

# ESC Guidelines and the Aspiration of the ESC Virtuous Circle

Eva Prescott

ESC CPG chair 2022-24

Cardiovascular Round Table on  
'Guidelines implementation' – Part 1

# Virtuous Circle



**Aim of my talk is to provide  
an overview of main ESC  
tools to support Guidelines  
implementation**

# Virtuous Circle



**Guidelines – are they authoritative?**

# ESC guidelines – are they trustworthy?

- 4 guidelines every year (+ focused updates)
- Developed over a 2.5 year process
- Taskforce of 25 persons led by 2 chairs
- Encompassing
  - Coordinators
  - Methodologists
  - Experts from ESC and subcommunities + external collaborators
  - Patients
- Balancing expertise and diversity (geographical, gender, ‘new blood’, relevant representation from ESC associations/WG)
- Rules on DOI (<10 K Euros/year) and limit on number of participations
- Robust review process (2 expert coordinators + ~30 experts + 57 representatives from National Cardiac Societies)

# 5-year publication cycle 2022-2026

2022

**Non-Cardiac Surgery** (in collaboration ESA)  
**Cardio-Oncology** (in collaboration EHA, ESTRO, ICOS)  
**Ventricular Arrhythmias-Sudden Cardiac Death**  
**Pulmonary Hypertension** (joint ERS)

2023

**Acute Coronary Syndromes**  
**Endocarditis**  
**Cardiomyopathies**  
**Diabetes and CVD**  
**Heart Failure** (focused update)

2024

**Arterial Hypertension**  
**Peripheral arterial and aortic diseases**  
**Chronic Coronary Syndromes**  
**Atrial Fibrillation** (in collaboration EACTS)

2025

**Valvular Heart Disease** (joint EACTS)  
**Cardiovascular disease and mental health**  
**Pregnancy**  
**Myocarditis and Pericarditis**

2026

**Heart Failure**  
**Cardiac Rehabilitation**  
**Cardiovascular disease and kidney disease** (in collaboration ERA)  
**(UDMI)**

# Timelines – 2 ½ years



# Scientific quality of ESC guidelines

## Thorough assessment of evidence documented in evidence tables Discussions – consensus – confirmatory voting (>75%)

	Definition	Wording to use
<b>Class I</b>	Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.	Is recommended or is indicated
<b>Class IIa</b>	Weight of evidence/opinion is in favour of usefulness/efficacy.	Should be considered
<b>Class IIb</b>	Usefulness/efficacy is less well established by evidence/opinion.	May be considered
<b>Class III</b>	Evidence or general agreement that the given treatment or procedure is not useful/effective, and in some cases may be harmful.	Is not recommended

### Classes of recommendations

- I = Is recommended or is indicated
- IIa = Should be considered
- IIb = May be considered
- III = Is not recommended

<b>Level of evidence A</b>	Data derived from multiple randomized clinical trials or meta-analyses.
<b>Level of evidence B</b>	Data derived from a single randomized clinical trial or large non-randomized studies.
<b>Level of evidence C</b>	Consensus of opinion of the experts and/or small studies, retrospective studies, registries.

### Level of Evidence

- A = multiple randomized clinical trials or meta-analyses.
- B = single randomized clinical trial or large non-randomized studies.
- C = Consensus of opinion of the experts and/or small studies, retrospective studies, registries.

### Recommendation Table 21 — Recommendations for heart failure treatments in patients with diabetes and left ventricular ejection fraction over 40%

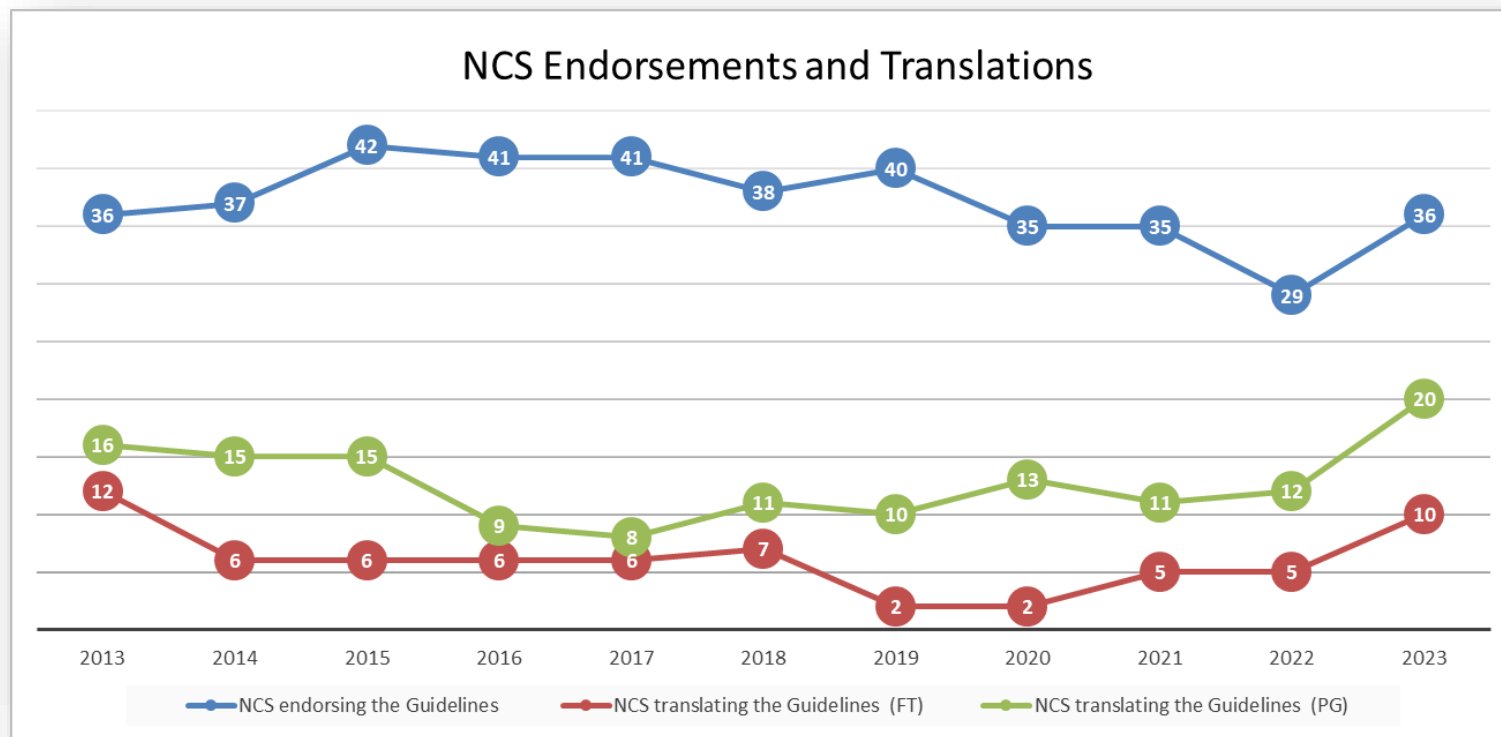
Recommendations	Class <sup>a</sup>	Level <sup>b</sup>
Empagliflozin or dapagliflozin are recommended in patients with T2DM and LVEF >40% (HFmrEF and HFpEF) to reduce the risk of HF hospitalization or CV death. <sup>530-533</sup>	<b>I</b>	<b>A</b>
Diuretics are recommended in patients with HFpEF or HFmrEF and diabetes with signs and/or symptoms of fluid congestion to improve symptoms, exercise capacity, and HF hospitalization. <sup>520</sup>	<b>I</b>	<b>C</b>

© ESC 2023

### Supporting references

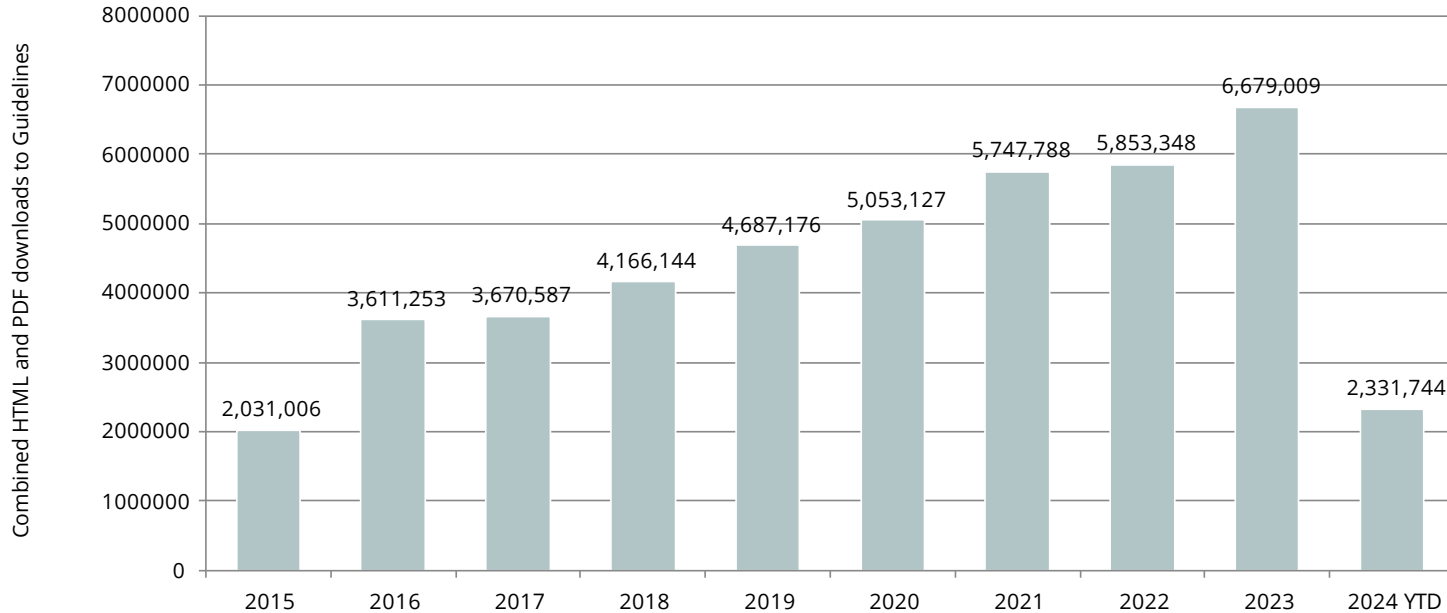
All recommendations must be supported by references

# Uptake of ESC guidelines at national level





# Usage of ESC Guidelines (published since 2009)



\*as of May 2024

# Impact of ESC guidelines - Citations

Guidelines with over 1000 citations in the first two full years after publication

Guideline Year	Title	Citations
2016	Prevention	2807
2019	CCS	1565
2018	Hypertension	1825
2019	Dyslipidemia	1126
2017	VHD	1309
2014	Revasc	1302
2016	AFib	1895
2020	AFib	2024
2018	Revasc	1108
2012	HF	1155
2021	HF	2215
2018	4th UDMI	1098

Citations to date for 2022 and 2023 guidelines

Guideline Year	Title	Citations
2022	VA SCD	615
2022	Cardiooncology	306
2022	Non-cardiac surgery	210
2022	Pulm hypertension	408
2023	ACS	298
2023	Cardiomyopathies	148
2023	Endocarditis	105
2023	Diabetes	95
2023	HF FU	163

\*as of May 2024

# Key attraction at ESC Congress



# ESC guidelines dissemination

## Guideline Derivative Products

A whole range of educational derivative products based on ESC Clinical Practice Guidelines are available in different formats.



### Guidelines Resources

See all ESC Guidelines presentations on demand on ESC 365.



### Pocket Guidelines

These condensed versions of the ESC Clinical Practice Guidelines provide quick references for practising clinicians with easy access in offices, clinics and emergency departments.



### Mobile App

Download the free ESC Pocket Guidelines App and its interactive tools onto your mobile device.



### Essential Messages and Slide Sets

A quick and easy-to-read document divided into two parts: Take-Home Messages, between 12 and 15 key points, and Gaps in Evidence.



### Summary Cards

A summary of ESC Clinical Practice Guidelines in a short, practical format with straightforward language easy for healthcare professionals to translate.

# ESC Guidelines Patient versions

## Guidelines for Patients

### What patients need to know

Based on ESC Clinical Practice Guidelines, these documents describe diagnosis and treatment recommendations based on medical and scientific evidence from healthcare professionals. They are intended to contribute to patients' understanding of their condition, to give them the knowledge and confidence to be involved in shared decision-making with their healthcare providers. It also provides suggestions on ways to take care of themselves, which is essential in the effective management of their disease.

## Diabetes



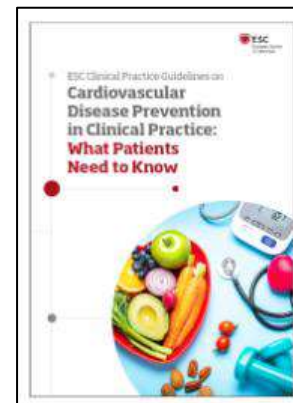
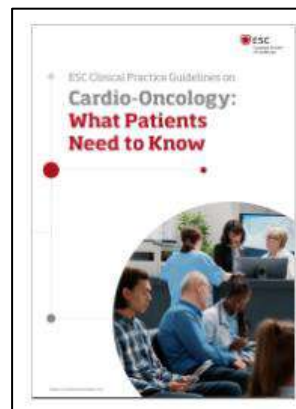
Patients with diabetes are at higher risk of developing cardiovascular disease and having cardiovascular events, such as heart attacks, than patients without diabetes.

This guide provides an overview of the latest evidence-based recommendations related to cardiovascular disease and diabetes. In particular, it should help you to understand:

- The different diseases that increase the risk of cardiovascular events in patients with diabetes
- The treatments that are recommended to reduce cardiovascular risk
- The lifestyle modifications that can help reduce cardiovascular risk

[Download the guidelines](#)

This document is not intended as a guide on how the heart works, nor can it be exhaustive. If you want to know more about any of the topics in this document, there are links to the appropriate sections in the [ESC Guidelines for the management of cardiovascular disease in patients with diabetes](#). People seeking more general information about cardiovascular disease prevention should visit the [Healthy Heart](#) website.



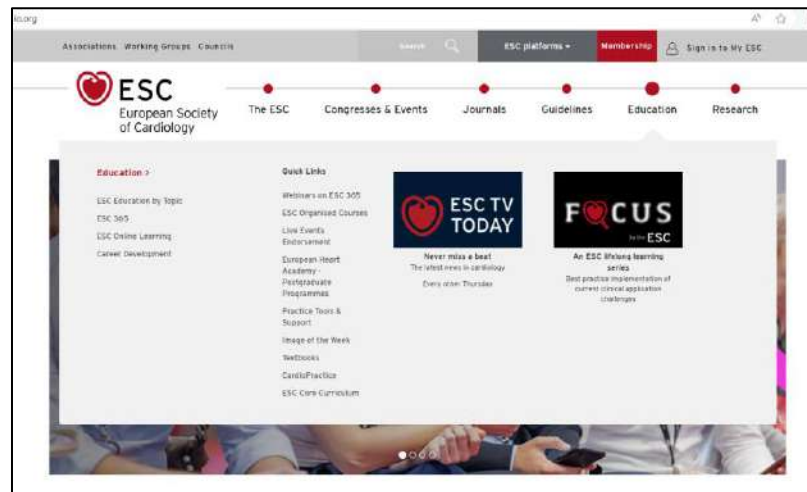
# Virtuous Circle



**Educational activities related to guidelines**

# ESC Educational activities

- **Webinars**
- **ESC365**
- **Core curriculum**
- **Courses**
- **Exams**
- **Congress**
- **Textbook**





# European Exam in Core Cardiology



The screenshot shows the EECC exam interface. At the top, it displays the date '01:24', the time '03:00', and the exam title 'EECC 13 June 2023'. Below this is an ECG tracing with leads I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6. The text below the ECG reads: 'A 56-year-old man was admitted to the emergency department with chest pain. His ECG is shown (see Image)'. Below the ECG is a multiple-choice question: '1 What is the most appropriate immediate management?'. The options are: A apixaban, B clopidogrel, C intravenous heparin, D primary PCI, and E thrombolysis. A 'Mark question to return later' button is visible on the right side of the question.

- test of core cardiology knowledge
- level of independent practice
- ESC core curriculum, guidelines and *CardioMed*
- 120 MCQs (text/image/video)
  - short, English, random order
- 3-hours on-line + remote proctoring
- robust governance
  - ESC – UEMS – independent academic analysis
- international collaboration
  - service to national cardiology societies



# European Exam in Core Cardiology



**APSC**  
Asian Pacific  
Society of  
Cardiology



**Austria**  
Austrian Society of  
Cardiology



**Bulgaria**  
Bulgarian Society  
of  
Cardiology



**CSANZ**  
Cardiac Society of  
Australia  
and New Zealand



**Costa Rica**  
Costa Rican  
Association of  
Cardiology



**Cyprus**  
Cyprus Society of  
Cardiology



**Egypt (pilot)**  
Egyptian society of  
Cardiology



**Finland**  
Finnish Society of  
Cardiology



**Georgia (pilot)**  
Georgian Society  
of Cardiology



**Germany**  
German Cardiac  
Society



**Gulf (pilot)**  
Gulf Heart  
Association



**Greece**  
Hellenic Society of  
Cardiology



**Ireland**  
Israel Heart  
Society



**Israel**  
Israel Heart  
Society



**Latvia**  
Latvian Society of  
Cardiology



**Lithuania**  
Lithuanian Society  
of  
Cardiology



**Luxembourg**  
Luxembourg  
Society of  
Cardiology



**Malta**  
Maltese Cardiac  
Society



**Netherlands**  
Netherlands  
Society of  
Cardiology



**Poland**  
Polish Cardiac  
Society



**Portugal**  
Portuguese  
Society of  
Cardiology



**Romania (pilot)**  
Finnish Society of  
Cardiology



**Slovenia**  
Slovenian Society  
of  
Cardiology



**Spain**  
Spanish Society of  
Cardiology



**Sweden**  
Swedish Society of  
Cardiology



**Switzerland**  
Swiss Society of  
Cardiology



**Syrian Arab  
Republic (pilot)**  
Syrian  
Cardiovascular  
Association



**Tunisia**  
Tunisian Society of  
Cardiology and  
Cardiovascular  
Surgery



**Turkey**  
Turkish Society of  
Cardiology



**United Kingdom**  
British  
Cardiovascular  
Society

**26 NCS – 2 ACS – 2 Global Partners, representing 57 countries**

From Costa Rica to New Zealand

# Subspecialty certification for the individual



## ACVC

Association for  
Acute CardioVascular Care

- Exam + Logbook



## EAPC

European Association  
of Preventive Cardiology

- Exam + Logbook



## EAPCI

European Association of  
Percutaneous Cardiovascular  
Interventions

- IC: Exam + Logbook



## HFA

Heart Failure  
Association

- Exam



## EACVI

European Association of  
Cardiovascular Imaging

- TTE: Exam + Logbook + Recertification
- TOE: Exam + Logbook + Recertification
- Echo CHD: Exam + Logbook + Recertification
- CMR: Exam + Logbook + Recertification
- CMR/CHD: Exam + Logbook
- Nuclear: Exam + Logbook
- CCT: Exam + Logbook
- MMI: Application



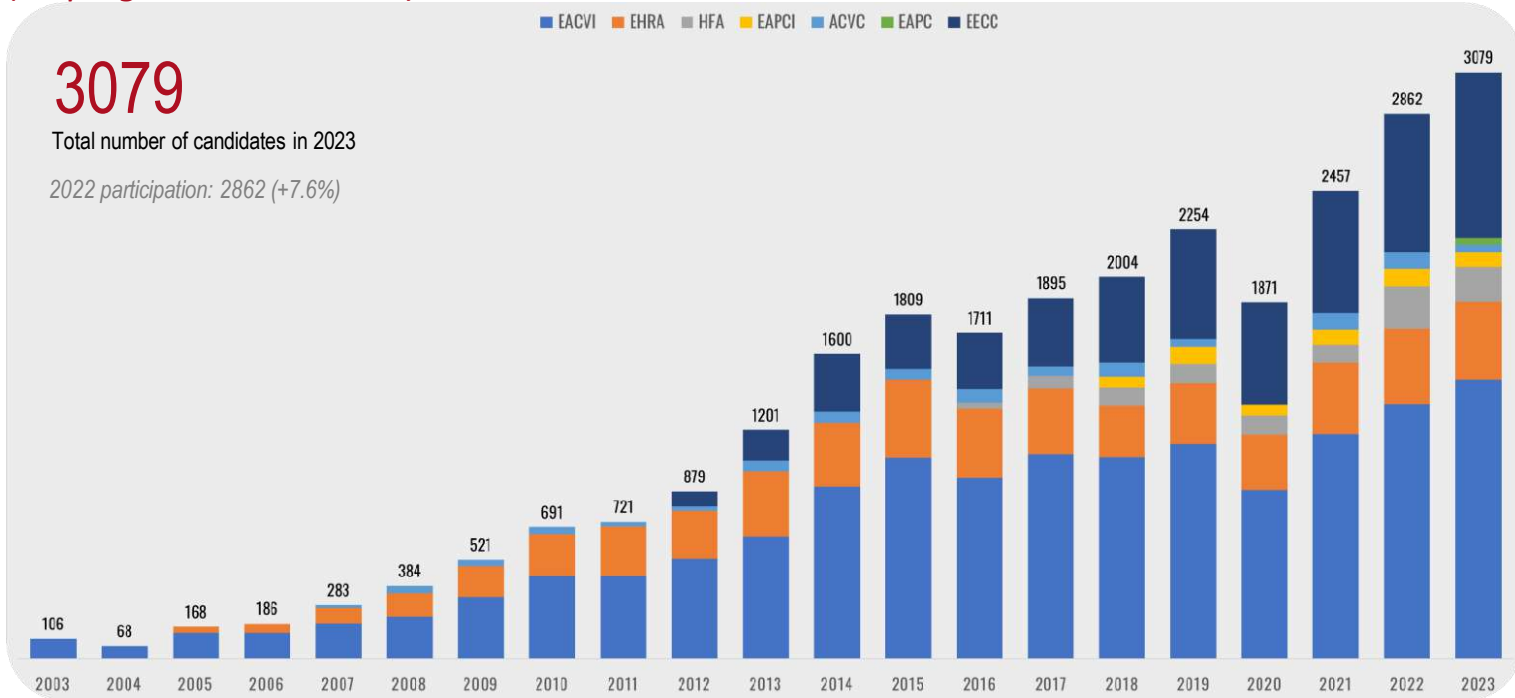
## EHRA

European Heart  
Rhythm Association

- CP: Exam + Logbook + Recertification
- EP: Exam + Logbook + Recertification
- CP for AP: Exam
- EP for AP: Exam

# Participation in ESC exams over the years

*(all programmes included)*





**As part of this project, 10 ESC webinars were delivered in 2023 on the Guidelines released at ESC Congress 2023.**

**FOCUS**, an ESC lifelong learning series, aims at disseminating ESC Guidelines and monitoring and supporting local best practice implementation on prevention and treatment of cardiovascular disease.

---

**FOCUS** will provide selected educational resources—targeted webinars, supporting literature and relevant resources—to disseminate newly released ESC Guidelines and report on the implementation of previously released ESC Guidelines.

---

Each **FOCUS** issue delves into best practice implementation by providing reviews of current clinical application challenges and materials on how to overcome them.

---

**FOCUS** helps cardiologists at any stage in their careers in staying up to date with core clinical standards and implementation of best practices.

April 2024's [FOCUS edition](#) shared key resources on the latest research and best practices for managing dyslipidaemias. Three webinars were part of this FOCUS. Content was partly based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias

### Webinars

[Risk assessment and lipid management in primary prevention](#)

11 April 2024

With François Mach, Monika Hollander, Frank LJ Visseren

[Unmet needs in lipid management: treatment goals and how to achieve them](#)

15 April 2024

With Konstantinos Koskinas, Florian Kronenberg, Charalambos Vlachopoulos

[New trial evidence in the field of lipid management](#)

19 April 2024

With Lale Takozoglu, Victor Aboyans, Ulf Landmesser

Date	11-Apr-24	15-Apr-24	19-Apr-24
Webinar Title	<a href="#">Risk assessment and lipid management in primary prevention</a>	<a href="#">Unmet needs in lipid management: treatment goals and how to achieve them</a>	<a href="#">New trial evidence in the field of lipid management</a>
Registered Participants	1355	1266	914
Live Attendees	496	536	303
Views On-Demand at 30 days	338	312	226

# Courses on new ESC Guidelines



## 2023 ESC Guidelines on Cardiomyopathies

Organiser: European Society of Cardiology

Topic: Cardiomyopathies

Course directors: Associate Professor E. Arbelo (Barcelona, ES) , Professor J. Kaski (London, GB)

 6 September 2023

 3h 00min

 Core Cardiology



Learning objectives

Additional information

Accreditation

ESC Clinical Practice Guidelines provide valuable support for the practice of cardiovascular healthcare professionals. This course is designed to test your understanding and knowledge of key recommendations. It will also provide you with essential information from curated content such as congress presentations, ESC TV interviews, and full guideline text. An MCQ test allows you to earn CME points.

# Virtuous Circle



**Does education have an impact on implementation?**

will be discussed further by  
Isabelle van Gelder

# Post ESC courses 2022-2024 feedback

- Following each event participants are asked whether they will implement their new knowledge in their practice in a post-event survey
- Feedback received in these surveys suggests that users:
  - will directly apply the knowledge learnt through their behaviours e.g. referral, prescribing, application of guidelines;
  - will have increased confidence to conduct their duties; engage in research; and have opportunities to network with their peers



**Some answers to “how the information you learnt will be implemented in your practice?”**

*“Made me read the guidelines, made my colleagues aware of them, will refer more to guidelines in decision making to back up what I'm trying to initiate and not just in syncope, created awareness of other work possibilities “*

*“More frequent assessment for mitra clip or ICD implantation”*

*“Systematically using Acetazolamide in the treatment of acutely decompensation HF patients”*

*“For instance, if I will see a creatinine increase in a HF patients during the early decongestion phase I won't remodulate the medical therapy.”*

*“It will influence my management of HF cases especially before discharge and at the follow up ,plus identification who will be candidate for MCS.”*

# Virtuous Circle

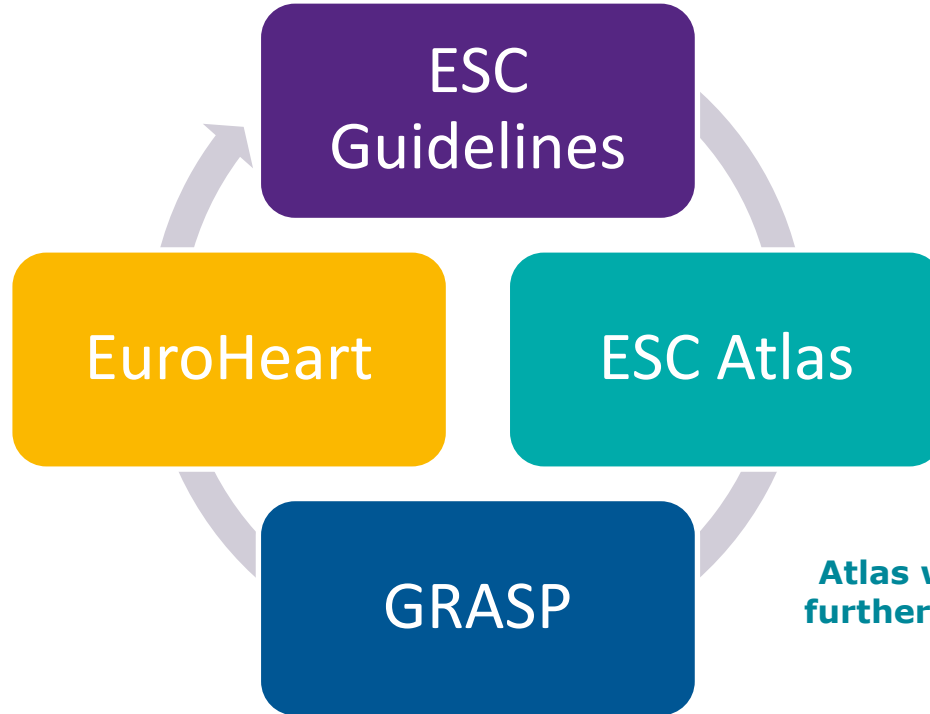
Research



**Registries to monitor  
guidelines implementation  
and quality of care**

**will be discussed further by  
Suleman Akhtaa**

# From a Virtuous Circle to a Learning Health System...

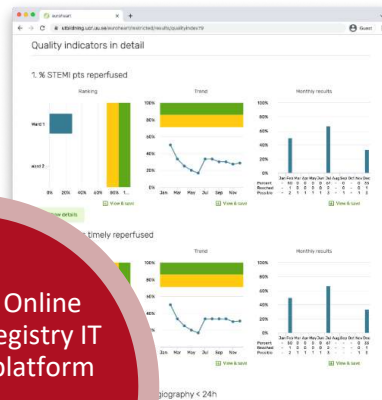


**Atlas will be discussed  
further by Panos Vardas**

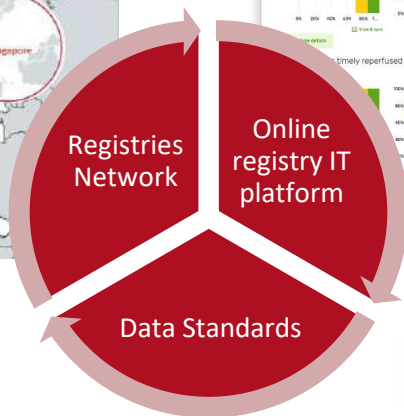
# EuroHeart network of registries



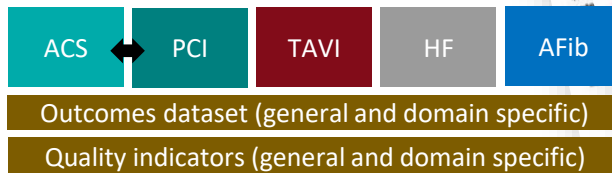
An expanding network of 12+ countries



A fully operating IT platform for continuous registries & real-time QoC monitoring



4 Data Standards published



# From EORP to GRASP Programme

## Non-Interventional multi-centre studies

### Objectives

- Assess **adherence** to current published **ESC Guidelines** or implementation



**34 studies**  
**102 countries (~27 per study)**  
**4350+ sites (~125 per study)**  
**180,000+ patients (~5386 per study)**  
**170+ publication**

### ESC GRASP Programme

#### 2 Snapshot studies launched each year

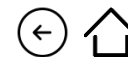
- Short period of data collection (≈ 2-3 months, no or short-time follow-up)
- Reduced workload for participating sites

#### 1 Registry study launched each year

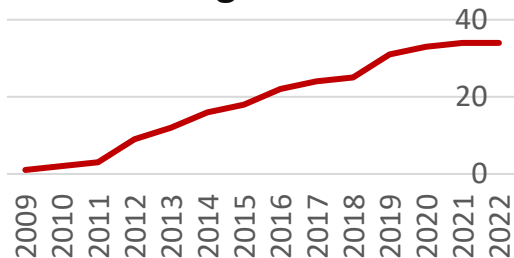
- Extended period of data collection and follow-up

**3 studies initiated**  
**26 to 49 countries willing to join per study**

# EURObservational Research Programme (EORP)



**34 registries**



**102 participating countries**

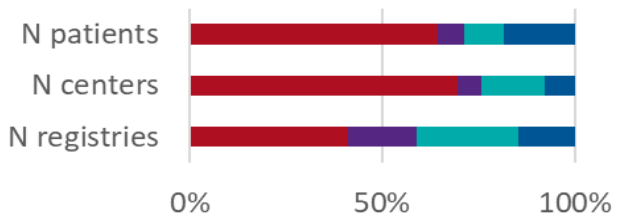
**~27 /registry [10-87]**



**4359 centers involved**

**~125 /registry [12-487]**

**15 different cardiac topics**



**183114 patients enrolled**

**~5386 /registry [469 – 27978]**



**170+ published articles in peer-reviewed journals**

■ Common diseases   ■ Intervention  
■ Rare diseases   ■ Prevention

# ESC Guidelines and the aspiration of the ESC virtuous circle



- **ESC has strong tools to support guidelines implementation**
- **Abundance of data show there are large gaps in guidelines implementation**
- **Aim of this CRT is to understand and discuss barriers to implementation from different perspectives**
  - Global
  - Economic
  - Patients
  - Health professionals
  - Industry
  - Health care organization
  - Regulatory systems
  - Acceptability of guidelines
- **At CRT part 2 in July discuss how implementation can be improved**

# ESC Guidelines and the aspiration of the ESC virtuous circle

Eva Prescott

ESC CPG chair 2022-24

● Cardiovascular Round Table on  
'Guidelines implementation' – Part 1