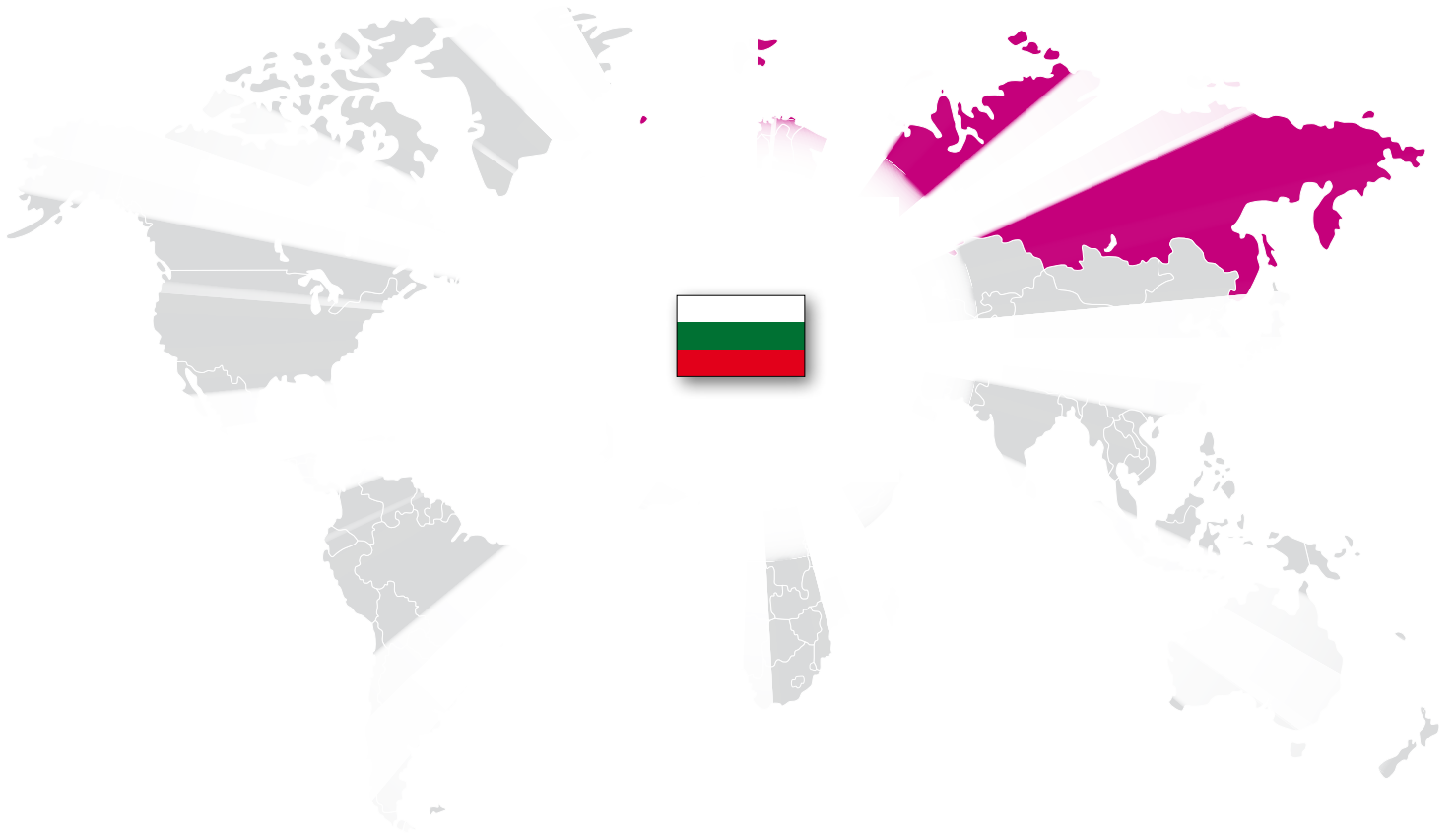
Yes

Are guidelines translated in the national language

No

Comments	Guidelines need translation to one of official languages in Bosnia and Herzegovina (Bosnian, Croatian or Serbian) because they are very similar languages and it would be a lot easier to work and use them in practice.
----------	--

BULGARIA



1. Country:

Bulgaria

Proportion of deaths resulting from cardiovascular disease

67.5%

2. Healthcare system

National Health system and Private Health Funds. National Health system covered the main health care and emergency care for all people with health insurances. Emergency care is possible for all people. Children and old people over 65 years are with government insurances. Private health funds covered some all or particularly the health care depending from the insurances for working people - yearly check up, some diagnostic tests, consultations and a few days in clinic.

Insurance availability

Basic No
Private Yes

Comments For Basic: Unemployed persons with unpaid health policies are with loss rights for unpaid health care.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

Yes

TTE	Official name: Medical University, Sofia & National Heart Hospital
TOE	Official name: Medical University, Sofia & National Heart Hospital
Stress ECHO	Official name: Medical University, Sofia & National Heart Hospital
CMR	Official name: Medical University, Sofia
CT	Official name: Medical University, Sofia
PET	Official name: Medical University, Sofia
SPECT	Official name: Medical University, Sofia
Vascular ultrasound	Official name: Medical University, Sofia

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Certificated cardiologist with expert level of certification	<input type="checkbox"/>
CMR/CT	Radiologist	<input type="checkbox"/>
PET/SPECT	Radiologist	<input type="checkbox"/>
Vascular ultrasound imaging	Angiologist, neurologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes
TTE	Number of years: 6 months
TOE	Number of years: 1
Stress ECHO	Number of years: 1
CMR	Number of years: 1
CT	Number of years: 4 years during specialisation in radiology
PET	Number of years: 4 years during specialisation in radiology
SPECT	Number of years: 4 years during specialisation in radiology
Vascular ultrasound	Number of years: 3 months

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	100% Cardiologists
CMR/CT	100% Radiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	30-40% Cardiologists / 30% Radiologists / 40% Neurologist, Angiologist

Availability of a National registry

	Yes	No
ECHO	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Vivid, Aloka , Siemens, Phillips, Esaote
CMR	Name: Siemens, GE,
CT	Name: GE
PET	Name: UNK
SPECT	Name: UNK
Vascular ultrasound	Name: Aloka, Esaote, GE

5. Guidelines

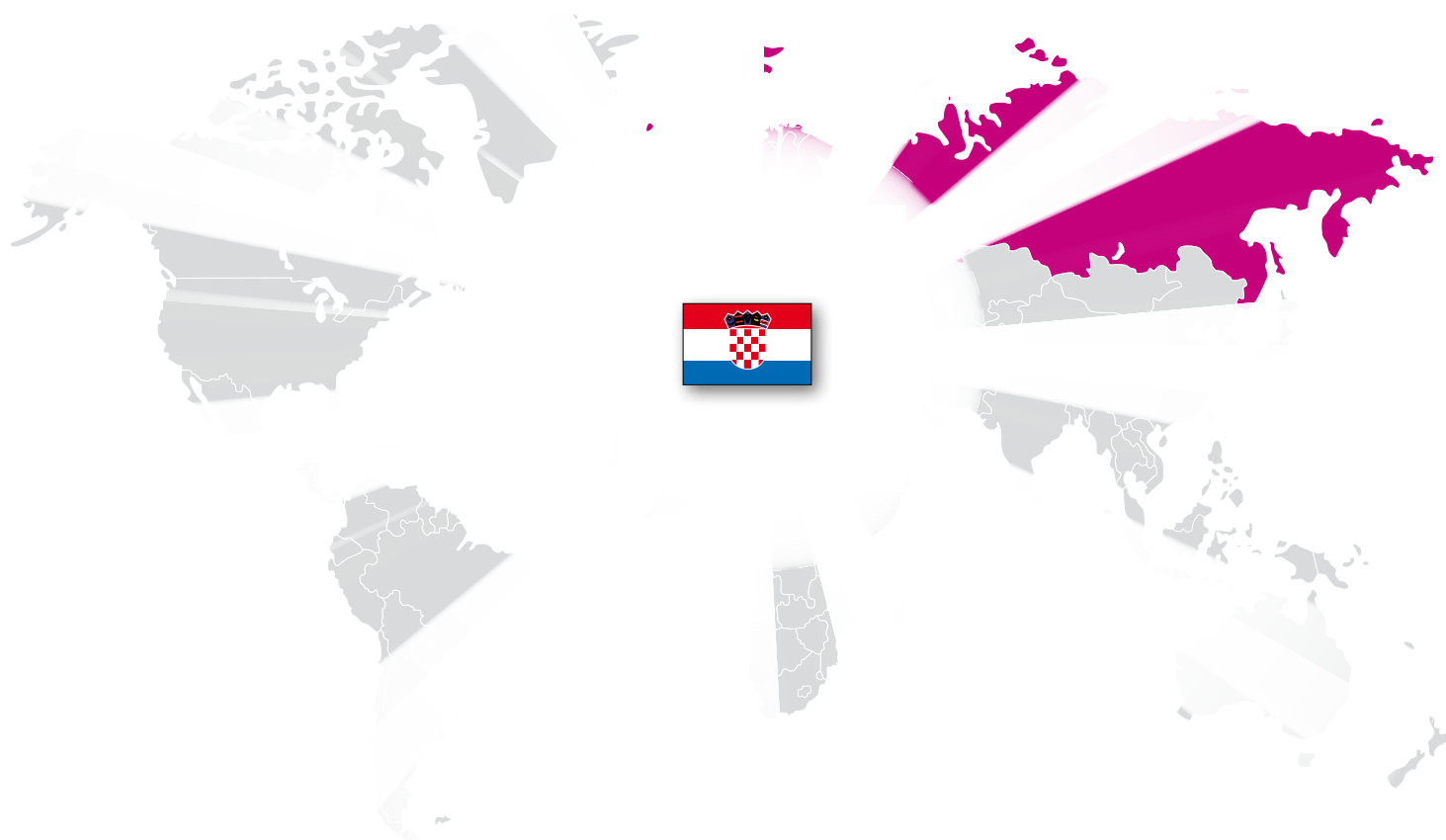
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	No
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CROATIA



Proportion of deaths resulting from cardiovascular disease

48.09%

2. Healthcare system

The healthcare system in Croatia is controlled centrally. The state owns hospitals and the county governments own the medical centres. The Minister of Health has a wide brief. He is responsible for legislation, the annual national health plan, monitoring health status and health care needs, modifying standards in healthcare facilities, supervising training, educating the nation in healthcare and etc.

Finance for the Croatian state health system comes from a variety of sources. Health insurance contributions are compulsory for all citizens in employment and for employers. Dependent family members are covered through the contributions made by working family members. Self-employed citizens must pay their own contributions in full. Vulnerable groups such as old age pensioners and low-income earners are exempt from payment. The Croatian Institute for Health Insurance (CIHI) holds the budget made up of the working populace's contributions. Some citizens supplement their state healthcare service with additional private health insurance.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

Reimbursement is received only for outpatients, while for in-hospital patients diagnostic procedures are finance through the DTS (diagnostic-therapeutic packages).

Treatment availability

Yes, it is not funded.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comments	There are exceptions for the emergency pts. PET is performed very rarely due to a lack in isotopes.		

3. Education

National certification availability

	Yes	No
TTE	Official name: National Accreditation in Transthoracic Echocardiography (NATE). NATE is Voluntary	
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Comments Physicians with EACVI certification immediately receive NATE.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Cardiologist
CMR/CT	Cardiologist, radiologist
PET/SPECT	Nuclear medicine specialist
Vascular ultrasound imaging	Cardiologist, radiologist

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: Working group on Echocardiography & cardiac imaging	<input type="checkbox"/>
TOE	Official name: Working group on Echocardiography & cardiac imaging	<input type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: Working group on Vascular Diseases of the Croatian Cardiac society	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years: 500 PET/CT exams	<input type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>
Comments	There is a core syllabus for competencies acquired during subspecialty in Cardiology, including highest level III for TTE, while TOE/STRESS are level II. CT, PET, SPECT no data available.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Cardiologists / 10% Internal specialist
CMR/CT	90% Radiologists / 10% Cardiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	50% Cardiologists / 50% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	No
ECHO	<input checked="" type="checkbox"/>
CMR/CT	<input checked="" type="checkbox"/>
PET/SPECT	<input checked="" type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	These are the costs provide by Croatian Institute for Health Insurance (CIHI), while in the private practice they are much higher.			

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens, Aloka, Toshiba (order is define by the app. rate)
CMR	Name: No data available
CT	Name: No data available
PET	Name: No data available
SPECT	Name: No data available
Vascular ultrasound	Name: Aloka, GE

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

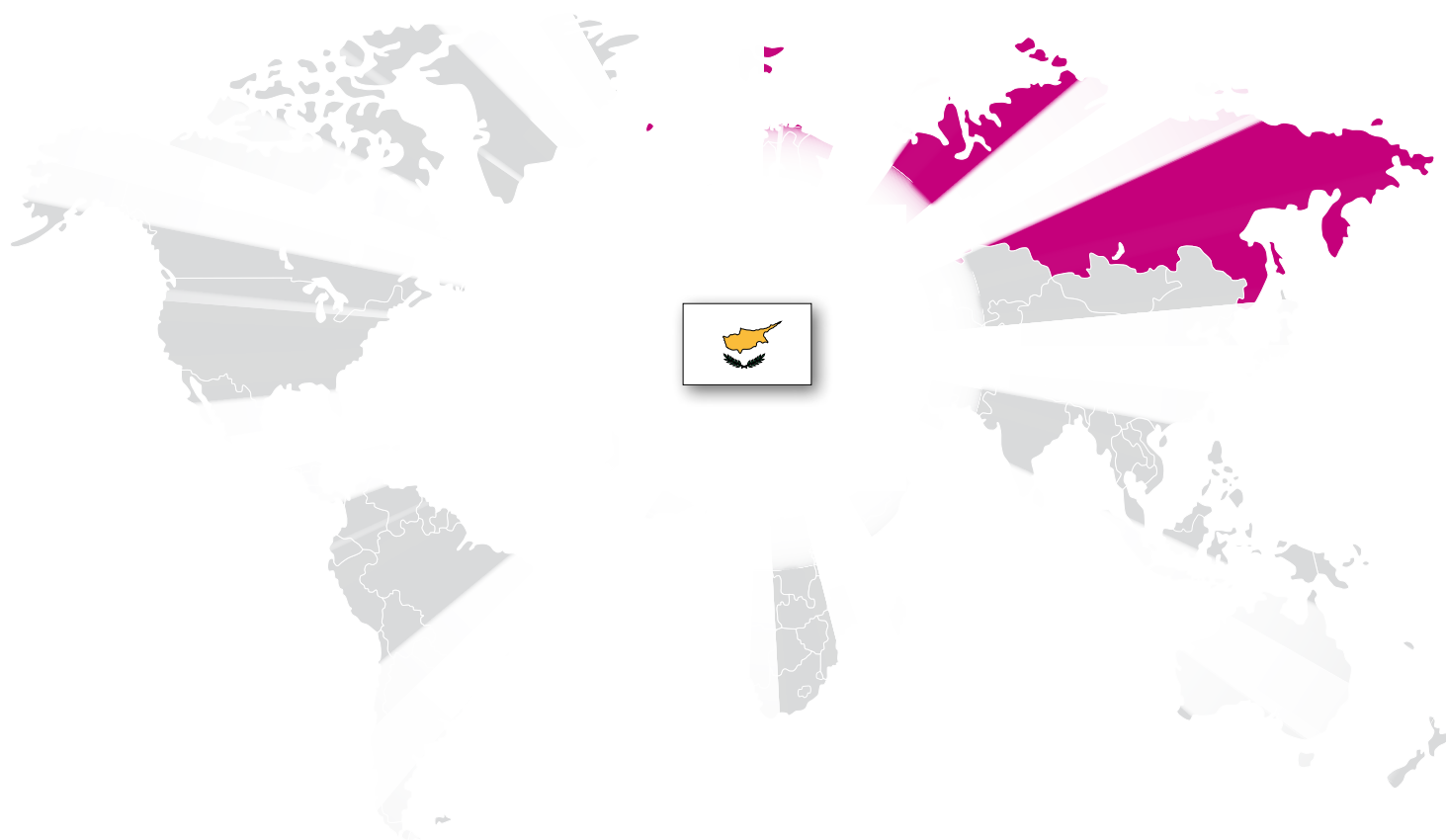
Yes

Comments	Planned for TTE, first for valvular heart disease.
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Are guidelines translated in the national language

Yes

CYPRUS



1. Country:

Cyprus

Proportion of deaths resulting from cardiovascular disease

25-30%

2. Healthcare system

National Health System based solely on governmental support. Free medical care based on income criteria, which became much more tight since 1st of August 2013. Citizens' contribution according to their income. Major reforms are about to be decided and implemented.

Insurance availability

Basic	No
Private	Yes

Comments	Increase of private health insurance plans since 1st of August 2013, after the initiation of much stricter income criteria for free beneficiaries.
----------	--

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments	This is a topic of change in the forthcoming reforms. The 'price' of the procedures will be reducing as long as their number will be increasing.
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Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

It depends on the hospital. Normally the bigger the hospital, the longer the waiting list. However if a procedure needs to be performed earlier, then it can be performed. No CT, PET and CMR availability in public hospitals.

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

No

Comments The national society does not advise its members to be certified, but recognises certification's value and importance.

Specialty required to perform

		No
ECHO (TTE, TOE, Stress ECHO)	Performed mainly by cardiologists, but some internists rather often perform TTE and anaesthetists perform TOE preoperatively.	<input checked="" type="checkbox"/>
CMR/CT	Performed by radiologists.	<input checked="" type="checkbox"/>
PET/SPECT	Performed mainly by radiologists and nuclear medicine specialists. A small number of cardiologists perform some procedures.	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Performed by cardiologists, vascular surgeons, internists, radiologists, some neurologists and experienced nurses.	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 6 months during residency	<input checked="" type="checkbox"/>
TOE	Number of years: 6 months during residency	<input checked="" type="checkbox"/>
Stress ECHO	Number of years: 6 months during residency	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years: 2,5 months during residency	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years: 1 month during residency	<input checked="" type="checkbox"/>
Comments	No required period for these imaging examinations. Training is gained during residency without any strict national required training period.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Cardiologists / 5% Internists
CMR/CT	100% Radiologists
PET/SPECT	97% Specialists in nuclear medicine / 3% Cardiologists
Cardiovascular ultrasound	60% Radiologists / 20% Vascular Surgeons / 20% Cardiologists (mostly carotid ultrasound)

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens, Esaote, Aloka
PET	Name: Toshiba, Philips, Siemens, GE
CT	Name: Toshiba, Philips, GE
PET	No PET machine in Cyprus
SPECT	Name: GE
Vascular ultrasound	Name: GE, Philips, Siemens, Esaote, Aloka

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

Yes

Comments A common effort concerning imaging guidelines and position papers has begun along with the Hellenic WG of Echocardiography.

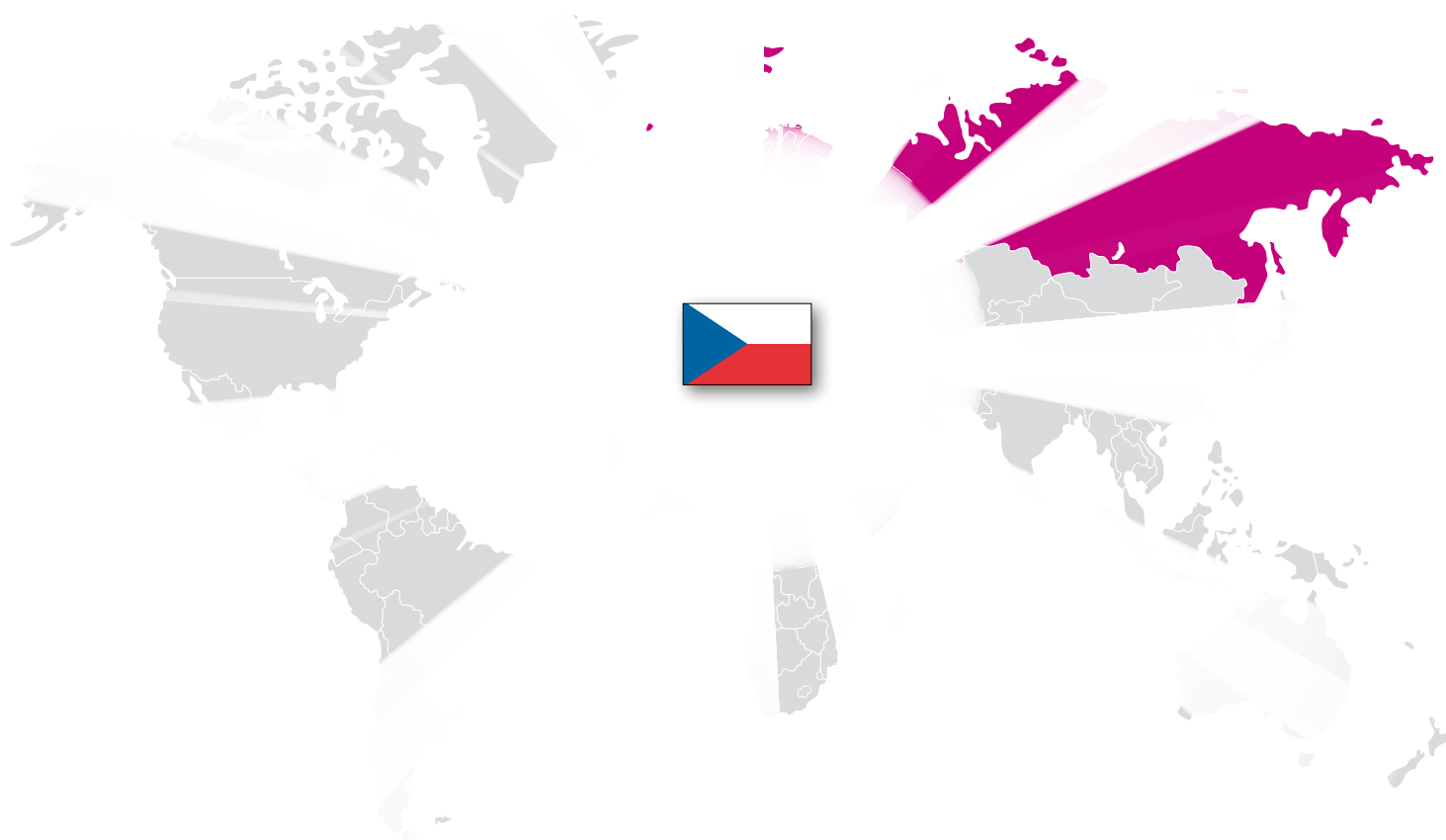
Are guidelines translated in the national language**Yes****Comments**

Some of them are already translated into Greek due to the contribution of the Hellenic Cardiology Society.

General Comments

During 2012 the following procedures were performed: TTE approx. 19300, TEE approx. 725, Stress Echo approx. 1400, CT 601, CMR 117, SPECT 1319. (Results for TTE, TOE and Stress Echo have been gathered from public hospitals' echo lab sections and a rough estimation for the private sector. CT, CMR and SPECT results have been gathered from public hospitals' and private centres' data.

CZECH REPUBLIC



1. Country:

Czech Republic

Proportion of deaths resulting from cardiovascular disease

49%

2. Healthcare system

National Health System. Insurance-based system consisting of public and private healthcare providers. Most of the medical care is fully covered by the insurance system.

Insurance availability

Basic	Yes
Private	No

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Exceptions may apply due to regional availability of services.		

3. Education

National certification availability

	Yes	No
TTE	Official name: Licence by the Medical Chamber	<input type="checkbox"/>
TOE	Official name: No special licence, however Board certificate (examination) in cardiology required	<input checked="" type="checkbox"/>
Stress ECHO	Official name: No special licence, however Board certificate (examination) in cardiology required	<input checked="" type="checkbox"/>
CMR	Official name: No special licence, however Board certificate (examination) in radiology required	<input checked="" type="checkbox"/>
CT	Official name: No special licence, however Board certificate (examination) in radiology required	<input checked="" type="checkbox"/>
PET	Official name: No special licence, however Board certificate (examination) in nuclear medicine required	<input checked="" type="checkbox"/>
SPECT	Official name: No special licence, however Board certificate (examination) in nuclear medicine required	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: No special licence, however Board certificate (examination) in cardiology, angiology or radiology medicine required	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	For all examination there is a requirement of Board examination in cardiology, angiology, radiology or nuclear medicine, respectively.		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments

Cardiovascular Centres are accredited by the Ministry of Health. However, the examinations may be performed in non-accredited hospitals, depending on contracts with insurance companies.

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Board examination exists for obtaining specialty in cardiology. All echocardiography examinations require obtaining of the specialty for independent practice.	<input type="checkbox"/>
CMR/CT	Board examination exists for obtaining specialty in radiology required for independent practice of CT/CMR.	<input type="checkbox"/>
PET/SPECT	Board examination exists for obtaining specialty in nuclear medicine required for independent practice of PET/SPECT.	<input type="checkbox"/>
Vascular ultrasound imaging	Board examination exists for obtaining specialty in radiology, cardiology and angiology (vascular medicine) required for independent practice of vascular ultrasound.	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name: Czech medical chamber	<input type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: within the training in cardiology (4 years).	<input type="checkbox"/>
TOE	Number of years: Defined by the number of independent examinations.	<input type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	90% Cardiologists / 10% Intensive care specialists
CMR/CT	90% Radiologists / 10% Cardiologists
PET/SPECT	90% Specialists in nuclear medicine / 10% Cardiologists
Cardiovascular ultrasound	40% Radiologists / 40% Angiology (vascular medicine) specialists / 20% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>
Comments	In principle, all complications related to contrast agents and drugs should be reported to State Institute for Drug Control.	

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Toshiba, Siemens
CMR	Name: Siemens, Philips
CT	Name:
PET	Name:
SPECT	Name:
Vascular ultrasound	Name: Siemens, Philips, Toshiba
Comments	All brands of major manufacturers are used, the models and equipment varies depending on the level of the healthcare providers.

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

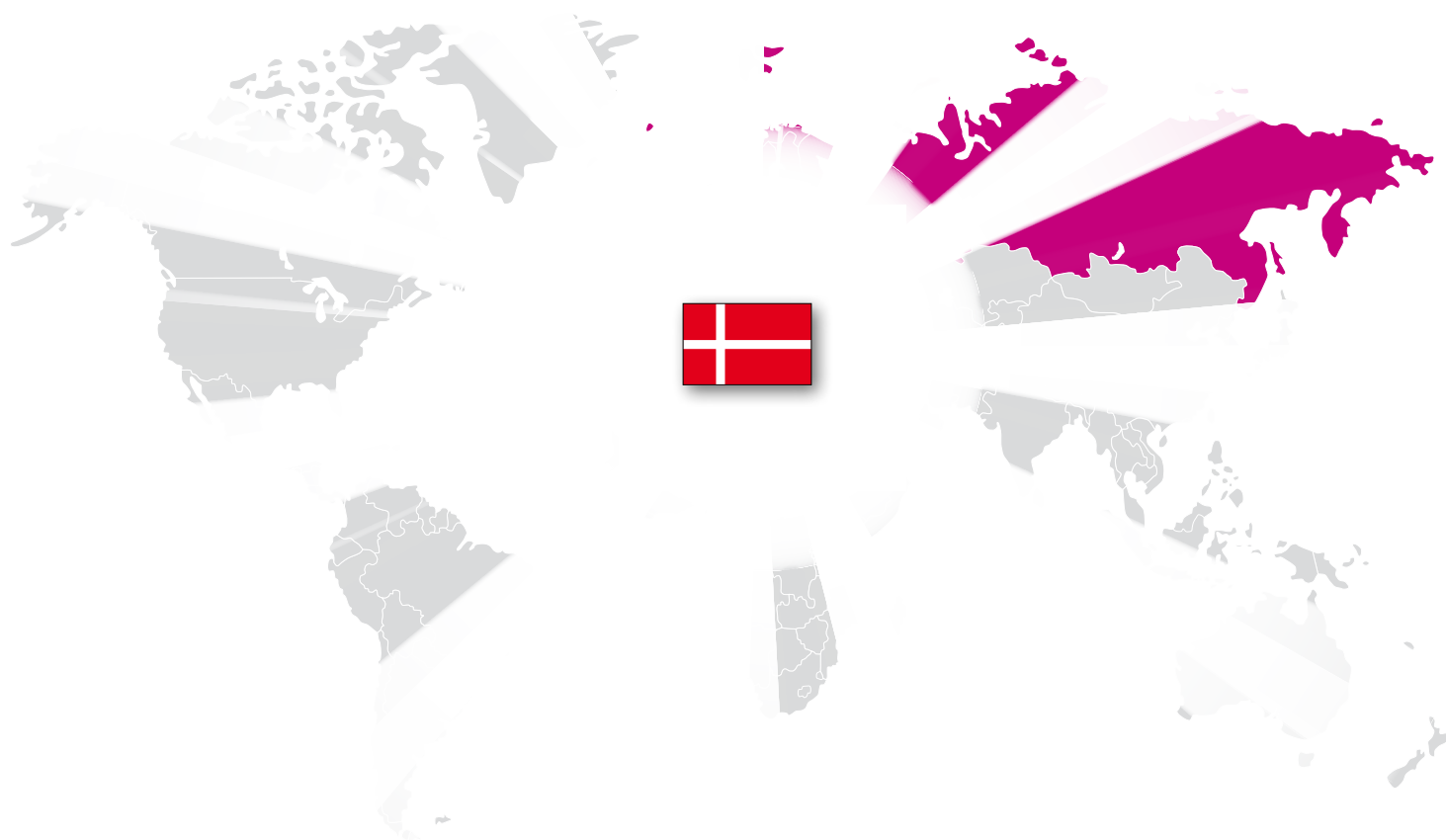
No

Are guidelines translated in the national language

No

Comments Imaging guidelines are not translated. There is a wide reluctance to accept latest guidelines for chamber quantification due to inconsistency and major methodological errors.

DENMARK



Proportion of deaths resulting from cardiovascular disease

25%

2. Healthcare system

All residents are entitled to free healthcare services. Each patient has a general practitioner. More than 99% of hospitals are public. Most health care expenses are covered by tax payment.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	All public hospitals receive fixed annual funding, the growth of which is controlled by the government.		

Treatment availability

No, there are no restrictions.

Comments	There are no restrictions other than that the treatment must comply with clinical guideline indications and the budget available to each hospital department.
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Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

The Danish Parliament has issued a guarantee, that all patients are entitled to be diagnosed within 30-60 days depending on the suspected illness. This means that patients are entitled to be referred from hospital with too long waiting lists to faster performing public or private hospitals. Vascular ultrasound is not recommended in Denmark.

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	The accreditation programme is controlled by The Danish Healthcare Quality Programme.		

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)		<input checked="" type="checkbox"/>
CMR/CT	Radiology or Cardiology	<input type="checkbox"/>
PET/SPECT	Nuclear Medicine	<input type="checkbox"/>
Vascular ultrasound imaging		<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Recommendations for standardized minimum requirements for TTE in adults published by the Danish Society of Cardiology	<input type="checkbox"/>
TOE	Guidelines for measurements and documentation of TOE published by the Danish Society of Cardiology	<input type="checkbox"/>
Stress ECHO		<input checked="" type="checkbox"/>
CMR	Guidelines on diagnosis of patients with suspected ischemic heart disease published by the Danish Society of Cardiology	<input type="checkbox"/>
CT	Society of Cardiovascular Computed Tomography Guidelines plus Guidelines on diagnosis of patients with suspected ischemic heart disease published by the Danish Society of Cardiology	<input type="checkbox"/>
PET	European Association of Nuclear Medicine Guidelines plus Guidelines on diagnosis of patients with suspected ischemic heart disease	<input type="checkbox"/>
SPECT	European Association of Nuclear Medicine Guidelines plus Guidelines on diagnosis of patients with suspected ischemic heart disease	<input type="checkbox"/>
Vascular ultrasound	Not performed routinely	<input type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years: No but has to fulfil the Society of Cardiovascular CT requirements.	<input checked="" type="checkbox"/>
PET	Number of years: 4 years training before unsupervised examinations are allowed.	<input type="checkbox"/>
SPECT	Number of years: 4 years training before unsupervised examinations are allowed.	<input type="checkbox"/>
Vascular ultrasound	Not performed routinely	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	100% Cardiologists
CMR/CT	100% Cardiologists & Radiologists – examinations are performed in teamwork between radiologists and cardiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	Not performed routinely

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name: Western Denmark Heart Registry plus Web PATS	<input type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes
ECHO	Official name: The Danish Patient Safety Database
CMR/CT	Official name: The Danish Patient Safety Database
PET/SPECT	Official name: The Danish Patient Safety Database
Vascular ultrasound	Official name: The Danish Patient Safety Database

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

Yes

ECHO Official name: **The Danish Patient Safety Database**

CMR/CT Official name: **The Danish Patient Safety Database**

PET/SPECT Official name: **The Danish Patient Safety Database**

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

Systems

ECHO	Name: GE, Philips, Siemens
CMR	Name: GE, Philips, Siemens
CT	Name: GE, Philips, Siemens, Toshiba
PET	Name: GE, Philips, Siemens
SPECT	Name: GE, Philips, Siemens
Vascular ultrasound	Name: GE, Philips, Siemens

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

No

Comments Danish doctors are well-trained in medical English.

Are guidelines translated in the national language

No

General Comments

The Danish Board of Medicines is developing a system to monitor the exact waiting lists for diagnostic examinations. However, at present, we do not have the exact data, patient for patient. Thus, the waiting list answers are based on the Danish legislation that ensures referral to centres with short waiting lists so that patients can be diagnosed within 30 to 60 days, depending on the suspected diagnosis.

EGYPT



1. Country:

Egypt

Proportion of deaths resulting from cardiovascular disease

42%

2. Healthcare system

National Health System (governmental including students) and private health care system.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	The reimbursement is applied only in the private system.		

Treatment availability

No, there are no restrictions, but the indications have to follow the National guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Egyptian Society of cardiology (Echocardiography Working group)	<input type="checkbox"/>
TOE	Official name: Egyptian Society Anaesthesiologist Cairo University	<input type="checkbox"/>
Stress ECHO	Official name:	<input type="checkbox"/>
CMR	Official name:	<input type="checkbox"/>
CT	Official name:	<input type="checkbox"/>
PET	Official name:	<input type="checkbox"/>
SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input type="checkbox"/>
Comments	Other certificates are granted by institution (small scale).	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform		
	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT	Cardiologist and Radiologist	<input type="checkbox"/>
PET/SPECT	Cardiology	<input type="checkbox"/>
Vascular ultrasound imaging	Cardiologist and radiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Number of years: Not provided	<input type="checkbox"/>
TOE	Number of years: Not provided	<input type="checkbox"/>
Stress ECHO	Number of years: Not provided	<input type="checkbox"/>
CMR	Number of years: Not provided	<input type="checkbox"/>
CT	Number of years: Not provided	<input type="checkbox"/>
PET	Number of years: Not provided	<input type="checkbox"/>
SPECT	Number of years: Not provided	<input type="checkbox"/>
Vascular ultrasound	Number of years: Not provided	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations	
	Yes
ECHO	80% Cardiologists, 20% Radiologists and ICU
CMR/CT	80% Cardiologists / 20% Radiologists
PET/SPECT	100% Cardiologists
Cardiovascular ultrasound	70% Cardiologists / 30% Radiologists
Comments	Estimates

Availability of a National registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Type of institution: <input type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution: <input type="checkbox"/>	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips, GE, Siemens, Esaote, Aluka, Toshiba
CMR	Name: Philips, Siemens, GE
CT	Name: Philips, Siemens, GE
PET	Name: Philips, Siemens, GE
SPECT	Name: Philips, Siemens, GE
Vascular ultrasound	Name: Philips, GE, Siemens, Esaote, Aluka, Toshiba

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

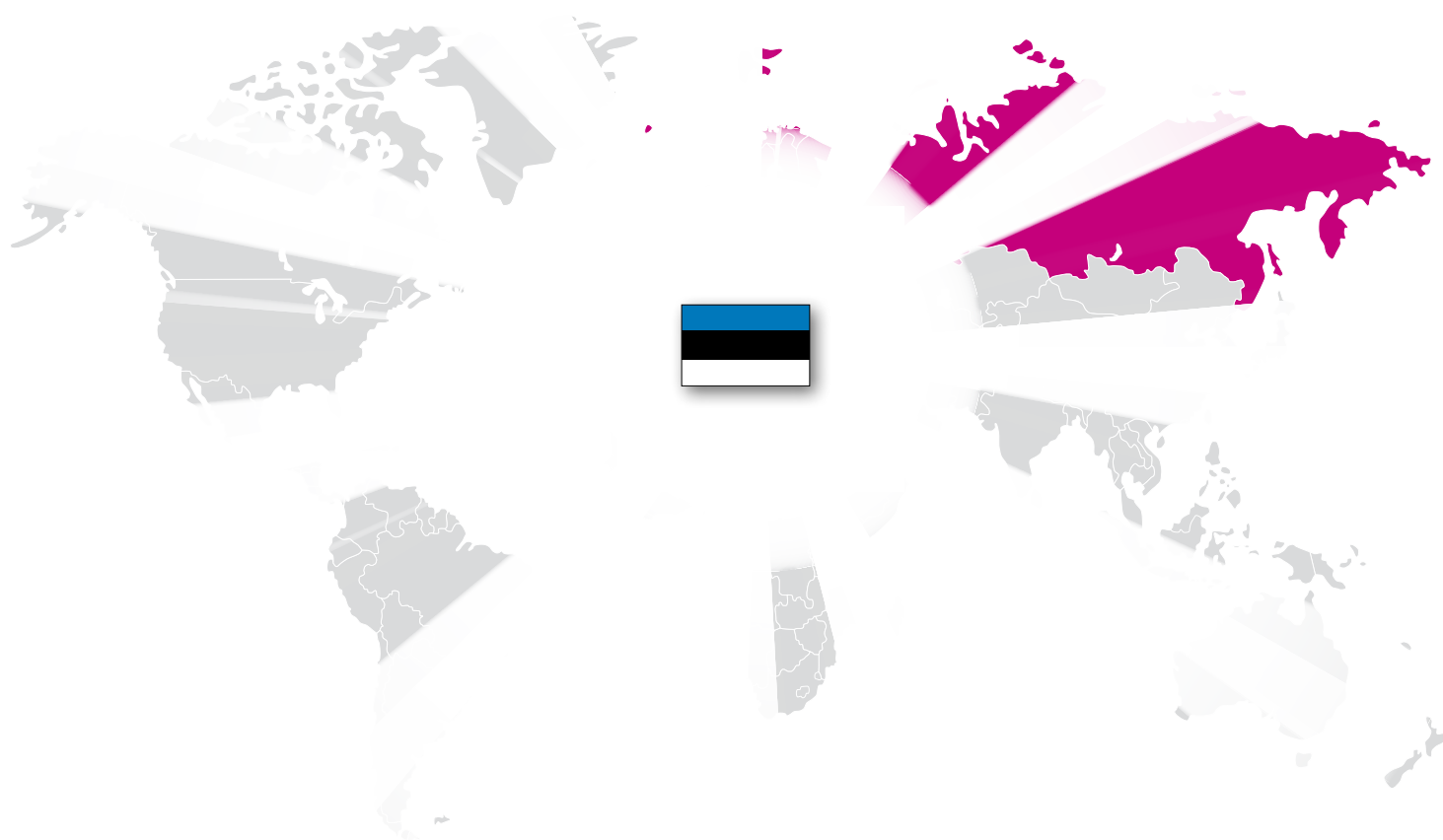
Necessity of guidelines in the national language **No**

Are guidelines translated in the national language **No**

General Comments

We are fulfilling the criteria of the European society of Cardiovascular imaging for adult TTE.

ESTONIA



1. Country:

Estonia

Proportion of deaths resulting from cardiovascular disease

54.17%

2. Healthcare system

Health Insurance Fund. A person has to have health insurance through Health Insurance Fund. The resources come from the state, from local resources and every person (not unemployed).

Insurance availability

Basic	Yes
Private	Yes

Comments There is a possibility to make some kind of a contract to get private health insurance. It is not an everyday practice.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Stress ECHO is not listed in Health Insurance Fund. PET is not performed.		

Treatment availability

Yes, it is not funded.

Comments The procedures are not funded in case the overall budget of the department is exceeded.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	Not performed	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist, anaesthesiologist mostly	<input type="checkbox"/>
CMR/CT	Radiologist mostly	<input type="checkbox"/>
PET/SPECT	Nuclear medicine specialist/ radiologists mostly	<input type="checkbox"/>
Vascular ultrasound imaging	Different specialists can perform	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	350 procedures	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>
Comments	Training during residency.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	Mostly Cardiologists / Anaesthesiologists
CMR/CT	Mostly Radiologists
PET/SPECT	99.9% Radiologists specialised in nuclear medicine
Cardiovascular ultrasound	Cardiologists / Radiologists / Other

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips
CMR	Name: GE
CT	Name: GE
SPECT	Name: GE
Vascular ultrasound	Name: GE

5. Guidelines**Guidelines adhered to for non-invasive cardiovascular imaging examinations**

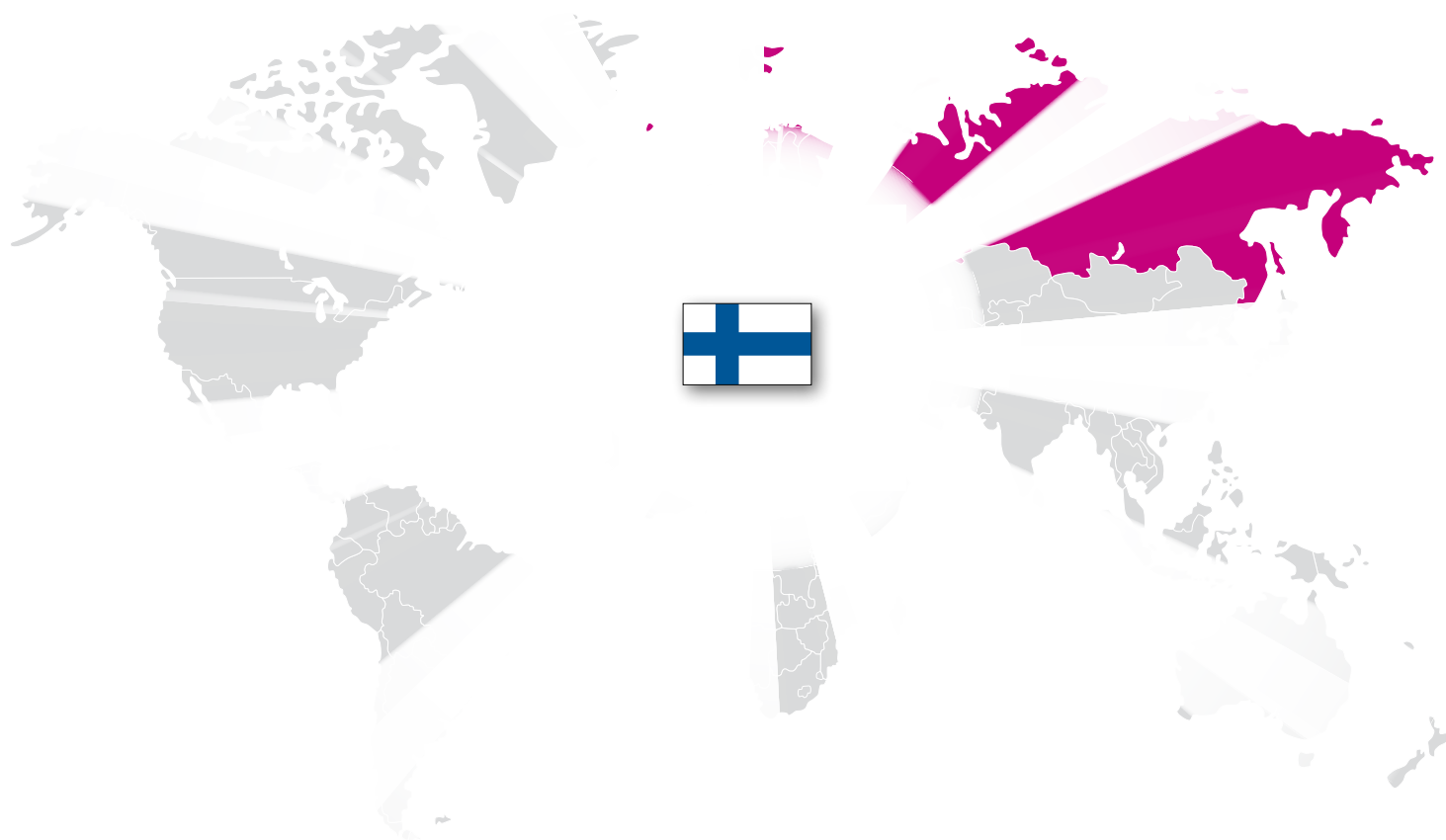
	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language**No**

Comments It would be beneficial if there were enough human and time resources. A relatively small English speaking group of specialists is occupied in imaging.

Are guidelines translated in the national language**No**

FINLAND



1. Country:

Finland

Proportion of deaths resulting from cardiovascular disease

38%

2. Healthcare system

National Health system. All Finnish residents are entitled to free healthcare services. Each resident has a general practitioner. More than 99% of hospitals are public. Most health care expenses are covered by tax payment.

Insurance availability

Basic Yes
Private Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)		<input checked="" type="checkbox"/>
CMR/CT	Radiology, Cardiology, or Clinical physiology	<input type="checkbox"/>
PET/SPECT	Cardiology or Nuclear medicine	<input type="checkbox"/>
Vascular ultrasound imaging		<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	International standards and guidelines are followed.	

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years: 2 years of chest radiology	<input type="checkbox"/>
CT	Number of years: 2 years of chest radiology	<input type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	70% Cardiologists / 30% Other
CMR/CT	50% Radiologists / 40% Cardiologists / 10% Clinical physiologist
PET/SPECT	60% Specialists in nuclear medicine / 40% Cardiologists
Cardiovascular ultrasound	80% Radiologists / 20% Surgeon, Internist

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	Hospitals have their own registries for CMR/CT and PET/SPECT.	

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	Hospitals have their own complication registry. The most serious complications are reported to Valvira-National Supervisory Authority for Welfare and Health.	

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens
CMR	Name: Philips, Siemens
CT	Name: GE, Siemens
PET	Name: GE, Philips, Siemens
SPECT	Name: GE, Siemens
	Name: GE, Philips

5. Guidelines

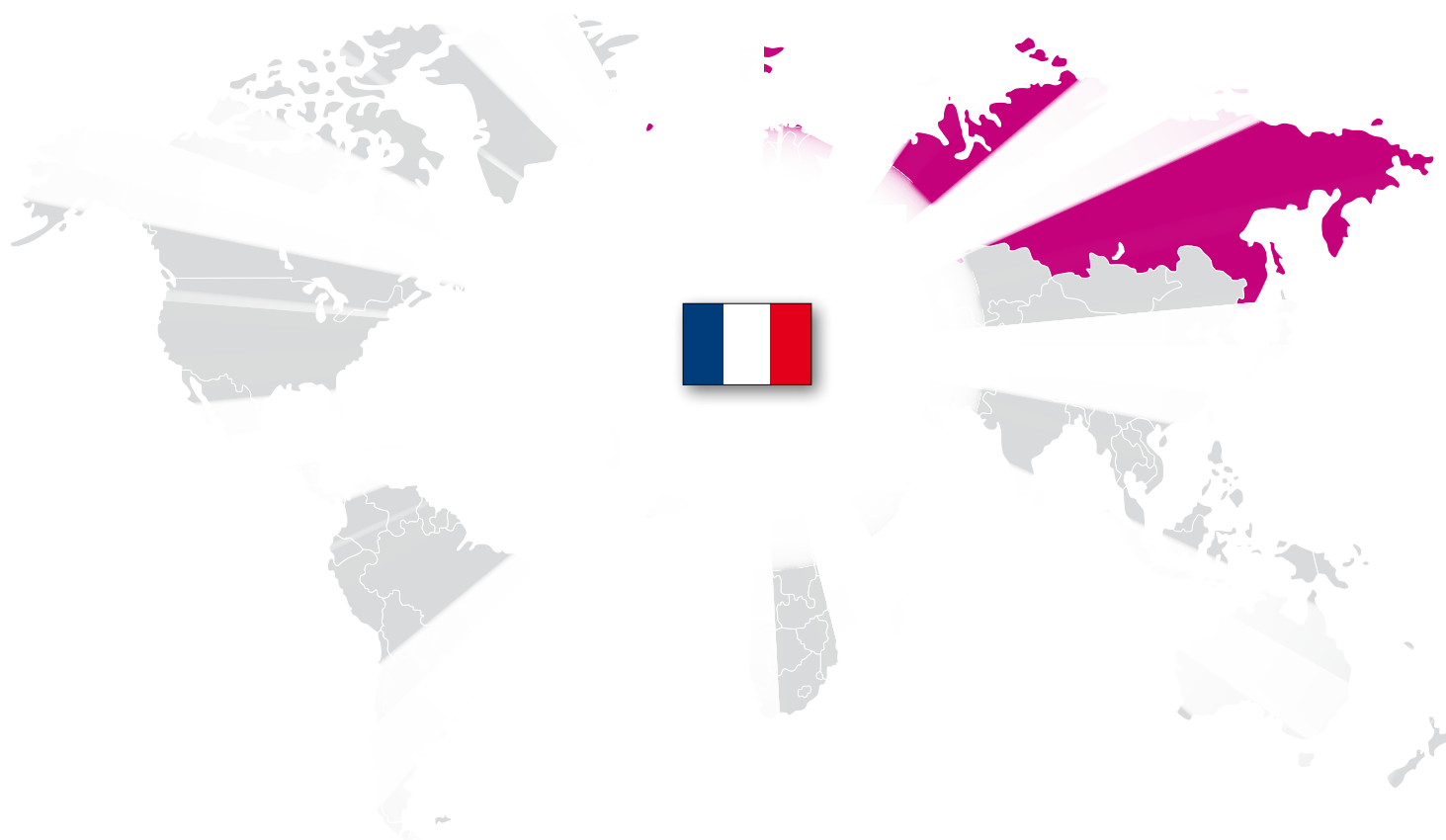
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	No
--	----

Are guidelines translated in the national language	No
--	----

FRANCE



1. Country:

France

Proportion of deaths resulting from cardiovascular disease

26%

2. Healthcare system

Social Security for everybody.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the National guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: DIU EchoCardio	<input type="checkbox"/>
TOE	Official name: DIU EchoCardio	<input type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name: DIU imagerie de coupe	<input type="checkbox"/>
CT	Official name: DIU imagerie de coupe	<input checked="" type="checkbox"/>
PET	Official name: Unknown	<input type="checkbox"/>
SPECT	Official name: Unknown	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologists	<input type="checkbox"/>
CMR/CT	Radiologists	<input type="checkbox"/>
PET/SPECT	Specialists in Nuclear medicine	<input type="checkbox"/>
Vascular ultrasound imaging		<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input type="checkbox"/>
TOE	Official name:	<input type="checkbox"/>
Stress ECHO	Official name:	<input type="checkbox"/>
CMR	Official name:	<input type="checkbox"/>
CT	Official name:	<input type="checkbox"/>
PET	Official name:	<input type="checkbox"/>
SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input type="checkbox"/>
Comments	There are guidelines but not official national competency guidelines.	

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Cardiologists / 5% Anaesthesiologists
CMR/CT	70% Radiologists / 30% Cardiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	60% specialists in vascular medicine, Angiologists / 20% Radiologists / 20% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

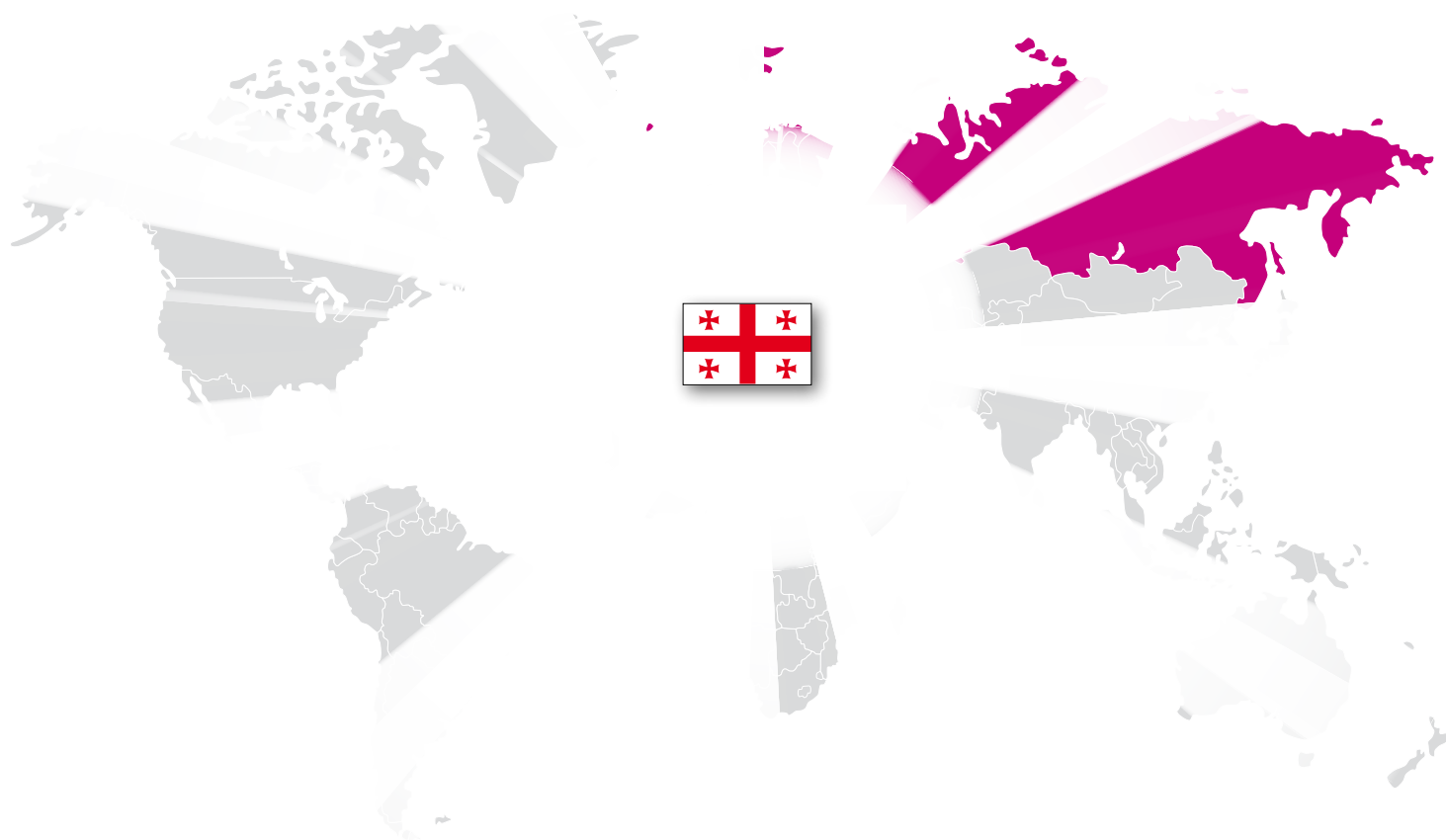
Machine Brand use	
	Systems
ECHO	Name: Philips, GE, Siemens, Toshiba, Samsung
CMR	Name: Philips, GE, Siemens
CT	Name: Philips, GE, Siemens
PET	Name: Philips, GE, Siemens
SPECT	Name: Philips, GE, Siemens
Vascular ultrasound	Name: Philips, GE, Siemens, Toshiba, Samsung

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations		
	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language		No
Are guidelines translated in the national language		No
Comments	New guidelines are commented in national papers.	

GEORGIA, REPUBLIC OF



1. Country:

Georgia, Republic of

Proportion of deaths resulting from cardiovascular disease

35.8%

2. Healthcare system

Universal Healthcare UHC. Government provides, citizens of Georgian Republic, with universal insurance. Normally the insurance is for those who don't have private insurance. Participation in Universal insurance program is not mandatory for all medical institutions. In hospital sector, almost all clinics are involved in this program, however in outpatient sector the reimbursement per the case is low and many private clinics try to avoid participation in the program. Universal insurance doesn't cover cost of medications.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	There are no medical centres practicing in PET.		

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Certificate of subspecialty in echo	<input type="checkbox"/>
TOE	Official name: Certificate of subspecialty in echo	<input type="checkbox"/>
Stress ECHO	Official name: Covered by certificate of subspecialty in echocardiography	<input type="checkbox"/>
CMR	Official name: Certificate of specialty in radiology	<input type="checkbox"/>
CT	Official name: Certificate of specialty in radiology	<input type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name: Certificate of specialty in radiology	<input type="checkbox"/>
Vascular ultrasound	Official name: Certificate of specialty in radiology	<input type="checkbox"/>
Comments	Normally physicians need another 3 (TOE/stress echo) or 6 (CT/CMR) months of experience on a base of postgraduate training program.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	In general there are no rules for the reaccreditation procedures. We work with the ministry of health of Georgia to introduce such a scheme; however we haven't achieved the goal yet.		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	There is general accreditation for the clinics wish to practice in cardiology. But it is not divided by modalities.		

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologists	<input type="checkbox"/>
CMR/CT	Radiologists	<input type="checkbox"/>
PET/SPECT	PET does not exist in Georgia, SPECT is performed by radiologists.	<input type="checkbox"/>
Vascular ultrasound imaging	Radiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes
TTE	Number of years: After specialty in cardiology (4 years), 6 months of training is required to practice subspecialty in echocardiography.
TOE	Number of years: After specialty in cardiology (4 years), 6 months of training is required to practice subspecialty in echo. However some cardiologists proceed additional 3 months of training in the TOE on a base of postgraduate training program.
Stress ECHO	Number of years: After specialty in cardiology (4 years), 6 months of training is required to practice subspecialty in echo. However some cardiologists proceed additional 3 months of training in stress ECHO on a base of postgraduate training program.
CMR	Number of years: After specialty in radiology 56 months, physicians who wish to practice in CMR, proceed with their training on a base of postgraduate training program, which normally takes 6 months.
CT	Number of years: After specialty in radiology 56 months, physicians who wish to practice in CT, proceed with their training on a base of postgraduate training program, which normally takes 6 months.
PET	Number of years: N/A
SPECT	Number of years: 36 months of training in specialty of radiology.
Vascular ultrasound	Number of years: 36 months of training in specialty of radiology (in Georgia vascular ultrasonography is performed by radiologists).

4. Imaging examinations

Specialty performing examinations

	Yes	No
ECHO	100% Cardiologists	<input type="checkbox"/>
CMR/CT	100% Radiologists	<input type="checkbox"/>
PET		<input checked="" type="checkbox"/>
SPECT	100% Radiologists	<input type="checkbox"/>
Cardiovascular ultrasound	100% Radiologists	<input type="checkbox"/>

Availability of a National registry

	Yes	No
ECHO	Official name: State Certification Registry	<input type="checkbox"/>
CMR/CT	Official name: State Certification Registry	<input type="checkbox"/>
SPECT	Official name: State Certification Registry	<input type="checkbox"/>
Vascular ultrasound	Official name: State Certification Registry	<input type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use	
	Systems
ECHO	Name: GE, Siemens, Philips, Toshiba
CMR	Name: GE, Siemens, Philips, Toshiba
CT	Name: GE, Siemens, Philips, Toshiba
PET	Name:
SPECT	Name: GE
Vascular ultrasound	Name: GE, Siemens, Philips, Toshiba

5. Guidelines

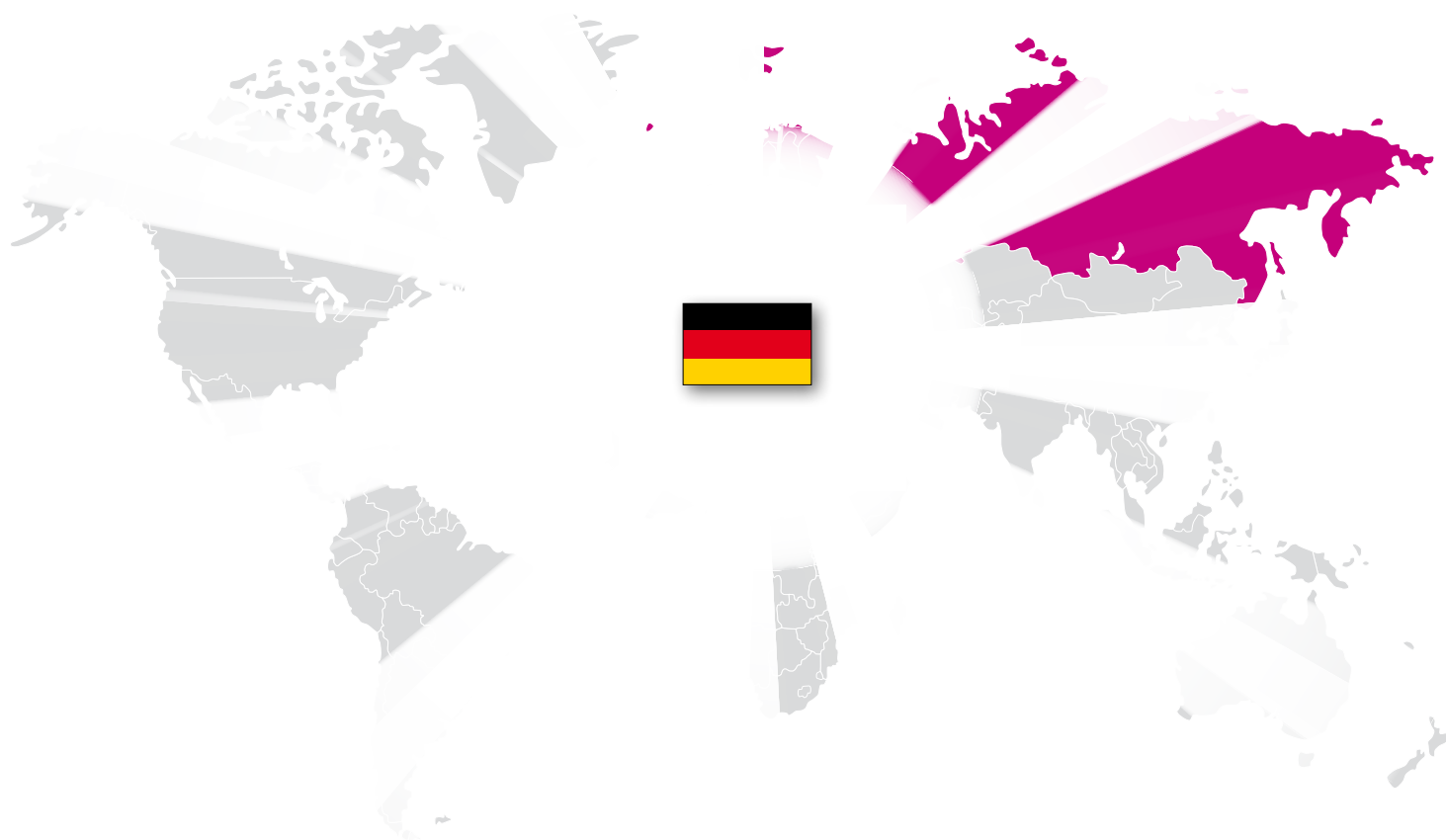
Guidelines adhered to for non-invasive cardiovascular imaging examinations		
	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Normally these guidelines are used in Georgia; However it is up to physicians to decide which guideline has to be followed.	

Necessity of guidelines in the national language	Yes
Are guidelines translated in the national language	Yes
Comments	Translated guides are adapted.

General Comments

We will be very thankful if the EACVI applies to the Ministry of labour health and social affairs of Georgia with the recommendation to harmonize its regulations with modern European standards. It will strengthen our positions and make our activity efficient.

GERMANY



1. Country:

Germany

Proportion of deaths resulting from cardiovascular disease

46,6% (2013)

2. Healthcare system

National Health system

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	For answers with yes: Partially – for private patients / Reimbursement for sonography is included into the DRG.		

Treatment availability

Pending.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	It differs between hospitals and out care clinics for all subgroups between the mentioned days.		

3. Education

National certification availability

	Yes	No
TTE	Official name: DEGUM	<input type="checkbox"/>
TOE	Official name: DEGUM	<input type="checkbox"/>
Stress ECHO	Official name: DEGUM	<input type="checkbox"/>
CMR	Official name: Unknown	<input type="checkbox"/>
CT	Official name: Unknown	<input type="checkbox"/>
PET	Official name: Unknown	<input type="checkbox"/>
SPECT	Official name: Unknown	<input type="checkbox"/>
Vascular ultrasound	Official name: DEGUM	<input type="checkbox"/>
Comments	All other sub disciplines have certifications within the "Weiterbildung" zum Kardiologen bzw. Radiologen; DEGUM Deutsche Gesellschaft für Ultraschall in der Medizin.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	In Germany we do not have official Sonographers. There are national certifications for assistant physicians and non-physicians (MTA).		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	All comments to MR, CT and nuclear cardiology should be additionally confirmed by the head of the working groups of MR, CT and nuclear cardiology of the German Society of Cardiology.		

National Cardiac Society supporting the EACVI certification system

No.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT	Radiologist/cardiologist	<input type="checkbox"/>
PET/SPECT	Nuclear radiologist	<input type="checkbox"/>
Vascular ultrasound imaging	Angiologist, cardiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	No guidelines, only recommendations.	

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 3	<input type="checkbox"/>
TOE	Number of years: 3	<input type="checkbox"/>
Stress ECHO	Number of years: 3	<input type="checkbox"/>
CMR	Number of years: To be confirmed by the head of the working groups of MR, CT	<input type="checkbox"/>
CT	Number of years: To be confirmed by the head of the working groups of MR, CT	<input type="checkbox"/>
PET	Number of years: 500	<input type="checkbox"/>
SPECT	Number of years: 1.5-2	<input type="checkbox"/>
Vascular ultrasound	Number of years: 3	<input type="checkbox"/>
Comments	The numbers are given in the "Weiterbildungsordnung" for cardiologists.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	90% Cardiologists / 10% Non-cardiological physicians, rarely Sonographers
CMR/CT	No sources available
PET/SPECT	<5% Cardiologists / 70-80% Specialists in nuclear medicine / 15-20% mainly radiologists
Cardiovascular ultrasound	Angiologists - No sources available

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name: German Survey on Myocardial Perfusion Scintigraphy. O Lindner Bad Oynhausen	<input type="checkbox"/>
PET/SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	Not specific for echo; complications in combination with drug administration have to be registered by BfArM.	

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Echo and most of the radiological procedures are integrated into the DRG in common patients. Extra cost can be calculated only in private patients.			

Machine Brand use

	Systems
ECHO	Name: Not answered
CMR	Name: Not answered
CT	Name: Not answered
PET	Name: Not answered
SPECT	Name: Not answered
Vascular ultrasound	Name: Not answered

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

No

Are guidelines translated in the national language

No

GREECE



1. Country:

Greece

Proportion of deaths resulting from cardiovascular disease

45%

2. Healthcare system

In Greece there is a national health system since 1983 that is based on the financial support of the state. Efforts are made in order to develop a data source of all patients.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	For CT the cost is paid by the patient.		

Treatment availability

No, there are no restrictions, but the indications have to follow the National guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	The above comments refer to the sector of public hospitals. However in the private health sector the waiting list is shorter.		

3. Education

National certification availability

	Yes	No
TTE	Official name: It is obtained by completing the specialization.	<input type="checkbox"/>
TOE	Official name: License for novel techniques.	<input type="checkbox"/>
Stress ECHO	Official name: License for novel techniques.	<input type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Most echocardiographs are performed by cardiologists and a few by anaesthesiologists.
CMR/CT	Radiology for CT, radiology or cardiology for CMR.
PET/SPECT	Nuclear medicine
Vascular ultrasound imaging	Radiology

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: ½ year during specialization.	<input type="checkbox"/>
TOE	Number of years: ½ year during specialization.	<input type="checkbox"/>
Stress ECHO	Number of years: ½ year during specialization.	<input type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years: A few months during specialization.	
Vascular ultrasound	Number of years: A few months during specialization.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Cardiologists / 5% Anaesthesiologists
CMR/CT	80% Radiologists / 20% Cardiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	97% Radiologists / 3% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name: Yes	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens, Toshiba
CMR	Name:
CT	Name:
PET	Name:
SPECT	Name:
Vascular ultrasound	Name: GE

5. Guidelines

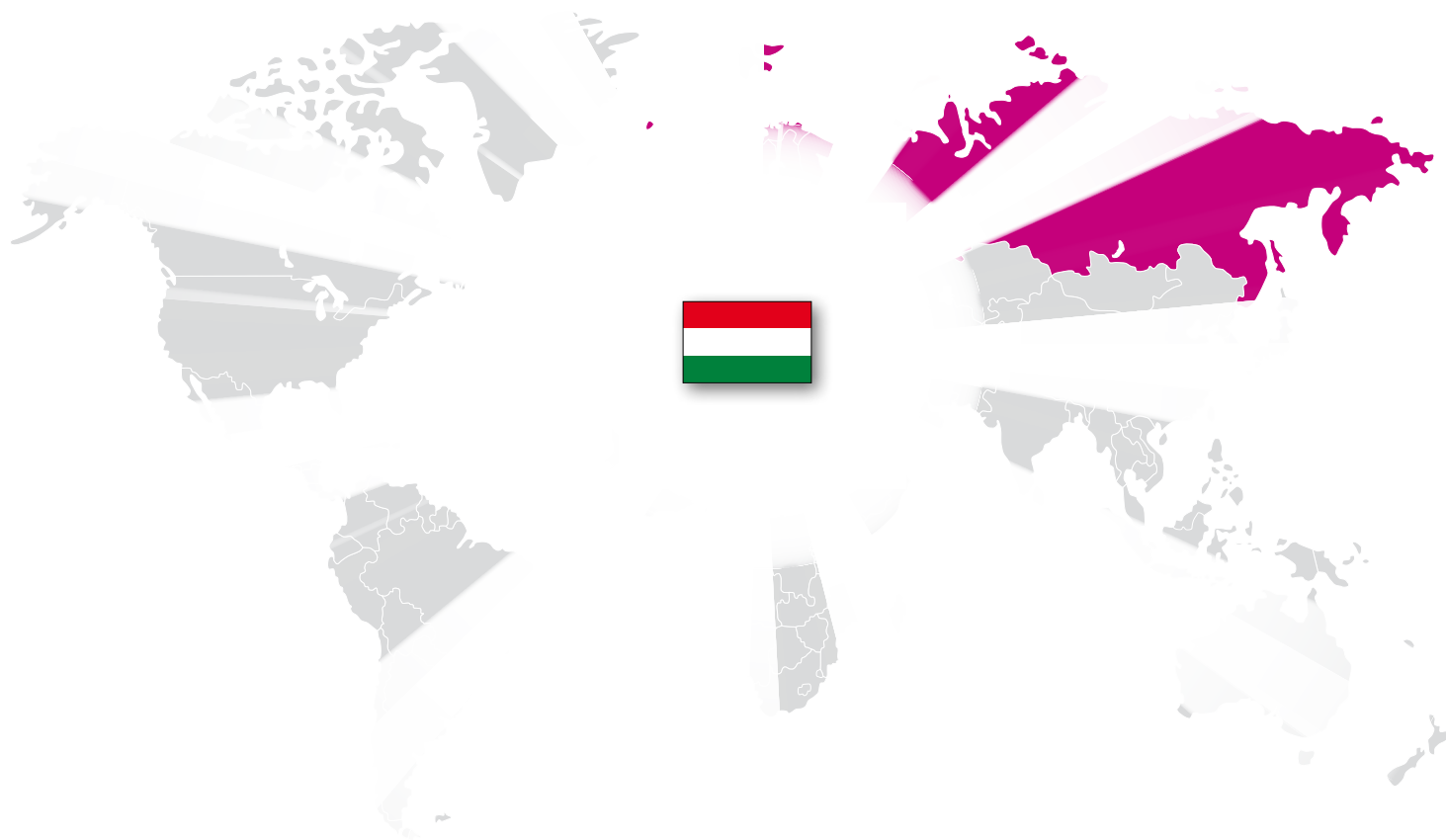
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	Yes
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HUNGARY



1. Country:

Hungary

Proportion of deaths resulting from cardiovascular disease

49.4% (2013)

2. Healthcare system

National Health system. Hungary has a tax-funded universal healthcare system, organised by the state-owned National Health Insurance Fund. 100% of the total population is covered by universal health insurance, which is free for children, students, pensioners, and people with socially poor background, handicapped people, priests and other church employees.

Insurance availability

Basic	No
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Some of the modalities are available and reimbursed only in dedicated hospitals.		

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Issued by the National Accreditation Committee	<input type="checkbox"/>
TOE	Official name: Issued by the National Accreditation Committee	<input type="checkbox"/>
Stress ECHO	Official name: Issued by the National Accreditation Committee	<input type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name: Issued by the National Accreditation Committee	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT		<input checked="" type="checkbox"/>
PET/SPECT	Specialist in nuclear medicine	<input type="checkbox"/>
Vascular ultrasound imaging	Radiologist, cardiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: The EACVI guidelines (position papers, statements) are implemented.	<input type="checkbox"/>
TOE	Official name: The EACVI guidelines (position papers, statements) are implemented.	<input type="checkbox"/>
Stress ECHO	Official name: The EACVI guidelines (position papers, statements) are implemented.	<input type="checkbox"/>
CMR	Official name:	<input type="checkbox"/>
CT	Official name:	<input type="checkbox"/>
PET	Official name:	<input type="checkbox"/>
SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input type="checkbox"/>
TOE	Number of years:	<input type="checkbox"/>
Stress ECHO	Number of years:	<input type="checkbox"/>
CMR	Number of years:	<input type="checkbox"/>
CT	Number of years:	<input type="checkbox"/>
PET	Number of years:	<input type="checkbox"/>
SPECT	Number of years:	<input type="checkbox"/>
Vascular ultrasound	Number of years:	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	100% Cardiologists
CMR/CT	90% Cardiologists / 10% Radiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	70% Radiologists / 30% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Phillips, GE, Siemens, Toshiba, Esaote
CMR	Name: Phillips, GE, Siemens
CT	Name: Phillips, GE, Siemens
PET	Name: Phillips, GE, Siemens
Vascular ultrasound	Name: Phillips, GE, Siemens, Toshiba, Esaote

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

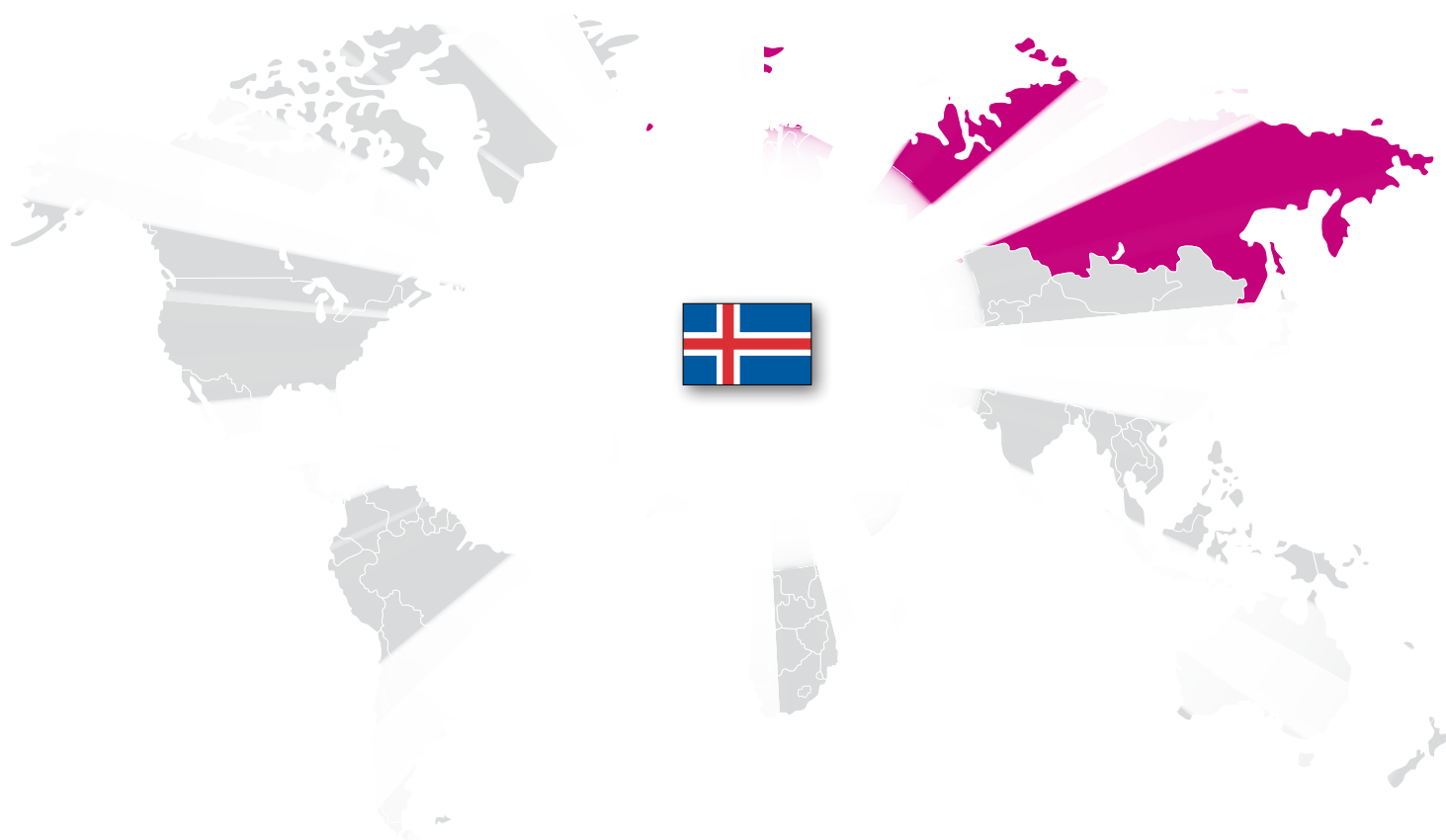
Yes

Are guidelines translated in the national language

Yes

Comments Pocket guidelines.

ICELAND



1. Country:

Iceland

Proportion of deaths resulting from cardiovascular disease

40%

2. Healthcare system

National Health system that is government funded. The state runs the hospital system and primary care. Specialist care and a small part of primary care are also funded through a national public insurance run by the state. Every citizen is insured.

Insurance availability

Basic	Yes
Private	Yes

Comments There is not much need for this since all citizens are covered by the public insurance.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comments	PET scans not available.		

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	PET scans not available.		

3. Education

National certification availability

	Yes	No
TTE	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

No.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT	Radiologist or Cardiologist	<input type="checkbox"/>
PET/SPECT	Radiologists, Cardiologists, Clinical physiology	<input type="checkbox"/>
Vascular ultrasound imaging	Radiologist, Cardiologist, Vascular surgeon	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	100% Cardiologists
CMR/CT	90% Radiologists / 10% Cardiologists
PET/SPECT	50% Specialists in nuclear medicine / 50% Clinical physiologist
Cardiovascular ultrasound	75% Radiologists / 20% Vascular surgeons, Clinical physiologist / 5% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name: SCAAR for CT	<input type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips
CMR	Name: GE, Philips, Siemens
CT	Name: GE, Philips, Siemens
PET	Name: NA
SPECT	Name: Unknown
Vascular ultrasound	Name: GE, Philips

5. Guidelines

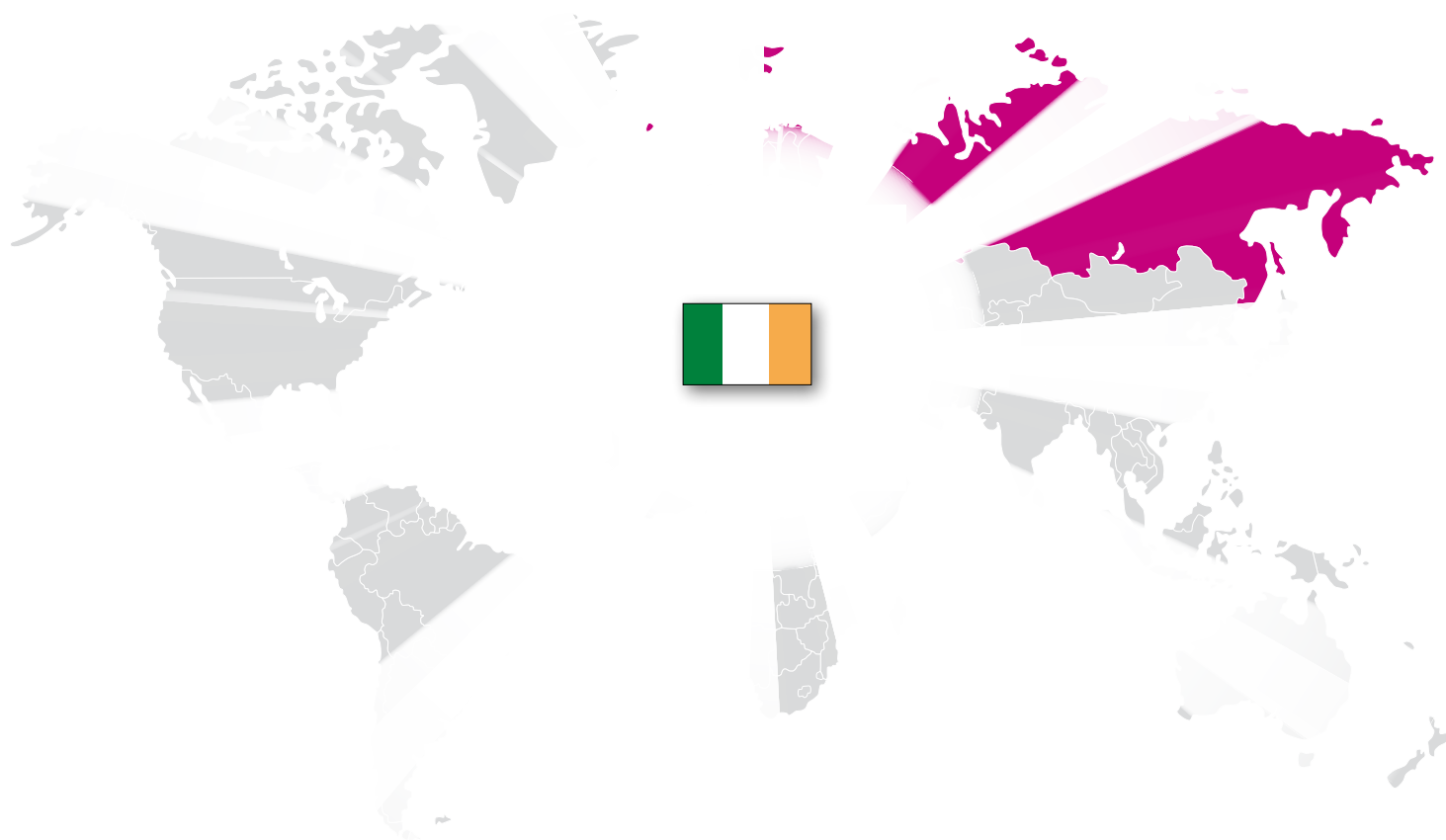
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	No
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Are guidelines translated in the national language	No
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IRELAND



1. Country:

Ireland

Proportion of deaths resulting from cardiovascular

32% (2013)

2. Healthcare system

Ireland has a multi tiered system, undergoing reform. The Health service executive (HSE) provides all of Irelands public health care services. Around 80% of health funding is provided for through the taxation system and the rest is through private health insurance. Irish residents are currently entitled to either full (category 1) or limited eligibility (category 2) for health services. Forty percent of residents have medical cards allowing free access to most services. Those without medical cards (cat 2) can still access services some free of charge others at reduced cost. In Dec 2012 45.8% of the Irish population had private health insurance however this figure is probably now lower due to increasing insurance costs.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

Public hospitals receive some reimbursement for some procedures for private patients; they receive no reimbursement for public patients. Private hospitals can receive reimbursements for all the above depending on the level of cover the patient has and depending on if the service is carried out as an inpatient or outpatient procedure.

Treatment availability

There are guidelines and criteria in place for these procedures but there are no absolute restrictions in the private hospitals if the procedure is covered or the patient can pay for the procedure. In the public hospitals there are local guidelines for appropriate use, if there are significant waiting lists then availability is limited but there are no absolute restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

In the public sector the waiting time for all procedures varies from hospital to hospital all emergency procedures will be carried out as soon as possible usually within 24 hours. For routine procedures the waiting times for outpatients is usually significantly longer than for in patients and for non urgent echo's could be well over 60 days in most institutions.

In the private hospitals waiting times are considerably shorter for both inpatient and outpatient procedures.

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	European, British and American certifications are used.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	Certification is encouraged and increasingly is required for new positions.		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	European and British accreditation are used.		

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Currently cardiac physiologists, cardiologists or anaesthetists who sub-specialise in echo/ TTE. TTE are performed by cardiologists and less often by anaesthetists. Stress echo is performed by a cardiac physiologist and doctor.
CMR/CT	Cardiologists or Radiologists with subspecialty interest some studies are jointly reported.
PET/SPECT	Cardiologist or nuclear physicians often jointly provide service.
Vascular ultrasound imaging	Generally Radiologist or physiologist with subspecialty training.

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	There are radiation protection guidelines and standards of care which would include CT, SPECT and CMR.	

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input type="checkbox"/>
TOE	Number of years:	<input type="checkbox"/>
Stress ECHO	Number of years:	<input type="checkbox"/>
CMR	Number of years:	<input type="checkbox"/>
CT	Number of years:	<input type="checkbox"/>
PET	Number of years:	<input type="checkbox"/>
SPECT	Number of years:	<input type="checkbox"/>
Vascular ultrasound	Number of years:	<input type="checkbox"/>
Comments	There is no fixed time or number specifications at present so training times will therefore vary from institution to institution. Increasingly Cardiologist undergo specialised training In a specialist centre prior to undertaking responsibility for one of these services this training also varies from relatively short courses to a couple of years incorporating research in the chosen field.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	Predominantly cardiac physiologists, some cardiologist perform TTE all TTE are performed by cardiologists and stress echo are jointly performed with technician and cardiologist.
CMR/CT	70% Cardiologists / 30% Radiologists Radiologist more often report CT but with increasing number of cardiologists undergoing specific training and undertaking these roles. Frequently there are joint reporting of CT.
PET/SPECT	Often there is joint reporting.
Cardiovascular ultrasound	Physiologists and Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	There are internal audit and registry data in some hospitals.	

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>
Comments	<p>HIQA – the Health information and quality authority is a statutory government funded organisation monitoring the safety and quality in healthcare. The Royal College of Physicians of Ireland are responsible for maintaining professional standards and continuing general medical education. There is no body specifically coordinating any complications related to non invasive cardiovascular imaging.</p>	

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	<p>Cost again vary between the public sector and private sector in the private sector a complete echo may be charged at 200-250 euro and CMR is 650 euro where as the implied cost in the public sector is significantly less than this.</p>			

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens
CMR	Name: GE, Philips, Siemens
CT	Name:
PET	Name:
SPECT	Name:
Vascular ultrasound	Name:

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments

There remains a variation as some individuals have trained in the US and some in the UK these individuals therefore continue to use the guidelines they trained with. In echo many individuals have BSE accreditation so follow the British echo guidelines but increasingly our registrars are taking the EACVI exam so follow the EACVI echo guidelines.

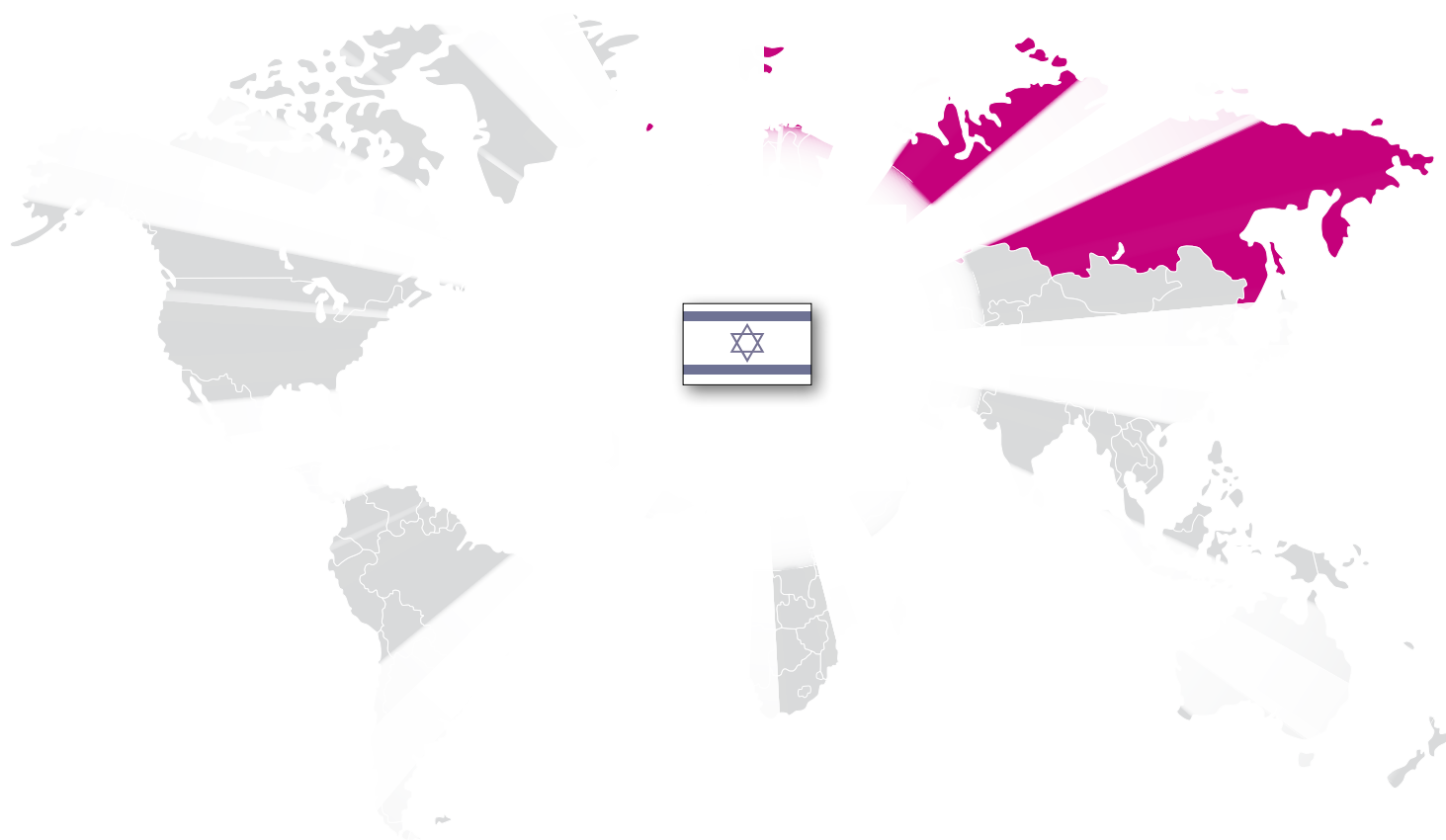
Necessity of guidelines in the national language

Yes

Are guidelines translated in the national language

Yes

ISRAEL



1. Country:

Israel

Proportion of deaths resulting from cardiovascular disease

22.9%

2. Healthcare system

There are 4 HMOs, and 41 hospitals, of which 9 are governmental and 8 belong to the largest HMO (Clalit). There are 8 private hospitals among these 41 hospitals.

Insurance availability

Basic	Yes
Private	Yes

Comments

For Basic: There is a national health insurance program according to a law set in 1994.

For Private: People can subscribe to complementary insurance plans, as well as to totally private insurance plans.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions.

Comments	In general, there are no medical constrictions. The operator may withhold a procedure due to safety and other concerns. Some HMOs control the more expensive procedures, e.g. CMR.
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Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Dates apply for outpatients and are quite variable among institutions. Some hospitals run afternoon programs to shorten the waiting period.		

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input type="checkbox"/>
Comments	For SPECT there is a syllabus and CME programs, which are not universally obligatory.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Leading hospitals undergo accreditation on behalf of JCI in the last several years. Imaging laboratories do participate in these activities, with an emphasis on the safety of the procedures.		

National Cardiac Society supporting the EACVI certification system

No.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Technicians, who perform the vast majority of echo studies, learn at biomedical school and 1-2 periods of internship. They further learn by on-job training and echo school. The interpretation of the echo studies is made by cardiologists, for whom there is no formal requirement for echo specialty.
CMR/CT	Imaging technicians perform all studies, and undergo special training. The interpretation is made by both a cardiologist specializing in that procedure, and a radiologist.
PET/SPECT	Technicians undergo a dedicated course. The interpretation of the SPECT studies is made by cardiologists, some of whom may specialize in international nuclear centres, although this is not a formal pre-requisite. PET CT is interpreted by dedicated radiologists.
Vascular ultrasound imaging	Unanswered

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input type="checkbox"/>
Comments	Obviously, it is the responsibility of each head of imaging laboratory to make sure that the personnel is trained and is competent, but there is no formal observational period.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Technicians / 5% Cardiologists (The vast majority of transthoracic echo examinations is performed by technicians. Physicians perform echocardiographies mainly when they are on call. All studies are interpreted by physicians. Obviously, TOE is performed by physicians).
CMR/CT	100% Technicians (Data is interpreted by physicians – a cardiologist and a radiologist).
PET/SPECT	For SPECT 80% Specialists in nuclear medicine / 20% Cardiologists (Data are interpreted by physicians –mainly a radiologist).
Cardiovascular ultrasound	Unknown.

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: Unknown	<input type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: Unknown	<input type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips (IE 33, CX50, HD 11, Epiq), GE (Vivid 7, Vivid Q, Vivid I, S6), Siemens aquason
CMR	Name: GE DISCOVERY 3.0 and 1.5 Tesla; Siemens 3.0 and 1.5 Tesla; Philips 3.0 and 1.5 Tesla
CT	Name: Philips brilliance 64, Siemens definition AS 64, AS+ 128, Philips iCT 256
PET	Name: Unknown
SPECT	Name: Dedicated cardiac Gamma cameras - GE, Phillips, Siemens
Vascular ultrasound	Name: Unknown

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>
Comments	For the echo, both EACVI and ASE guidelines are used. For SPECT - EACVI and ASNC.	

Necessity of guidelines in the national language

No**Comments**

Most Israelis learn English as their second language and are capable of reading medical literature.

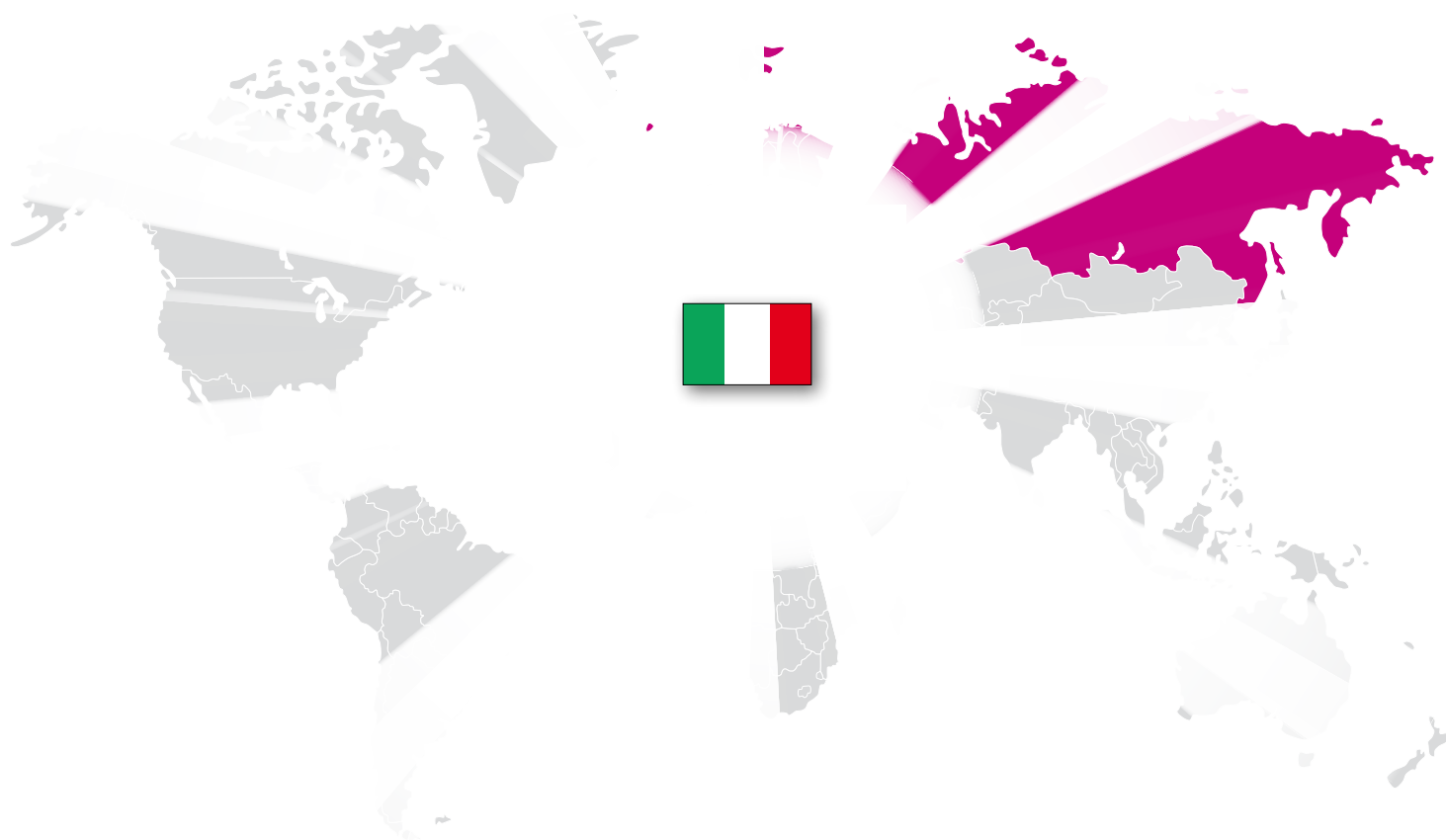
Are guidelines translated in the national language

No

General Comments

Vascular ultrasound is not in the domain of cardiologist in Israel, and therefore no answers were given regarding that issue.

ITALY



1. Country:

Italy

Proportion of deaths resulting from cardiovascular disease

30.1%

2. Healthcare system

National Health System. Public hospital supplies free treatment. Gen practitioner for everybody.

Insurance availability

Basic	Yes
Private	Yes

Comments For basic: Included in the general taxation.

For private: Approximately 10% of the population subscribe privately.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	Imaging exams are included in the calculation of disease related pathology.		

Treatment availability

No, there are no restrictions.

Comments This idea of no restrictions creates long waiting lists. No priorities for different diseases. In urgency patients go to the emergency dept.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: " Certificazione di competenza in ecografia generale " by Ital Soc of Cardiovascular Echo (SIEC).	<input type="checkbox"/>
TOE	Official name: " Certificazione di competenza in ecografia generale " by Ital Soc of Cardiovascular Echo (SIEC).	<input type="checkbox"/>
Stress ECHO	Official name: " Certificazione di competenza in ecografia generale " by Ital Soc of Cardiovascular Echo (SIEC).	<input type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: " Certificazione di competenza in ecografia generale " by Ital Soc of Cardiovascular Echo (SIEC).	<input checked="" type="checkbox"/>
Comments	We are organizing certification for CMR and CT.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Comments There is a mutual recognition for the logbook in echocardiography.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	In the past it was required. Now it is necessary to prove the ability and to perform cardiac echocardiography.	<input checked="" type="checkbox"/>
CMR/CT	For CT radiology specialty.	<input type="checkbox"/>
PET/SPECT	Specialty in nuclear medicine.	<input type="checkbox"/>
Vascular ultrasound imaging	In the past it was required. Now it is necessary to prove the ability and to perform cardiac echocardiography.	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: Promoted by the Italian Society of Cardiovascular Echocardiography (SIEC)	<input type="checkbox"/>
TOE	Official name: Promoted by the Italian Society of Cardiovascular Echocardiography (SIEC)	<input type="checkbox"/>
Stress ECHO	Official name: Promoted by the Italian Society of Cardiovascular Echocardiography (SIEC)	<input type="checkbox"/>
CMR	Official name: Planned to be published by the SIEC	<input checked="" type="checkbox"/>
CT	Official name: Planned to be published by the SIEC	<input checked="" type="checkbox"/>
PET	Official name: Planned to be published by the SIEC	<input checked="" type="checkbox"/>
SPECT	Official name: Planned to be published by the SIEC	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: Promoted by the Italian Society of Cardiovascular Echocardiography (SIEC)	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 1 year and 100 exams	<input type="checkbox"/>
TOE	Number of years: 1 year and 75 exams	<input type="checkbox"/>
Stress ECHO	Number of years: 1 year and 75 exams	<input type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years: 1 year and 75 exams	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	80% Cardiologists / 10% Internists, 5% Emergency doctors, 5% Anaesthesiologists
CMR/CT	80% Radiologists / 20% Cardiologists
PET/SPECT	90% Specialists in nuclear medicine (10% with also a specialty in cardiology) / 10% Cardiologists (with also a specialty in nuclear medicine)
Cardiovascular ultrasound	40% Cardiologists / 30% Vascular surgeons / 20% Internists / 10% Radiologists

Availability of a National registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name: SIEC Register	<input type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name: SIEC Register	<input type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	There is a maximum charge for all examinations of 130 Euros.			

Machine Brand use

	Systems
ECHO	Name: Philips, GE, Siemens, Esaote, Mindray
CMR	Name: Philips, GE, Siemens
CT	Name: Philips, GE, Siemens
SPECT	Name: Unknown
Vascular ultrasound	Name: Philips, GE, Siemens, Esaote, Mindray

5. Guidelines

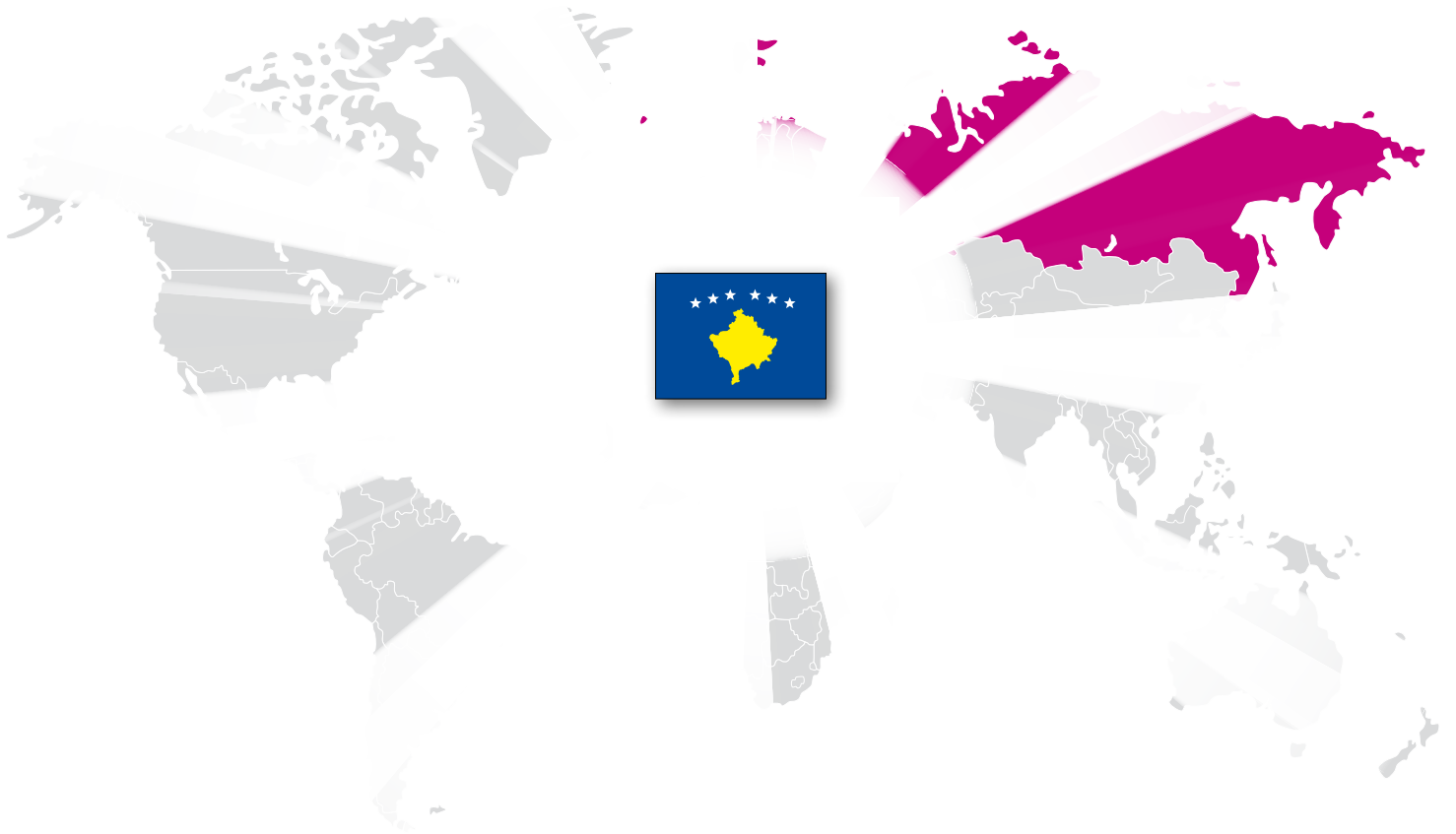
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language Yes

Are guidelines translated in the national language No

KOSOVO, REPUBLIC OF



1. Country:

Kosovo, Republic of

Proportion of deaths resulting from cardiovascular disease

48%

2. Healthcare system

National Health System covered by the Ministry of Health.

Insurance availability

Basic	No
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input type="checkbox"/>	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

No.

Specialty required to perform

	No
ECHO (TTE, TOE, Stress ECHO)	<input checked="" type="checkbox"/>
CMR/CT	<input checked="" type="checkbox"/>
PET/SPECT	<input type="checkbox"/>
Vascular ultrasound imaging	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	60% Cardiologists / 40% Internal Medicine, Paediatricians
CMR/CT	80% Radiologists / 20% Cardiologists
PET/SPECT	80% Specialists in nuclear medicine / 20% Cardiologists
Cardiovascular ultrasound	60% Cardiologists / 30% Internal Medicine, Paediatricians, Vascular Surgeons / 10% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips, GE
CMR	Name: Siemens
CT	Name: Siemens
PET	Name: Siemens
SPECT	Name: Siemens
Vascular ultrasound	Name: GE, Philips

5. Guidelines

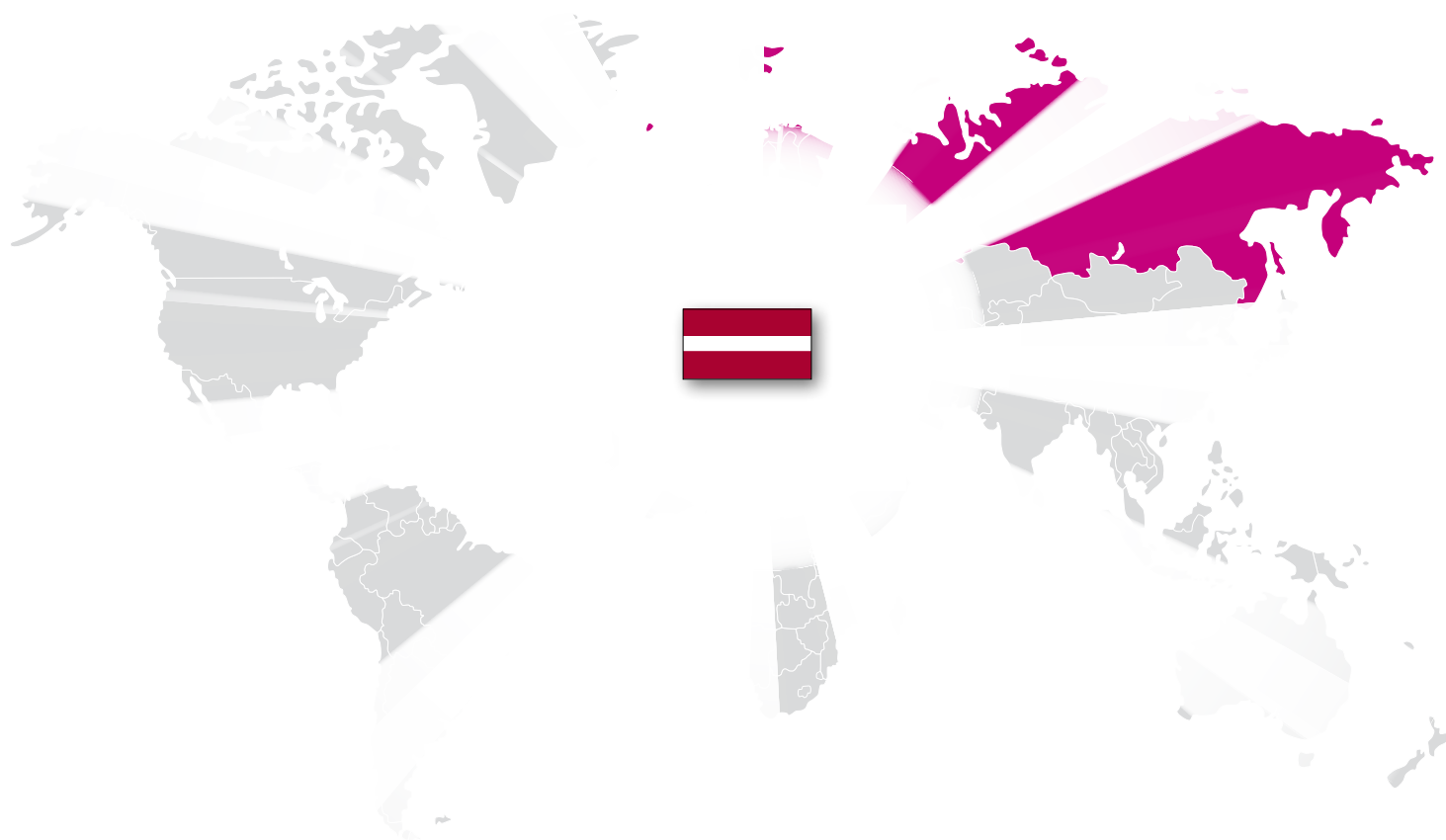
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	No
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LATVIA



1. Country:

Latvia

Proportion of deaths resulting from cardiovascular disease

56.1% (2013)

2. Healthcare system

Ministry of Health of the Republic of Latvia. Ministry of Health is the leading government authority in the health sector and it is responsible for public health, health care and pharmacy. The Latvian health care system is based on general tax-financed statutory health care provision, with a purchaser-provider split and a mix of public and private providers. The Ministry of Health is responsible for national health policy and the overall organization and functioning of the health system. The independent National Health Service (NHS) institution implements state health policies and ensures the availability of health care services throughout the country.

Insurance availability

Basic	No
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	No PET in Latvia.		

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes
TTE	Official name: Echocardiography method
TOE	Official name: Echocardiography method
Stress ECHO	Official name: Echocardiography method
CMR	Official name: Radiology
CT	Official name: Radiology
PET	Official name: Radiology
SPECT	Official name: Radiology
Vascular ultrasound	Official name: Neurosonology

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Comments

We perform "national" certification exam for the echocardiography. Exam in echocardiography which is supervised by the 2 members of the Latvian Society of Cardiology and 2-3 board members of Echocardiography WG. The exam consists of two parts: 1. Oral - exam tickets with three questions: a. methodology; b. echocardiographic changes at various diseases or acquired defects; c. congenital defect. 2. Practical - knowledge of the settings and functions of the echocardiography machine, the ability to find the correct projection, sequence of measurements

Specialty required to perform

Yes

ECHO (TTE, TOE, Stress ECHO)	Cardiology certificate required
CMR/CT	Radiology certificate required
PET/SPECT	Radiology certificate required
Vascular ultrasound imaging	Neurology or radiology certificate required

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	
Comments	In all methods, usually, we use European Recommendations.	

Required period of training to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Number of years: 1	<input type="checkbox"/>
TOE	Number of years: 1	<input type="checkbox"/>
Stress ECHO	Number of years: 1	<input type="checkbox"/>
CMR	Number of years: 4	<input type="checkbox"/>
CT	Number of years: 4	<input type="checkbox"/>
PET	Number of years: 4	<input type="checkbox"/>
SPECT	Number of years: 4	<input type="checkbox"/>
Vascular ultrasound	Number of years: 3 months	<input type="checkbox"/>
Comments	For TTE: 80 hours theoretical programme and 700 procedures (training) required before Echo certification.	

4. Imaging examinations

Specialty performing examinations

Yes

ECHO	100% Cardiologists
CMR/CT	90% Radiologists / 10% Cardiologists
PET/SPECT	100% Cardiologists
Cardiovascular ultrasound	80% Neurologists / 20% Radiologists

Availability of a National registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name:	<input checked="" type="checkbox"/>
Comments	We do not national registry for all methods, but in specific internet resources we can see all certificated members from societies (Echo, Radiology and Neurosonology).	

Availability of a National quality insurance system or complication registry

	No
ECHO (TTE, TOE, Stress ECHO)	<input checked="" type="checkbox"/>
CMR/CT	<input checked="" type="checkbox"/>
PET/SPECT	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	No
ECHO	Type of institution: <input checked="" type="checkbox"/>
CMR/CT	Type of institution: <input checked="" type="checkbox"/>
PET/SPECT	Type of institution: <input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE Healthcare, Philips, Toshiba, Aloka, Siemens
CMR	Name: GE Healthcare, Philips, Toshiba, Siemens
CT	Name: GE Healthcare, Philips, Toshiba, Siemens
PET	Name: N/A
SPECT	Name: GE Healthcare
Vascular ultrasound	Name: GE Healthcare, Philips, Toshiba, Aloka, Siemens

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	No
--	----

LEBANON



1. Country:

Lebanon

Proportion of deaths resulting from cardiovascular disease

27.44% (2011)

2. Healthcare system

NHS, Ministry of Health, PRIVATE MEICAL INSURANCE, corporate. Army and security. Private self payers. Mixture of at least 6 to 7 payers as above, public and private health care system.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	No PET or SPECT in our institution.		

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Some of these test answered more than 60 days are almost only practiced in private hospitals.		

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	Certification is rather obtained from international authorities and no control mechanism on practice.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	But it is usually practiced by specialist certified from abroad most of the time.		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform		
	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiology	<input type="checkbox"/>
CMR/CT	Cardiology / Radiology	<input type="checkbox"/>
PET/SPECT	Cardiology / Radiology	<input type="checkbox"/>
Vascular ultrasound imaging	Cardiology / Radiology / Vascular	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: LSC	<input type="checkbox"/>
TOE	Official name: LSC	<input type="checkbox"/>
Stress ECHO	Official name: LSC	<input type="checkbox"/>
CMR	Official name: LSC radiology society	<input type="checkbox"/>
CT	Official name: LSC radiology society	<input type="checkbox"/>
PET	Official name: Radiology	<input type="checkbox"/>
SPECT	Official name: Radiology	<input type="checkbox"/>
Vascular ultrasound	Official name: LSC Radiology	<input type="checkbox"/>
Comments	Not strictly organised and monitored.	

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 1	<input type="checkbox"/>
TOE	Number of years: 1	<input type="checkbox"/>
Stress ECHO	Number of years: 1	<input type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>
Comments	Specialist have usually certificates from abroad, Europe or USA, Canada are validated by college of MD.	

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Cardiologists / 5% Radiologists
CMR/CT	50% Cardiologists / 50% Radiologists
PET/SPECT	20% Cardiologists / 80% Radiologists
Cardiovascular ultrasound	95% Cardiologists / 5% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Toshiba
CMR	Name: GE, Philips
CT	Name: GE, Philips
PET	Name: GE
SPECT	Name: GE, Philips, Siemens
Vascular ultrasound	Name: GE, Philips

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

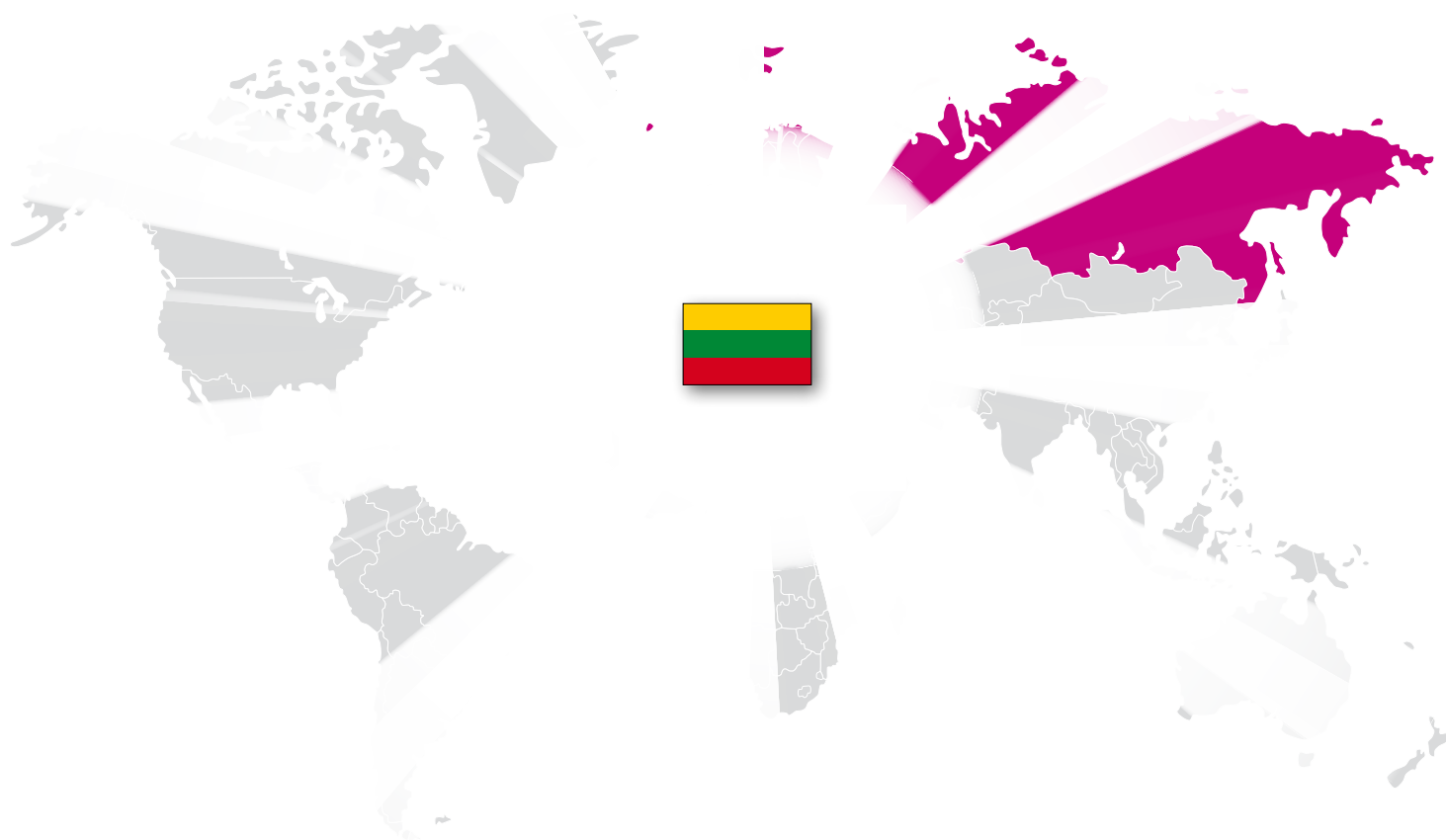
No

Are guidelines translated in the national language

No

Comments A major amount of work and energy need to be deployed to put rules and regulations into practicing cardiac imaging and standardisation of the practice.

LITHUANIA



Proportion of deaths resulting from cardiovascular disease

55%

2. Healthcare system

Health system, including that of legislator (parliament), regulator (government and the Ministry of Health), contributor to the Compulsory Health Insurance Fund (Ministry of Finance) and owner of healthcare facilities (Ministry of Health, Ministry of Defence, Ministry of the Interior, Ministry of Justice). In addition to ensuring the implementation of the state health programmes, the Government of Lithuania is responsible for intersectoral collaboration and drafting legislation. The institutions subordinated directly to the government include the Drug, Tobacco and Alcohol Control Department, established in April 2011 by merging two governmental institutions (Drug Control Department and State Tobacco and Alcohol Control Service); the State Food and Veterinary Service; the Labour Inspectorate; and the Statistics Department (routinely reporting on main national statistics, including population health status and health-care resources, utilization and expenditure). Overall responsibility for general supervision of the entire health system is held by the Ministry of Health. It is strongly involved in drafting legal acts and issuing regulation for the sector. It also runs health-care facilities and public health institutions and has the overall responsibility for health system performance. The state health insurance scheme is implemented by the NHIF, which also manages the Compulsory Health Insurance Fund. While the NHIF was initially directly subordinate to the government and the NHIF Board, in 2003 it was transferred to the Ministry of Health with the NHIF Board taking on an advisory role. The NHIF mission is to ensure access to health care for those insured by remunerating the costs and to use the funds in a transparent and efficient manner. The NHIF coordinates the activities of five existing territorial health insurance funds.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Cardiologists
CMR/CT	Cardiologists, radiologists
PET/SPECT	Cardiologists, radiologists
Vascular ultrasound imaging	Radiologists, angiologists, neurologists

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 4-5 months	<input type="checkbox"/>
TOE	Number of years: 4+1 months	<input type="checkbox"/>
Stress ECHO	Number of years: 4+1 months	<input type="checkbox"/>
CMR	Number of years: 6 months	<input type="checkbox"/>
CT	Number of years: 6 months	<input type="checkbox"/>
9PET	Number of years: 6 months	<input type="checkbox"/>
SPECT	Number of years: 6 months	<input type="checkbox"/>
		<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	80-85% Cardiologists / 15-20% Internal medicine doctors
CMR/CT	50% Cardiologists / 50% Radiologists
PET/SPECT	50% Cardiologists / 50% Specialists in nuclear medicine
Cardiovascular ultrasound	75% Cardiologists / 20% Neurologists / 5% Radiologists

Availability of a National registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use	
	Systems
ECHO	Name: General Electrics, Philips, Siemens
CMR	Name: Siemens
CT	Name: Toshiba
PET	Name: General Electrics
SPECT	Name: General Electrics
Vascular ultrasound	Name: General Electrics, Philips, Siemens

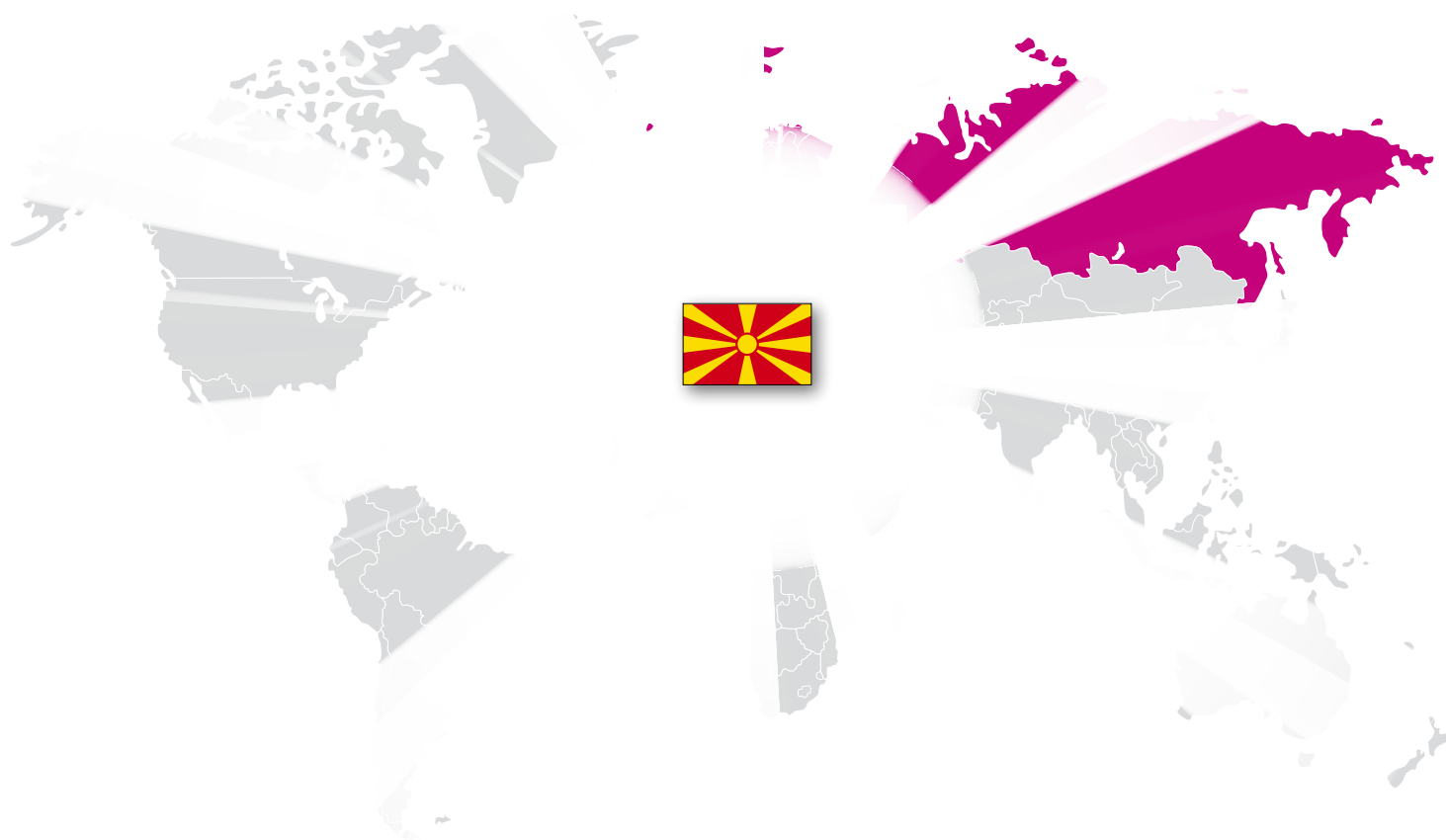
5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations		
	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	No
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Are guidelines translated in the national language	Yes
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MACEDONIA



1. Country:

Macedonia

Proportion of deaths resulting from cardiovascular disease

60%

2. Healthcare system

Governmental NH Fund regulated system; Referent prices for Rx products (drugs) and free OTC market.

Insurance availability

Basic	Yes
Private	No

Hospital reimbursement availability

	Yes, the hospital receives per process	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	There is no possibility for PET.		

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET	Official name: <input type="checkbox"/>	<input type="checkbox"/>
SPECT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	There is education theoretical and practical in University Clinic of cardiology, organized courses.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

No.

Specialty required to perform

Yes

ECHO (TTE, TOE, Stress ECHO)	Cardiologist, specialist internist trained in cardiology
CMR/CT	Radiologist
PET/SPECT	Cardiologist and pathophysiologicalist
Vascular ultrasound imaging	Cardiologist, specialist internist trained in cardiology

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

Yes

ECHO	We do not have regular examinations.
CMR/CT	We do not have regular examinations.
PET/SPECT	We do not have regular examinations.
Cardiovascular ultrasound	We do not have regular examinations.

Availability of a National registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Vivid 7, Vivid 5
CMR	Name: No information
CT	Name: No information
SPECT	Name: No information
Vascular ultrasound	Name: Vivid 7

5. Guidelines

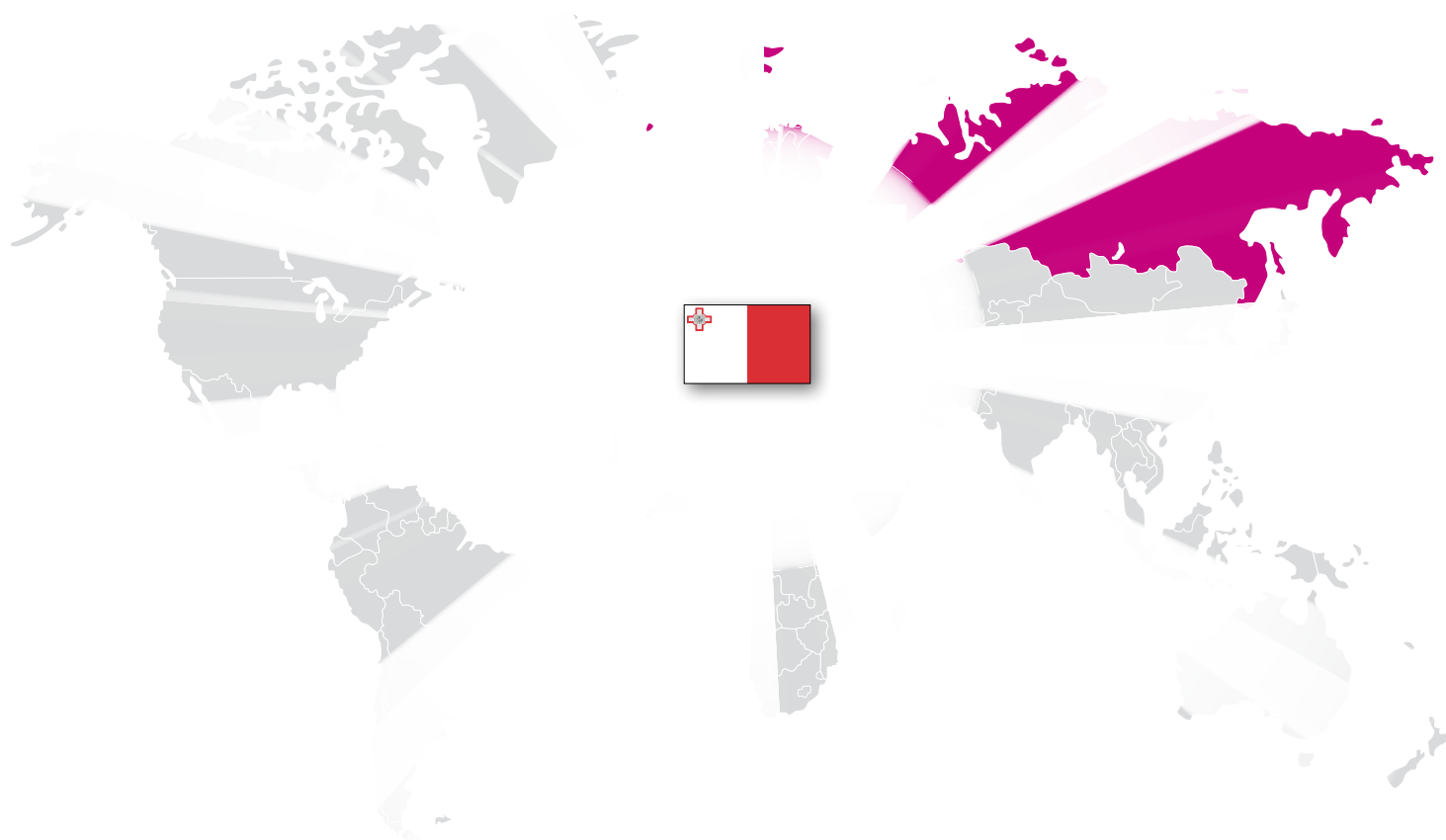
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
--	-----

Are guidelines translated in the national language	No
--	----

MALTA



1. Country:

Malta

Proportion of deaths resulting from cardiovascular disease

40.1% (2103)

2. Healthcare system

National Health Service. Single payer system. Private GP used by most.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT	Cardiologist, radiologist	<input type="checkbox"/>
PET/SPECT	Radiologist (nuclear physician)	<input type="checkbox"/>
Vascular ultrasound imaging		<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 2	<input type="checkbox"/>
TOE	Number of years: 3	<input type="checkbox"/>
Stress ECHO	Number of years: Specific training	<input type="checkbox"/>
CMR	Number of years: Specific training	<input type="checkbox"/>
CT	Number of years: Specific training	<input type="checkbox"/>
PET	Number of years: Specific training	<input type="checkbox"/>
SPECT	Number of years: Specific training	<input type="checkbox"/>
Vascular ultrasound	Number of years: Specific training	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	60% Cardiologists / 40% Other
CMR/CT	50% Cardiologists / 50% Radiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	100% Radiologist

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips, Siemens, Esaote
CMR	Name: GE
CT	Name: Philips
SPECT	Name: GE
Vascular ultrasound	Name: GE

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language No

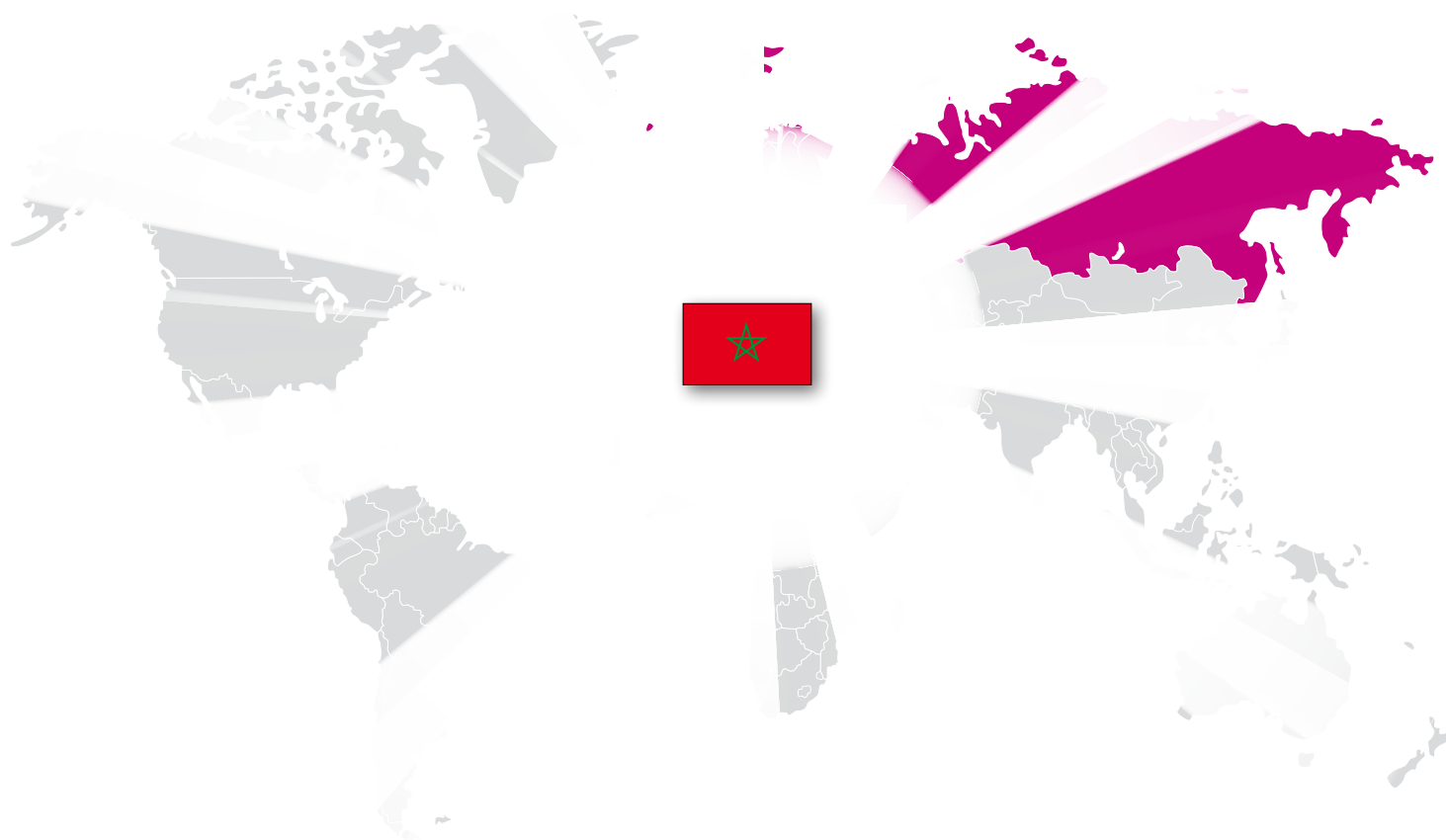
Are guidelines translated in the national language No

Comments	English is a first language in Malta.
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General Comments

The cardiac imaging community in Malta is growing. We are now offering stress echo since May 2014 and CMR since September 2014.

MOROCCO



1. Country:

Morocco

Proportion of deaths resulting from cardiovascular disease

60%

2. Healthcare system

National Health System.

Insurance availability

Basic	No
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: <input type="checkbox"/>	<input type="checkbox"/>
TOE	Official name: <input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	Official name: <input type="checkbox"/>	<input type="checkbox"/>
CMR	Official name: <input type="checkbox"/>	<input type="checkbox"/>
CT	Official name: <input type="checkbox"/>	<input type="checkbox"/>
PET	Official name: <input type="checkbox"/>	<input type="checkbox"/>
SPECT	Official name: <input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	Official name: <input type="checkbox"/>	<input type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

No.

Specialty required to perform		
	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT	Radiologist	<input type="checkbox"/>
PET/SPECT	Radiologist	<input type="checkbox"/>
Vascular ultrasound imaging	Cardiologist, radiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Official name: Not answered	<input type="checkbox"/>
TOE	Official name: Not answered	<input type="checkbox"/>
Stress ECHO	Official name: Not answered	<input type="checkbox"/>
CMR	Official name: Not answered	<input type="checkbox"/>
CT	Official name: Not answered	<input type="checkbox"/>
PET	Official name: Not answered	<input type="checkbox"/>
SPECT	Official name: Not answered	<input type="checkbox"/>
Vascular ultrasound	Official name: Not answered	<input type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Number of years: Not answered	<input type="checkbox"/>
TOE	Number of years: Not answered	<input type="checkbox"/>
Stress ECHO	Number of years: Not answered	<input type="checkbox"/>
CMR	Number of years: Not answered	<input type="checkbox"/>
CT	Number of years: Not answered	<input type="checkbox"/>
PET	Number of years: Not answered	<input type="checkbox"/>
SPECT	Number of years: Not answered	<input type="checkbox"/>
Vascular ultrasound	Number of years: Not answered	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations	
	Yes
ECHO	100% Cardiologists
CMR/CT	100% Radiologists
PET/SPECT	Not answered
Cardiovascular ultrasound	50% Cardiologists / 50% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name: Not answered	<input type="checkbox"/>
CMR/CT	Official name: Not answered	<input type="checkbox"/>
PET/SPECT	Official name: Not answered	<input type="checkbox"/>
Vascular ultrasound	Official name: Not answered	<input type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name: Not answered	<input type="checkbox"/>
CMR/CT	Official name: Not answered	<input type="checkbox"/>
PET/SPECT	Official name: Not answered	<input type="checkbox"/>
Vascular ultrasound	Official name: Not answered	<input type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: Not answered	<input type="checkbox"/>
CMR/CT	Type of institution: Not answered	<input type="checkbox"/>
PET/SPECT	Type of institution: Not answered	<input type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Not answered
CMR	Name: Not answered
CT	Name: Not answered
PET	Name: Not answered
SPECT	Name: Not answered
Vascular ultrasound	Name: Not answered

5. Guidelines

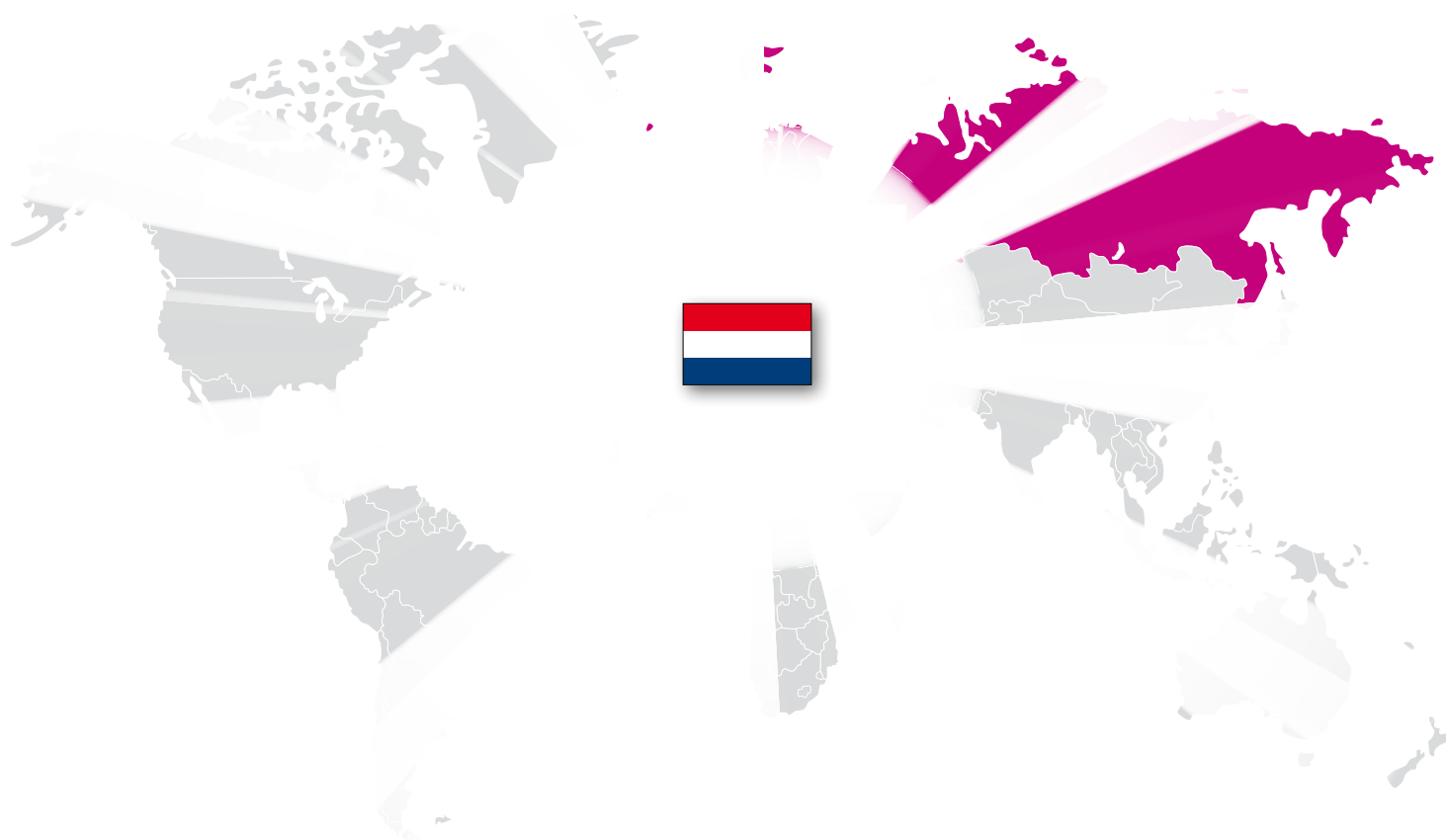
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	No
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NETHERLANDS



Proportion of deaths resulting from cardiovascular disease

30%

2. Healthcare system

A system of obligatory health insurance. For all regular (short-term) medical treatment, there is a system of obligatory health insurance, with private health insurance companies. These insurance companies are obliged to provide a package with a defined set of insured treatments. This insurance covers 41% of all health care expenses.

Insurance availability

Basic	Yes
Private	Yes
Comments	Every Dutch person is obliged to take basic insurance.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	DRG system, reimbursement per diagnosis.		

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Very variable per centre, no average national numbers available.		

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

Yes

ECHO (TTE, TOE, Stress ECHO)	But there are many specialties performing echo
CMR/CT	Radiologists, cardiologists
PET/SPECT	Radiologists, cardiologists, nuclear medicine
Vascular ultrasound imaging	Radiologists

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

Yes

ECHO (TTE, TOE, Stress ECHO)	Unknown
CMR/CT	Unknown
PET/SPECT	Unknown
Vascular ultrasound imaging	Unknown

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name:
CMR	Name: Siemens, Philips, GE
CT	Name: Siemens, Toshiba, Philips
PET	Name:
SPECT	Name:
Vascular ultrasound	Name:

5. Guidelines

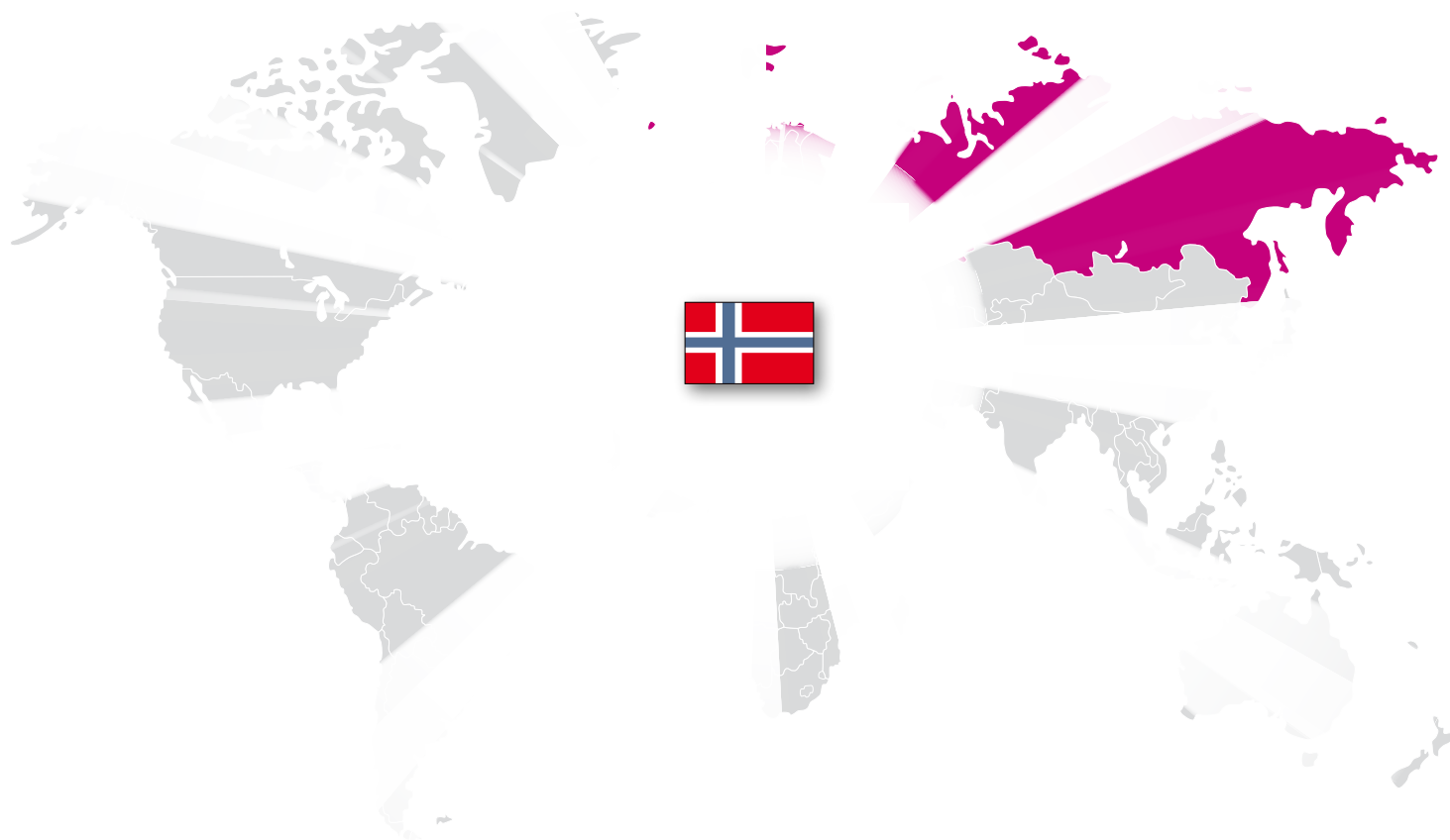
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	No
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Are guidelines translated in the national language	No
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NORWAY



1. Country:

Norway

Proportion of deaths resulting from cardiovascular disease

31% (2013)

2. Healthcare system

National Health system

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Procedures implemented in the departments of Cardiology or Internal Medicine are not paid/reimbursed separately, but the hospital gets paid by the diagnosis or the outpatient clinic consultations independent of cardiac imaging procedures.

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

Waiting time depends on if the patient are hospitalised (always examination within days) or referred ambulatory (where the clinical situation is guiding the waiting time, some have maximum waiting time 2 weeks, but those with the lowest priority have waiting

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

The health care personnel are authorized/certified but there are no national certification demands for cardiac imaging. However, a minimum of 300 supervised echocardiograms and 50 supervised Transesophageal echoes are necessary to become a cardiologist. Knowledge about other cardiac imaging procedures are necessary as well to be a cardiologist.

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not homologated to national certification.

Comments	Yes we support EACVI certification, but we are a small country with a well-controlled official health care system. Sonographers have their own education at the University. In total less than 20 Sonographers are working in Norway at the time being. The other cardiac imaging procedures are mainly hosted by radiological departments.
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Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	All examinations are though interpreted and signed by cardiologists or experienced fellows, but at some small local hospitals specialists in internal medicine may perform echo as well.	<input type="checkbox"/>
CMR/CT	However, at the institutional level a specialist in cardiology or radiology is needed.	<input checked="" type="checkbox"/>
PET/SPECT	However, at the institutional level a specialist in nuclear medicine (and cardiology) is needed.	<input checked="" type="checkbox"/>
Vascular ultrasound imaging		<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: Norwegian Working Group of Echocardiography	<input type="checkbox"/>
TOE	Official name: Norwegian Working Group of Echocardiography	<input type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

Comments	The training required are not related to the right to perform imaging procedures, but both in radiological, cardiological and nuclear departments there is a minimum time required for the speciality of at least 3-12 months for the described methods depending on the speciality.
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4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	50% Cardiologists / 50% Residents, Sonographers, specialists in internal medicine (source: Non university hospitals cardiologist more than others. Opinion of the WG Echo)
CMR/CT	20% Cardiologists / 80% Radiologists (source: We have no trustable source. Opinion of the WG Echo)
PET/SPECT	40% Cardiologists / 60% Specialists in nuclear medicine (source: We have no trustable source. Cardiologists more involved in SPECT than PET. Opinion of the WG Echo)
Cardiovascular ultrasound	20% Cardiologists / 40% Radiologists / 40% Specialists in stroke, neurology, vascular surgery

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	No
ECHO	Official name: <input checked="" type="checkbox"/>
CMR/CT	Official name: <input checked="" type="checkbox"/>
PET/SPECT	Official name: <input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	No
ECHO	Type of institution: <input checked="" type="checkbox"/>
CMR/CT	Type of institution: <input checked="" type="checkbox"/>
PET/SPECT	Type of institution: <input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	We have no data for the cost of the examinations. The reimbursement for ambulatory cardiac imaging procedures including clinical examination and all other laboratory tests is usually 250 Euros.			

Machine Brand use

	Systems
ECHO	Name: GE Ultrasound, Siemens, Philips
CMR	Name: GE, Siemens, Philips, Toshiba
CT	Name: GE, Siemens, Philips, Toshiba
PET	Name: GE, Siemens, Philips, Toshiba
SPECT	Name: GE, Siemens, Philips, Toshiba
Vascular ultrasound	Name: GE, Siemens, Philips, Toshiba, SonoSite and several small companies

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Varies. We have some national standards. We have some international guidelines recommended for national use. Not validated for radiological examinations.	

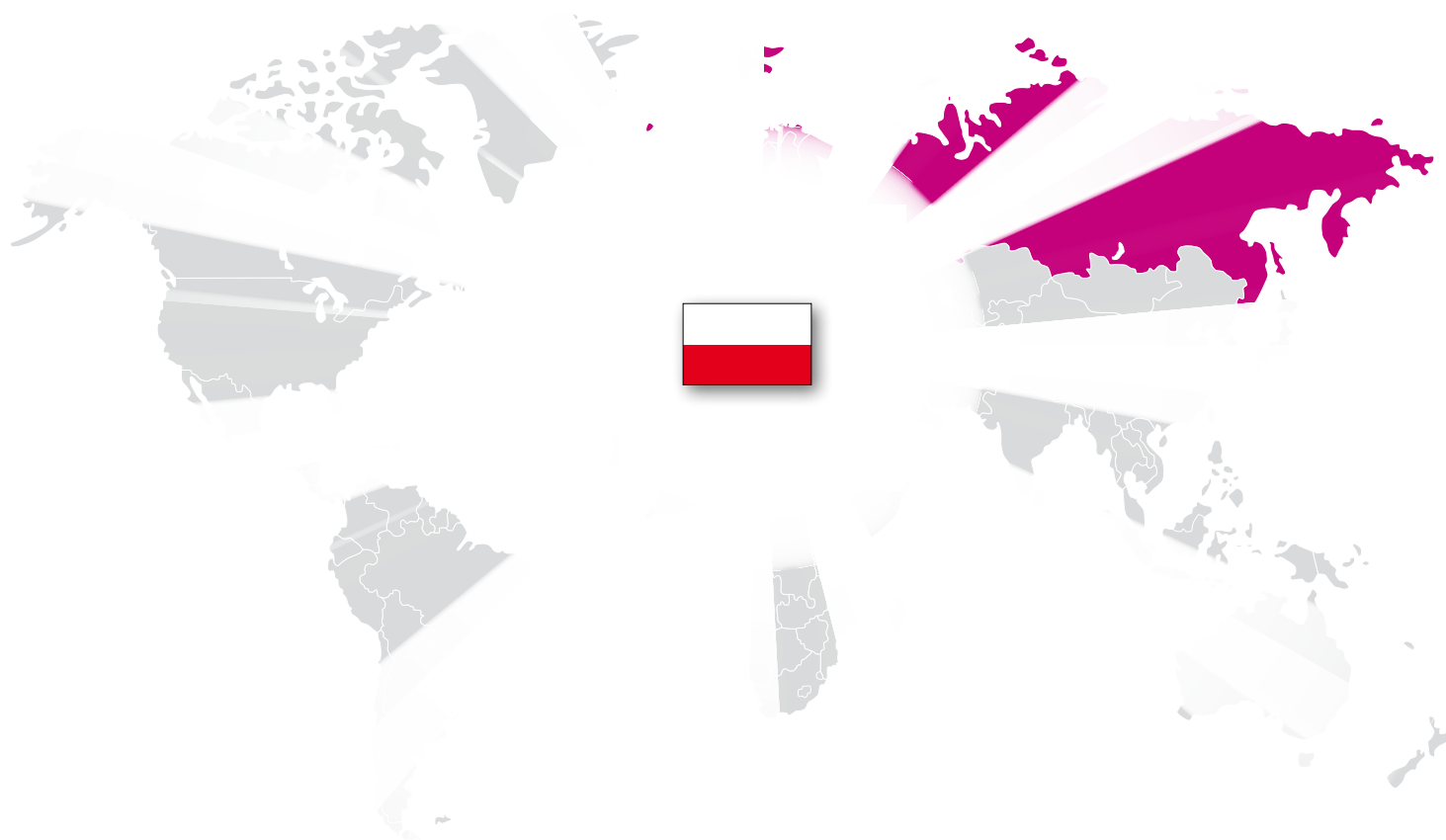
Necessity of guidelines in the national language

No

Are guidelines translated in the national language

No

POLAND



1. Country:

Poland

Proportion of deaths resulting from cardiovascular disease

50% (2013)

2. Healthcare system

National Health system.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Not provided	<input type="checkbox"/>
TOE	Official name: Not provided	<input type="checkbox"/>
Stress ECHO	Official name: Not provided	<input type="checkbox"/>
CMR	Official name: Not provided	<input type="checkbox"/>
CT	Official name: Not provided	<input type="checkbox"/>
PET	Official name: Not provided	<input type="checkbox"/>
SPECT	Official name: Not provided	<input type="checkbox"/>
Vascular ultrasound	Official name: Not provided	<input type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

No.

Specialty required to perform		
	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT	Cardiologist	<input type="checkbox"/>
PET/SPECT	Cardiologist	<input type="checkbox"/>
Vascular ultrasound imaging	Radiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Official name: Polish Association of Echocardiography	<input type="checkbox"/>
TOE	Official name: Polish Association of Echocardiography	<input type="checkbox"/>
Stress ECHO	Official name: Polish Association of Echocardiography	<input type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Number of years: 5	<input type="checkbox"/>
TOE	Number of years: 5	<input type="checkbox"/>
Stress ECHO	Number of years: 5	<input type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations	
	Yes
ECHO	80% Cardiologists / 20% Other
CMR/CT	Not replied
PET/SPECT	Not replied
Cardiovascular ultrasound	Not replied

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Cardiovascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Cardiovascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens, Toshiba, Aloka
CMR	Name:
CT	Name:
PET	Name:
SPECT	Name:
Vascular ultrasound	Name: GE, Philips, Siemens, Toshiba, Aloka

5. Guidelines

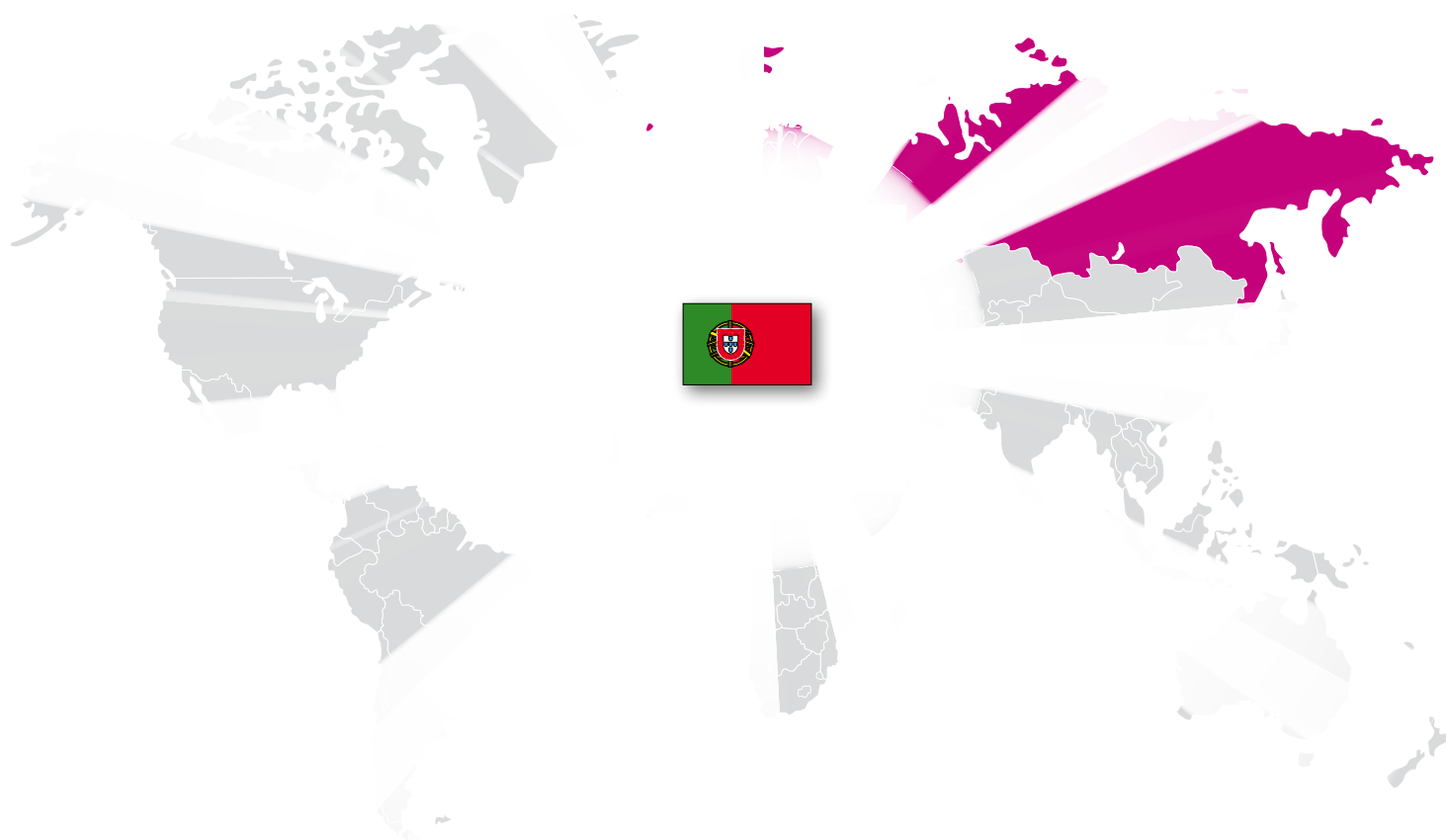
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	No
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Are guidelines translated in the national language	Yes
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PORTUGAL



1. Country:

Portugal

Proportion of deaths resulting from cardiovascular disease

0.39%

2. Healthcare system

National Health System (NHS). NHS is of free access for all the population. There are other public subsystems for specific professionals (ex: military forces..). Private insurance is a complement but is increasing actually.

Insurance availability

Basic	Yes
Private	Yes

Comments

Private health insurance plans are a little expensive, only possible for media or high social classes (exclude the retired or older people). Usually they are complements of the NHS. Give the possibility of choosing a specific doctor or surgeon.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	NHS hospitals reimbursements are defined by type of hospital, type of patients and treatments performed. This is calculated by GDH (homogeneous diagnostic groups).		

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Comments	It depends of local availability and agreement, varies from no waiting list in some hospitals to over 6 months in others. An average does not make sense in this situation.		

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	The national certification is given by the final exam of speciality and training. After that, competence is provided by our Medical Order.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Comments We promote the EACVI certification for improving CV, but EACVI certification does not distinguish between levels of competence.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Cardiologists
CMR/CT	Cardiologists, Radiologists
PET/SPECT	Cardiologists in collaboration with a Nuclear Medicine Specialist
Vascular ultrasound imaging	Cardiologists, Radiologists, Vascular Surgeons

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes
TTE	6 months - 500-1000 TTE
TOE	6 months - 50-60 TOE
Stress ECHO	6 months - participation in > 25 stress echo
CMR	3 months, but for people who wants to become expertise, usually requires an intensive training.
CT	3 months, but for people who wants to become expertise, usually requires an intensive training.
PET	No data.
SPECT	3 months, but for people who wants to become expertise, usually requires an intensive training.
Vascular ultrasound	No data.

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	90% Cardiologists / 10% Sonographers (under revision of a cardiologist)
CMR/CT	80% Cardiologists / 20% Radiologists
PET/SPECT	50% Cardiologists / 50% Specialists in nuclear medicine
Cardiovascular ultrasound	50% Radiologists / 30% Vascular Surgeons / 20% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

		No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>
Vascular ultrasound	Type of institution:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

		No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Phillips, Siemens, Toshiba
CMR	Name: GE, Phillips, Siemens, Toshiba
CT	Name: GE, Phillips, Siemens, Toshiba
PET	Name: No data
SPECT	Name: No data
Vascular ultrasound	Name: GE/Phillips/Siemens

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

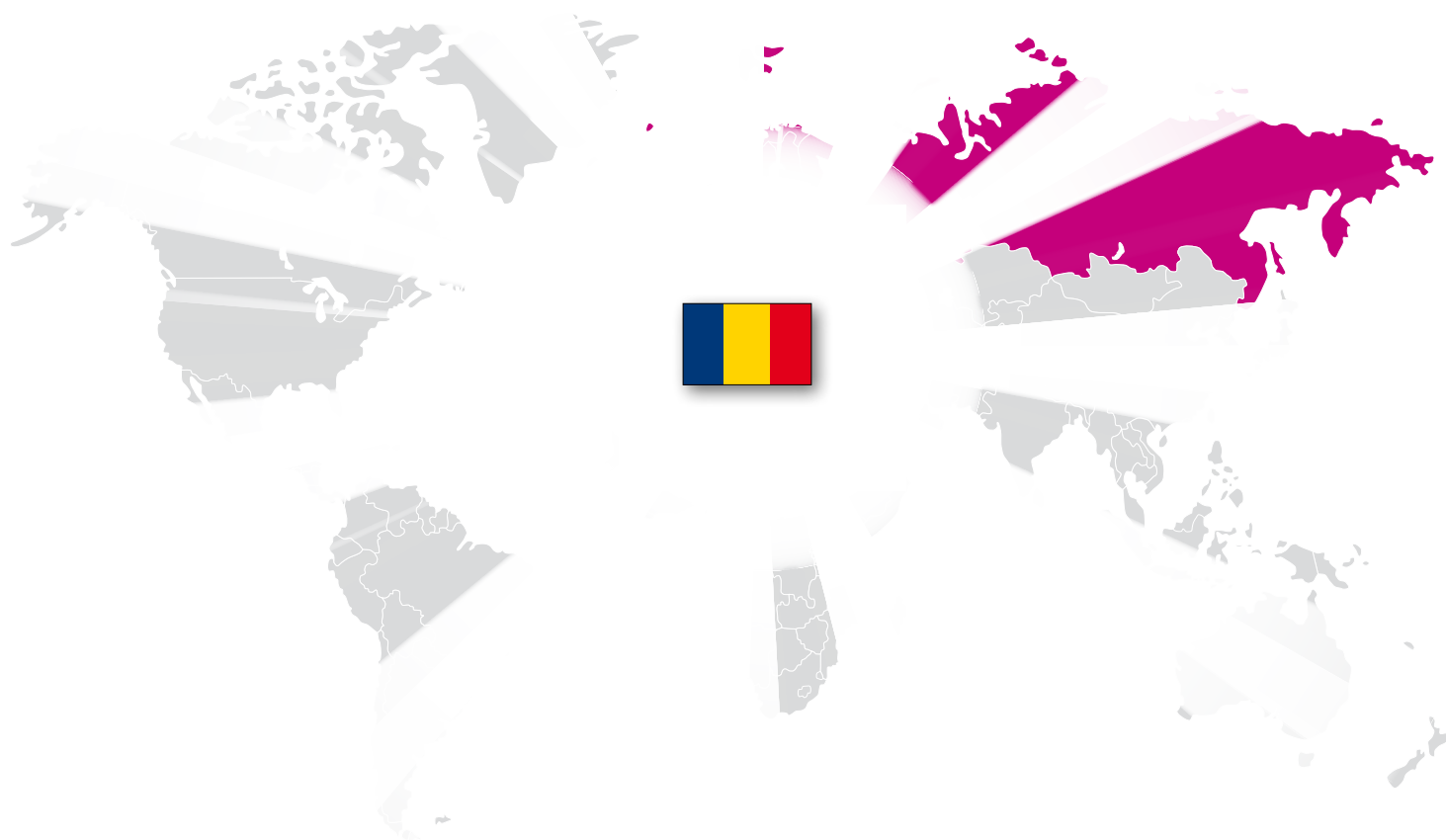
Necessity of guidelines in the national language

No

Are guidelines translated in the national language

Yes

ROMANIA



Proportion of deaths resulting from cardiovascular disease

60%

2. Healthcare system

National Health System. Romania benefits of a universal healthcare system. The state finances primary, secondary and tertiary healthcare. Since 2007, when Romania joined the EU, the amount of private hospitals has raised.

Insurance availability

Basic	Yes
Private	No
Comments	Not yet, but the private health insurance plan is ongoing.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the National guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: TTE national certification	<input type="checkbox"/>
TOE	Official name: TOE national certification	<input type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: Vascular ultrasound national certification	<input type="checkbox"/>
Comments	There are few centres with CT, CMR and SPECT capabilities.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Cardiologist, internal medicine, general practitioner, anaesthesiologist
CMR/CT	Radiologist
PET/SPECT	Cardiologist, radiologist
Vascular ultrasound imaging	Cardiologist, internal medicine, general practitioner, anaesthesiologist

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 2	<input type="checkbox"/>
TOE	Number of years: 2	<input type="checkbox"/>
Stress ECHO	Number of years: 1	<input type="checkbox"/>
CMR	Number of years: 4	<input type="checkbox"/>
CT	Number of years: 4	<input type="checkbox"/>
PET	Number of years: 4	<input type="checkbox"/>
SPECT	Number of years: 4	<input type="checkbox"/>
Vascular ultrasound	Number of years: 2	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	90% Cardiologists / 10% Internal medicine, general practitioner
CMR/CT	97% Radiologists / 3% Cardiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	70% Cardiologists / 20% Radiologists / 10% internal medicine, general practitioner

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: General Electric, Philips, Siemens, Aloka, Toshiba, Esaote
CMR	Name: General Electric, Philips
CT	Name: General Electric, Philips
SPECT	Name: General Electric, Philips
Vascular ultrasound	Name: General Electric, Philips, Siemens, Aloka, Toshiba, Esaote

5. Guidelines

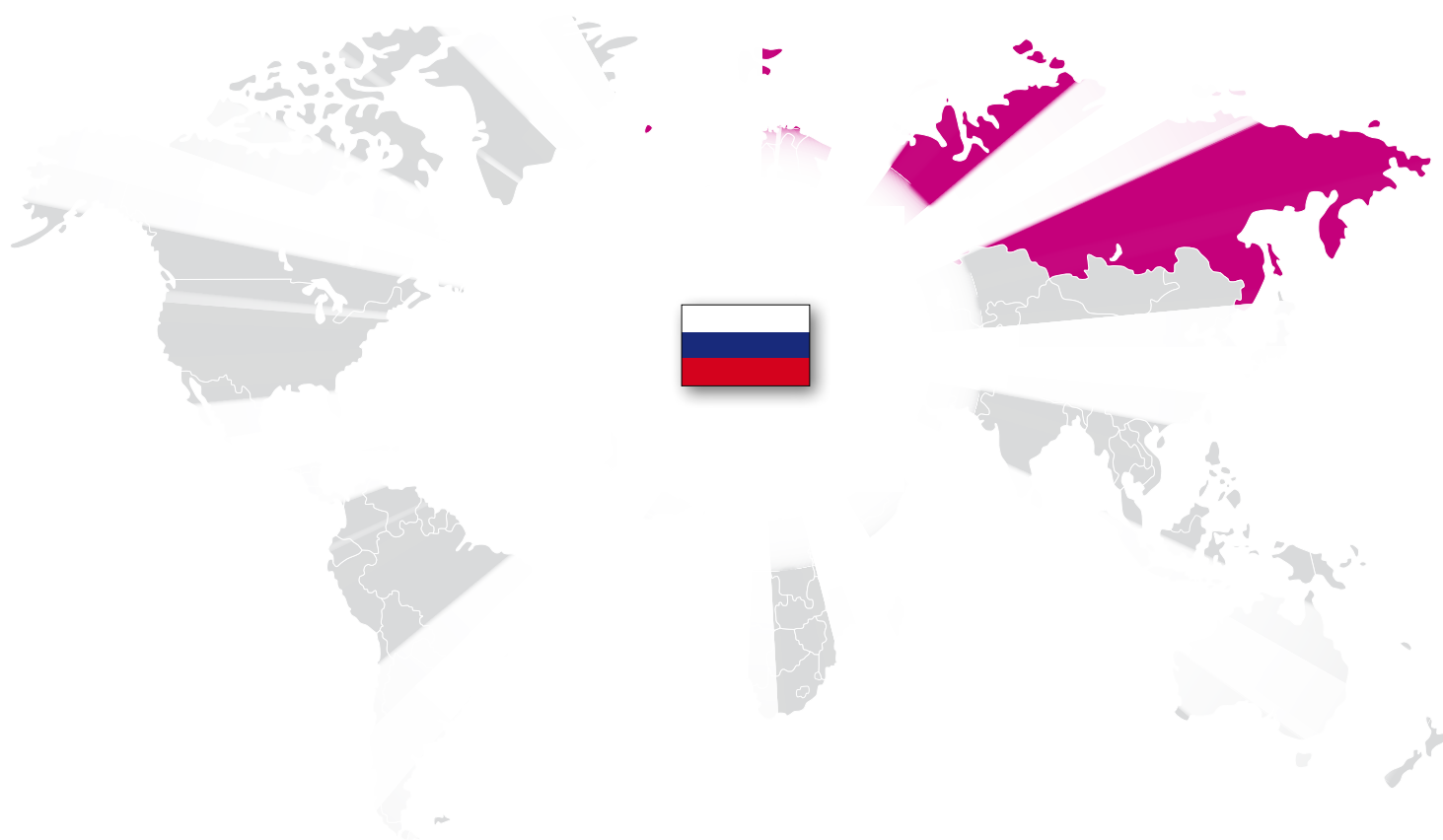
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
--	-----

Are guidelines translated in the national language	Yes
--	-----

RUSSIAN FEDERATION



1. Country:

Russian Federation

Proportion of deaths resulting from cardiovascular disease

56%

2. Healthcare system

Ministry of Health. The Ministry of Health is providing basic medical service through the National healthcare fund and accredited insurance companies. For some specific advanced and/or high cost procedures the Ministry provides direct per procedure funding (cardiac surgery, heart transplantation, paediatric interventions, ICD and CRT implantation).

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

Yes, it is not restricted to certain number of advanced procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Ultrasound diagnostics or Functional diagnostics	<input type="checkbox"/>
TOE	Official name: Ultrasound diagnostics or Functional diagnostics	<input type="checkbox"/>
Stress ECHO	Official name: Ultrasound diagnostics or Functional diagnostics	<input type="checkbox"/>
CMR	Official name: Radiology	<input type="checkbox"/>
CT	Official name: Radiology	<input type="checkbox"/>
PET	Official name: Nuclear Medicine	<input type="checkbox"/>
SPECT	Official name: Nuclear Medicine	<input type="checkbox"/>
Vascular ultrasound	Official name: Ultrasound diagnostics or Functional diagnostics	<input type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Ultrasound diagnostics or Functional diagnostics
CMR/CT	Radiology
PET/SPECT	Radiology
Vascular ultrasound imaging	Ultrasound diagnostics or Functional diagnostics

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: Expected in September 2015 by Section of Echocardiography of the Russian Cardiology Society	<input type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name: Expected in September 2015 by Section of Echocardiography of the Russian Cardiology Society	<input type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 2	<input type="checkbox"/>
TOE	Number of years: 2	<input type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years: 2	<input type="checkbox"/>
CT	Number of years: 2	<input type="checkbox"/>
PET	Number of years: 2	<input type="checkbox"/>
SPECT	Number of years: 2	<input type="checkbox"/>
Vascular ultrasound	Number of years: 2	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	90% Ultrasound or Functional diagnostics doctors / 10% Cardiologists
CMR/CT	95% Radiologists / 5% Cardiologists
PET/SPECT	100% Radiologists
Cardiovascular ultrasound	95% Ultrasound or Functional diagnostics doctors / 5% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips, GE, Siemens, Toshiba, Mindray, Esaote
CMR	Name: Philips, GE, Siemens, Toshiba
CT	Name: Philips, GE, Siemens, Toshiba
PET	Name: Philips, Siemens
SPECT	Name: Philips, GE, Siemens
Vascular ultrasound	Name: Philips, GE, Siemens, Toshiba, Mindray, Esaote

5. Guidelines

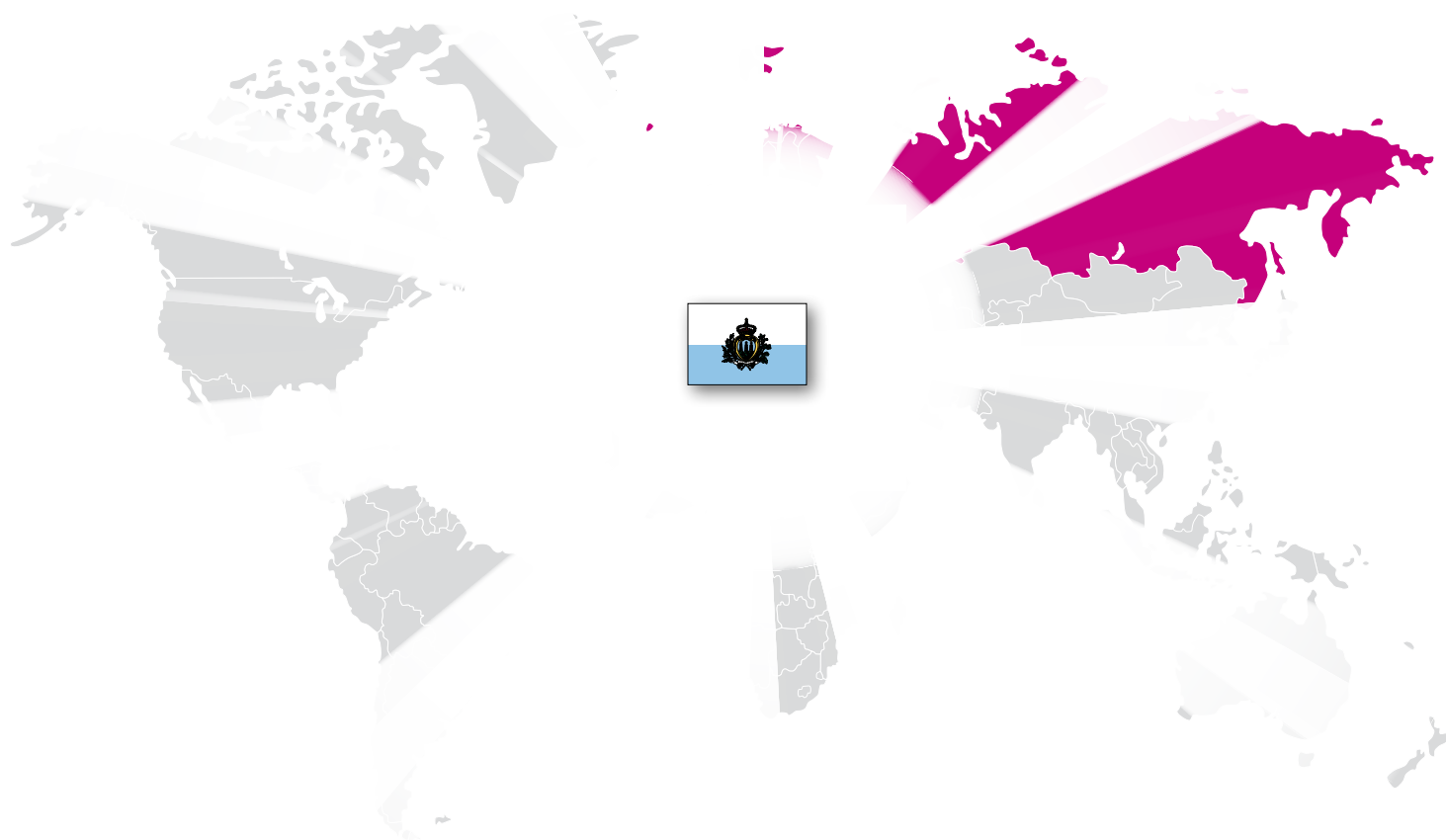
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	Yes
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SAN MARINO, REPUBLIC OF



1. Country:

San Marino, Republic of

Proportion of deaths resulting from cardiovascular disease

39%

2. Healthcare system

National Health System.

Insurance availability

Basic Yes

Private Yes

Comments The basic insurance is free and for everybody from birth to death. The private insurance plan provides to repay for job absence, travels and more.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	CMR, CT, PET and SPECT are performed out of the State in Italy.		

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	In San Marino all national certification are recognised and advised.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input type="checkbox"/>
CMR/CT	Radiologist	<input type="checkbox"/>
PET/SPECT	Nuclear Medicine, Radiologist	<input type="checkbox"/>
Vascular ultrasound imaging	Cardiologist, Vascular Surgeon, Radiologist	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 5	<input type="checkbox"/>
TOE	Number of years: 5	<input type="checkbox"/>
Stress ECHO	Number of years: 5	<input type="checkbox"/>
CMR	Number of years: 5	<input type="checkbox"/>
CT	Number of years: 5	<input type="checkbox"/>
PET	Number of years: 5	<input type="checkbox"/>
SPECT	Number of years: 5	<input type="checkbox"/>
Vascular ultrasound	Number of years: 5	<input type="checkbox"/>

4. Imaging examinations**Specialty performing examinations**

	Yes
ECHO	100% Cardiologists
CMR/CT	100% Radiologists
PET/SPECT	70% Specialists in nuclear medicine / 30% Cardiologists
Cardiovascular ultrasound	90% Cardiologists / 10% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name: Echocardiography database	<input type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: EchoDoppler TSA database	<input type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name: Echocardiography Internal database	<input type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: Internal database	<input type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: Cardiology Unit	<input type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Acuson SC 2000
CMR	Name: Not available
CT	Name: Not available
PET	Name: Not available
SPECT	Name: GE, Philips, Siemens
Vascular ultrasound	Name: Acuson SC 2000

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>

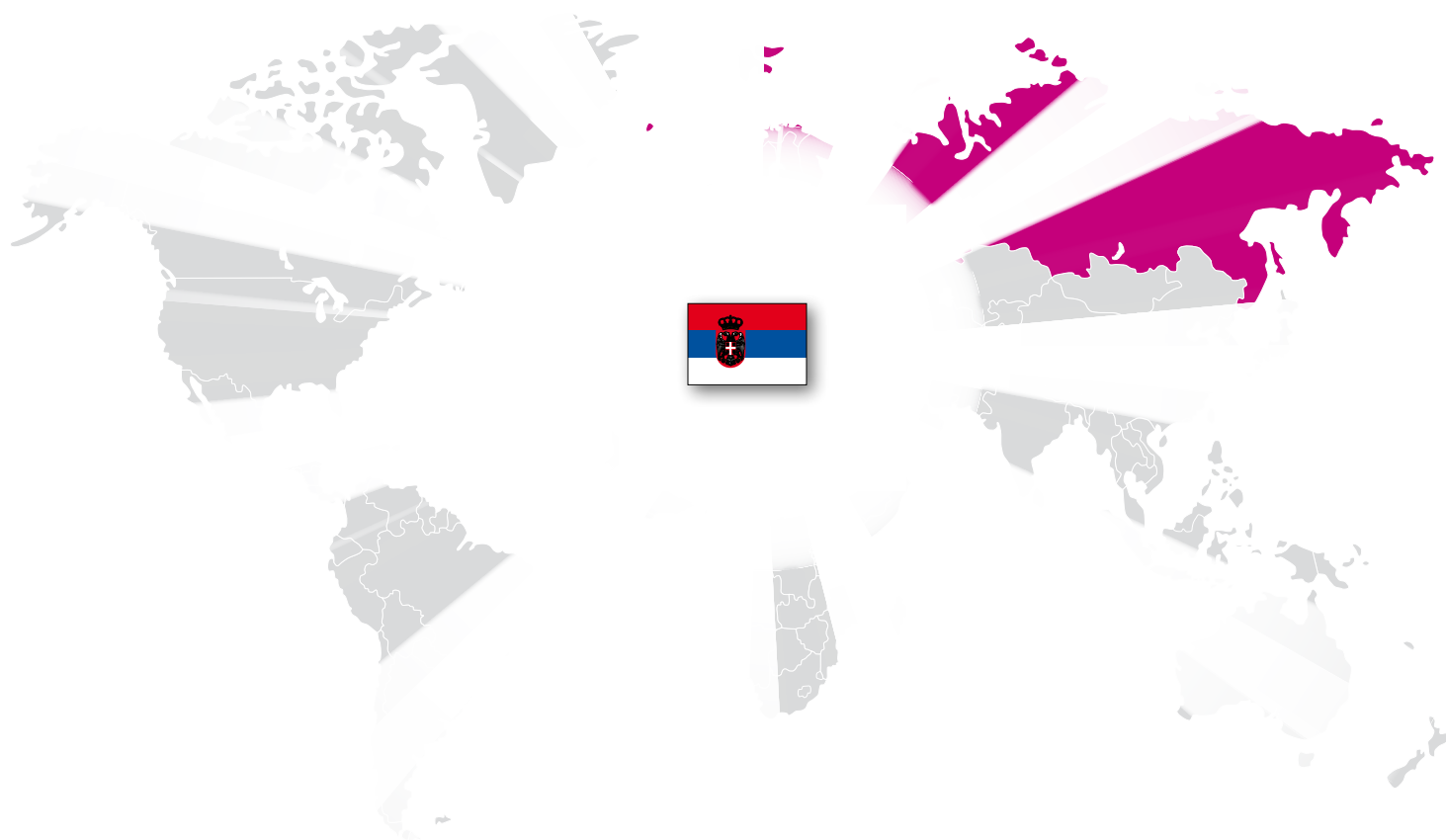
Necessity of guidelines in the national language **No**

Are guidelines translated in the national language **No**

General Comments

We advise the EACVI certification for Cardiologist and accreditation for Echo lab.

SERBIA



1. Country:

Serbia

Proportion of deaths resulting from cardiovascular disease

53.2%

2. Healthcare system

National Health System. 80% National, state-owned healthcare facilities, 20% private healthcare facilities (mainly outpatient clinics)

Insurance availability

Basic	Yes
Private	Yes
Comments	Private only for private healthcare facilities.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	There is no national certification for cardiovascular imaging.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Comments There is no national certification. National Society advises EACVI certifications.

Specialty required to perform

Yes

ECHO (TTE, TOE, Stress ECHO)	Internal medicine - Cardiology
CMR/CT	Radiology, Cardiology
PET/SPECT	Nuclear medicine
Vascular ultrasound imaging	Internal medicine - Cardiology, Radiology, Vascular surgery

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

Yes

No

TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

Comments There is no required period of training to perform non-invasive CVI examination.

4. Imaging examinations

Specialty performing examinations

Yes

ECHO	95% Cardiologists / 5% Other
CMR/CT	98% Radiologists / 2% Cardiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	80% Radiologists / 10% Cardiologists / 10% Other

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	There is no national registry for CVI procedures.	

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	There is no national quality insurance system or complication registry for CVI procedures.	

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>
Comments	There is no national institution that is coordinating the complication related to non-invasive CVI examinations.	

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use	
	Systems
ECHO	Name: GE, Siemens, Philips, Toshiba
CMR	Name: Siemens
CT	Name: GE
PET	Name: Siemens
SPECT	Name: Siemens
Vascular ultrasound	Name: GE, Siemens, Toshiba, Philips

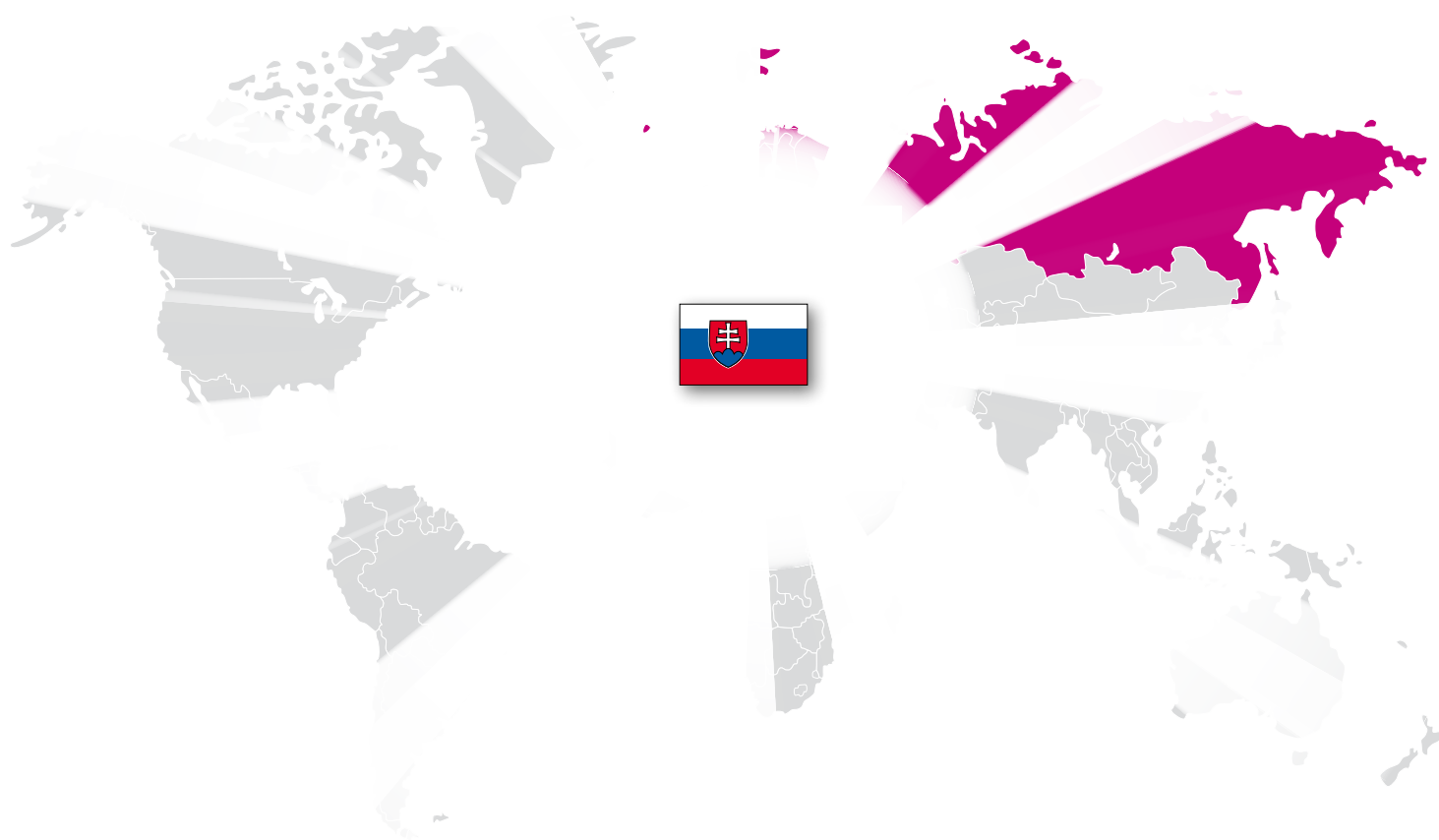
5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations		
	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	Yes
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SLOVAK REPUBLIC



Proportion of deaths resulting from cardiovascular disease

53%

2. Healthcare system

National Health System.

Insurance availability

Basic	Yes
Private	No

Comments For basic: There are 3 health insurance companies.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Treatment availability

Yes, it is not funded.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Dr. Simkova SZU	<input type="checkbox"/>
TOE	Official name: Dr. Simkova SZU	<input type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiology	<input type="checkbox"/>
CMR/CT	Rentgenology	<input type="checkbox"/>
PET/SPECT		<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Cardiology, Angiology, Angiosurgery	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 2	<input type="checkbox"/>
TOE	Number of years: 3	<input type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	100% Cardiologists / Internists very rarely
CMR/CT	100% Radiologists
SPECT	50% Cardiologists / 50% Specialists in nuclear medicine
Cardiovascular ultrasound	40% Radiologists / 40% Other / 20% Cardiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips, GE, Toshiba
CMR	Name: Siemens
CT	Name: Siemens, Toshiba
Vascular ultrasound	Name: Philips, GE, Siemens

5. Guidelines

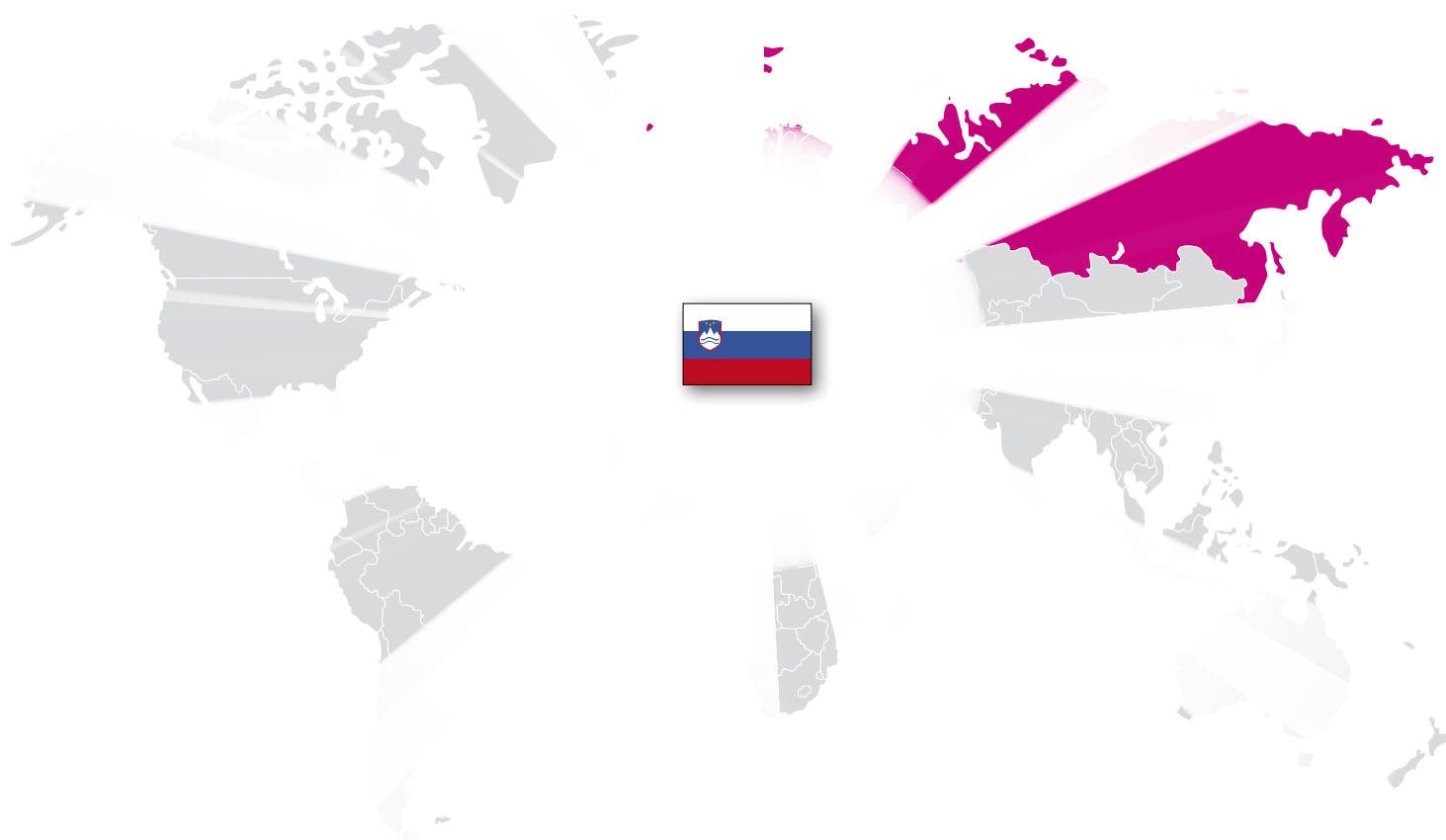
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	Yes
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SLOVENIA



Proportion of deaths resulting from cardiovascular disease

39%

2. Healthcare system

National Institute of Public Health of Slovenia. In general the National HC System is mainly public, and the main source of funding is from the state authorised National Institute on Health Insurance.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	TOE and stress echo are not fully reimbursed. The hospital receives reimbursement per process for ambulatory procedures. For hospitalised patients the payment is through DRG.		

Treatment availability

Yes, it is restricted to certain number of procedures.

Comments A limited number of investigations per year are reimbursed.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiology and vascular medicine, internal medicine	<input type="checkbox"/>
CMR/CT	Radiology, cardiology with additional knowledge of CMR or CT	<input type="checkbox"/>
PET/SPECT	Cardiology with additional knowledge of nuclear medicine, nuclear medicine specialist	<input type="checkbox"/>
Vascular ultrasound imaging	Internal medicine, cardiology and vascular medicine, neurology (carotid ultrasound only)	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name: Is part of the specialisation in radiology	<input type="checkbox"/>
CT	Official name: Is part of the specialisation in radiology	<input type="checkbox"/>
PET	Official name:	<input type="checkbox"/>
SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 1 – it is part of the specialisation in cardiology and vascular medicine.	<input type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years: 4 months+ 1 year optional - is part of the specialisation in radiology.	<input type="checkbox"/>
CT	Number of years: 4 months+ 1 year optional - is part of the specialisation in radiology.	<input type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years: 1 – it is part of the specialisation in cardiology and vascular medicine.	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	80% Cardiologists / 20% Internists
CMR/CT	99% Radiologists / 1% Cardiologists
PET/SPECT	50% Cardiologists / 50% Radiologists
Cardiovascular ultrasound	50% Cardiologists / 30% Neurologists / 20% Internists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution: Not replied	<input type="checkbox"/>
PET/SPECT	Type of institution: Not replied	<input type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use	
	Systems
ECHO	Name: Phillips, GE, Aloka, Esaote
CMR	Name: Siemens, GE
CT	Name: Siemens
PET	Name: Siemens
SPECT	Name: Siemens, GE
Vascular ultrasound	Name: Phillips, GE, Aloka, Toshiba

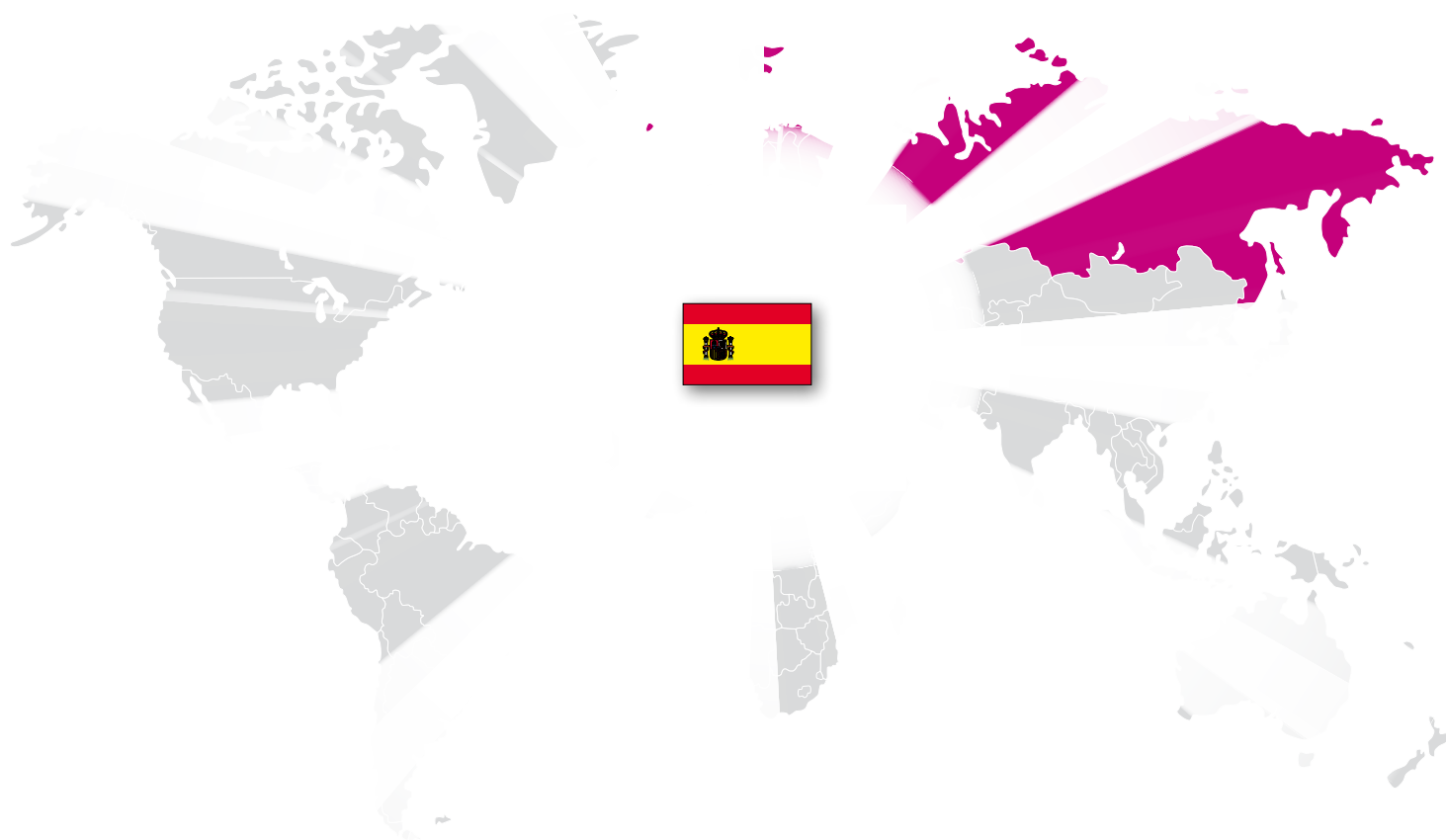
5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations		
	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
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Are guidelines translated in the national language	No
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SPAIN



1. Country:

Spain

Proportion of deaths resulting from cardiovascular disease

30.3%

2. Healthcare system

National Health System. Public, universal.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Experto en ecocardiografía avanzada	<input type="checkbox"/>
TOE	Official name: Experto en ecocardiografía avanzada	<input type="checkbox"/>
Stress ECHO	Official name: Experto en ecocardiografía avanzada	<input type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification and officially approves it to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologist	<input checked="" type="checkbox"/>
CMR/CT	Cardiologist or Radiologist	<input checked="" type="checkbox"/>
PET/SPECT	Nuclear Medicine specialist	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Angiology	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 1	<input type="checkbox"/>
TOE	Number of years: 1	<input type="checkbox"/>
Stress ECHO	Number of years: 1	<input type="checkbox"/>
CMR	Number of years: 1	<input type="checkbox"/>
CT	Number of years: 1	<input type="checkbox"/>
PET	Number of years: Not answered	<input type="checkbox"/>
SPECT	Number of years: Not answered	<input type="checkbox"/>
Vascular ultrasound	Number of years: Not answered	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Cardiologists / 5% Intensive care, internists
CMR/CT	50% Cardiologists / 50% Radiologists
PET/SPECT	95% Specialists in nuclear medicine / 5% Cardiologists
Cardiovascular ultrasound	100% Angiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	Not applicable.			

Machine Brand use

	Systems
ECHO	Name: Phillips, GE, Siemens, Toshiba, aloka, Mindray
CMR	Name: Phillips, GE, Siemens
CT	Name: Phillips, GE, Siemens, Toshiba
PET	Name: N/A
SPECT	Name: N/A
Vascular ultrasound	Name: Siemens

5. Guidelines

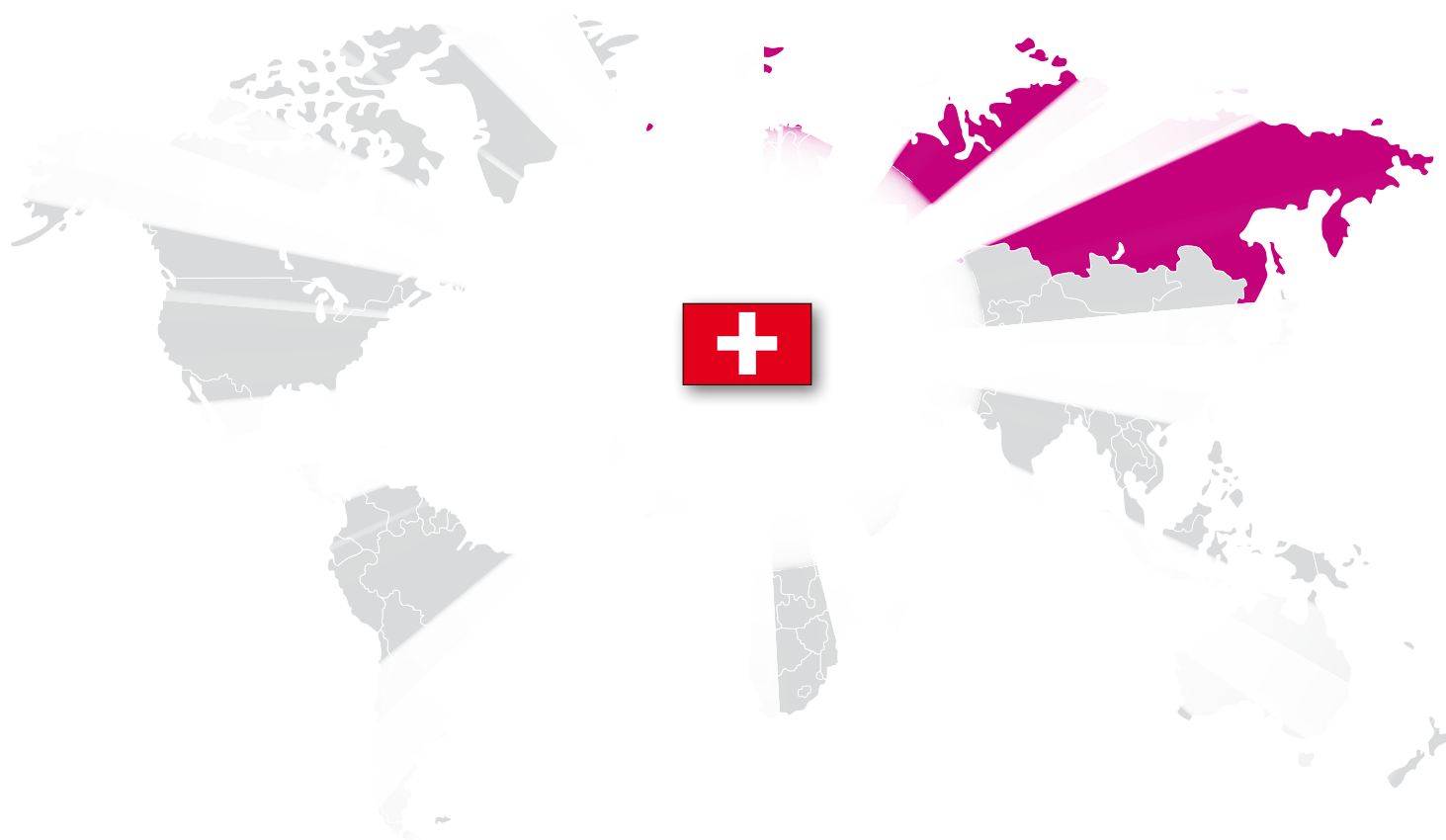
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
--	-----

Are guidelines translated in the national language	No
--	----

SWITZERLAND



Proportion of deaths resulting from cardiovascular disease

15%

2. Healthcare system

The task is shared between the federal government and cantons. Large autonomy of the cantons. Federal Found for Research.

Insurance availability

Basic Yes
Private Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Comments	Specific reimbursement only for ambulatory patients or private patients. For the general population, no dedicated reimbursement neither incentives.		

Treatment availability

No, there are no restrictions.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes
TTE	Official name: Board of Cardiology
TOE	Official name: Board of Cardiology
Stress ECHO	Official name: Board of Cardiology
CMR	Official name: Specific CMR certification for cardiologists. Board of Radiology
CT	Official name: Board of Radiology
PET	Official name: Board of Nuclear Medicine
SPECT	Official name: Board of Nuclear Medicine
Vascular ultrasound	Official name: Board of Angiology, Neurology, Radiology

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	No specific Certifications. Usually it is included in the board of specialty. However anaesthetists have their own certification for TOE. ICU physicians follow the same strategy.		

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not mandatory for national certification.

Specialty required to perform

	Yes
ECHO (TTE, TOE, Stress ECHO)	Cardiology, Cardiac Anaesthesia (TOE), Intensivists
CMR/CT	Radiology, Cardiology
PET/SPECT	PET performed by Nuclear Physicians; SPECT performed mainly by radiologists, few cardiologists
Vascular ultrasound imaging	Angiology, Neurology (cerebral arteries), Radiology

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes
TTE	Official name: Swiss Society of Cardiology
TOE	Official name: Swiss Society of Cardiology, Cardiac Anaesthesiology
Stress ECHO	Official name: Swiss Society of Cardiology
CMR	Official name: Swiss Society of Cardiology and Radiology
CT	Official name: Swiss Society of Radiology
PET	Official name: Swiss Society of Nuclear Medicine
SPECT	Official name: Swiss Society of Nuclear Medicine
Vascular ultrasound	Official name: Swiss Society of Angiology, Neurology

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes
TTE	Number of years: 6 - Board of Cardiology
TOE	Number of years: Board of Cardiology, Anaesthesiology
Stress ECHO	Number of years: 6 - Board of Cardiology
CMR	Number of years: 5 - Board of Radiology / Board of Cardiology
CT	Number of years: 5 - Board of Radiology
PET	Number of years: 5 - Board of Nuclear Medicine
SPECT	Number of years: 5 - Board of Nuclear Medicine
Vascular ultrasound	Number of years: Board of Angiology

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	95% Cardiologists / 5% intensivists, emergency team
CMR/CT	CMR: Cardiologists and Radiologists / CT: mainly radiologists, few cardiologists
PET/SPECT	Nuclear specialists / cardiologists
Cardiovascular ultrasound	Some cardiologists & radiologists / specialists in angiology for more than 80%

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: General electric, Philips, Siemens, Toshiba
CMR/CT	Name: General electric, Philips, Siemens, Toshiba
CT	Name: General electric, Philips, Siemens, Toshiba
PET/SPECT	Name: General electric, Philips, Siemens
SPECT	Name: General electric, Philips, Siemens
Vascular ultrasound	Name: General electric, Philips, Siemens, Toshiba

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language

No

Are guidelines translated in the national language

Yes

Comments Only for the national guidelines. French, German, sometimes in English too.

TUNISIA



Proportion of deaths resulting from cardiovascular disease

27%

2. Healthcare system

National Health System. Hospital, clinician, institute.

Insurance availability

Basic

No

Private

Unanswered

Comments

For basic: It is for public work or Private insurance.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name: Masters in echocardiography & Doppler	<input type="checkbox"/>
TOE	Official name: Masters in echocardiography & Doppler	<input type="checkbox"/>
Stress ECHO	Official name: Masters in echocardiography & Doppler	<input type="checkbox"/>
CMR	Official name: Masters in Cardiac imaging	<input type="checkbox"/>
CT	Official name: Masters in Cardiac imaging	<input type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Unanswered.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Cardiologists, emergency medicine, anaesthesiologists	<input type="checkbox"/>
CMR/CT	Cardiologist or Radiologist	<input type="checkbox"/>
PET/SPECT	N/A	<input type="checkbox"/>
		<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: Yes	<input type="checkbox"/>
TOE	Official name: Not especially	<input type="checkbox"/>
Stress ECHO	Official name: Not especially	<input type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input type="checkbox"/>
SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name: Yes	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: Yes if the student learned with a Masters in echocardiography & Doppler	<input type="checkbox"/>
TOE	Number of years: Yes if the student learned with a Masters in echocardiography & Doppler	<input type="checkbox"/>
Stress ECHO	Number of years: Yes if the student learned with a Masters in echocardiography & Doppler	<input type="checkbox"/>
CMR	Number of years: Yes if the student learned with a Masters in cardiac non invasive imaging	<input type="checkbox"/>
CT	Number of years: Yes if the student learned with a Masters in cardiac non invasive imaging	<input type="checkbox"/>
PET	Number of years: Unanswered	<input type="checkbox"/>
SPECT	Number of years: Unanswered	<input type="checkbox"/>
Vascular ultrasound	Number of years: Yes if the student learned with a Masters in angiology	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	75% Cardiologists / 25% General physicians, radiologists with a masters degree
CMR/CT	10% Cardiologists / 90% Radiologists
PET/SPECT	Not answered
Cardiovascular ultrasound	60% Angiologists / 40% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE , Philips , Siemens, Toshiba, mindray, esaote, Hitachi, aloka
CMR	Name: GE , Philips , Siemens, Toshiba
CT	Name: GE , Philips , Siemens, Toshiba
PET	Name:
SPECT	Name:
Vascular ultrasound	Name: GE , Philips , Siemens, Toshiba, mindray, esaote, Hitachi, aloka

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national	Yes
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Are guidelines translated in the national language	Yes
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TURKEY



1. Country:

Turkey

Proportion of deaths resulting from cardiovascular disease

47.73%

2. Healthcare system

National Health system (majority), Private health insurance (minority).

Insurance availability

Basic Yes

Private Yes

Comments Depending on the income of people, private health insurance is possible.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments Reimbursements are complete in state hospitals, but partial in private hospitals where the patients are charged partially.

Treatment availability

Yes, it is restricted to certain number of procedures.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	PET not applicable	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	These themes are included in the overall cardiology. Nuclear and radiology certification exams are not individually applied.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform	
	No
ECHO (TTE, TEE, Stress ECHO)	<input checked="" type="checkbox"/>
CMR/CT	<input checked="" type="checkbox"/>
PET/SPECT	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name: Turkish Society of Radiology	<input type="checkbox"/>
CT	Official name: Turkish Society of Radiology	<input type="checkbox"/>
PET	Official name: NA	<input type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations		
	Yes	No
TTE	Number of years:	<input type="checkbox"/>
TOE	Number of years:	<input type="checkbox"/>
Stress ECHO	Number of years:	<input type="checkbox"/>
CMR	Number of years:	<input type="checkbox"/>
CT	Number of years:	<input type="checkbox"/>
PET	Number of years:	<input type="checkbox"/>
SPECT	Number of years:	<input type="checkbox"/>
Vascular ultrasound	Number of years:	<input type="checkbox"/>

Comments	Imaging is incorporated into the residency programs. Cardiology residents are required to perform TTE during at least 6 months under the supervision of the attending as full day performance and are encouraged to assist interpretation to as many as TOEs and stress echos as they can. Radiology and nuclear residency last 4 years and are not dedicated to cardiologists.
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4. Imaging examinations

Specialty performing examinations	
	Yes
ECHO	99% Cardiologists / 1% ER physicians, and anaesthesiologists
CMR/CT	100% Radiologists
PET/SPECT	100% Specialists in nuclear medicine
Cardiovascular ultrasound	100% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: GE, Philips, Siemens
CMR	Name: Siemens
CT	Name: Siemens
SPECT	Name: Siemens
Vascular ultrasound	Name: Siemens

5. Guidelines

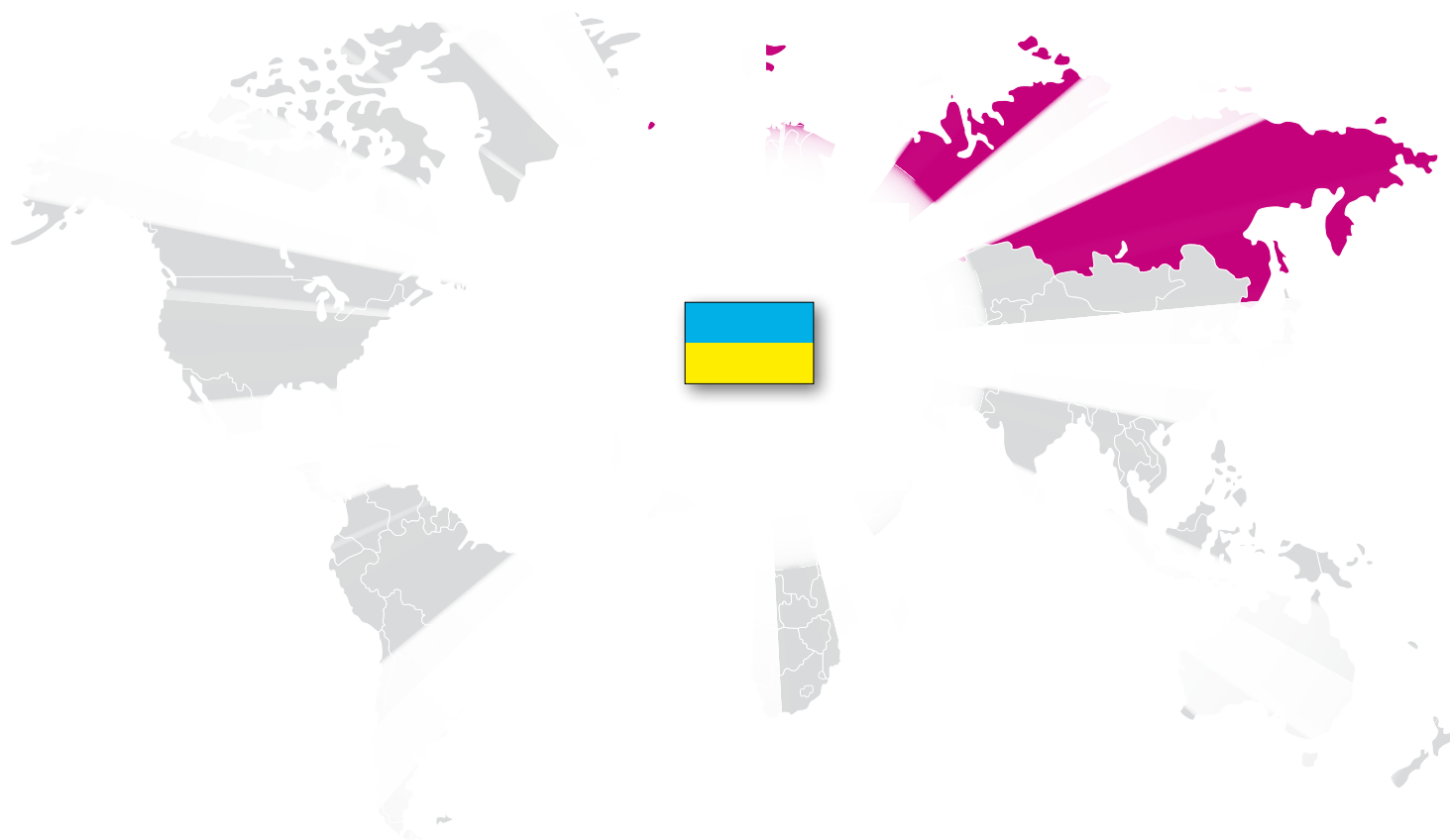
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input checked="" type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	Yes
--	-----

Are guidelines translated in the national language	Yes
--	-----

UKRAINE



1. Country:

Ukraine

Proportion of deaths resulting from cardiovascular disease

60%

2. Healthcare system

National Health System-severe financial shortages.

Insurance availability

Basic No

Private No

Comments **For Basic:** Beginning of introducing the basic insurance.
For Private: Only a few people can do such plans.

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress Echo	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular Ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Treatment availability

No, there are no restrictions, but the indications have to follow the ESC guidelines.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments	PET and SPECT are not available.		

3. Education

National certification availability

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	Every 5 years every specialist should approve his qualification.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

Yes, the Society advises EACVI certification, but it is not officially approved to national certification.

Specialty required to perform

	Yes	No
ECHO (TTE, TOE, Stress ECHO)	Functional diagnostic specialist	<input type="checkbox"/>
CMR/CT		<input checked="" type="checkbox"/>
PET/SPECT		<input checked="" type="checkbox"/>
Vascular ultrasound imaging	Diagnostic ultrasonography	<input type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name:	<input checked="" type="checkbox"/>
TOE	Official name:	<input checked="" type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years:	<input checked="" type="checkbox"/>
TOE	Number of years:	<input checked="" type="checkbox"/>
Stress ECHO	Number of years:	<input checked="" type="checkbox"/>
CMR	Number of years:	<input checked="" type="checkbox"/>
CT	Number of years:	<input checked="" type="checkbox"/>
PET	Number of years:	<input checked="" type="checkbox"/>
SPECT	Number of years:	<input checked="" type="checkbox"/>
Vascular ultrasound	Number of years:	<input checked="" type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	80% Functional diagnostic specialists / 15% ultrasound diagnostic specialists / 5% Cardiologists
CMR/CT	100% Radiologists
PET/SPECT	Not answered
Cardiovascular ultrasound	100% Radiologists

Availability of a National registry

	Yes	No
ECHO	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CMR/CT	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Toshiba, Siemens, Aloka, GE
CMR	Name: Toshiba, Siemens
CT	Name: Siemens, Toshiba
PET	Name:
SPECT	Name:
Vascular ultrasound	Name: Toshiba, Siemens, GE, Aloka

5. Guidelines

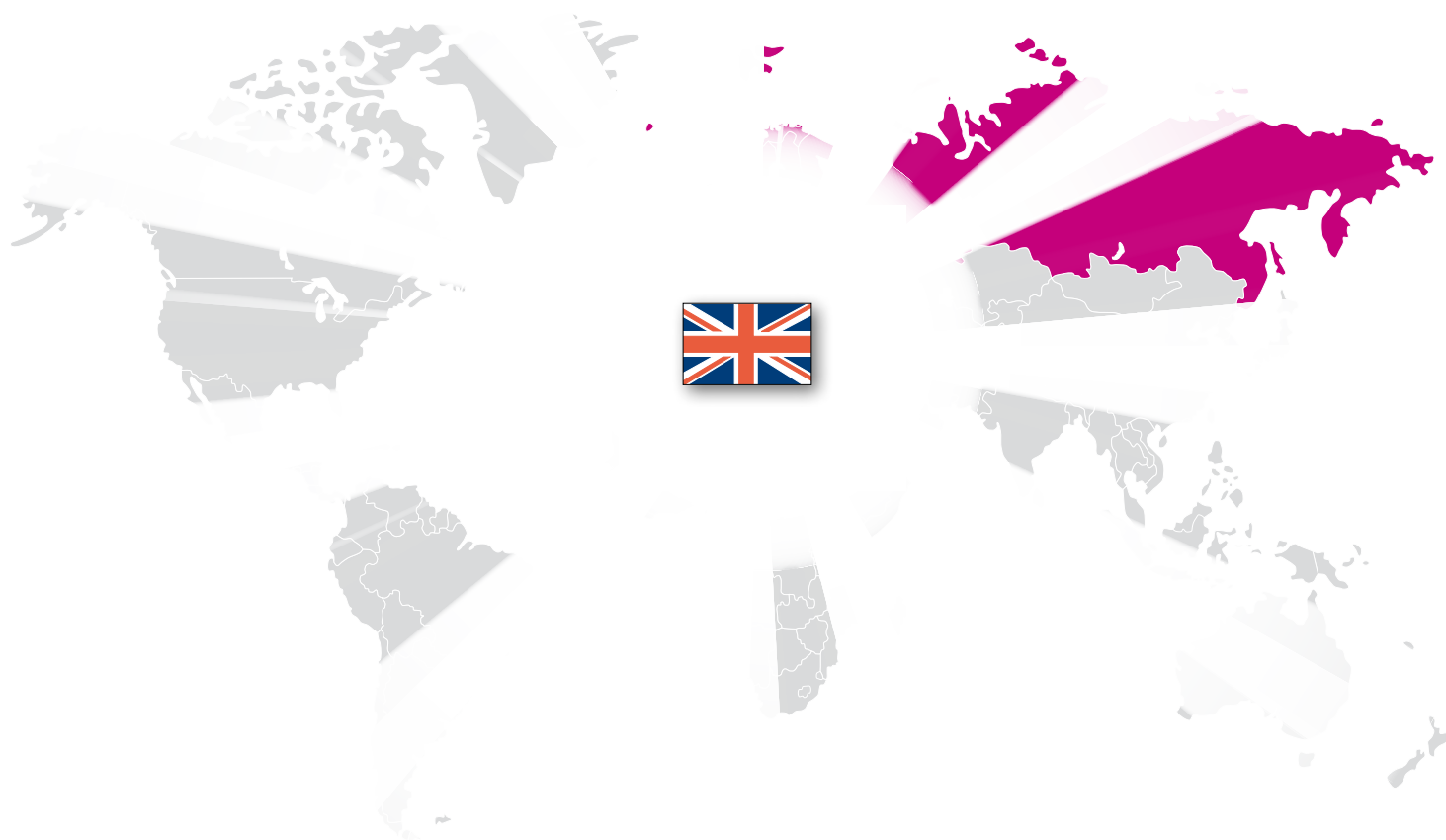
Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national	Yes
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Are guidelines translated in the national language	Yes
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UNITED KINGDOM



1. Country:

United Kingdom

Proportion of deaths resulting from cardiovascular disease

25% (2103)

2. Healthcare system

National Health Service - Public funding.

Insurance availability

Basic	Yes
Private	Yes

Hospital reimbursement availability

	Yes, the hospital receives per process reimbursement	No, the hospital does not receive reimbursement, but incentives	No, the hospital does not receive reimbursement neither incentive
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress Echo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular Ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

The hospitals receive per process funding the year after completion of the test but the funding does depend upon numbers, such that increases beyond a certain number for a given hospital may not be paid dependent on local contracts.

Treatment availability

Yes, it is restricted to certain number of procedures.

Comments

De facto, the funding arrangements mean that hospitals and departments may continue to perform tests but not be paid for them.

Average waiting time of examinations in public healthcare system

	1-30 days	>30 days	>60 days
TTE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

Waiting times vary widely across institutions and between tests. In clinical NHS care pathways imaging test generally need to be performed within 6 weeks. In the private sector, waiting times are generally much shorter.

3. Education

National certification availability

	Yes	No
TTE	Official name: BSE Proficiency Accreditation	<input type="checkbox"/>
TOE	Official name: BSE Proficiency Accreditation	<input type="checkbox"/>
Stress ECHO	Official name:	<input checked="" type="checkbox"/>
CMR	Official name:	<input checked="" type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>
Comments	SPECT users are advised to take the CBNC examination and follow the BCS revalidation guidelines to maintain licence to practice. Similar arrangements apply for CT and CMR.	

National certification for physicians

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

National accreditation for centres

Centres	Yes, it is required for practice	Yes, but it is not required for practice	No
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

National Cardiac Society supporting the EACVI certification system

No, we have our own certification system.

Specialty required to perform

	No
ECHO (TTE, TOE, Stress ECHO)	<input checked="" type="checkbox"/>
CMR/CT	<input checked="" type="checkbox"/>
PET/SPECT	<input checked="" type="checkbox"/>
Vascular ultrasound imaging	<input checked="" type="checkbox"/>

Official national competency guidelines to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Official name: BSE Minimum Dataset	<input type="checkbox"/>
TOE	Official name: BSE Minimum Dataset	<input type="checkbox"/>
Stress ECHO	Official name: In development	<input type="checkbox"/>
CMR	Official name: BSCMR guidelines	<input type="checkbox"/>
CT	Official name:	<input checked="" type="checkbox"/>
PET	Official name:	<input checked="" type="checkbox"/>
SPECT	Official name: BNCS Standard Operating Procedures	<input type="checkbox"/>
Vascular ultrasound	Official name:	<input type="checkbox"/>

Required period of training to perform non-invasive cardiovascular imaging examinations

	Yes	No
TTE	Number of years: 2	<input type="checkbox"/>
TOE	Number of years: 2	<input type="checkbox"/>
Stress ECHO	Number of years: 2	<input type="checkbox"/>
CMR	Number of years: 2	<input type="checkbox"/>
CT	Number of years: N/A	<input type="checkbox"/>
PET	Number of years: N/A	<input type="checkbox"/>
SPECT	Number of years: 2	<input type="checkbox"/>
Vascular ultrasound	Number of years: N/A	<input type="checkbox"/>

4. Imaging examinations

Specialty performing examinations

	Yes
ECHO	90% Sonographers / 10% Cardiologists
CMR/CT	50% Cardiologists / 50% Radiologists
PET/SPECT	Not answered
Cardiovascular ultrasound	Not answered

Availability of a National registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National quality insurance system or complication registry

	Yes	No
ECHO	Official name:	<input checked="" type="checkbox"/>
CMR/CT	Official name:	<input checked="" type="checkbox"/>
PET/SPECT	Official name:	<input checked="" type="checkbox"/>
Vascular ultrasound	Official name:	<input checked="" type="checkbox"/>

Availability of a National institution coordinating complications related to non-invasive cardiovascular imaging examinations

	Yes	No
ECHO	Type of institution:	<input checked="" type="checkbox"/>
CMR/CT	Type of institution:	<input checked="" type="checkbox"/>
PET/SPECT	Type of institution:	<input checked="" type="checkbox"/>

Specialty costs of examination

	< 50 Euro	50-200 Euro	200-500 Euro	>500 Euro
TTE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stress ECHO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CMR	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PET	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECT	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Vascular ultrasound	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Machine Brand use

	Systems
ECHO	Name: Philips, Siemens, GE, Toshiba
CMR	Name: Philips, Siemens, GE, Toshiba
CT	Name: Philips, Siemens, GE, Toshiba
PET	Name: Philips, Siemens, GE, Toshiba
SPECT	Name: Philips, Siemens, GE, Toshiba
Vascular ultrasound	Name: Philips, Siemens, GE, Toshiba

5. Guidelines

Guidelines adhered to for non-invasive cardiovascular imaging examinations

	Yes	No
National	<input checked="" type="checkbox"/>	<input type="checkbox"/>
US	<input type="checkbox"/>	<input type="checkbox"/>
European	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

Necessity of guidelines in the national language	No
--	----

Are guidelines translated in the national language	No
--	----

Notes

European Association of Cardiovascular Imaging



COMING TOGETHER IS A BEGINNING
KEEPING TOGETHER IS PROGRESS
WORKING TOGETHER IS SUCCESS



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