

# THE REAL WORLD EVIDENCE OF CHRONIC HEART FAILURE: FINDINGS FROM 41,413 PATIENTS OF THE ARNO DATABASE

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## BACKGROUND

- \*HF is a major public health issue that affects as many as 23 million people worldwide.
- \*HF is associated with a high burden of mortality, morbidity and increasing healthcare costs.
- Patients with \*HF included in RCTs are selected on the basis of eligibility criteria and do not fully represent the real world population of patients followed in clinical practice.
- Patients enrolled in specialty registries also maintain a certain level of selection because most of them are enrolled in cardiology wards only (often of high quality of care standards).

## AIMS

- The purpose of this study is to have a more representative picture of the clinical epidemiology of patients with \*HF, analyzing a database of 5 Italian local health authorities including nearly 2,500,000 subjects.
- Further, the incidence and causes of re-hospitalizations and the costs due to \*HF have been evaluated.

## METHODS

### DATA SOURCE

- Analysis for the retrospective observational study were carried out from the ARNO CardioVascular Observatory (<http://osservatorioarno.cineca.org>), a population-based database.
- ARNO Observatory routinely collects and integrates Italian National Health System (INHS) administrative data for each single patient:
  - patient demographics
  - outpatient drug prescriptions
  - hospital discharges
  - imaging and lab tests prescriptions
- Demographic information were anonymised, according to Italian rules on the protection of privacy.

### HOSPITALIZATIONS

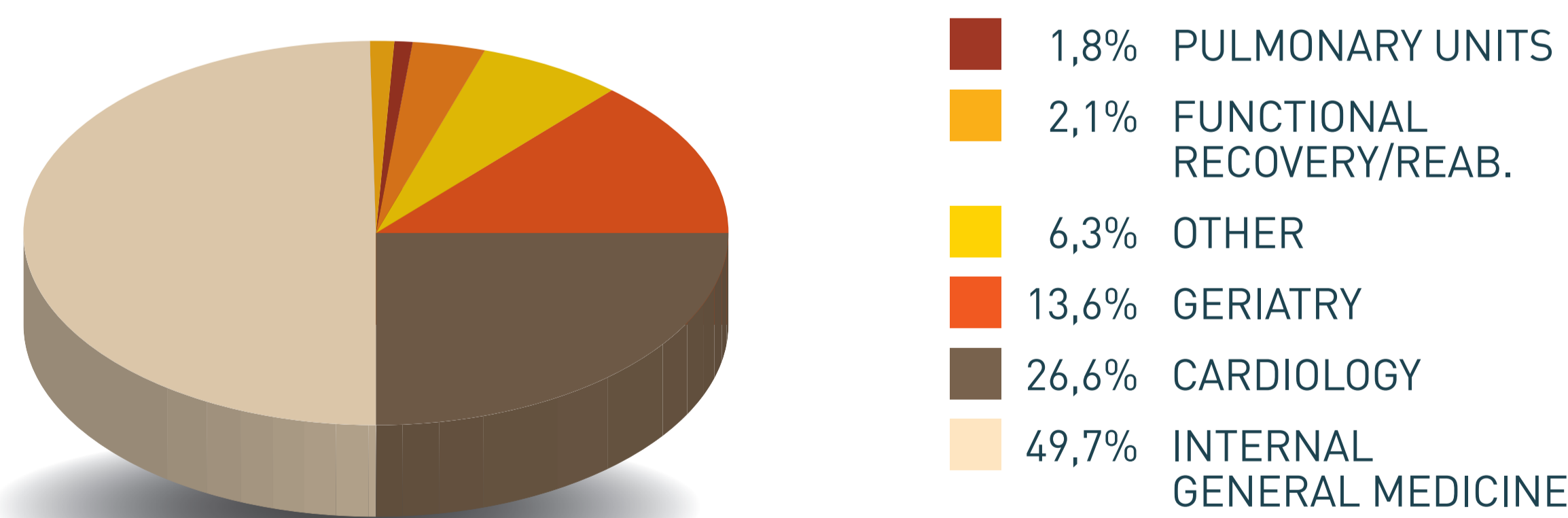
- Occurrence of re-hospitalizations (% on the total cohort of patients with \*HF) was analyzed according to the following indicators:
  - cardiovascular and non-cardiovascular causes of hospitalization
  - days of hospital admission
  - in-hospital all-cause mortality
- The assessment was performed both for ordinary and daily admissions and on hospitalizations in the different hospital wards (Cardiology, Internal Medicine or Others).

### HEALTH CARE COSTS

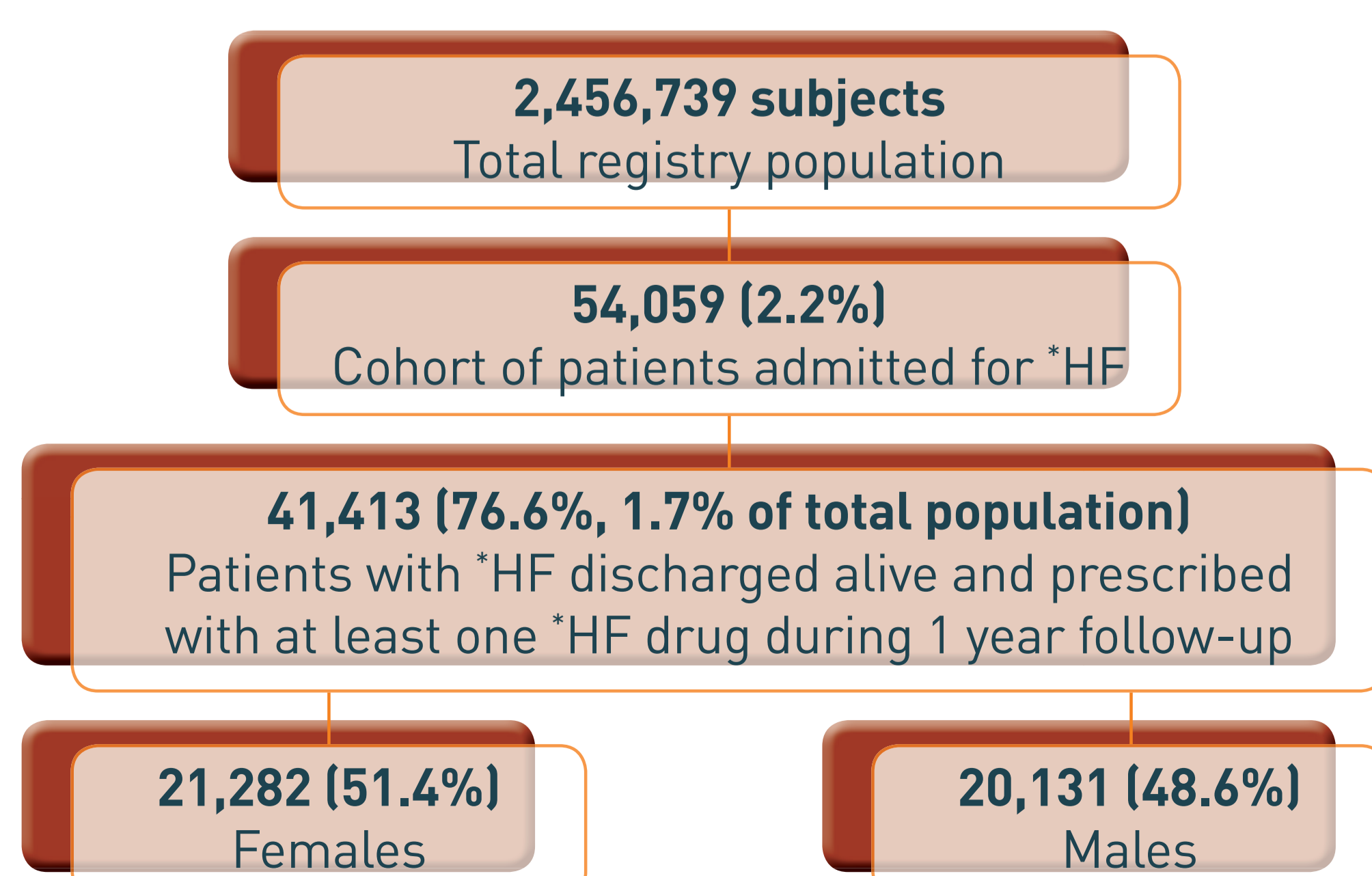
- Patients were evaluated for costs during the 1 year follow-up period from the National Health Service (NHS) perspective.
- Costs items considered were:
  - drugs in charge to NHS (estimated based on reimbursement prices)
  - out of hospital diagnostic procedures (estimated using reimbursement tariffs)
  - hospitalizations (estimated using DRGs-TUC 2008)
- The mean cost was calculated per patient per year
  - on the overall cohort followed-up from 1<sup>st</sup> January 2008 to 31<sup>st</sup> December 2012

## RESULTS

### ADMISSION WARDS FOR ACUTE HEARTH FAILURE PATIENTS

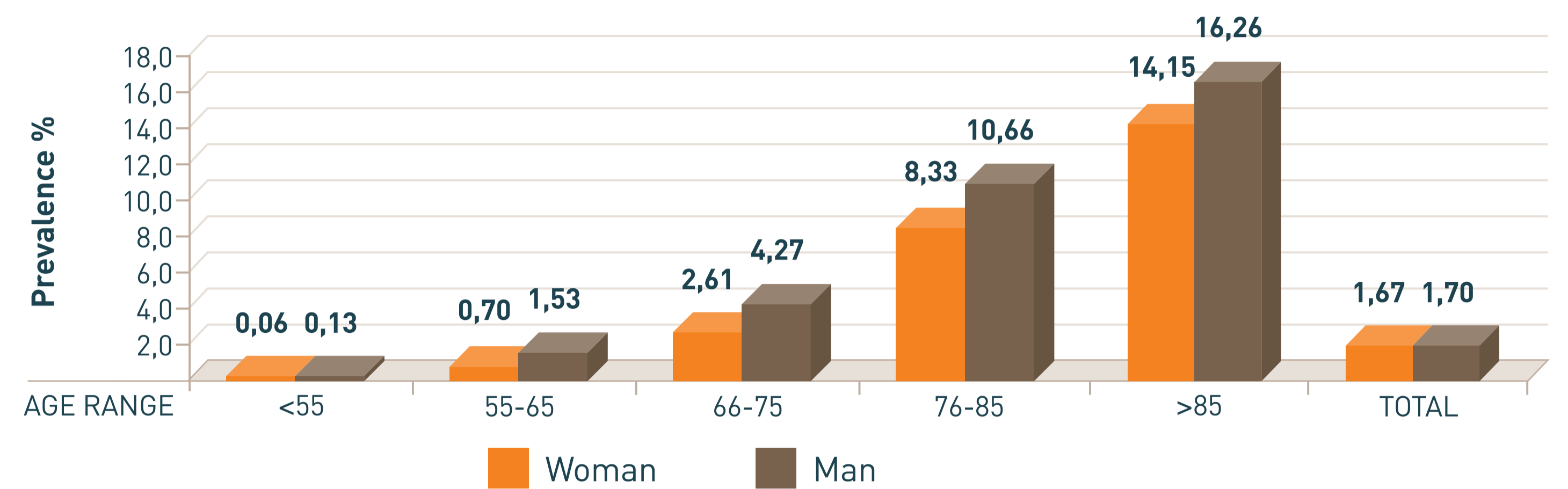


### DATA SOURCE



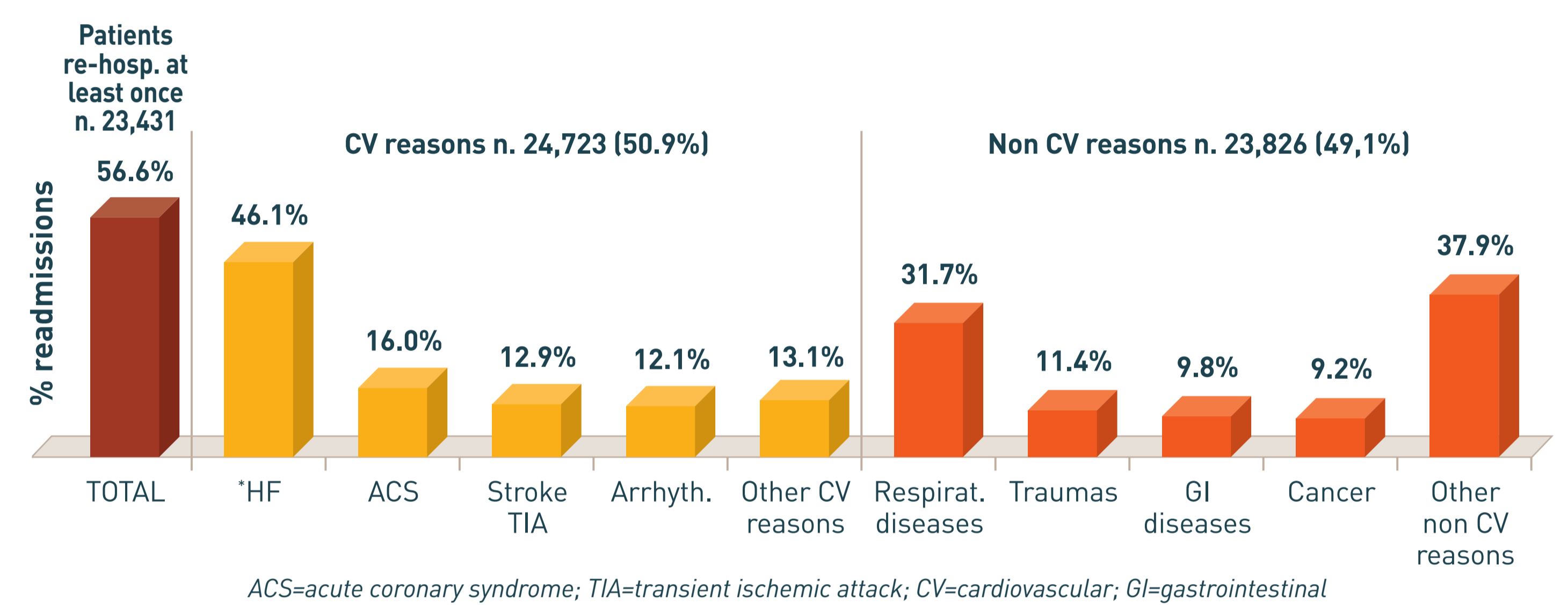
### \*HF PREVALENCE (%) BY SEX-GENDER AND AGE

Medium prevalence value 1,69%



### CAUSES AND RATE OF HOSPITAL RE-ADMISSIONS - 1 Y FOLLOW UP

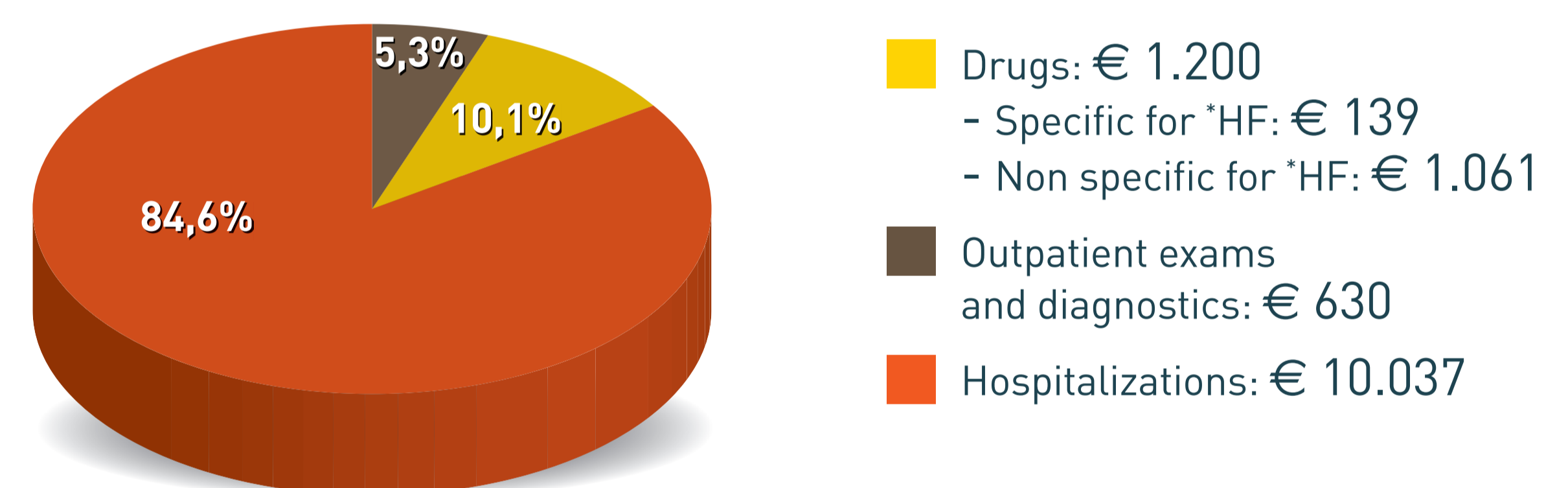
Total number of readmissions = 48,549 (2.1 per patient)



### ALL-CAUSE 1-YEAR MORTALITY

All-cause mortality during 1 year follow-up in our study was found to be 18,9%.

### THE TOTAL COST/YEAR FOR ONE YEAR FOLLOW UP/HEART FAILURE PATIENT IS € 11.867



## SUMMARY

- The characteristics of patients with \*HF of a general population are largely different from those of patients included in specialty registries or RCTs.
- The re-hospitalization rate of patients with \*HF is extremely high and frequently due to a non-cardiovascular causes.
- The yearly cost for a patient with \*HF is high and mainly driven by hospitalizations, the cost for drugs accounting for no more than 10% of the total costs.

## CONCLUSIONS

- Real world evidence provides findings that are very different from those derived from RCTs generally conducted by cardiologists.
- Outcomes' studies are necessary to confirm the results of a RCT when translated to the patients of clinical practice.
- Re-hospitalizations of heart failure patients are frequent and due to a heterogeneity of causes.
- The vulnerability to a diversity of illnesses suggests that the intervention strategies for \*HF should be delivered with a multidisciplinary approach.
- Given the poor prognosis and the high health care costs associated with hospital re-admissions, even small improvements in the global \*HF patient care can have a substantial impact on patient quality of life and health care cost.
- In this context, better appropriateness of prescriptions recommended by current guidelines can also play a vital role in reducing hospitalizations and health care costs.

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