Azerbaijan Society of Cardiology

ZURICH HEART HOUSE
LONDON HEART HOUSE

Royal Brompton and Harefield hospitals NHS
Guy's and St Thomas' NHS Foundation Trust

HFA Heart Failure Association

Master Course in Heart Failure

25 BAKU

AZERBAIJAN

30th May - 1st June

Why Talk About Heart Failure Now?

Ulvi Mirzoyev, MD, PhD, MBA, MSc, FESC

Universal Definition and Classification of Heart Failure (HF)

Definition

HF is a *clinical syndrome* with current or prior

- ***Symptoms and or signs caused by a structural and/or functional cardiac***

And corroborated by at least one of the following:

- ***Elevated natriuretic peptide levels***
- ***Objective evidence of cardiogenic pulmonary or systemic congestion***

Stages

AT RISK *(STAGE A)*	**Patients at risk for HF, but without current or prior symptoms or signs of HF and without structural cardiac changes or elevated biomarkers of heart disease**
PRE-HF *(STAGE B)*	**Patients without current or prior symptoms or signs of HF with evidence of <u>one</u> of the following:** • *Structural Heart Disease* • *Abnormal cardiac function* • *Elevated natriuretic peptide or cardiac troponin levels*
HF *(STAGE C)*	**Patients with current or prior symptoms and/or signs of HF caused by a structural and/or functional cardiac abnormality**
ADVANCED HF *(STAGE D)*	**Severe symptoms and/or signs of HF at rest, recurrent hospitalizations despite GDMT, refractory or intolerant to GDMT, requiring advanced therapies transplantation, mechanical circulatory support, or palliative care**

Classification By EF

HF with reduced EF (HFrEF)
- *HF with **LVEF < 40%***

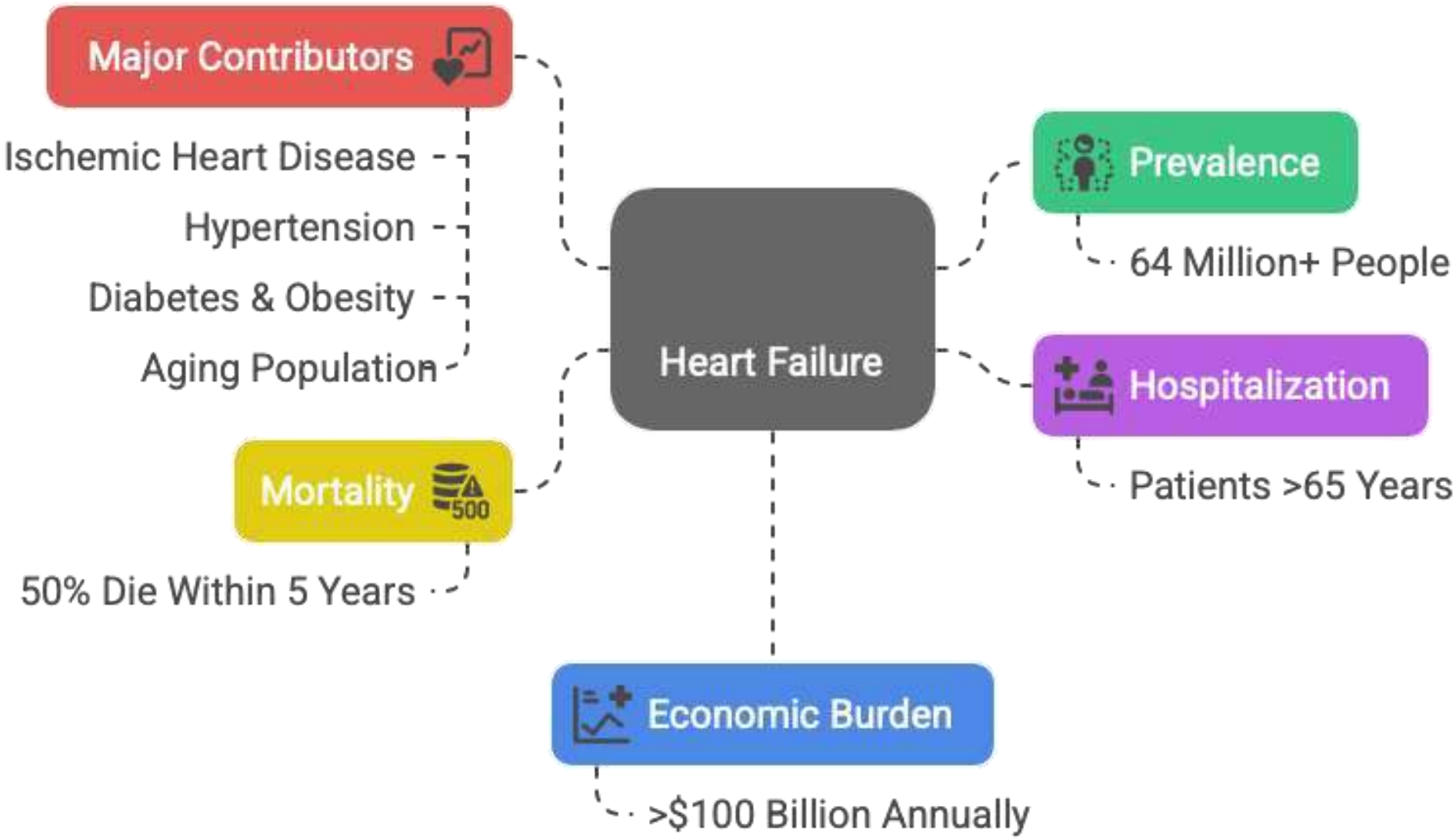
HF with mildly reduced EF (HFmrEF)
- *HF with **LVEF 41-49%***

HF with preserved EF (HFpEF)
- *HF with **LVEF > 50%***

HF with improved EF (HFimpEF)
- *HF with a baseline LVEF of < 40%, a 10-point increase from baseline LVEF, and a second measurement of LVEF of > 40%*

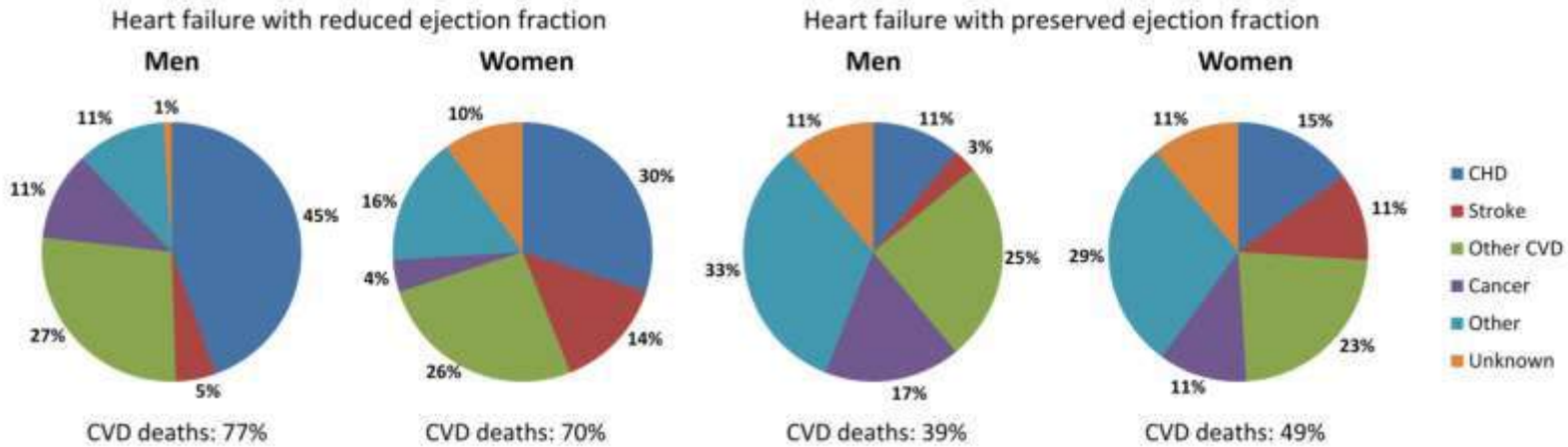
Language matters! The new universal definition offers opportunities for *more precise communication* and description with terms including ***persistent HF*** instead of "stable HF," and ***HF in remission*** rather than "recovered HF."

Global Impact of Heart Failure



Heart Failure Trends

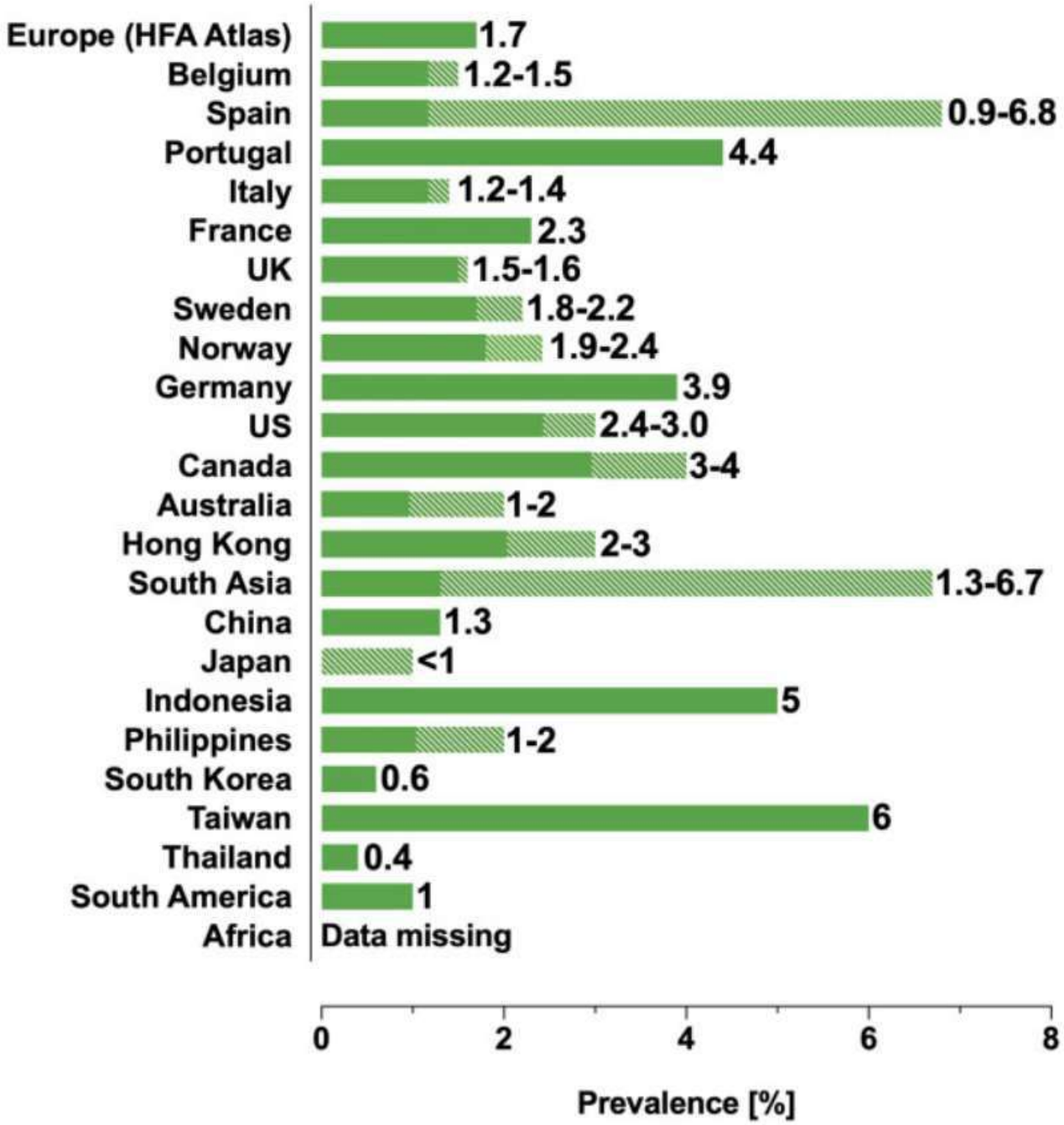
Trend	Description
Disease Cause	Rheumatic & valvular to ischemic, hypertensive & metabolic
HFpEF	Rising, especially in elderly, women, diabetics
Patient Profile	Younger patients with multiple comorbidities common
Contributing Factors	Urbanization, poor diets, sedentary lifestyles
HF Burden	Projected 30–40% increase in LMICs
Emerging Contributors	Climate change, pollution, air quality
Healthcare Preparedness	Systems unprepared for chronic HF management

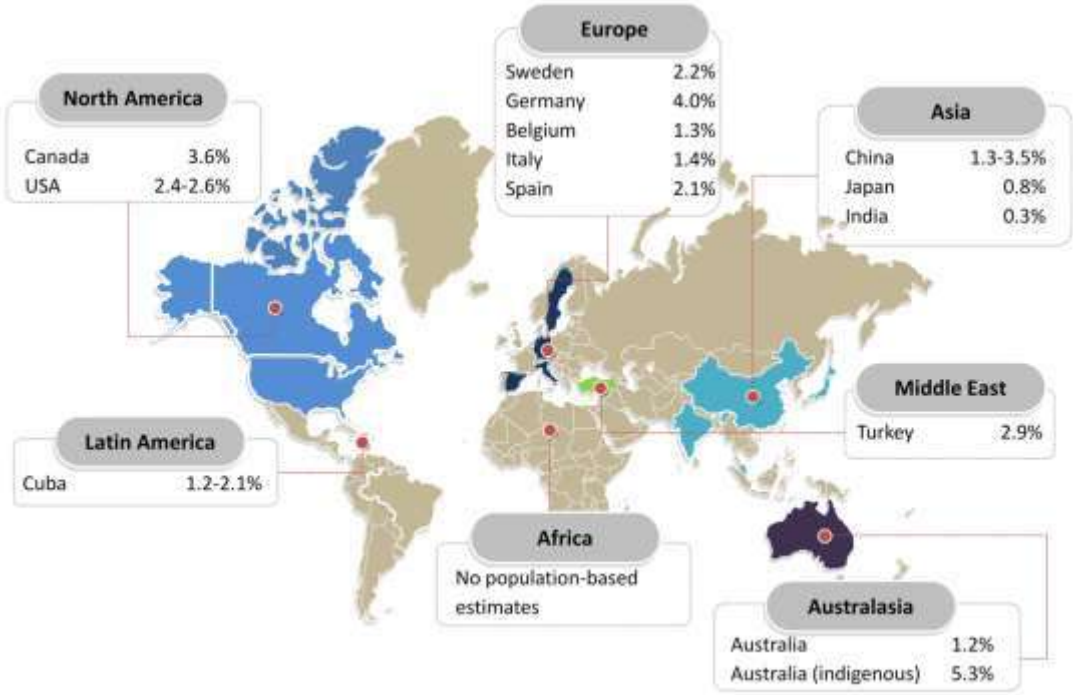


Underlying causes of death by gender and left ventricular ejection fraction in 463 patients in the Framingham Heart Study

*Lee DS, Gona P, Albano I, Larson MG, Benjamin EJ, Levy D, Kannel WB, Vasan RS. A systematic assessment of causes of death after heart failure onset in the community: impact of age at death, time period, and left ventricular systolic dysfunction. Circ Heart Fail 2011;**4**:36–43.*

Prevalence of Heart Failure Worldwide





Gianluigi Savarese , Peter Moritz Becher†, Lars H. Lund1, Petar Seferovic, Giuseppe M.C. Rosano, and Andrew J.S. Coats. Global burden of heart failure: a comprehensive and updated review of epidemiology. Cardiovascular Research (2022) **118**, 3272–3287
https://doi.org/10.1093/cvr/cvac013

Heart Failure Prevalence Trends

1

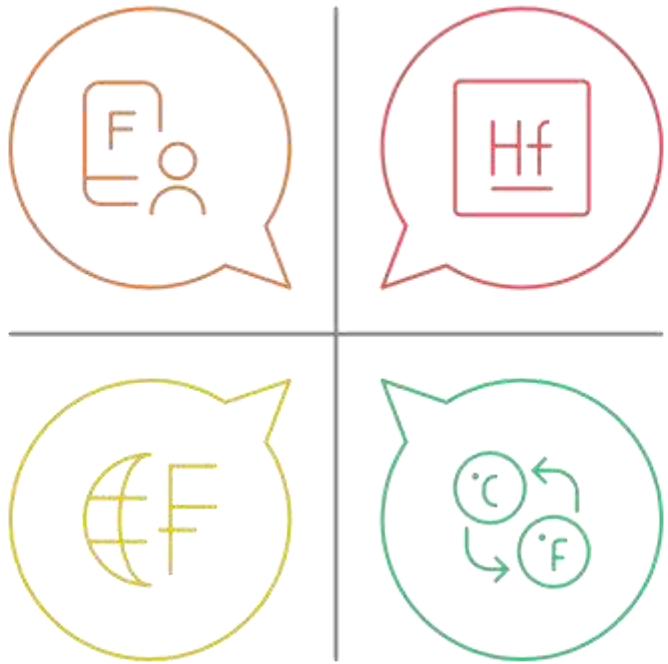
HF in Older Individuals

HF in older individuals is increasing due to aging populations.

2

HFpEF

HFpEF is becoming the most common form of heart failure.



3

HF in South America and Africa

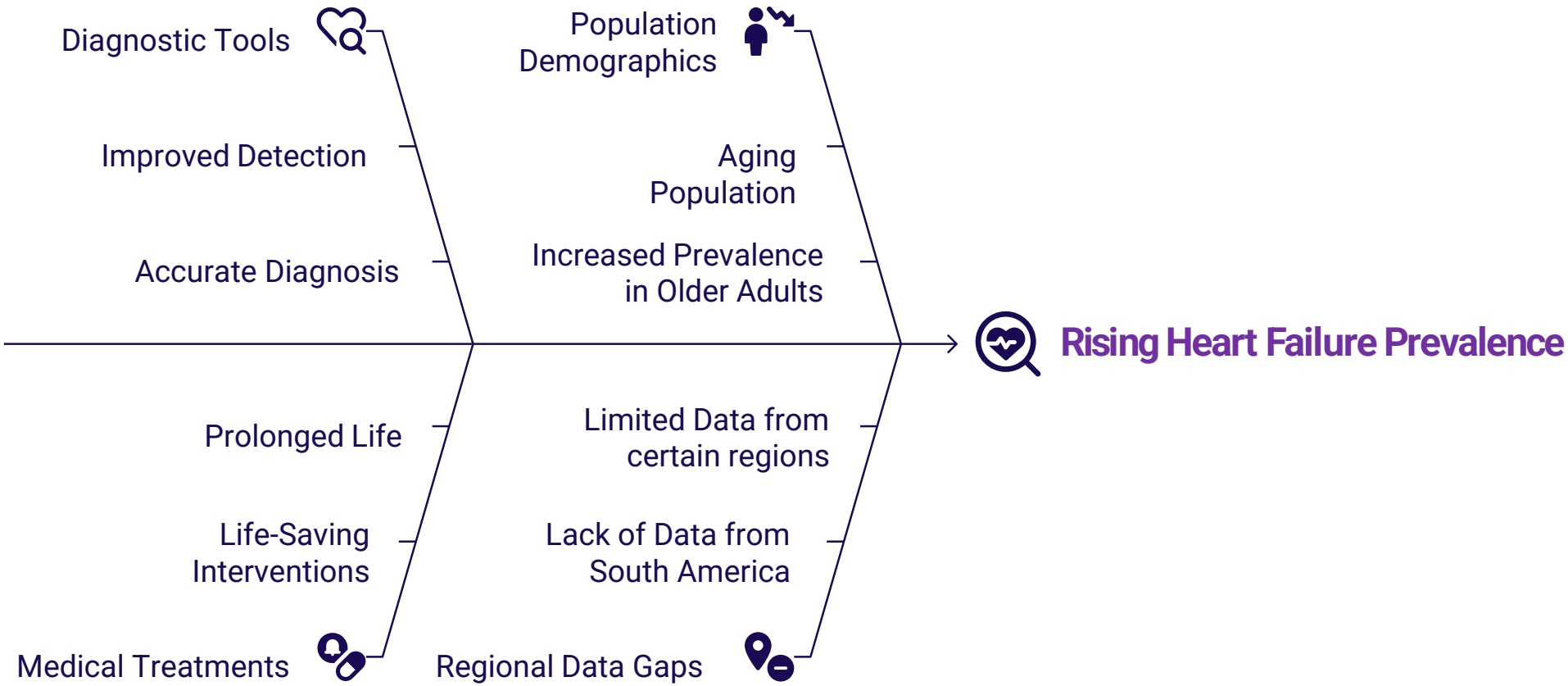
HF in South America and Africa lacks sufficient data.

4

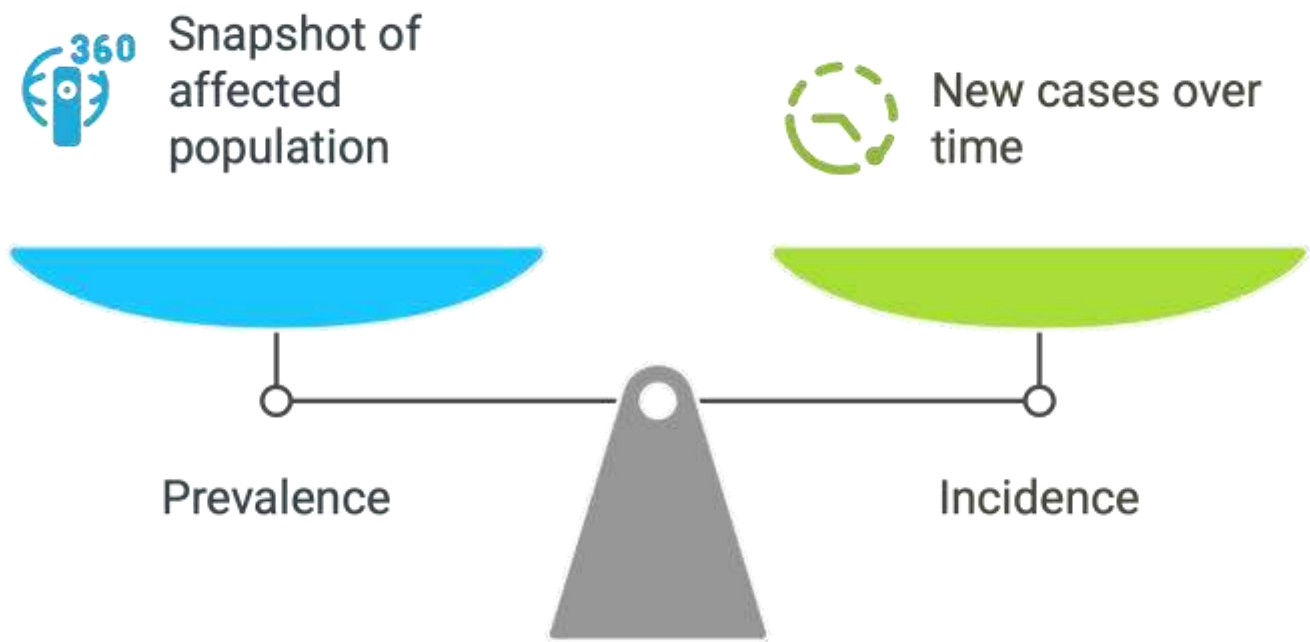
HFrEF

HFrEF prevalence is stable or declining due to better treatments.

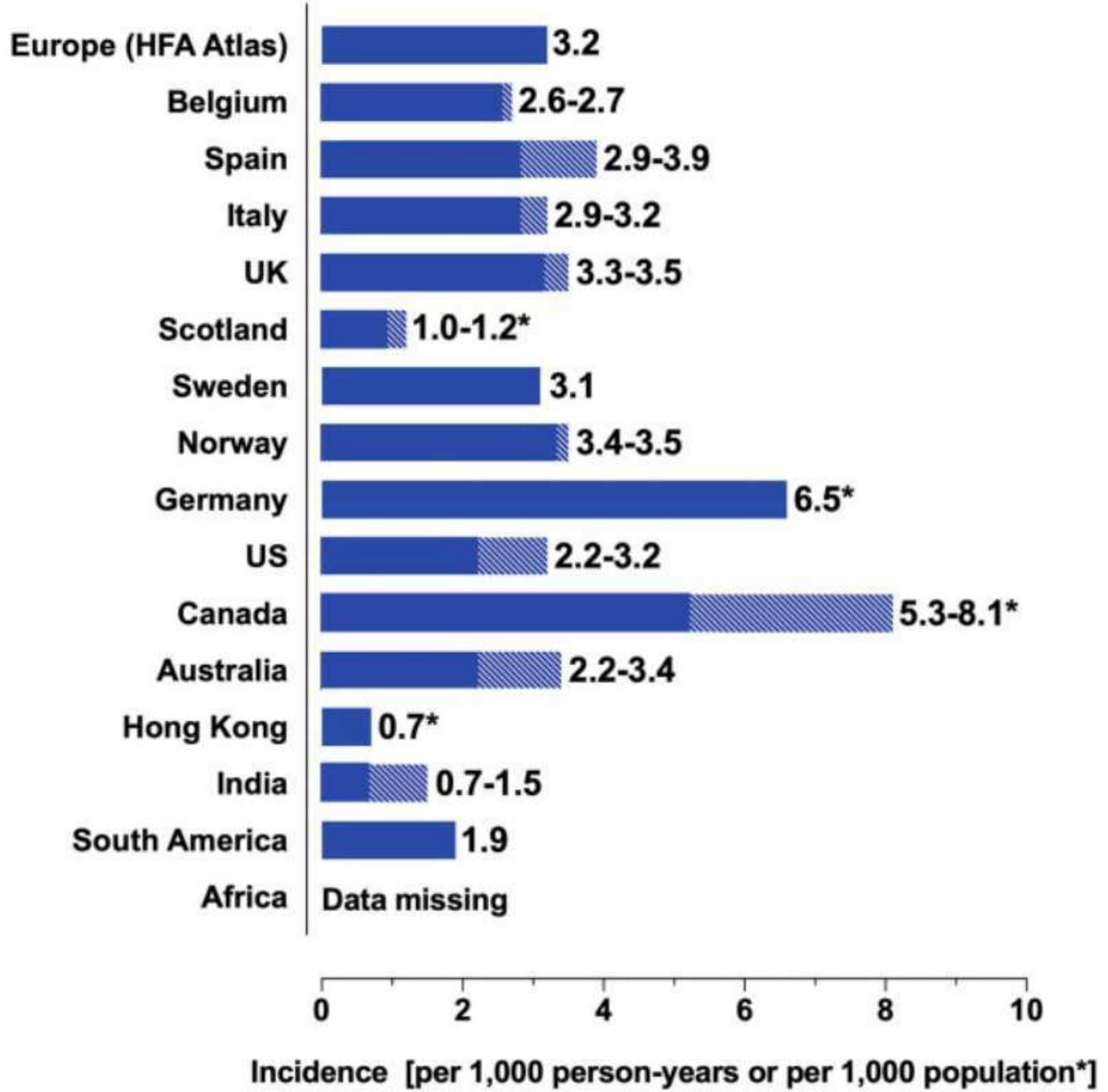
Analyzing the Increasing Prevalence of Heart Failure



Understanding HF Prevalence and Incidence



Incidence of Heart Failure Worldwide



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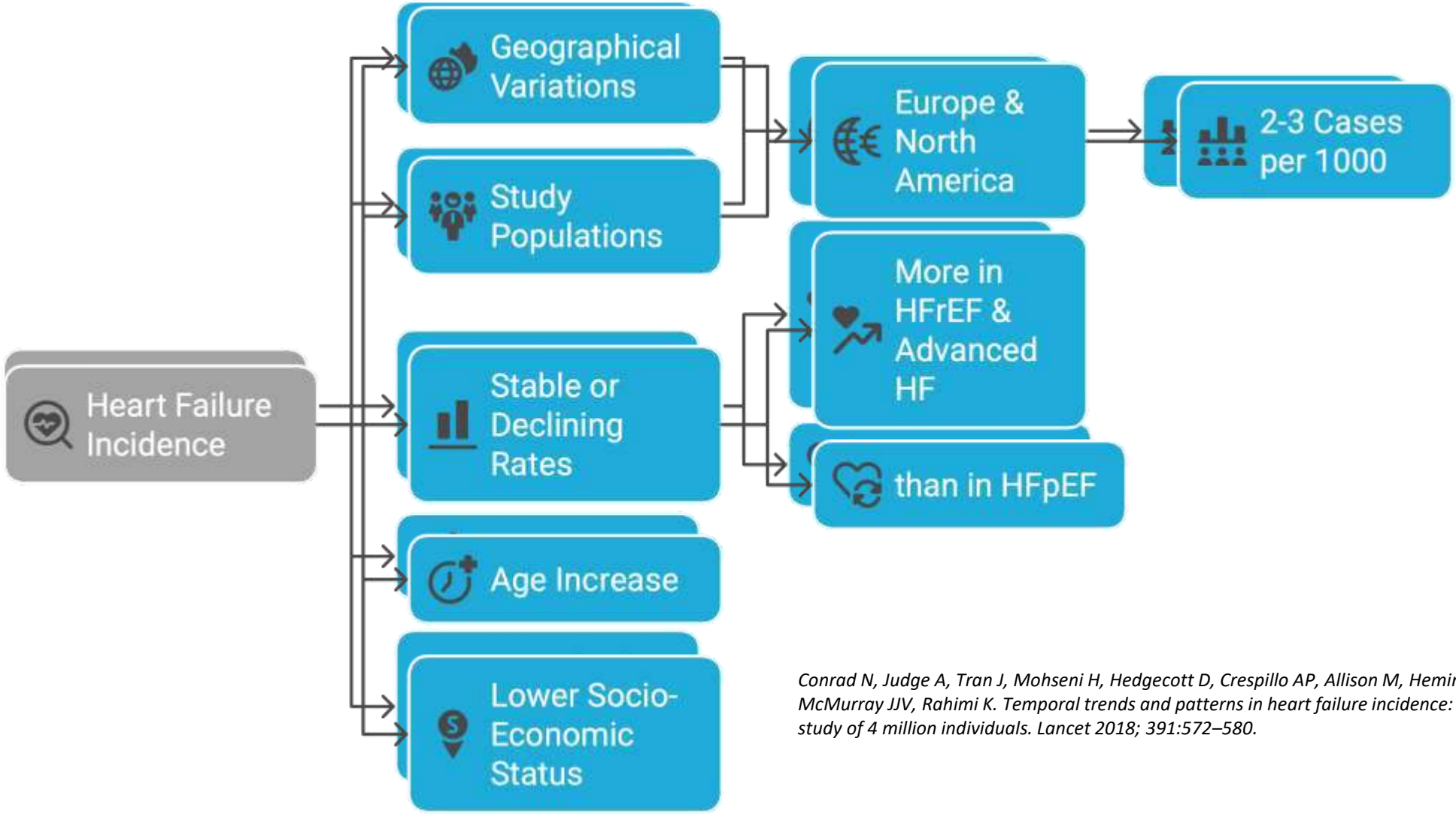
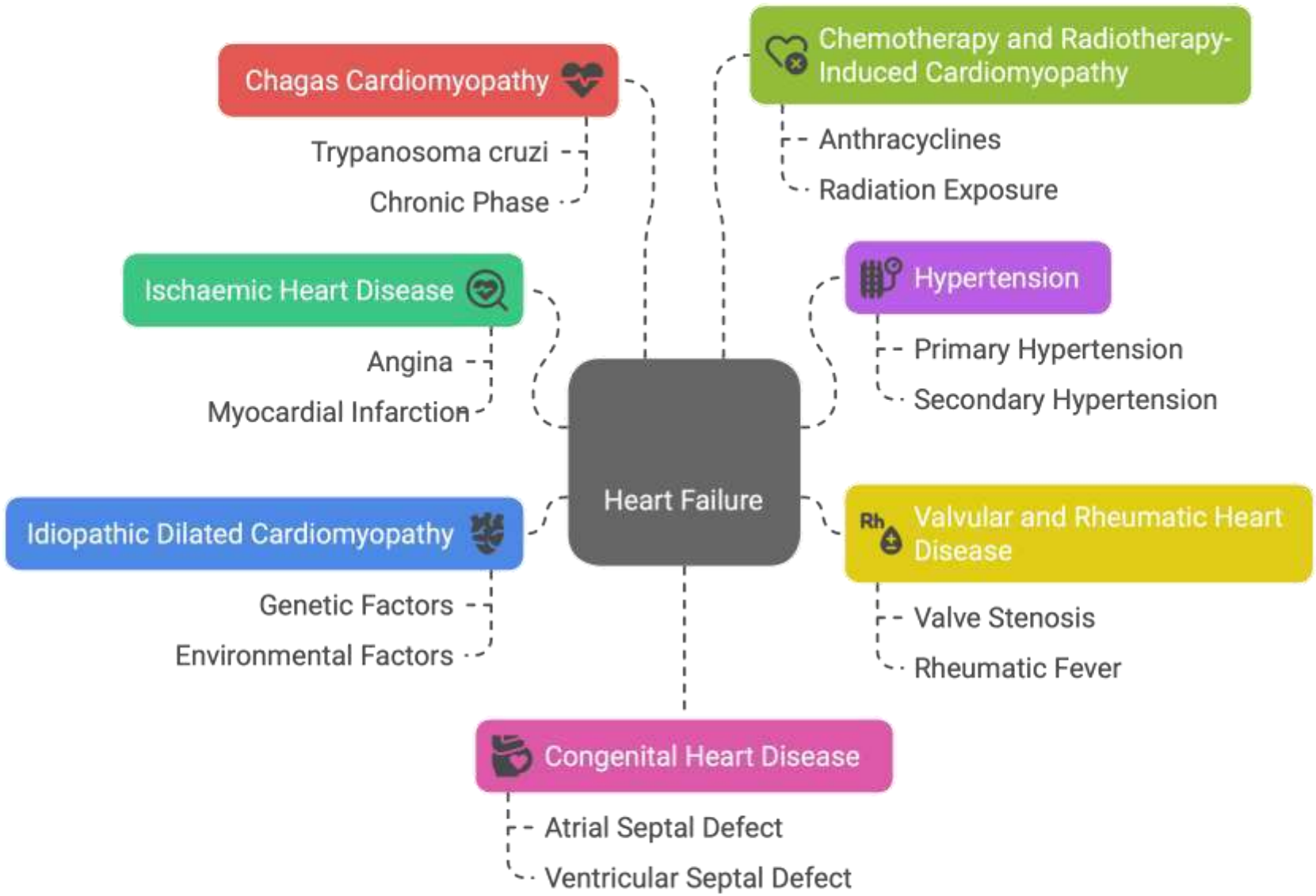
In developed countries, incidence rates of HF have reached a plateau during the last decades and are now substantially decreasing

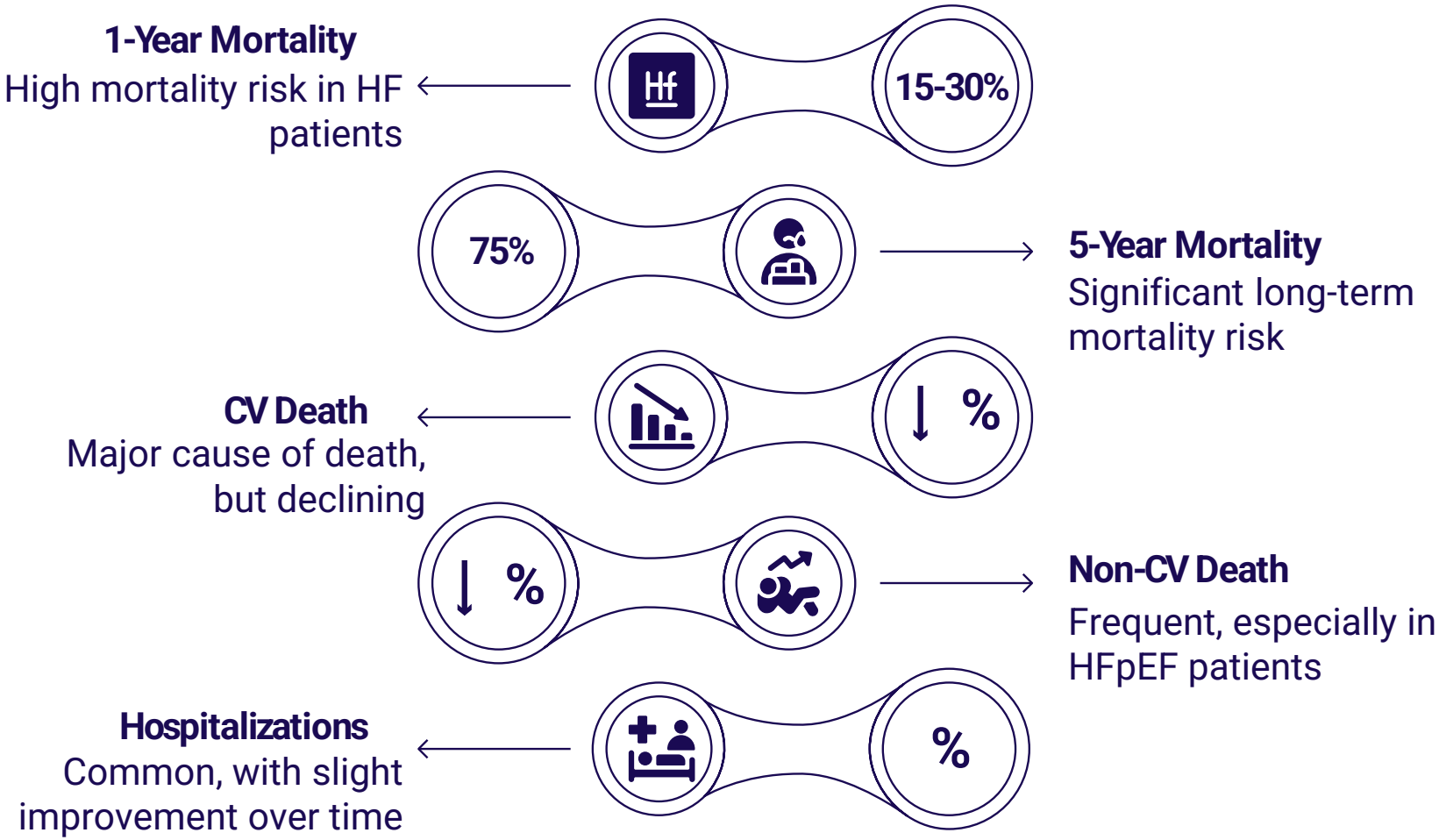


Conrad N, Judge A, Tran J, Mohseni H, Hedgecott D, Crespillo AP, Allison M, Hemingway H, Cleland JG, McMurray JJV, Rahimi K. Temporal trends and patterns in heart failure incidence: a population-based study of 4 million individuals. Lancet 2018; 391:572–580.

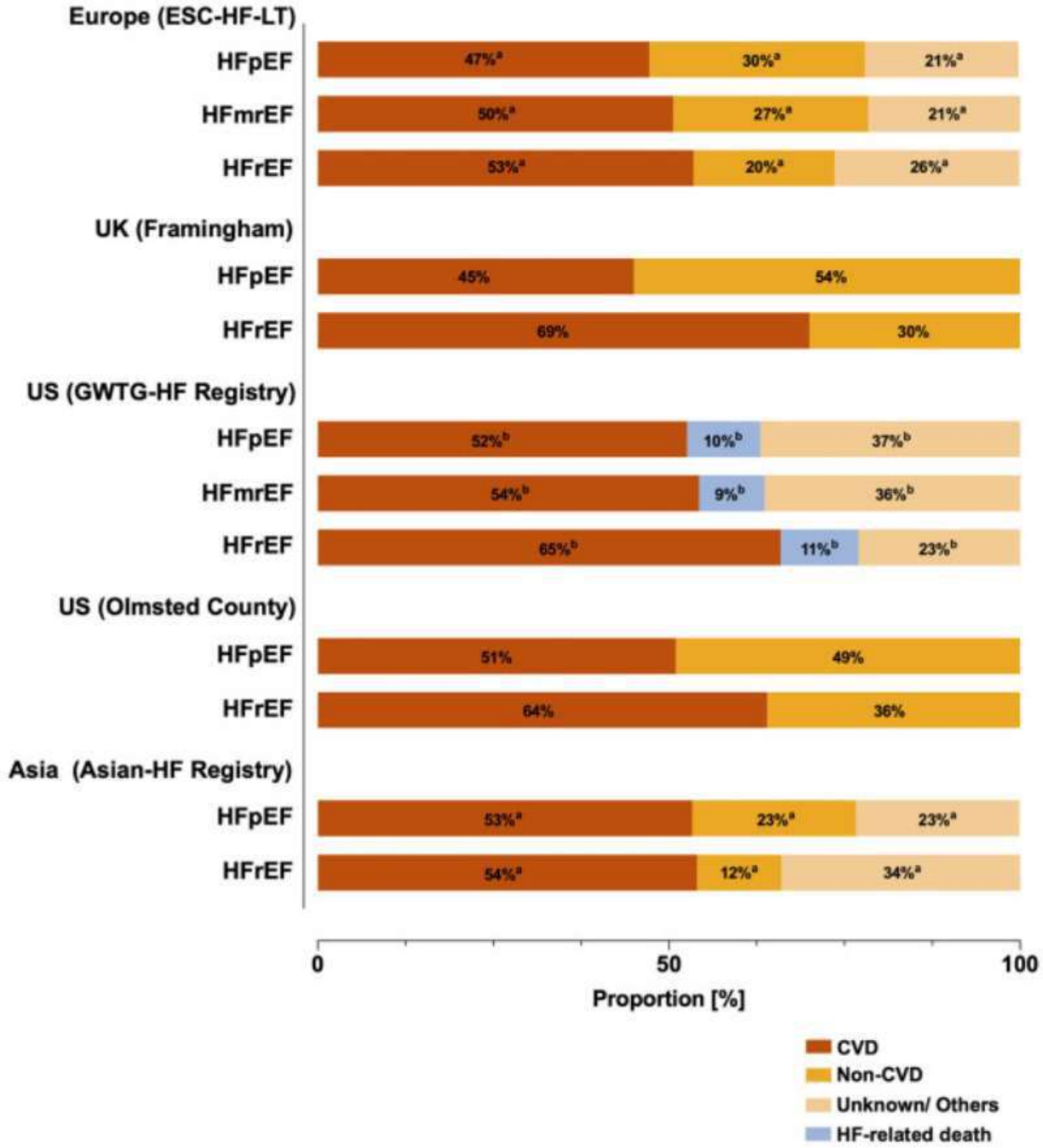
Etiology of Heart Failure



Mortality and Hospitalization Trends in Heart Failure

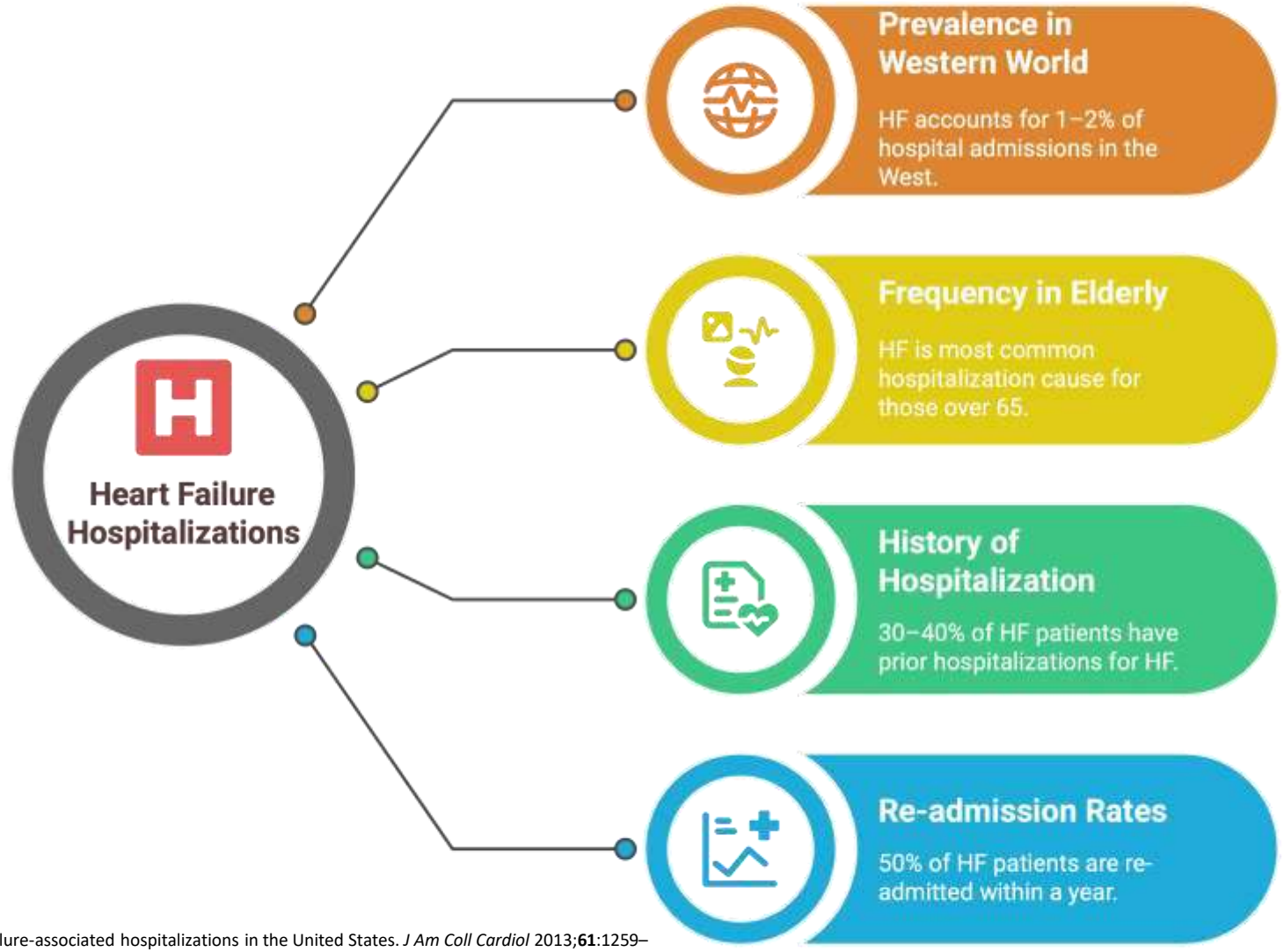


Causes of death in heart failure patients worldwide



Gianluigi Savarese 1,2†, Peter Moritz Becher1,3†, Lars H. Lund1,2, Petar Seferovic4,5, Giuseppe M.C. Rosano6, and Andrew J.S. Coats7. Global burden of heart failure: a comprehensive and updated review of epidemiology. Cardiovascular Research (2022) **118**, 3272–3287 https://doi.org/10.1093/cvr/cvac013

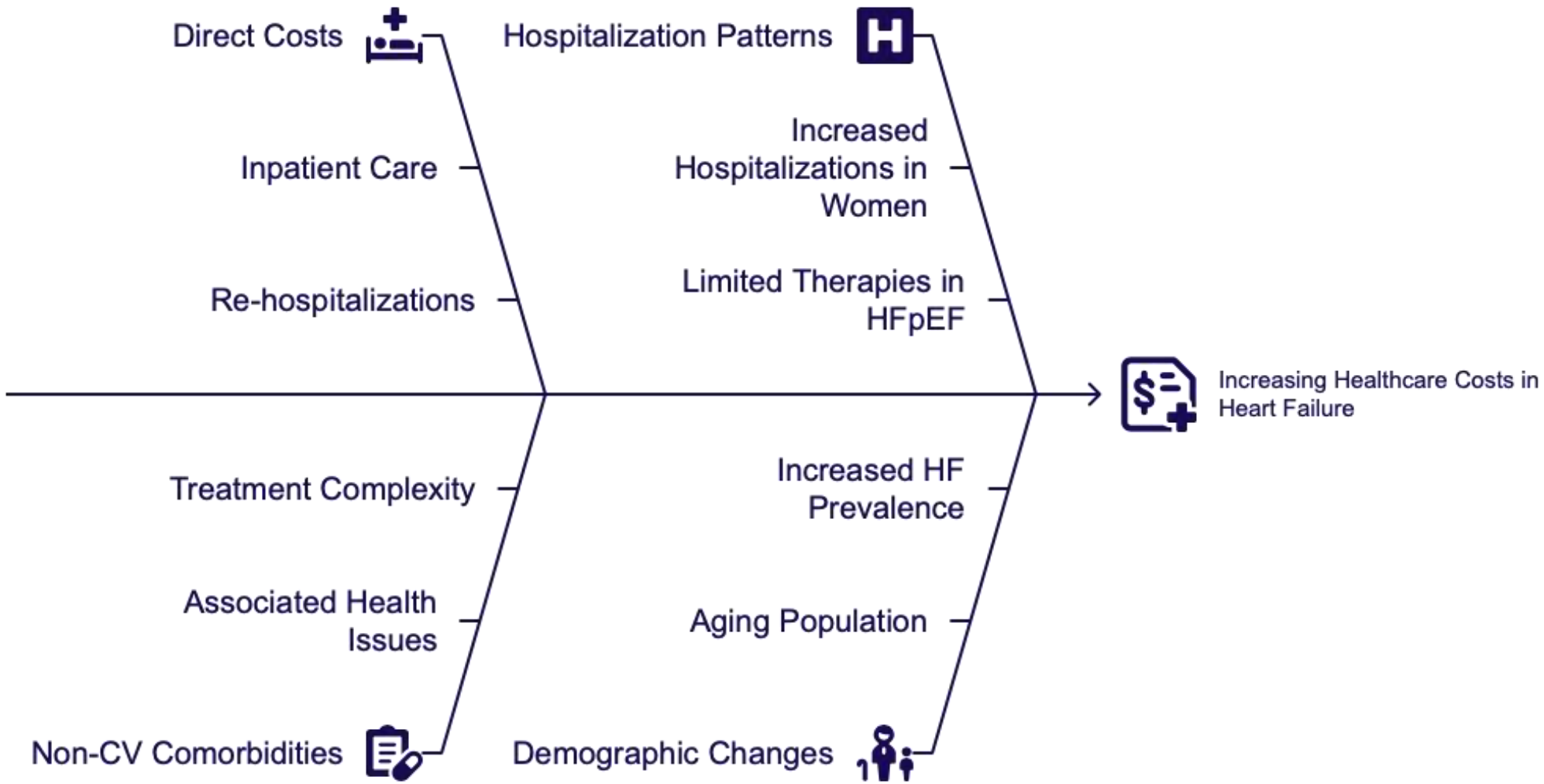
Heart Failure Hospitalizations

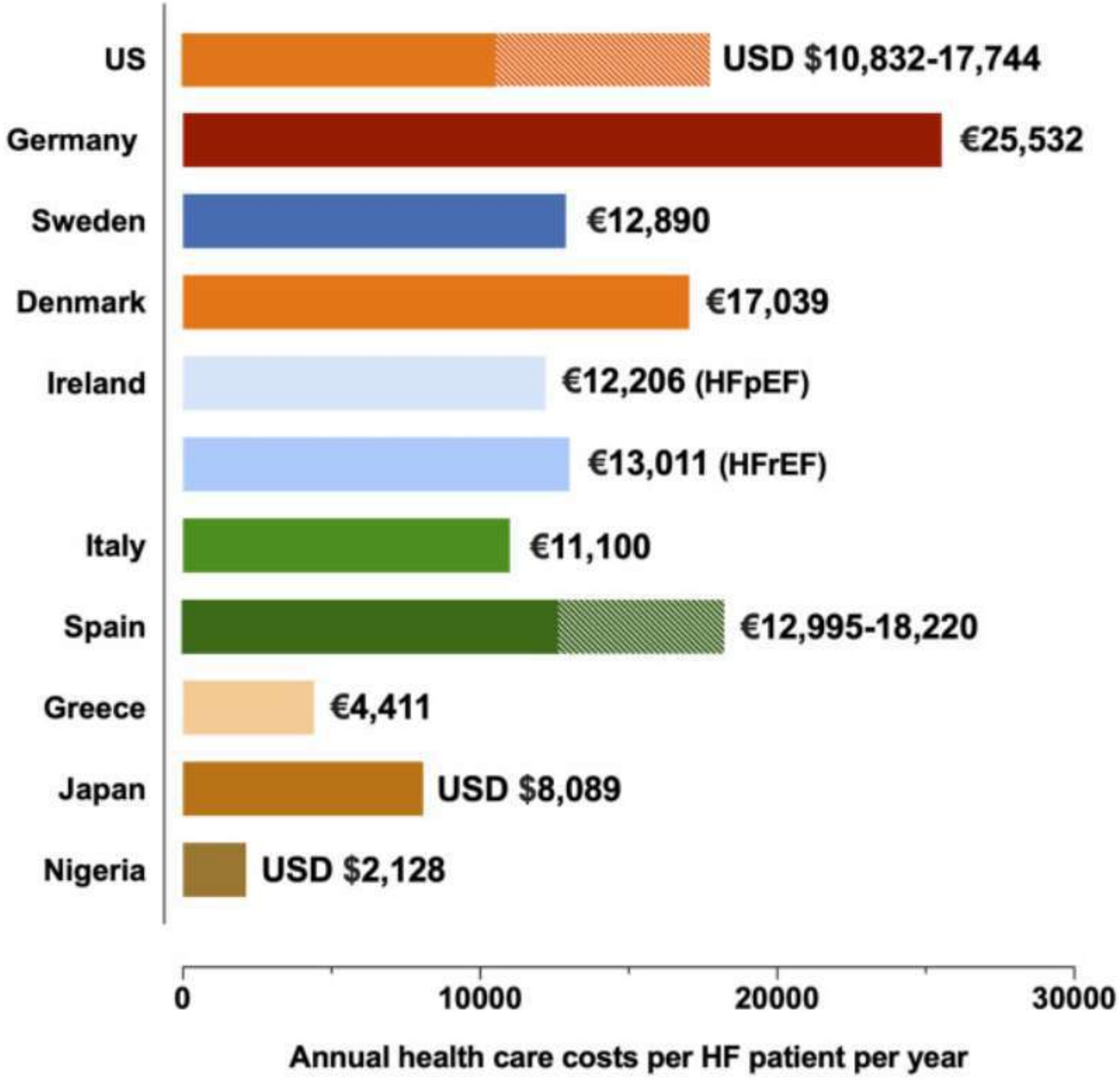


Blecker S, Paul M, Taksler G, Ogedegbe G, Katz S. Heart failure-associated hospitalizations in the United States. *J Am Coll Cardiol* 2013;**61**:1259–1267.

Nichols GA, Reynolds K, Kimes TM, Rosales AG, Chan WW. Comparison of risk of rehospitalization, all-cause mortality, and medical care resource utilization in patients with heart failure and preserved versus reduced ejection fraction. *Am J Cardiol* 2015;**116**: 1088–1092.

Analyzing the Rising Healthcare Costs in Heart Failure





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Global Burden of Heart Failure

Prevalence

Prevalence 1-3% in general adult population

Overall prevalence ↑

Prevalence in HFrEF ↔

Prevalence In HFpEF ↑

Incidence

Incidence 1-20 cases per 1,000 person-years or per 1,000 population

Incidence stable/ declining ↔

Incidence in HFrEF ↓

Incidence in HFpEF ↘

Mortality

Mortality remains high

30-day Mortality	~2-3%
1-year Mortality	~15-30%
3-year Mortality	~30-50%
5-year Mortality	~50-75%

CVD HFreF ↓

Non-CVD HFpeF ↑

Costs

Annual health care costs up to €25,500 per year

Increasing due to major demographic changes (>65 years)

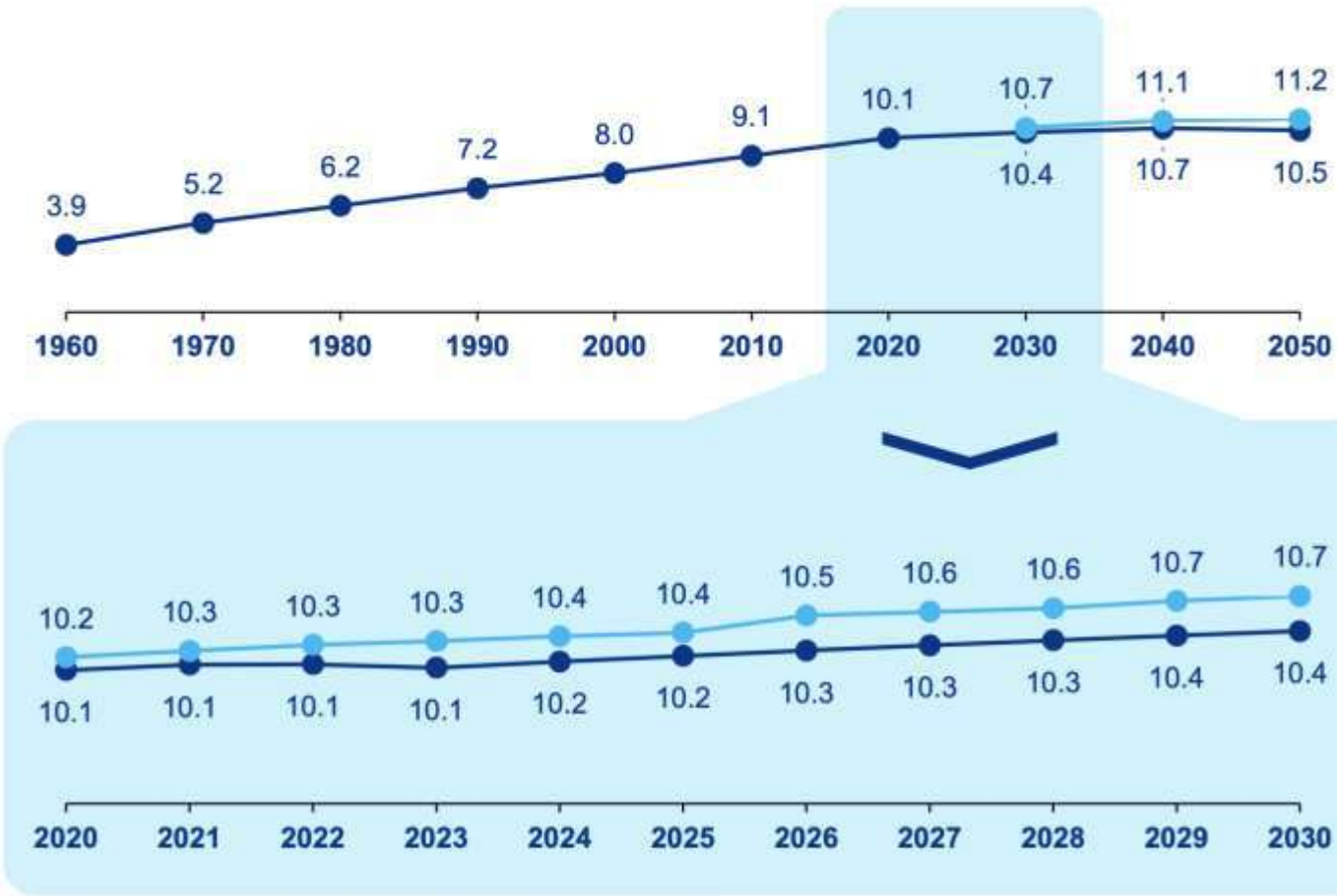
<u>Main cost drivers:</u>

- Directs costs (~70%)
- Non-CVD comorbidities
- Invasive procedures
- Medications/Diagnostics
- Outpatient visits

Population Trends and Growth Rates

Azerbaijan Society of Cardiology

Azerbaijan's population growth, mln people



CAGR 2024-2050

+0.3% WHO

+0.1% World Bank

CAGR 2024-2030

+0.5% WHO

+0.4% World Bank

Sources: The State Statistical Committee, World Health Organization, World Bank Group

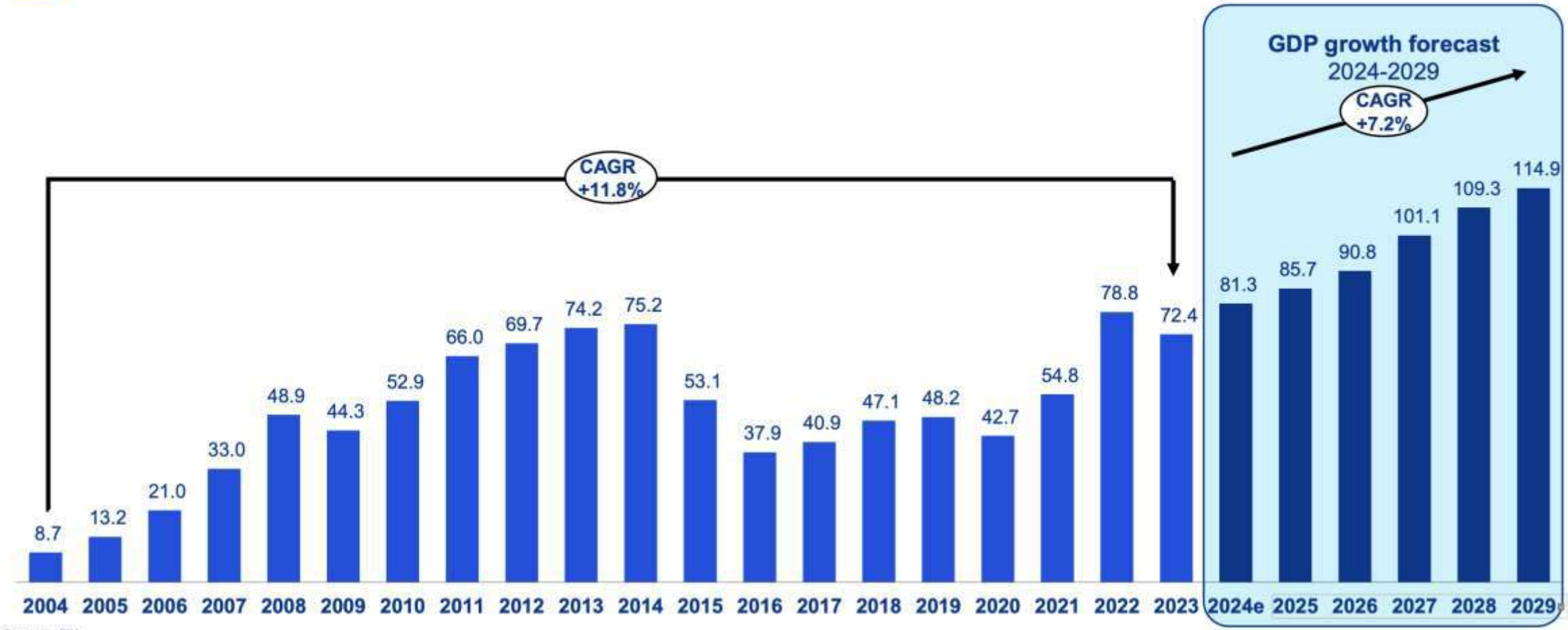
Comments

- Even though Azerbaijan population grew on about 1 million people in every decade in the past, it is expected to have limited growth in future
- According to forecasts of World Bank and World Health Organization population is going to grow by +0.4-0.5% annually until 2030 and by +0.1-0.3% till 2050, reaching 10.5 – 11.2 mln people
- This dynamic demonstrates that demand on medical services is not likely to grow fast organically
- However, other crucial factors might influence medical services demand (e.g. population welfare, life expectancy, average age, government programs, incl. reimbursement, population lifestyle, urbanization level, etc.)

Even though Azerbaijan GDP demonstrated fluctuations for the last 20 years, international agencies expect its growth by on average +7.2% annually

Azerbaijan Society of Cardiology

Gross Domestic Product of Azerbaijan, bn USD

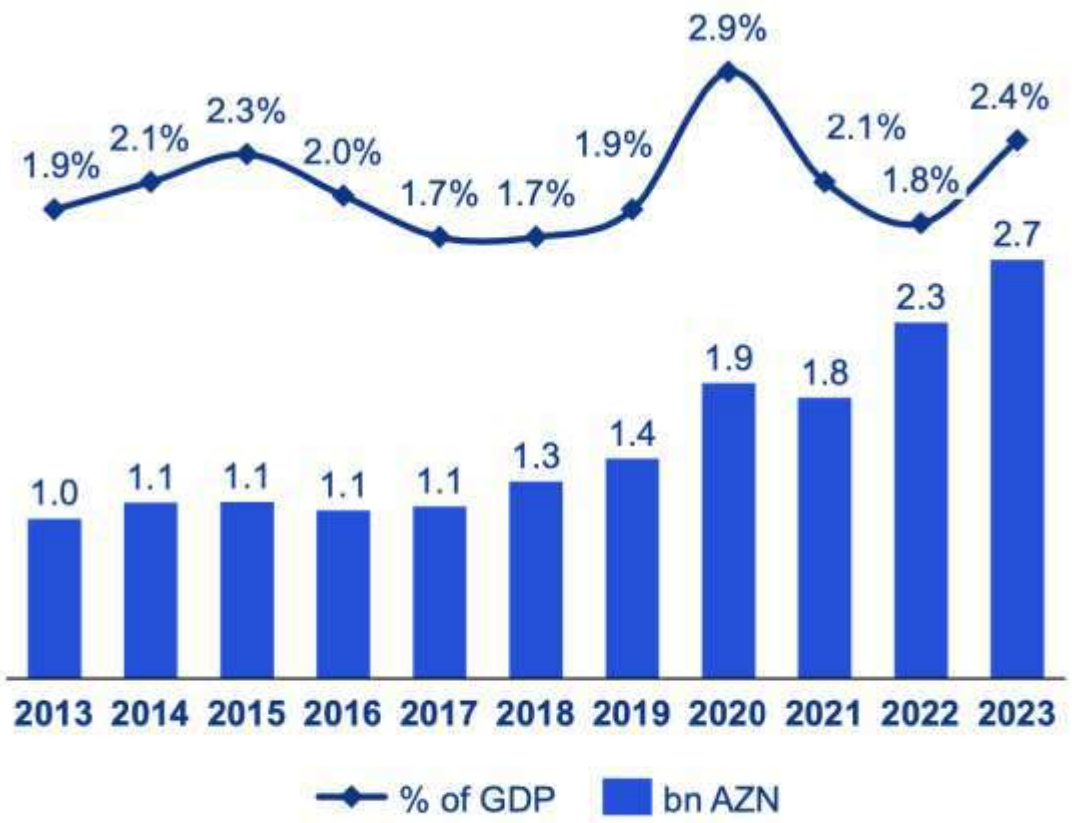


Sources: EIU

Healthcare GDP share and global benchmarks

Azerbaijan Society of Cardiology

Share of sector «Human health and social work activities» in GDP



Share of sector in other regions, % of GDP

European Union	6.2%
South Korea	9.7%
Turkey	4.6%
Russian Federation	7.4%
Kazakhstan	3.9%

Comments

- The sector's monetary contribution rose from 1.0 billion AZN in 2013 to 2.7 billion AZN in 2023, reflecting healthcare and social service investments
- The sector's GDP share fluctuated between 1.7% and 2.9% from 2013 to 2023, peaking at 2.9% in 2020, likely due to increased COVID-19 spending
- Azerbaijan's healthcare sector, contributing 2.4% to GDP in 2023, lags behind regions like the EU (6.2%) and South Korea (9.7%), which have more developed healthcare systems. Russia (7.4%) and Turkey (4.6%) also allocate larger shares, while Kazakhstan is closer at 3.9%. Despite growth, Azerbaijan has room for further healthcare investment to match global standards

Sources: The State Statistical Committee, Eurostat

Healthcare System in Azerbaijan

Payor - SAMHI

The State Agency on Mandatory Health Insurance

MoH

AZƏRBAYCAN RESPUBLİKASI SƏHİYYƏ NAZİLİYİ

University

Public health

Research Hospitals

Private Insurance

TƏBİB

Tibbi Ərazi Bölmələrini İdarəetmə Birliyi

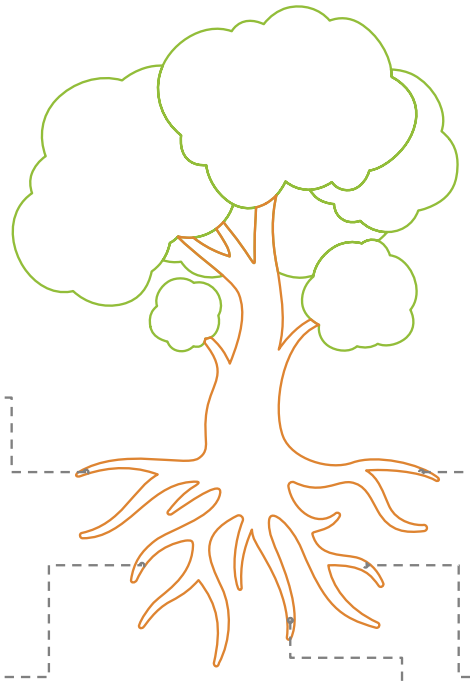
Patient/Care reciever

Public Hospitals with autonomic governance

Private Hospitals

Public Healthcare Facilities

Inefficient cardiovascular care in Azerbaijan due to systemic issues



Fee-for-service

Prioritizes quantity over quality, inflating costs.

Human resource shortage

Rural areas lack qualified healthcare staff.

Absent quality metrics

Difficult to assess and improve care effectiveness.

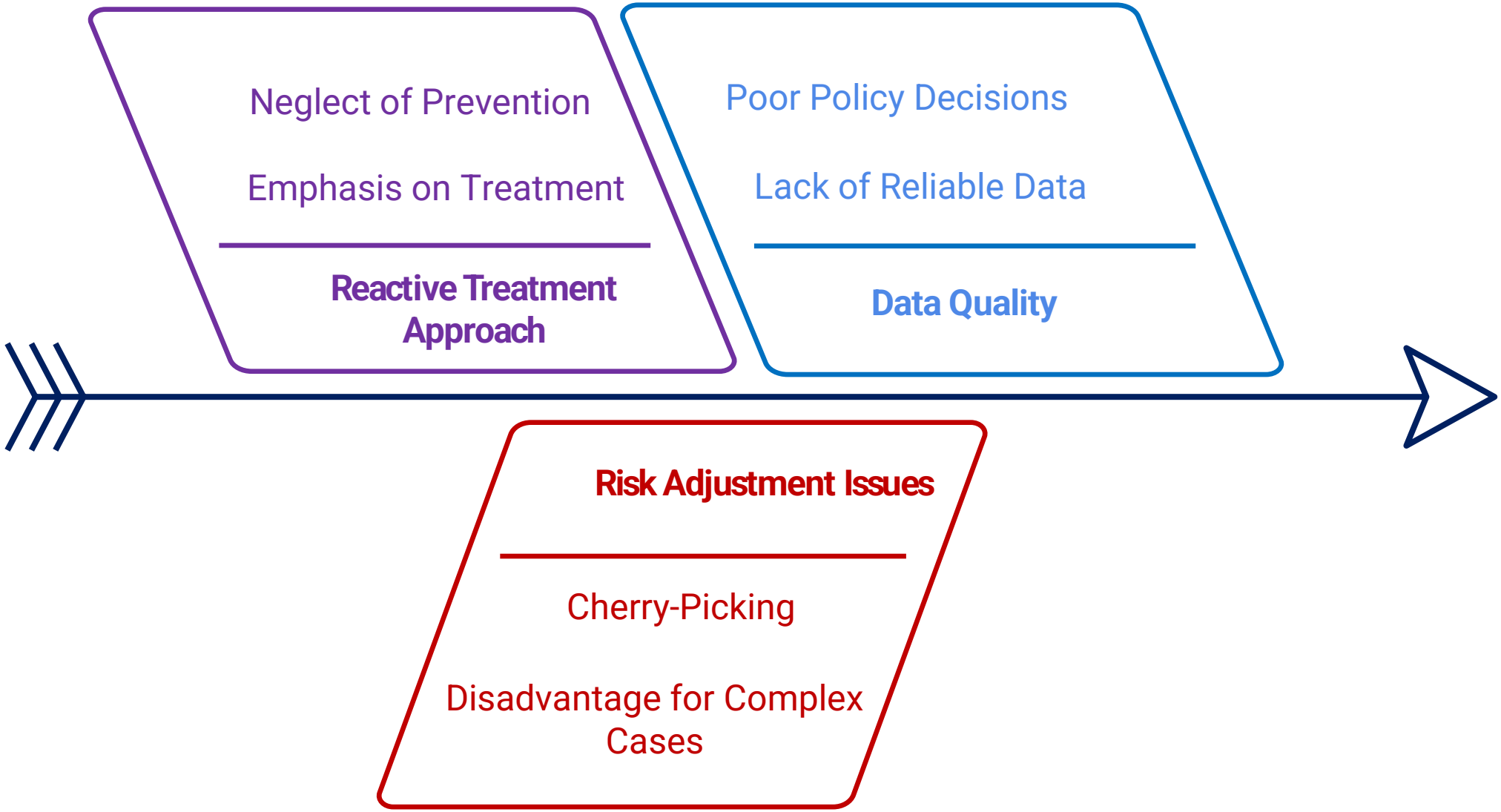
Geographic disparities

Rural areas lack access to services.

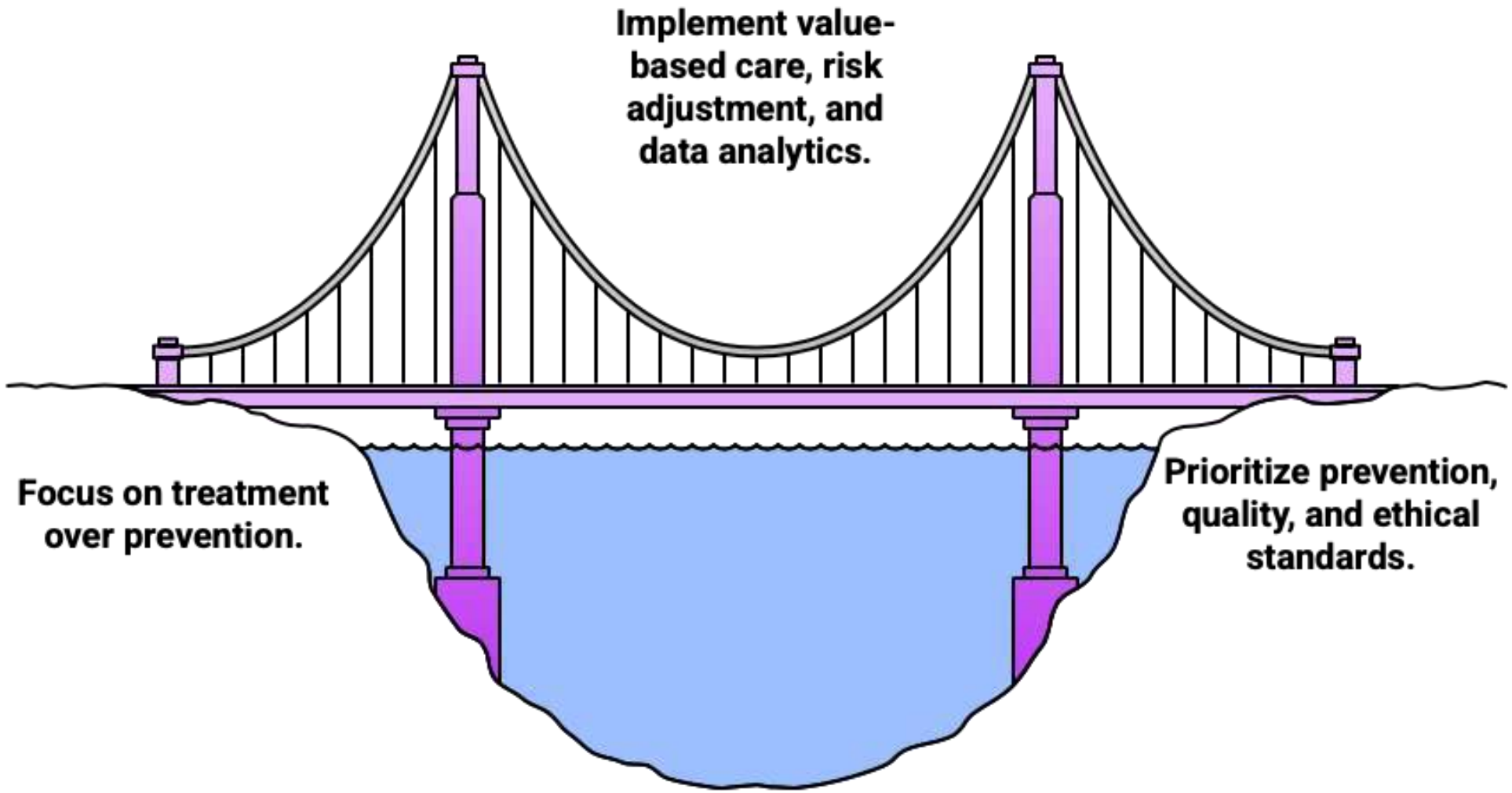
No gatekeeping

Specialists are overburdened with primary care tasks.

Challenges in Azerbaijan's Cardiovascular Care



Azerbaijan's Healthcare System: Transition to Proactive and Value-Driven Care



Heart Failure Challenges

Underestimated Burden

Lack of registries leads to underestimated burden. This poses challenges in resource allocation.

Late-Stage Admissions

Increasing hospitalizations often occur at late stages. This complicates treatment and increases mortality.

Younger Onset Age

Heart failure onset occurs at a younger age. This is when compared to Western Europe.

High Disease Prevalence

High prevalence of hypertension, ischemic heart disease, and diabetes. These are major contributing factors.

Low Therapy Rates

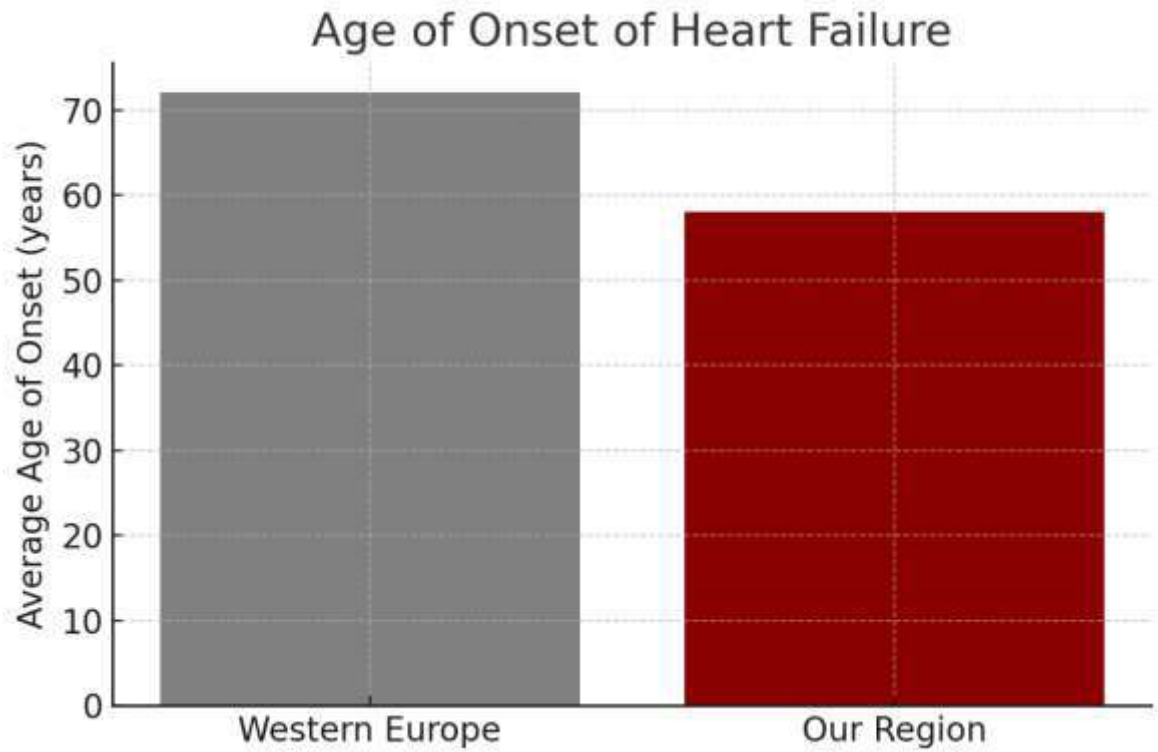
Low rates of guideline-directed medical therapy. This impacts treatment effectiveness and patient outcomes.

Limited Programs

Limited heart failure programs, follow-up systems, and structured care. This affects long-term management.

Fragmented Linkage

Fragmented referral pathways and weak primary care linkage. This hinders coordinated patient care.



Challenges in National Heart Failure Management

Heart Failure in Azerbaijan

↓

No data, no registries

→ **EuroHeart opportunity**
We can't manage what we can't measure

← **No incentives**
for hospitals/providers to manage HF patients

→ **No quality-adjusted reimbursement**

↓

Reimbursement is TRANSACTIONAL

EuroHeart

ESC
European Society of Cardiology

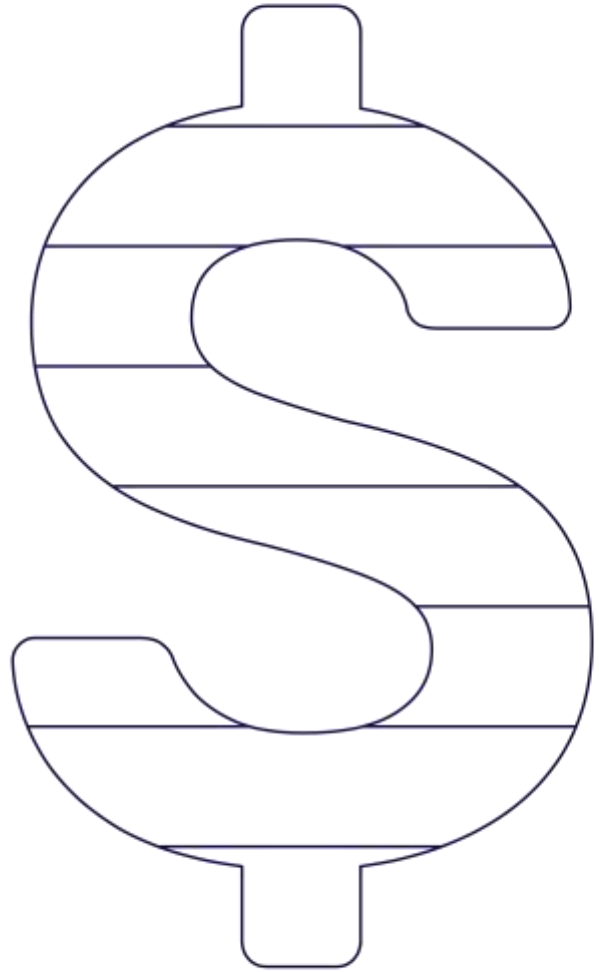
Reimbursement in place for

- PCI
- ICD-CRTs
- TAVI
- Open Surgery

But:

- Volume-Based
- No Continuity of care
- Not OUTCOMES-oriented
- Push providers to overuse OPERATIONS

Challenges in Healthcare Reimbursement



PCI

Reimbursement for Percutaneous Coronary Intervention

ICD-CRTs

Reimbursement for Implantable Cardioverter-Defibrillators and Cardiac Resynchronization Therapy

TAVI

Reimbursement for Transcatheter Aortic Valve Implantation

Open Surgery

Reimbursement for Traditional Surgical Procedures

Volume-Based

Reimbursement based on the number of procedures

Lack of Continuity of Care

Absence of ongoing patient management

Not Outcomes-Oriented

Focus on procedures rather than patient results

Overuse of Operations

Tendency to perform unnecessary surgeries

Foundations of Heart Failure Care

Heart Failure Clinics

Specialized clinics reducing readmissions and improving survival rates

Guideline-Directed Therapy

Evidence-based medical treatments enhancing patient outcomes

Digital Tools

Utilizing technology for remote monitoring and chronic care

Policy Support

Essential governmental and organizational backing for healthcare initiatives

Multidisciplinary Teams

Collaboration of diverse healthcare professionals for comprehensive care

Patient Education

Empowering patients to actively participate in their care

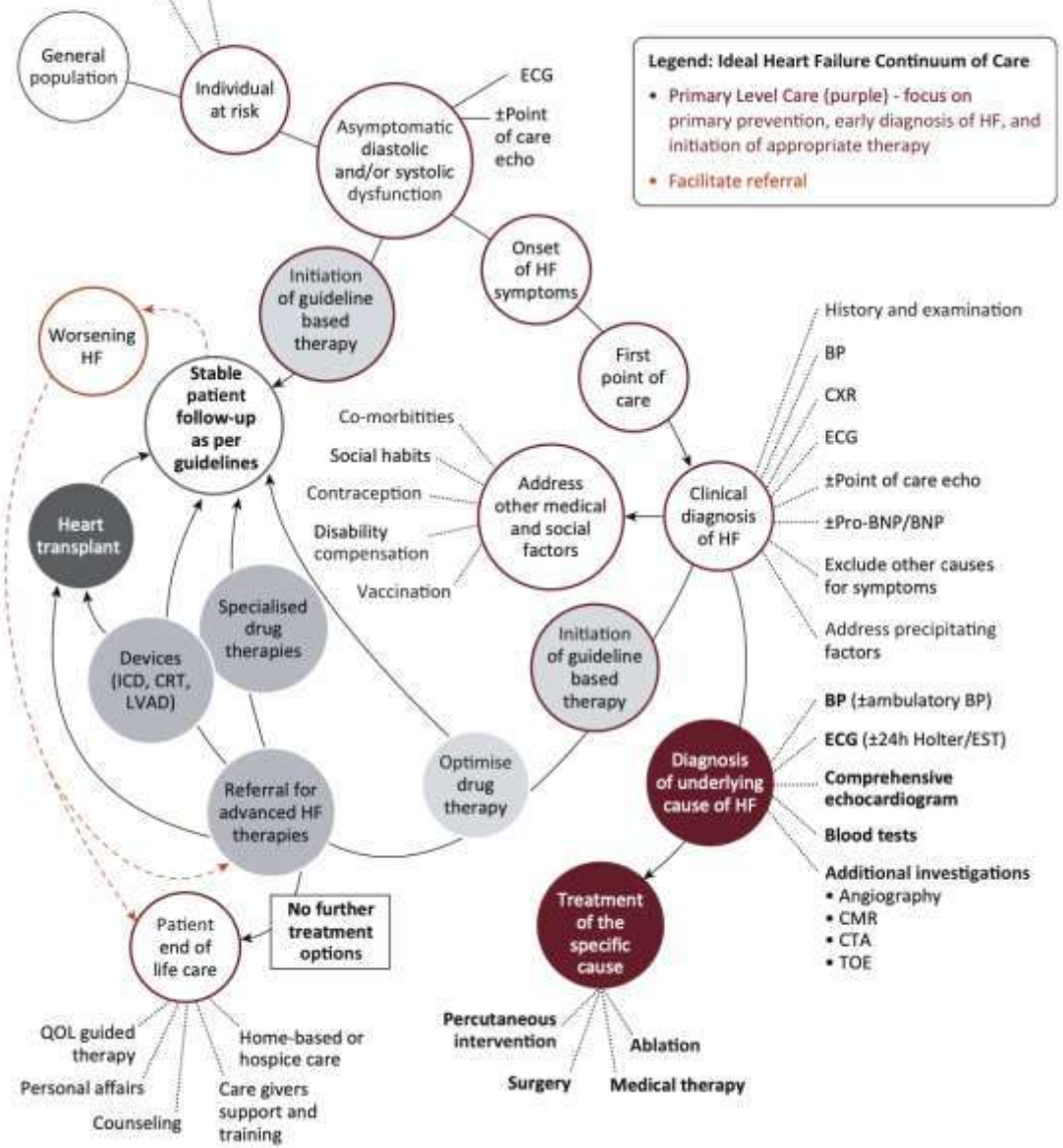
Quality Registries

Data-driven initiatives improving healthcare quality

Ideal Heart Failure Continuum of Care

RISK FACTOR SCREENING – BP, Cholesterol, blood sugar, HR (ECG), BMI, waist circumference, urine dipstick, HIV test

BE ALERT: Peripartum women, history of HF in pregnancy/postpartum, positive family history of SCD or heart disease, inflammatory conditions - infectious (e.g. viral, Chagas) or non-infectious (e.g. autoimmune, sarcoidosis), previous chemotherapy, amyloidosis



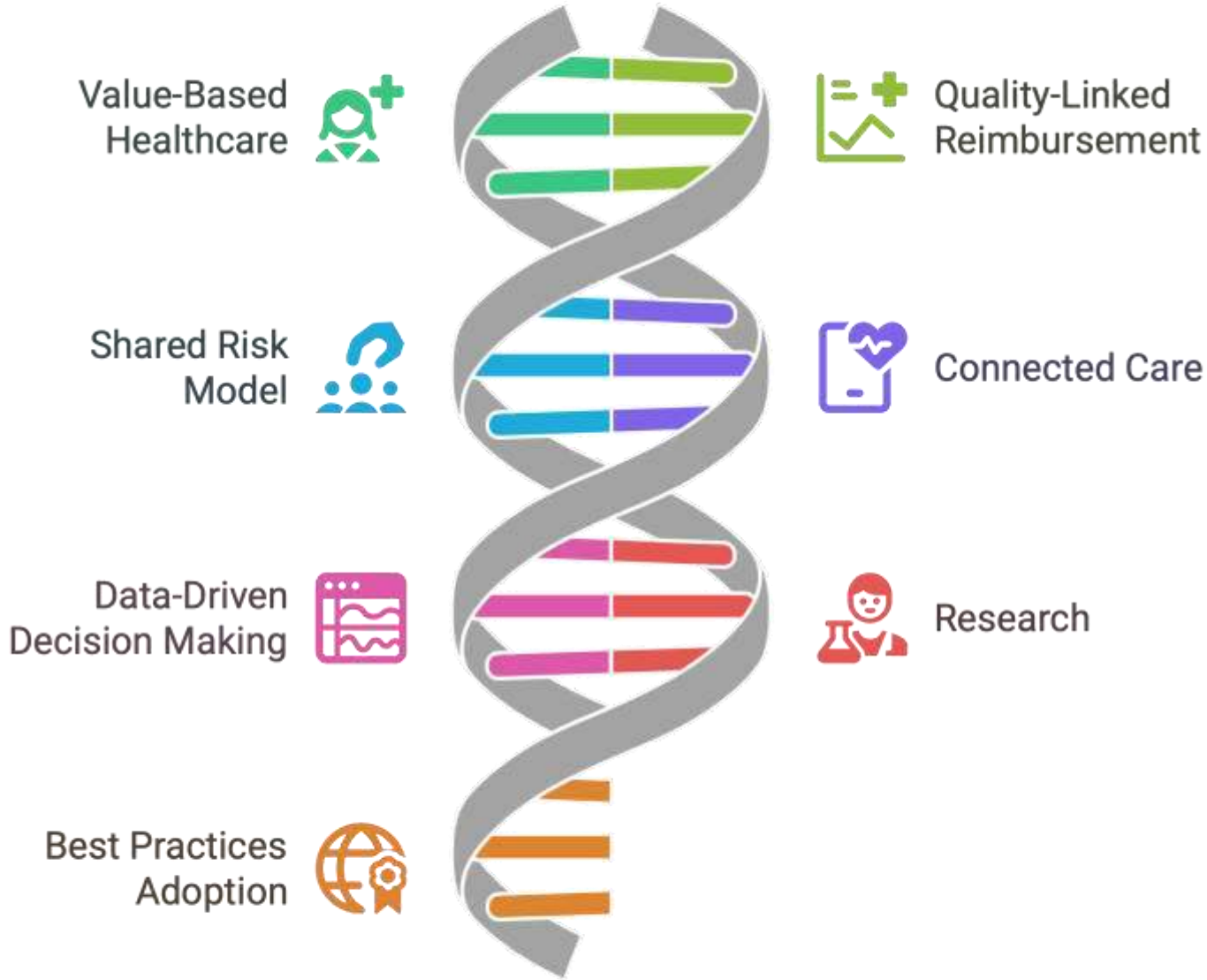
Legend: Ideal Heart Failure Continuum of Care

- Primary Level Care (purple) - focus on primary prevention, early diagnosis of HF, and initiation of appropriate therapy
- Facilitate referral

WORLD HEART FEDERATION

AN INTEGRATED APPROACH TO PATIENT CARE

Strategies for Healthcare Improvement



THANK YOU

Together, we can rewrite the story of heart failure in our region.

Let’s commit to:

- Smarter systems
- Earlier action
- Stronger collaboration

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+994 50 210 35 50