

# Report: National CVD Prevention Coordinators (NCPC) Workshop

ESC Preventive Cardiology 2025 in Milan, Italy

4 April 2025



**EAPC**  
European Association  
of Preventive Cardiology  
 European Society of Cardiology

# Programme

Cardiac Rehabilitation across Europe: Differences between men and women Example “Heart Failure patient”		
12:45 – 12:50	Welcome & Objectives of the workshop	Maryam Kavousi
12:50 – 12:55	Case presentation	Elena Tessitore
12:55 – 13:20	Discussion in groups: <ul style="list-style-type: none"><li>• What are the cardiac rehabilitation referral strategies in your country?</li><li>• What type of cardiac rehabilitation do you offer your patients? (inpatient, outpatient, home-based, tele-rehab)</li><li>• How long is the cardiac rehabilitation program in your country/ how is it structured?</li></ul>	All
13:20 – 13:55	Comparison of outcome	All
13:55 – 14:00	Closing remarks	Maryam Kavousi

Invited expert: Professor Massimo Piepoli



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# Patient case



Dr. Elena Tessitore

# • The history of Mrs J.

65 years old female patient

## **Cardiovascular risks factors:**

- Hypertension,
- Type 2 Diabetes Mellitus,
- Dyslipidemia,
- Obesity (BMI: 32 kg/m<sup>2</sup>),
- Current Smoking (20 pack-years)



## Presenting Complaint:

Progressive shortness of breath for the past 3 months, worse on exertion, associated with bilateral lower limb swelling and orthopnea.



# Physical examination

## Clinical Findings:

BP: 140/90 mmHg

HR: 85 bpm

RR: 18/min

SpO<sub>2</sub>: 96% on room air

Jugular venous distension (+)

Bilateral basal crackles on lung auscultation

S3 heart sound present

2+ pitting edema in both lower limbs



# Investigations:

- **Echocardiogram:** LVH, Left Ventricular Ejection Fraction (LVEF) 35%, global severe hypokinesis
- **BNP:** Elevated at 7000 ng/l
- **Lipid Profile:** LDL 160 mg/dL, HDL 38 mg/dL, Triglycerides 210 mg/dL
- **HbA1c:** 7.8%
- **ECG:** Sinus rhythm, left ventricular hypertrophy



# Coronarography:

2 vessels disease:

Significant stenosis of circonflexe a. and left main a.

Treated with 2 stents





# Patient is clinically stabilised with resolution of dyspnea.

## Medication at discharge :

- ✓ Aspirin cardio 10 mg 1x/ day
- ✓ Ticagrelor (Brilique ) 90 mg 2x/day
- ✓ Beta-blocker (Carvedilol) : 6.25 mg 2x/day
- ✓ Sacubitril-Valsartan ( Entresto) 100mg 2x/day
- ✓ SGLT2 inhibitor (Empagliflozin) 10 mg 1x/day
- ✓ Spironolactone ( Aldactone) 25 mg 1x/day
- ✓ Statin ( Rosuvastatine) 10 mg 1x/ day
- ✓ Loop diuretic (Furosemide) 5 mg 1x/day



# Referral to Cardiac Rehabilitation Program?



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# Group discussions by risk region

- What are the CR referral strategies in your country?
- What type of CR do you offer to your patients?
- How long is the CR program in your country and how is it structured?



Low risk



High risk



Moderate risk



Very high risk



# Presentation of results



## Comparison of outcome

- What are the CR referral strategies in your country?
- What type of CR do you offer to your patients?
- How long is the CR program in your country and how is it structured?

# Participation by European risk regions:

**Low risk:** Norway, Netherlands, UK, Switzerland

**Moderate risk:** Portugal, Italy, Iceland, Finland, Slovenia

**High risk:** Bosnia and Herzegovina, Poland, Türkiye

**Very high risk:** Azerbaijan, Georgia, Latvia, Lithuania, Romania



# Very high risk (presenter: Rahima Gabulova, Azerbaijan)

## Romania:

- 8 large cardiac rehabilitation (CR) facilities, mostly in large cities.
- Many private CR facilities also exist.
- Inpatient CR starts in hospital, lasts 10–16 days.
- Follow-up care continues for 3 months.
- Some facilities offer telemedicine CR programmes.

## Latvia:

- Inpatient CR reimbursement limited to 10 days.
- General Practitioners (GPs) manage follow-up for chronic cardiovascular disease (CVD) patients.

## Lithuania:

- 27 CR centers for post-acute MI
- Inpatient CR lasts 18 days; outpatient CR lasts 14 days.

## General note:

- The group did not address the specific workshop questions due to differing healthcare systems and reimbursement policies for CR.
- Despite differences, most countries offer inpatient and outpatient CR for patients with acute cardiovascular events.

## Georgia and Azerbaijan:

- Very few referrals to inpatient/outpatient CR due to lack of reimbursement.

## Azerbaijan:

- Chronic CVD follow-up managed by cardiac dispensaries and polyclinics.
- Baku (Azerbaijan) has a 300-bed cardiology sanatorium for chronic CVD.
- Phases 3 and 4 of CR guided by cardiologists.
- Ministry of Labour and Social Protection provides 14 days of free sanatorium-resort treatment for individuals with disabilities.



# High risk (presenter: Elnur Smajić, Bosnia and Herzegovina):

## Bosnia & Herzegovina

### 1. Cardiac Rehabilitation referral strategies:

- CR is reimbursed by the health insurance institute
- Referral is made by a primary health care doctor based on medical documentation (e.g., discharge letter).
- Final decision is made by the medical commission of the health insurance institute.
- For post-cardiac surgery patients, CR starts within 1.5 months.
- Professional bodies include:
  - FBiH Physiotherapy Association
  - Association for Physical Medicine and Rehabilitation of FBiH
  - Association of Psychiatrists of the Republic of Srpska

### 2. Types of Cardiac Rehabilitation offered:

- Inpatient and outpatient CR are currently available.
- Home-based and tele-rehabilitation are in development.
- Patients are given home exercise instructions for continued rehabilitation.
- CR is provided in public and private centers, with private sector expanding.
- Available in:
  - Public health centers (physical rehab)
  - Clinical centers (physical medicine & rehabilitation clinics)
  - Specialized rehabilitation institutions

### 3. CR Program duration and structure:

- Early CR exists in hospitals but is not formalized.
- Program includes:
  - Breathing exercises, salt room therapy, swimming, pool exercises, treadmill/bike, walking
  - Conducted in groups of 7–8 patients.
  - Duration: typically, 10–14 days, sometimes 21 days.
- Assessment tools:
  - 6-minute walk test before and after rehabilitation
  - Pre-rehabilitation: cardiology exam, echocardiography, stress test, and possibly 24-hour Holter monitoring



# High risk - continued (presenter: Elnur Smajić, Bosnia and Herzegovina):

## Poland

- Inpatient and outpatient CR are available while tele-rehabilitation is available in some regions only
- Phase II CR is reimbursed
- Referral is made by cardiologists
- CR is provided in public (mainly in-patient) and private centers (mainly out-patient)
- Recently, a nationwide programme of managed care increased the access to CR following MI
- Participation rates:
  - 40% for ACS.
  - 5% for HF.

## Türkiye

- CR services available mainly in tertiary centers, especially post-MI/PCI.
- Phase II and III generally reimbursed.
- Tele-rehabilitation and community-based CR programs expanding.
- Referral rates remain suboptimal.

## General note:

- No gender differences noted, except in rehabilitation goal attainment.





## Moderate risk (presenter: Borut Jug, Slovenia)

### Portugal:

- Referral post-cardiac event (e.g., MI); begins with Phase I (in-hospital), Phase II (outpatient) and Phase III (outpatient).
- Phase II: 2–3 months, 21–36 sessions, 2 to 3 sessions/week, if in the public hospital is under the National Health Service (SNS) and generally free of charge or subject to a small user fee.
- Multidisciplinary: exercise and respiratory training, educational sessions 1x week, CPET (or stress test if CPET is not available), echocardiogram, blood analysis, risk factor management, diet, psychological support, smoking cessation, diabetes care.
- Tailored to CAD, heart failure and valvular patients.
- Patients are provided with home exercise instructions after completing phase II.
- Phase III is lifelong and non-reimbursed; few centers are available.
- Referral rates are rising due to proactive physicians' involvement and more centers available in the country.

### Iceland:

- Starts with Phase I (hospital physical therapy), followed by nurse-led 1-year programme.
- Includes 2–3 follow-up visits, with optional referrals to physical therapy, psychological counselling, dietetics, and diabetes care.
- Focuses on high-risk, post-surgical patients (e.g., CABG, valve surgery).
- Outpatient programmes typically 6 weeks, emphasizing functional recovery through risk factor management and exercise training.
- Delivered by both public and private sectors.

### Finland:

- Broad access of CR for all cardiac patients.
- Options: inpatient, outpatient, home-based for 6 months in groups, or 1-year tele-rehabilitation.
- Most care via outpatient health centres.
- Strong multidisciplinary support and long-term engagement.
- Fully reimbursed; delivered by public and private providers.



## Moderate risk - continued (presenter: Borut Jug, Slovenia)

### Italy:

- Regionally varied, largely inpatient-focused.
- Common after surgery; starts 2–6 weeks post-event.
- Emphasizes clinical assessment, ECG, echocardiography, and therapy—not traditional exercise.
- Strong focus on nutrition and psychological support.
- Duration: 2–3 weeks for PCI or complex cases.
- Fully reimbursed, but availability limited by region.
- Sometimes serves as hospital-to-home transition for complex cases.

### Slovenia:

- Combines hospital (Phase I) and cardiologist referrals.
- Programmes mostly outpatient via regional centres, with 2 inpatient facilities for post-surgical cases.
- Targets patients with CAD or heart failure.
- Standard programme: 36 sessions, includes stress testing, echocardiography, secondary prevention, and patient empowerment.

### Similarities and gaps across these countries:

- Established referral pathways and multidisciplinary approaches are common across all countries with emphasis on timely referral, multidisciplinary care, and integrated support (physical, psychological, lifestyle).
- Cardiac rehabilitation uptake remains suboptimal, despite robust systems.
- Women are consistently underrepresented in programme participation.
- Significant variability in settings: inpatient vs. outpatient delivery.
- Programme duration and components differ by country and healthcare system.
- Reflects both the flexibility and inconsistency of cardiac rehabilitation services across these countries.



## Low risk (presenter: Elena Tessitore, Switzerland)

### Norway:

- Outpatient programmes available
  - Frequency: twice a week for 6-12 weeks
  - Mainly ACS patients (HF only at a few hospitals and private institutions)
  - Only 14% of eligible MI patients offered a comprehensive CR.
- Participation after ACS: 14%–25%.
- Automatic referral system in place at most hospitals.
- Tele-rehabilitation available at some hospitals, but not nationally
- Inpatient rehabilitation programs available at selected private institutions

### Netherlands:

- Outpatient rehabilitation available after ACS:
  - Frequency: twice a week for 6 weeks.
  - Only ~50% of ACS patients actually participate.
- Automatic referral system in place.
- Tele-rehabilitation available, but no national programme.
- Limited inpatient rehabilitation:
  - Mostly private clinics, mainly for heart failure (HF) patients.
  - Rehab for HF: 5% participation, twice a week for 12 weeks.

### United Kingdom:

- Outpatient programmes only, typically:
  - 8–12 weeks duration, twice a week.
  - 4-week waiting list is common.
- Home-based and tele-rehabilitation programmes are more common than outpatient.
- Hybrid format (mix of home and outpatient) is offered.
- Automatic referral system in place.
- Participation rates:
  - 50% for ACS.
  - 15% for HF.
- Government targets for 2029:
  - 80% participation for ACS.
  - 33% participation for HF.
- No inpatient cardiac rehabilitation in the UK.



## Low risk - continued (presenter: Elena Tessitore, Switzerland)

### Switzerland:

- National guidelines exist for cardiac rehabilitation.
- Outpatient and inpatient programmes available.
  - Duration: typically 4–6 weeks.
- Tele-rehabilitation only implemented during COVID-19; currently no standardised national tele-rehabilitation programme.
- Programmes reimbursed by health insurance.

### General note:

- Women participate less than men across all countries.
- Uncoordinated care and regional inconsistencies in programme access and delivery.
- Tele-rehabilitation options vary widely and are not consistently available or standardised.



# Summary

- Women participate less than men in cardiac rehabilitation programmes
- Uptake remains suboptimal despite clear indications
- Variability in settings across the countries: duration and programme components (inpatient or outpatient)
- Uncoordinated care and inconsistency between regions of the same country
- Reimbursements changes according to countries
- Availability is constrained by capacity
- Early cardiac rehabilitation is not “officially structured”
- Tele-rehabilitation and home-based rehabilitation are underdeveloped



# National Coordinators workshop

4 April 2025 at ESC Preventive Cardiology in Milan



22 participants from 19 countries

Thank You

Danke

Grazie

Tak

Merci

Dankje

Teşekkürler

Paldies

Obrigado

Ačiū

Dziękuję

Təşəkkür

Edirəm

Hvala

Kiitos

Мултумесц

გმადლობთ



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