🫀 Heart Failure Analytics Dashboard

Analyzing 2,008 patients from PhysioNet Dataset

🔬 Laboratory Biomarkers & GCS

🔍 Filter Patients

Gender

Male ✕   Female ✕   ⊗ ⌄

Ward

Cardiology ✕

GeneralWard ✕   ⊗ ⌄

ICU ✕   Others ✕

Filtered: 2,008 / 2,008 patients

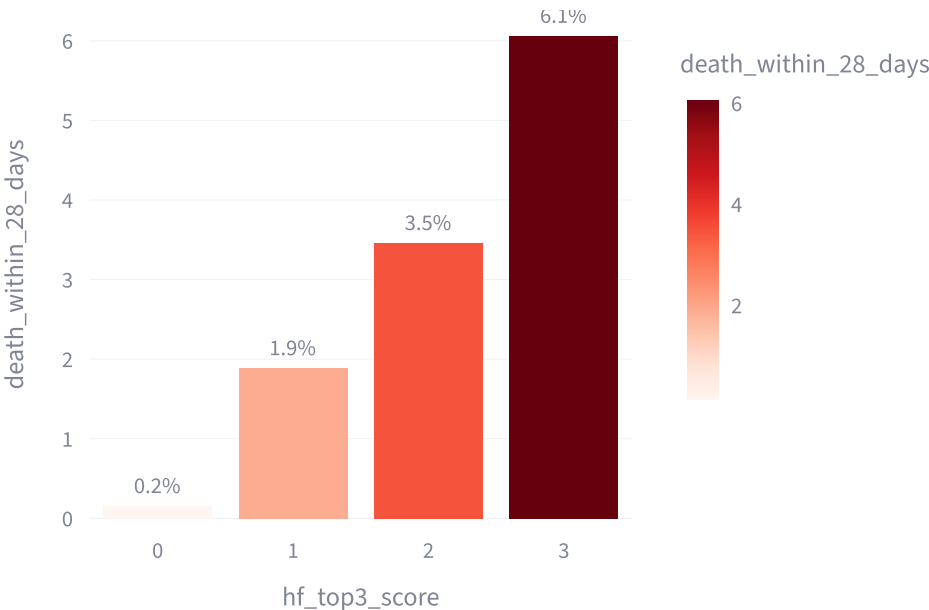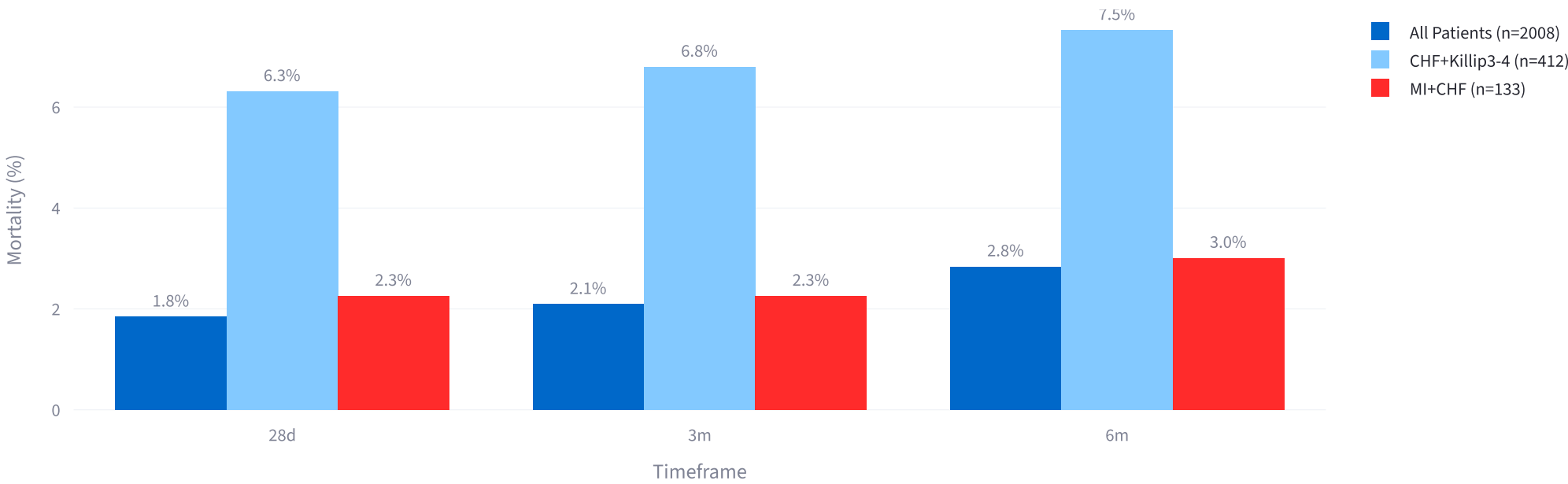| Score 3	High-Risk GCS	High Lactate	Low Sodium
99	48	442	387
↑ 4.9%	↑ 2.4%	↑ 22.0%	↑ 19.3%

Three-Biomarker Risk Score

Score Distribution
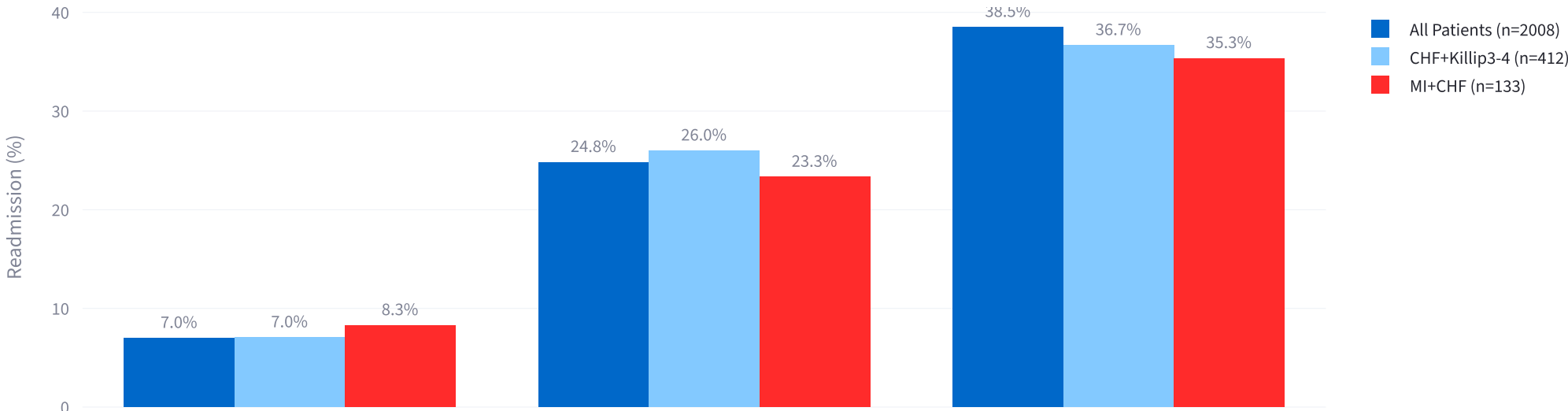

Mortality by Score

28-Day → 6-Month Mortality using High risk biomarkers

** CHF+Killip3-4 (412 pts): **6.3% 28d mortality** → ICU-level HF care

** MI+CHF (133 pts): **8.3% 28d readmission** → Post-discharge surveillance
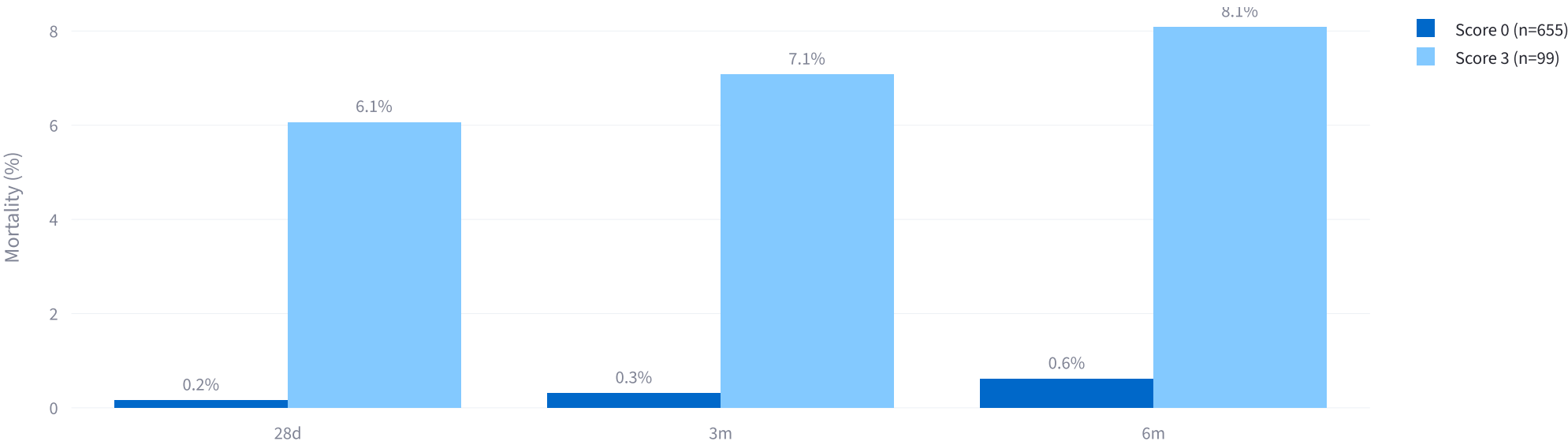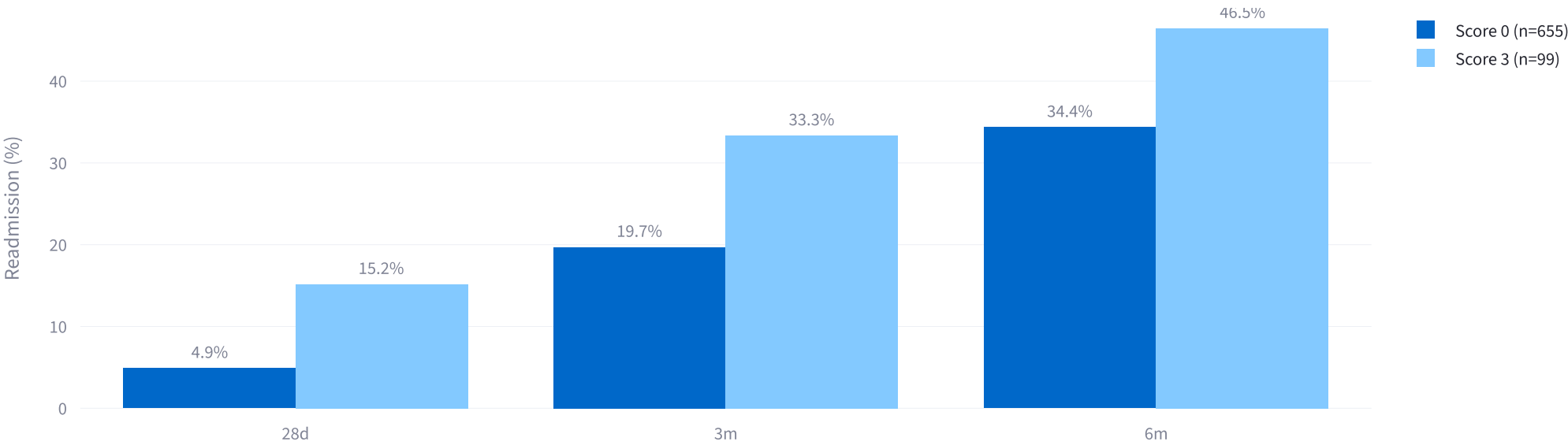
28-Day → 6-Month Readmission

28d   3m   6m

Timeframe

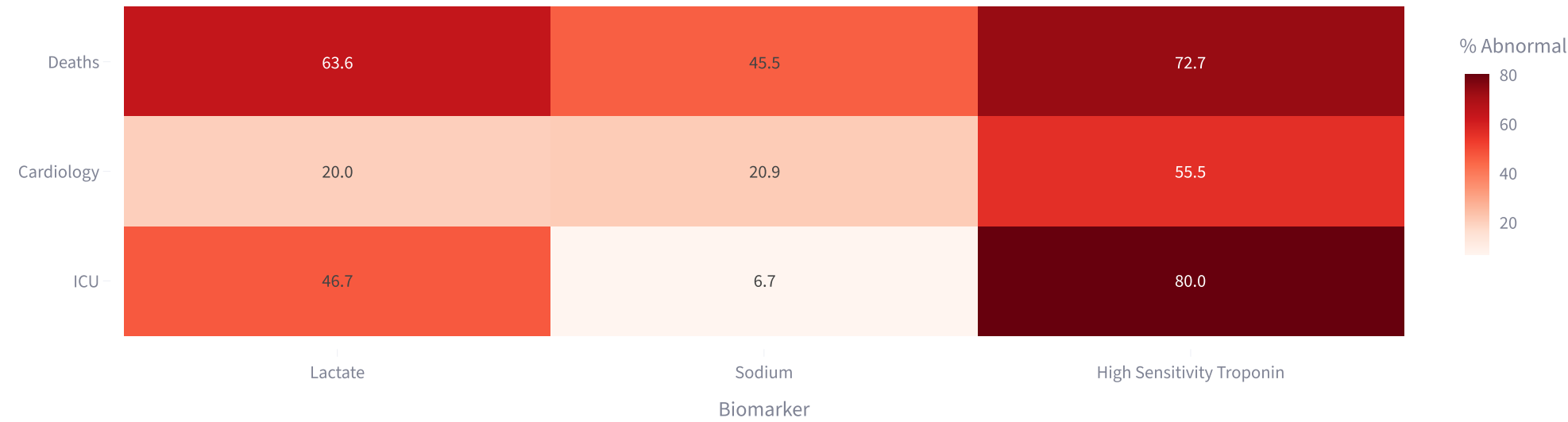# HF Top3 Score: Risk Evolution Over Time

Mortality: Score 0 vs Score 3

■ Score 0 (n=655)
■ Score 3 (n=99)

Readmission: Score 0 vs Score 3

■ Score 0 (n=655)
■ Score 3 (n=99)

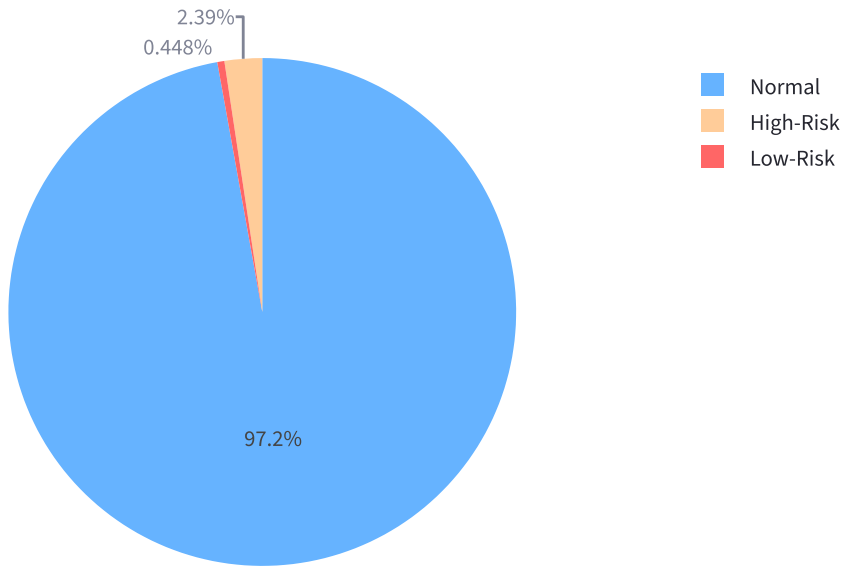## Biomarker Patterns: Deaths vs Ward (Heatmap)

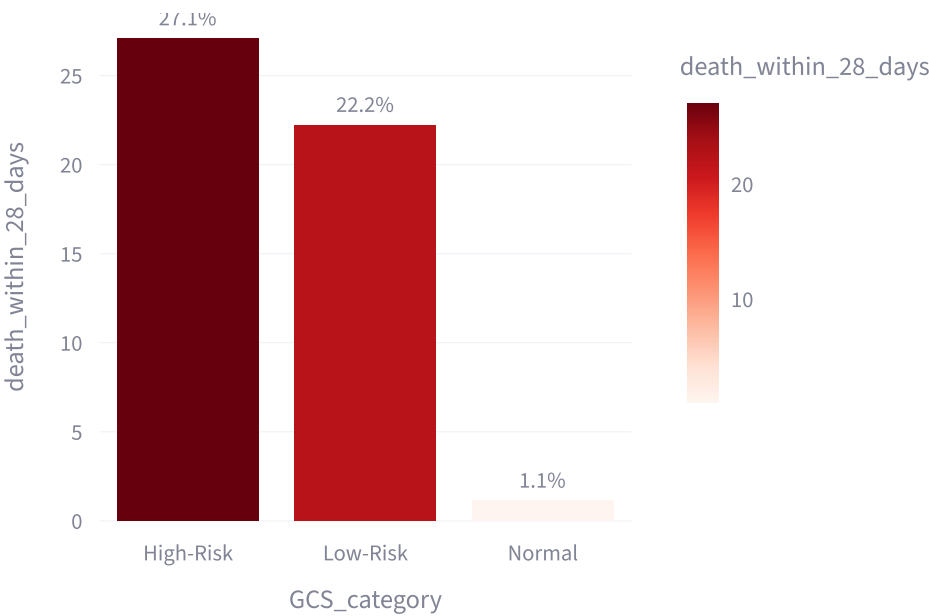**% Abnormal Biomarkers: Deaths vs Cardiology vs ICU**

73% of deaths had elevated lactate+troponin , Patients who died showed the highest burden of high-risk biomarker abnormalities—particularly elevated troponin (72.7%) and lactate (63.6%)—highlighting a strong association between myocardial injury, metabolic stress, and in-hospital mortality.

Glasgow Coma Scale (GCS)

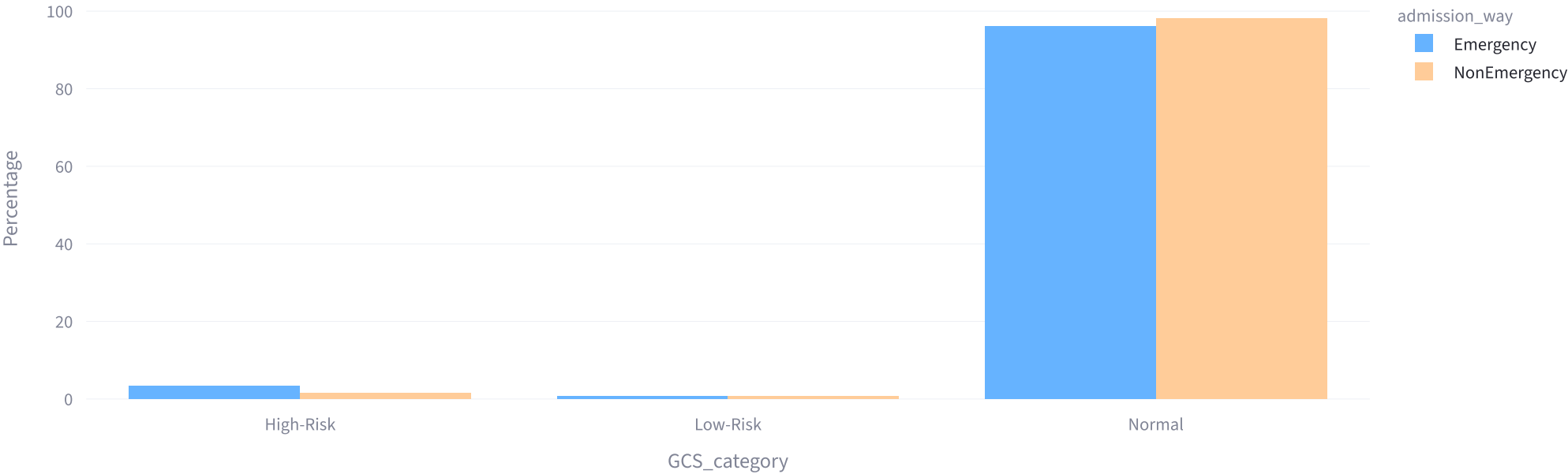**GCS Categories**

Mortality by GCS

🧠 **GCS: Strongest Mortality Predictor**

- High-Risk GCS: **2.4% of admits, 64% of deaths**

- 92% had abnormal HF biomarkers

- 25% had Type II respiratory failure

GCS by Admission Type

GCS: Emergency vs Non-Emergency (%)

Emergency patients: 2x more high-risk GCS (3.9% vs 1.9%)