Audit & Feedback MetaLab

QUALITY MATTERS FOR PATIENTS WITH ACUTE CORONARY SYNDROME: DESIGN OF A NOVEL AUDIT & FEEDBACK INITIATIVE TO PROMOTE EQUITY, TRANSPARENCY, AND TIMELY DELIVERY OF HIGH-QUALITY CARE

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SISTEMA SANITARIO REGIONALE
ASL ROMA 1

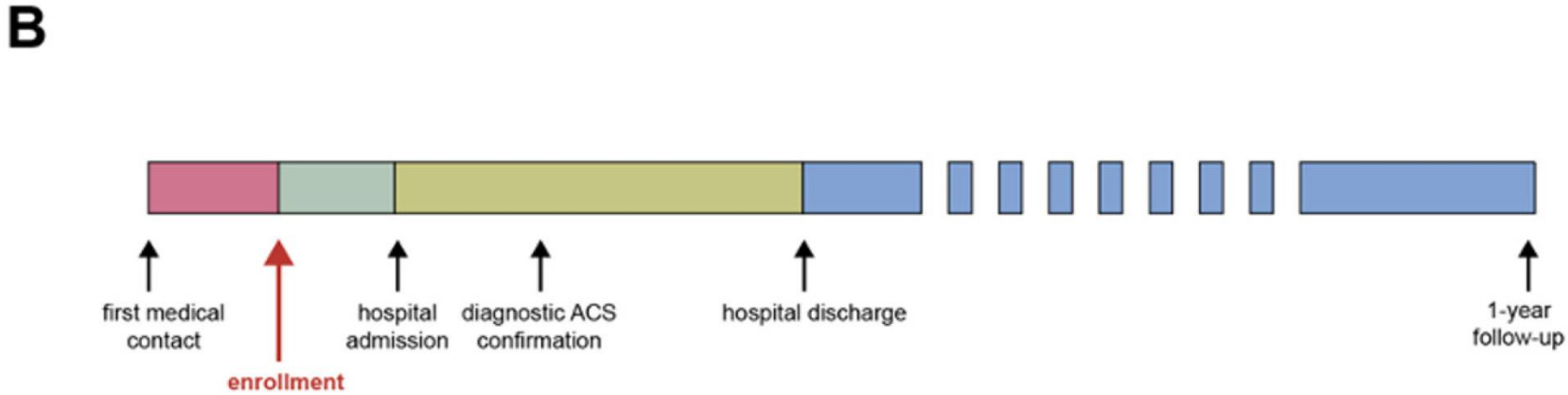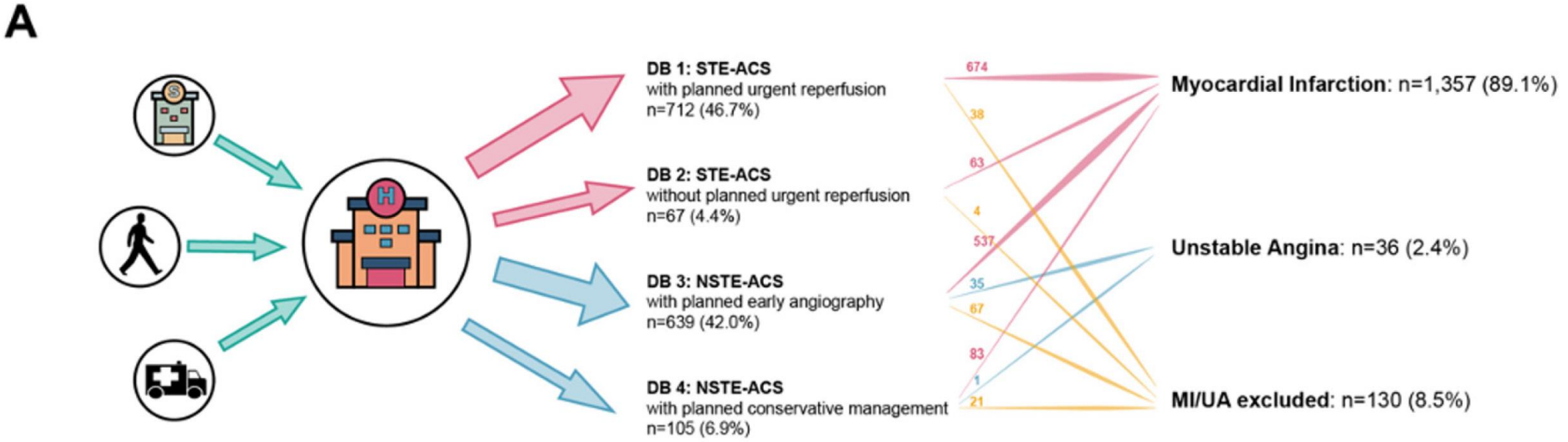REGIONE LAZIO

UNIVERSITÀ CATTOLICA del Sacro Cuore
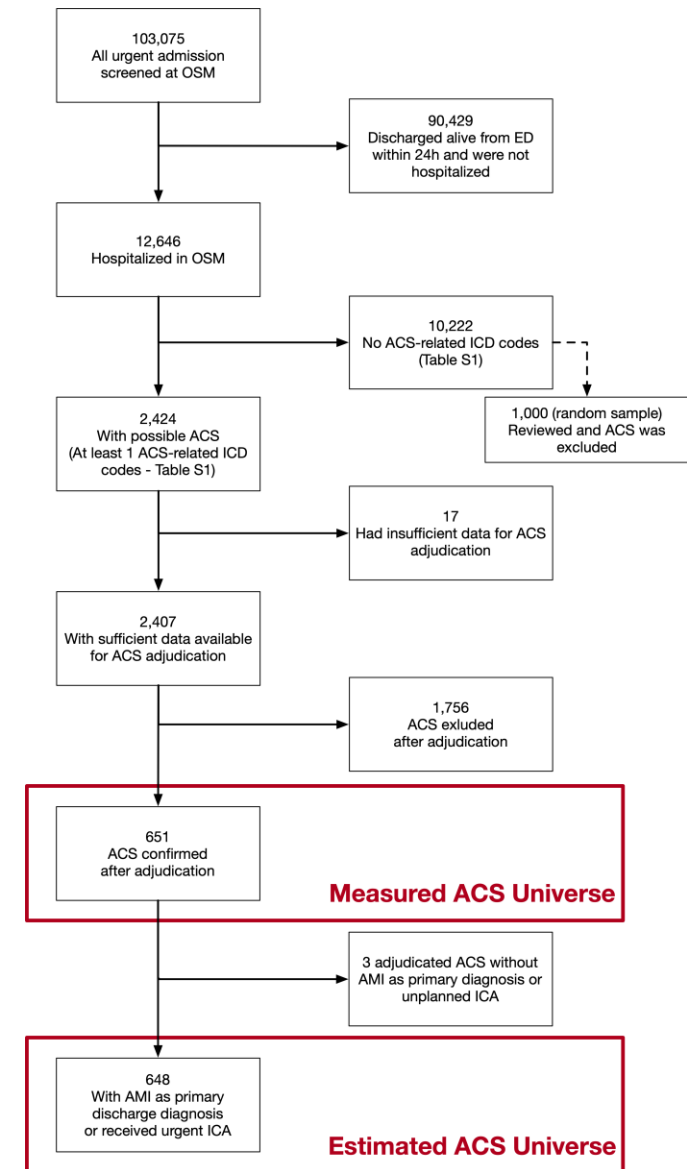
The Ottawa Hospital
Research Institute

L'Hôpital d'Ottawa
Institut de recherche

openheart

Clinical governance programme in patients with acute coronary syndrome: design and methodology of a quality improvement initiative

Sergio Leonardi [iD] ,[1,2] Claudio Montalto,[1] Gianni Casella,[3] Daniele Grosseto,[4] Alessandra Repetto,[2] Monica Portolan,[2] Federico Fortuni,[1] Filippo Ottani,[5] Marcello Galvani,[5] Laura Sofia Cardelli,[6,7] Stefano De Servi,[1,8] Andrea Rubboli,[9] Gaetano Maria De Ferrari,[10] Luigi Oltrona Visconti,[2] Gianluca Campo [iD] [7]

British Cardiovascular Society

International Audit & Feedback MetaLab Meeting: **Putting A&F into real world practice**

A

DB 1: STE-ACS
with planned urgent reperfusion
n=712 (46.7%)

DB 2: STE-ACS
without planned urgent reperfusion
n=67 (4.4%)

DB 3: NSTE-ACS
with planned early angiography
n=639 (42.0%)

DB 4: NSTE-ACS
with planned conservative management
n=105 (6.9%)

674
38
63
4
537
35
67
83
1
21

Myocardial Infarction: n=1,357 (89.1%)

Unstable Angina: n=36 (2.4%)

MI/UA excluded: n=130 (8.5%)

B

first medical contact

enrollment

hospital admission

diagnostic ACS confirmation

hospital discharge

1-year follow-up

Importantly, ==consecutive enrolment will be verified and quantified== by the concordance with corresponding hospital administrative records using diagnosis-related group (DRG) codes of ACS. Specifically, according to the protocol of the Italian National Agency for Regional Health Services—AGE.NA.S (https://pne.agenas.it/ risultati/protocolli/pro_1.pdf), which is charged to describe hospital-level outcome in Italy, DRG codes related to ACS will be used to identify the totality of hospital-level patients with MI or UA (denominator) against the enrolled patients with a final diagnosis of MI or UA (numerator) as so to quantify the proportion of consecutive patients.

103,075
All urgent admission screened at OSM

90,429
Discharged alive from ED within 24h and were not hospitalized

12,646
Hospitalized in OSM

10,222
No ACS-related ICD codes (Table S1)

1,000 (random sample)
Reviewed and ACS was excluded

2,424
With possible ACS (At least 1 ACS-related ICD codes - Table S1)

17
Had insufficient data for ACS adjudication

2,407
With sufficient data available for ACS adjudication

1,756
ACS exluded after adjudication

651
ACS confirmed after adjudication

Measured ACS Universe

3 adjudicated ACS without AMI as primary diagnosis or unplanned ICA

648
With AMI as primary discharge diagnosis or received urgent ICA

Estimated ACS Universe

Clinical governance of patients with acute coronary syndromes

Sergio Leonardi [1,2]*, Claudio Montalto [1], Greta Carrara[3], Gianni Casella [4], Daniele Grosseto[5], Marco Galazzi[1], Alessandra Repetto[2], Lorenzo Tua[1], Monica Portolan[2], Filippo Ottani[6], Marcello Galvani[6], Leandro Gentile[2], Laura Sofia Cardelli[7,8], Stefano De Servi[9,10], Andrea Antonelli[9], Gaetano Maria De Ferrari[11], Luigi Oltrona Visconti[2], and Gianluca Campo [7,8]

[1]Department of Molecular Medicine, University of Pavia, Pavia 27100, Italy; [2]Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; [3]Advice Pharma Group, Milan, Italy; [4]U.O.C. Cardiologia, Ospedale Maggiore, Bologna, Italy; [5]U.O.C. Cardiologia, Ospedale Infermi, Rimini, Italy; [6]U.O.C. Cardiologia, Ospedale G.B. Morgagni, Forlì—Fondazione Cardiologica 'Myriam Zito Sacco', Forlì, Italy; [7]Cardiology Unit, Azienda Ospedaliera Universitaria di Ferrara, Cona, Italy; [8]Maria Cecilia Hospital, GVM Care & Research, Cotignola, Italy; [9]IRCCS MultiMedica, Milan, Italy; [10]University of Pavia Medical School, Pavia, Italy; and [11]Città della Salute e della Scienza, Torino
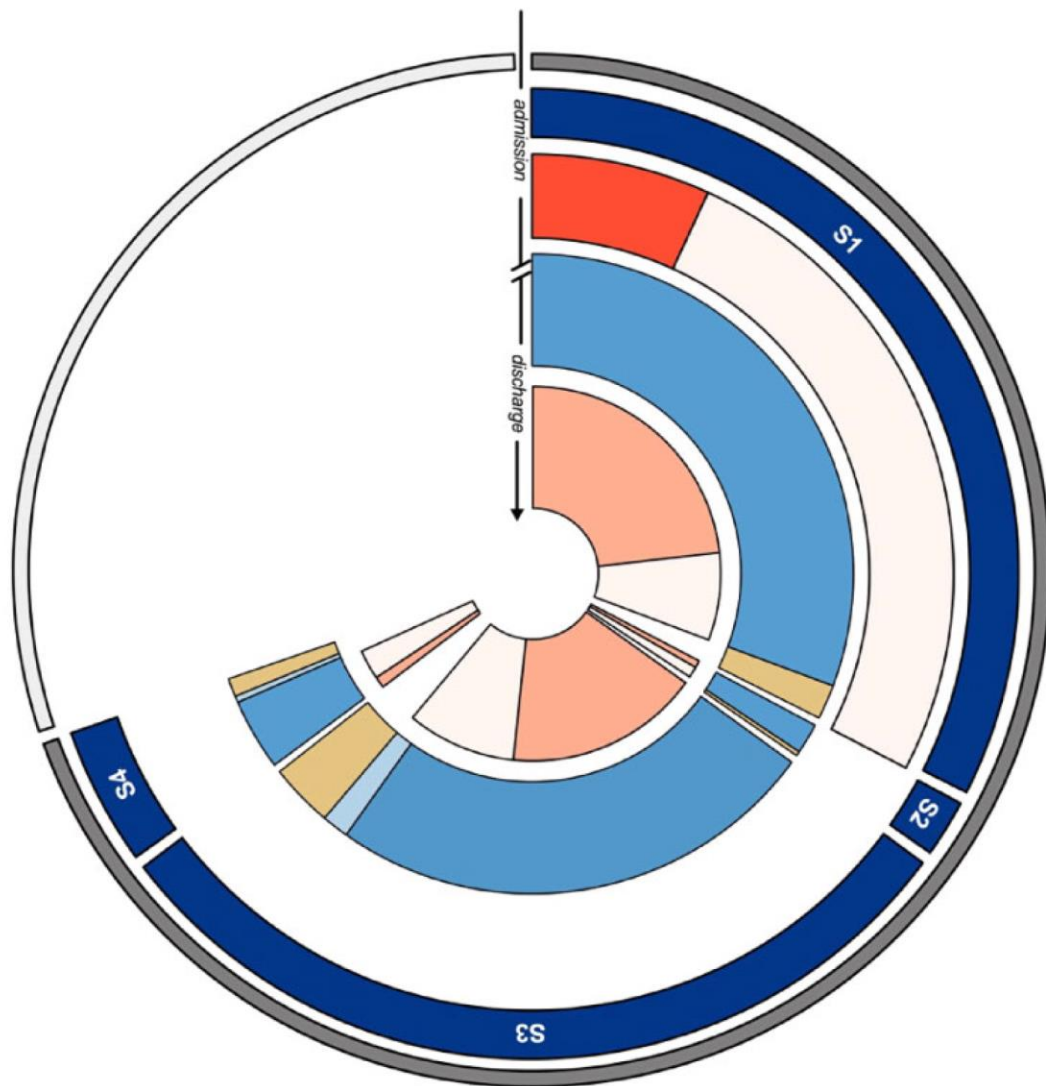
Legend:

- ACS Patients Included
- ACS Patients NOT included
- ACS Study Stratum
  - S1: STEACS reperfusion
  - S2: STEACS NO reperfusion
  - S3: NSTEACS invasive
  - S4: NSTEACS NO invasive
- Co-Primary endpoint: Timely reperfusion (Y / N)
- Discharge diagnosis: Acute Myocardial Infarction (AMI)
- Discharge diagnosis: Unstable Angina (UA)
- Discharge diagnosis: No AMI/UA
- Co-Primary endpoint: Optimal Medical Therapy at Discharge (Y / N)

admission

discharge

S1

S2

S3

S4

Co-Primary Quality Indicators

CLINICAL PRACTICE
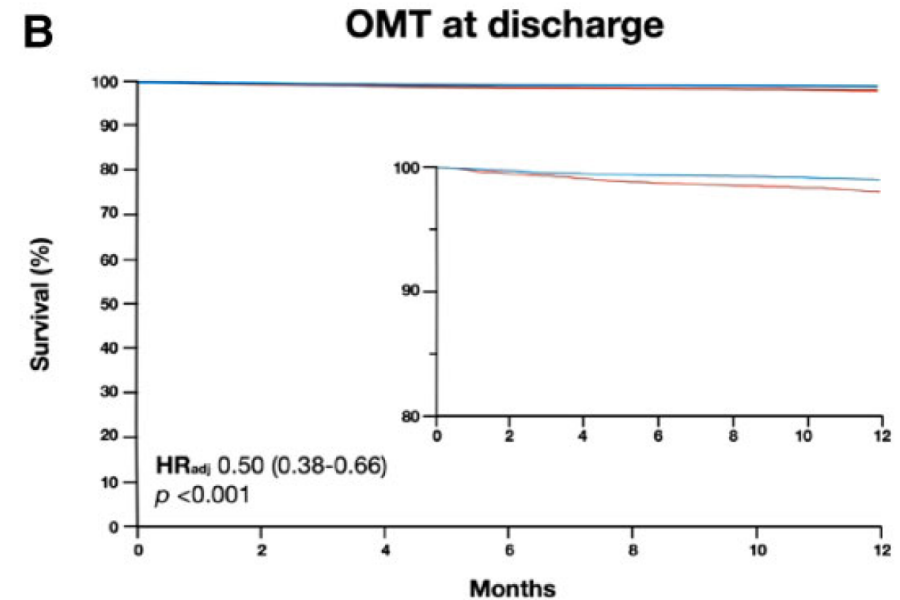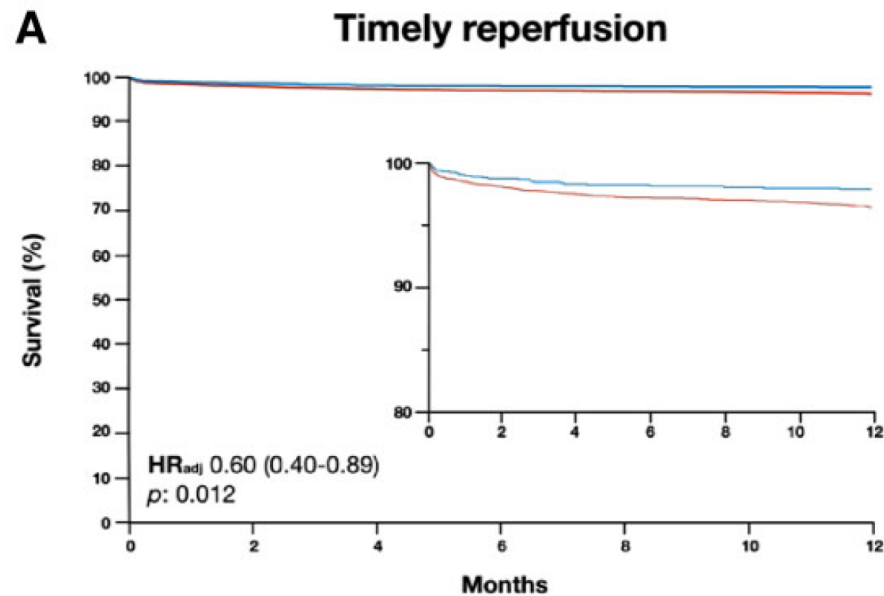
2020 Update of the quality indicators for acute myocardial infarction: a position paper of the Association for Acute Cardiovascular Care: the study group for quality indicators from the ACVC and the NSTE-ACS guideline group

François Schiele[1]*, Suleman Aktaa[2], Xavier Rossello [3,4,5], Ingo Ahrens[6], Marc J. Claeys[7], Jean-Philippe Collet[8,9], Keith A.A. Fox [10], Chris P. Gale[2], Kurt Huber [11], Zaza Iakobishvili[12], Alan Keys[13], Ekaterini Lambrinou[14], Sergio Leonardi [15], Maddalena Lettino [16], Frederick A. Masoudi[17], Susanna Price[18], Tom Quinn[19], Eva Swahn[20], Holger Thiele [21], Adam Timmis [22], Marco Tubaro[23], Christiaan J.M. Vrints[7,24], David Walker[25], and Hector Bueno[5,26,27]

After the success of 'quality indicators' season 1,

Finanziato dall'Unione europea

NextGenerationEU

| **Project Code:** PNRR-MCNT2-2023-12377015	**Call section:** Malattie Croniche non Trasmissibili (MCnT2) ad alto impatto sui sistemi sanitari
Applicant Institution: Fondazione Policlinico San Matteo	**Applicant/PI Coordinator:** Leonardi Sergio

Operative Units

| Institution that perform as UO	CF Institution	Department / Division / Laboratory	Role in the project	Southern Italy	SSN
1 - Fondazione Policlinico San Matteo	00303490189	Dipartimento Cardio-Toraco-Vascolare/Cardiologia 1	U01		X
2 - Agenzia Nazionale per i Servizi Sanitari Regionali (AGENAS)	97113690586	UOC Ricerca	UO2		
3 - Azienda Ospedaliera Sant'Anna e San Sebastiano	02201130610	Dipartimento Cardio-Toraco-Vascolare	UO3	X	X
4 - Azienda Ospedaliera Universitaria Gaetano Martino	03051890832	Dipartimento Cardio-Toraco-Vascolare	UO4	X	X
5 (self-financing) - ASL Roma 1, Lazio Regional Health Service	13664791004	Department of Epidemiology	UO5		

Hypothesis

- **Public online reporting every 6 months of actionable indicators of quality for the diagnosis and therapy in patients with ACS followed by hospital-tailored feedback interventions is feasible, could reduce diagnostic and therapeutic inertia, and be associated with improved patient outcomes.**
    - To promote equity, we will verify that consecutive inclusion of the estimated totality of patients admitted with ACS in each participating hospital is measured and quantified via a dedicated metric, the consecutive index.

Implications of ICD Coding Integration on Consecutive Inclusion

NO CRF-integrated ICD Codes for screening
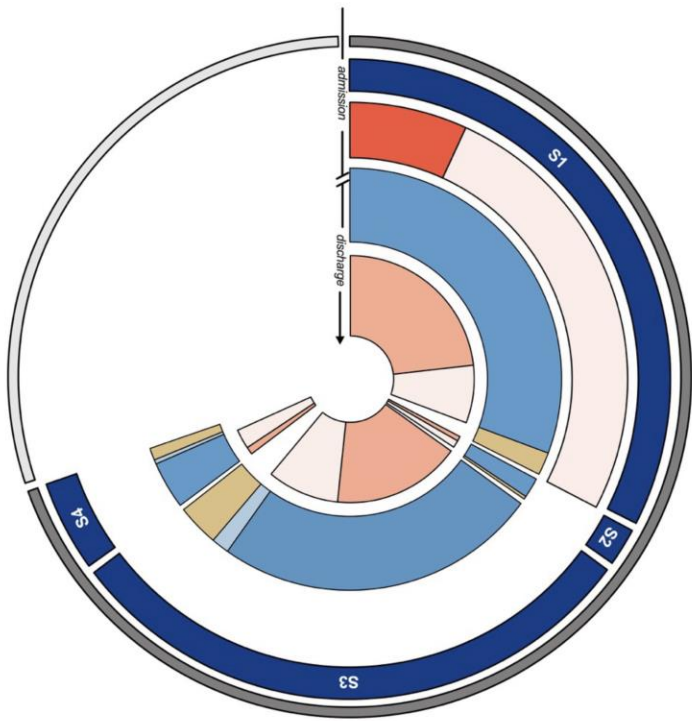
Systematic screening via integrated ICD Codes
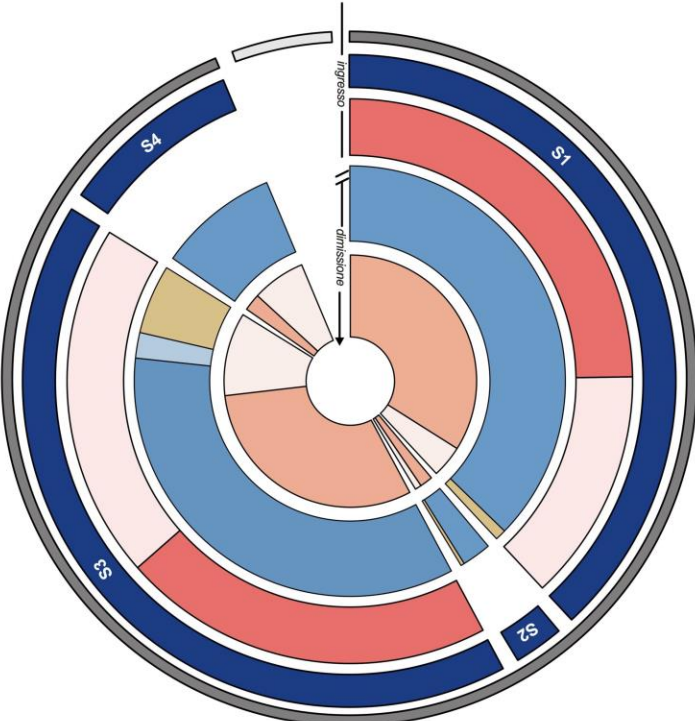
Legend:
- **ACS Patients Included**
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- **Co-Primary endpoint: Timely reperfusion** (Y / N)
- **Discharge diagnosis: Acute Myocardial Infarction (AMI)**
- **Discharge diagnosis: Unstable Angina (UA)**
- **Discharge diagnosis: No AMI/UA**
- **Co-Primary endpoint: Optimal Medical Therapy at Discharge** (Y / N)

Adapted from **Leonardi S et al**. *Eur Heart J Acute Cardiovasc Care 2022;11(11):797-805*. doi: 10.1093/ehjacc/zuac106.
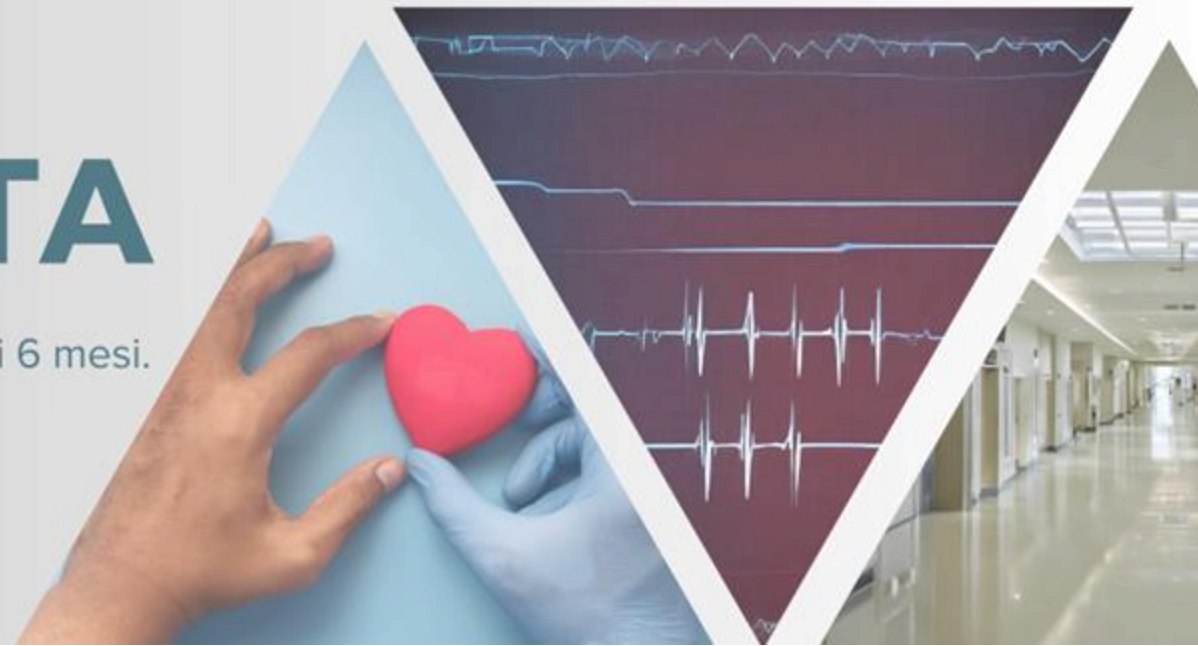
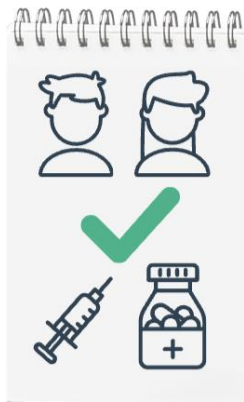**Preliminary Results**

HTTPS://ATBV.IT/

La Qualità Conta

Iniziativa aperta di audit e feedback clinico multicentrico, in collaborazione con le S.C Qualità e risk management dei centri partecipanti, con il coinvolgimento di interlocutori diversi tra cui AGENAS, società scientifiche (ATBV), associazione di cittadini (ConaCuore).

Fondazione IRCCS Policlinico San Matteo Pavia

+ INFO

ASST Grande Ospedale Metropolitano Niguarda Milano

+ INFO

AO Sant'Anna e San Sebastiano Caserta

+ INFO

Ospedale Maggiore della Carità Novara

+ INFO

Un controllo semestrale della qualità

FINALITÀ

Generare e pubblicare ogni sei mesi, sul sito istituzionale degli ospedali coinvolti e di ATBV, indicatori di qualità consolidati in patologie ad alta prevalenza, tra cui:
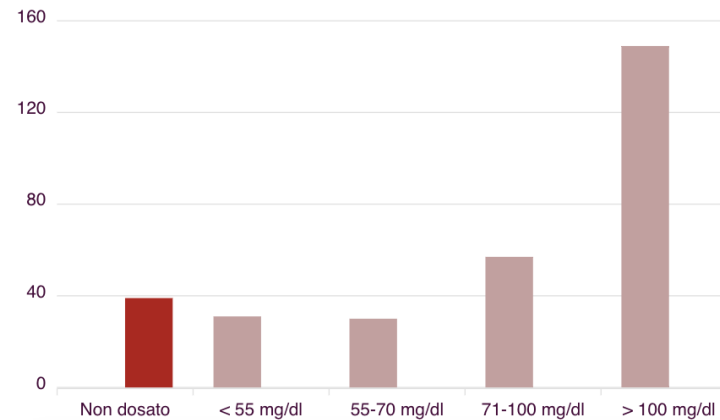
TEMPISTICHE

Focus iniziale sull'opportunità per migliorare l'inerzia diagnostica e terapeutica nella gestione del LDL-C.

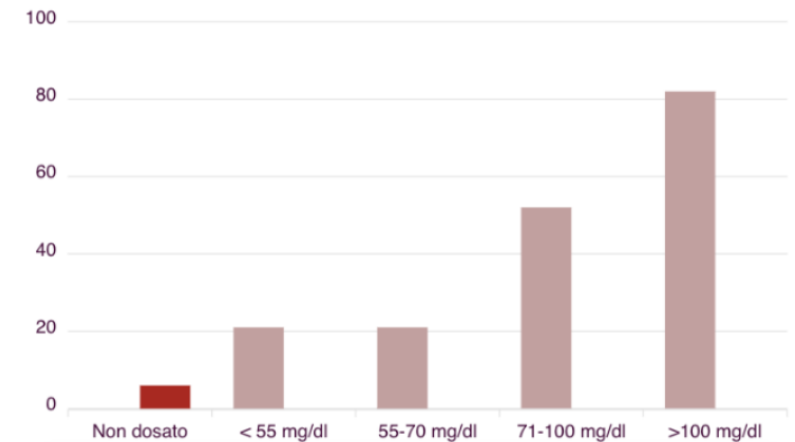I dati sono riportati semestralmente da ogni ospedale.

Measuring Diagnostic Inertia: LDL-C at Discharge
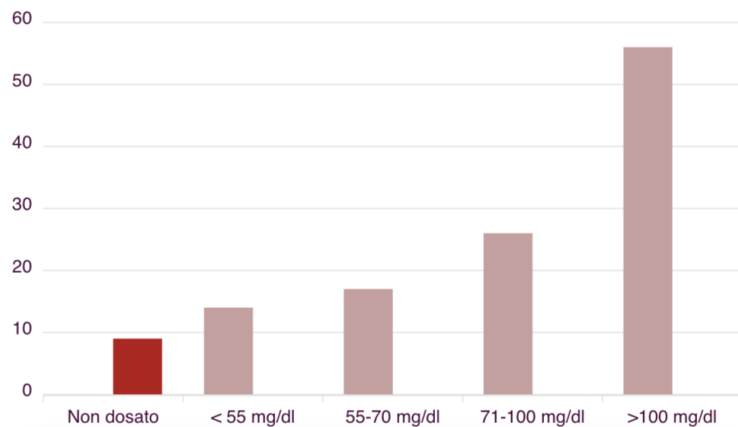
Measuring Diagnostic Inertia: LDL-C at 6 months

OSPEDALE NIGUARDA CA' GRANDA

Valori di LDL-C a 6 mesi

✓ Misurato: 55   ✗ Non misurato: 60

Valore mediano	Primo quartile	Terzo quartile
52	41	68

OSPITALE DI S. MATTEO PAVIA
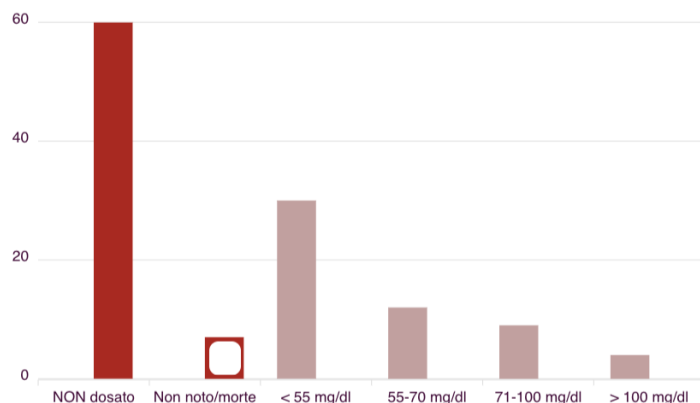
Valori di LDL-C a 6 mesi

✓ Misurato: 160   ✗ Non misurato: 114
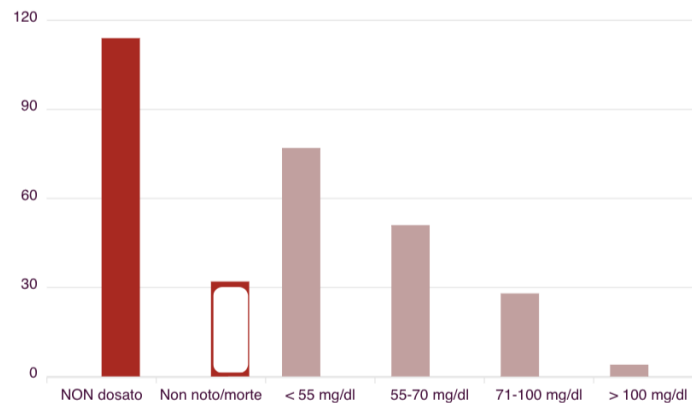
Valore mediano	Primo quartile	Terzo quartile
55	44	66

AORN CASERTA

Valori di LDL-C a 6 mesi

✓ Misurato: 48   ✗ Non misurato: 125
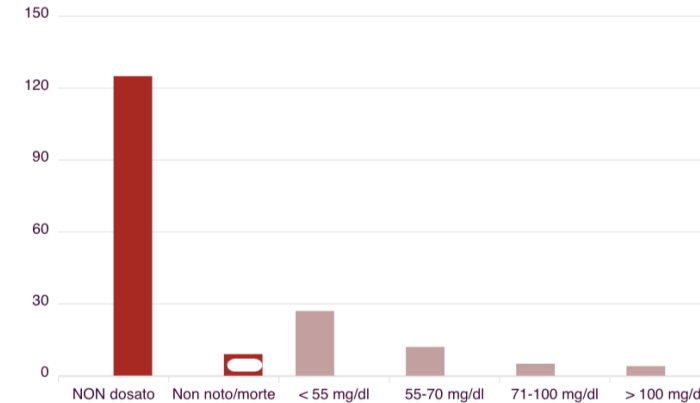
Valore mediano	Primo quartile	Terzo quartile
50	41	63

Time to LDL-C target (< 55 mg/dL)
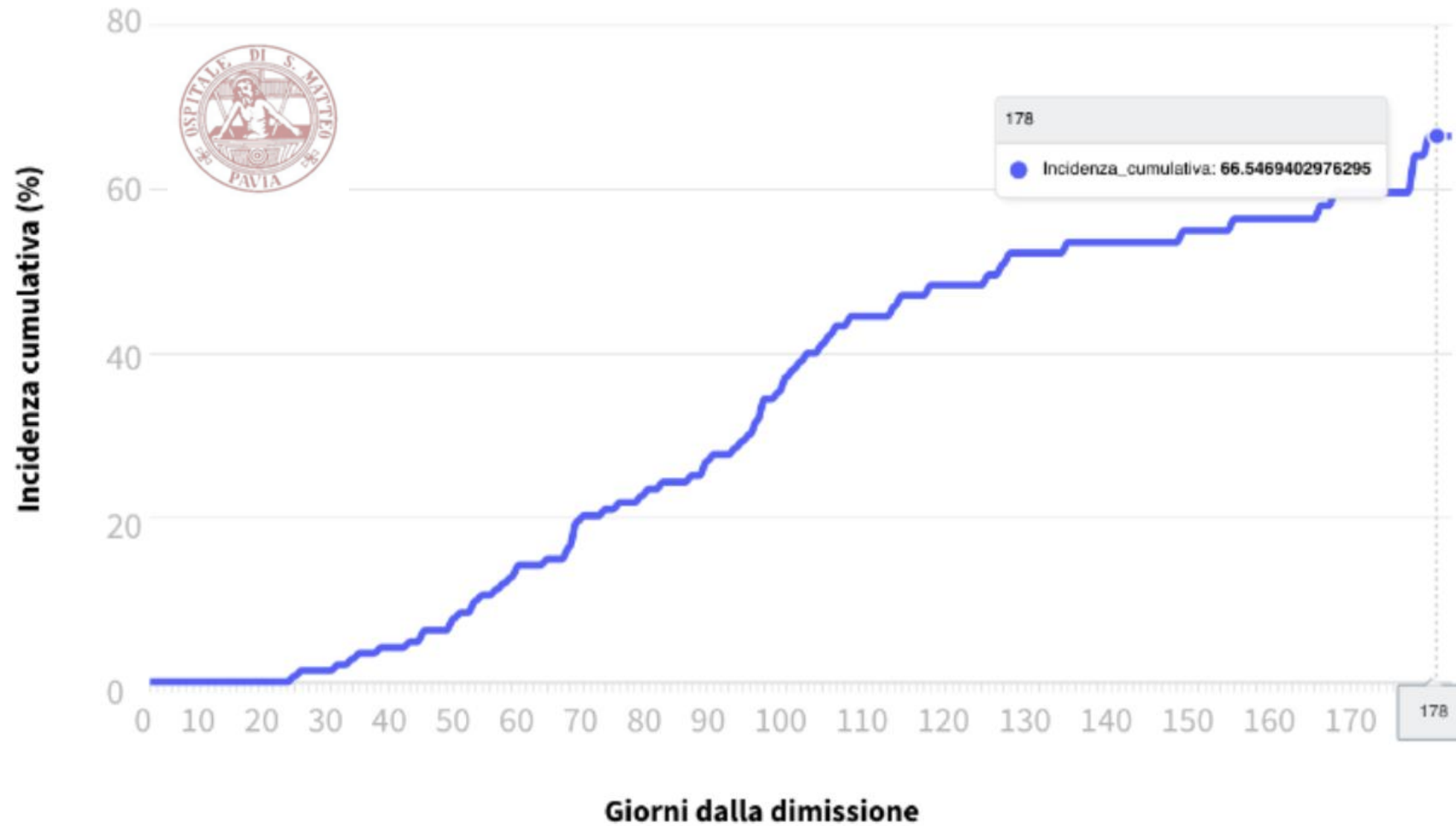
Time to LDL-C Target or Optimal Lipid Lowering Therapy
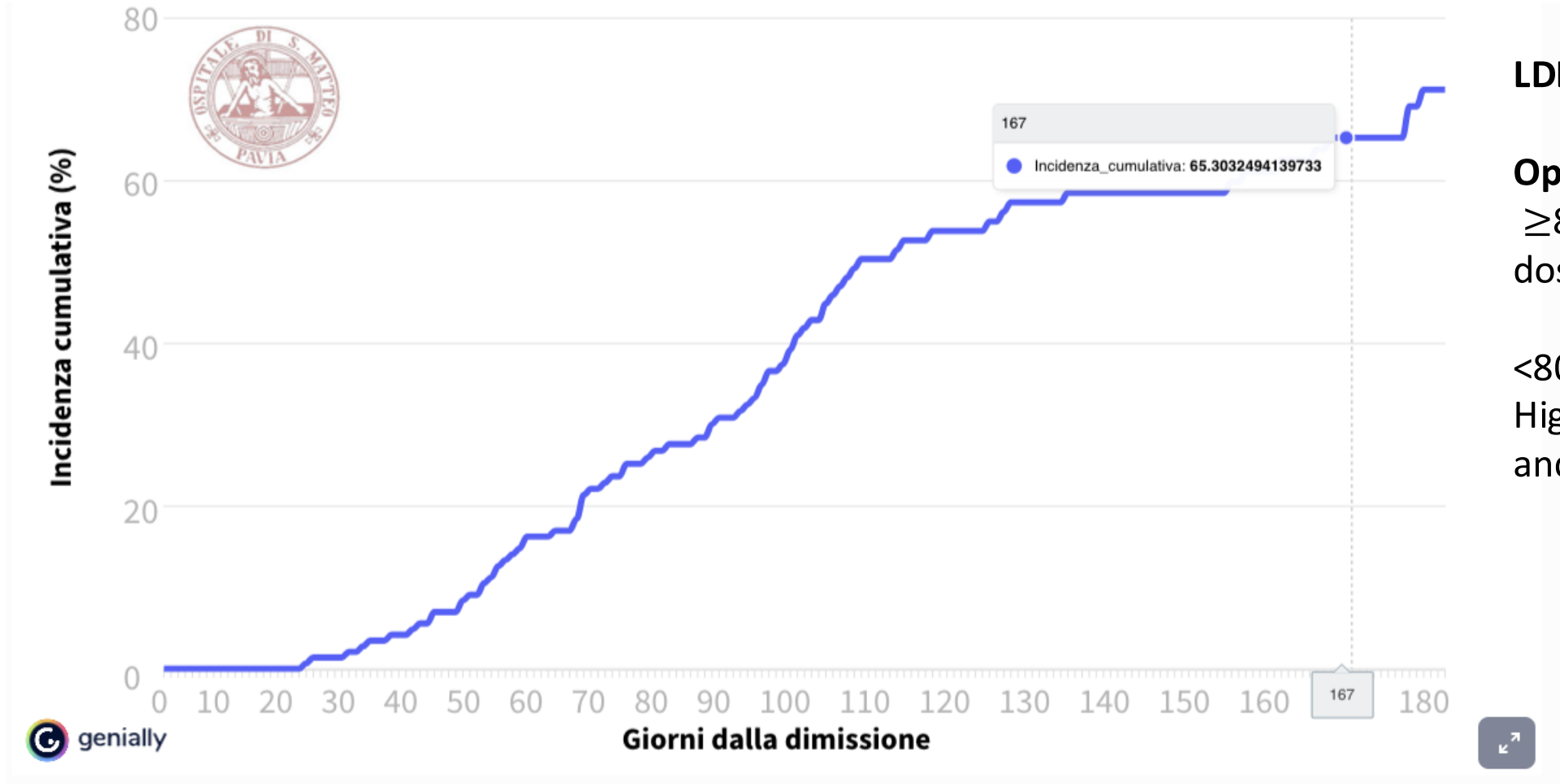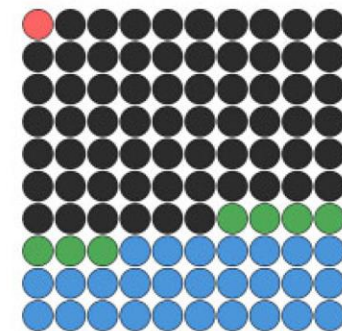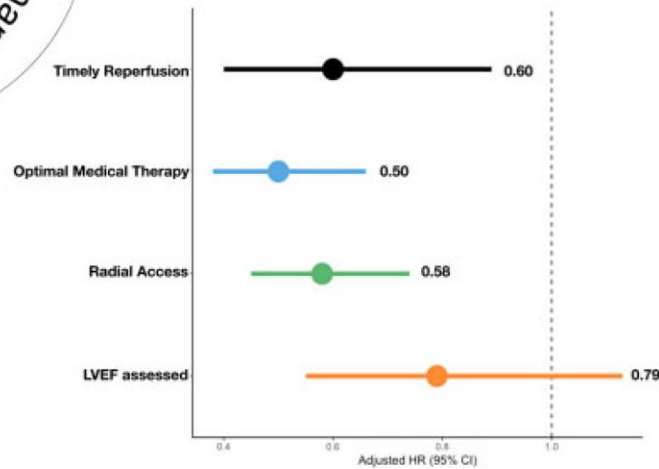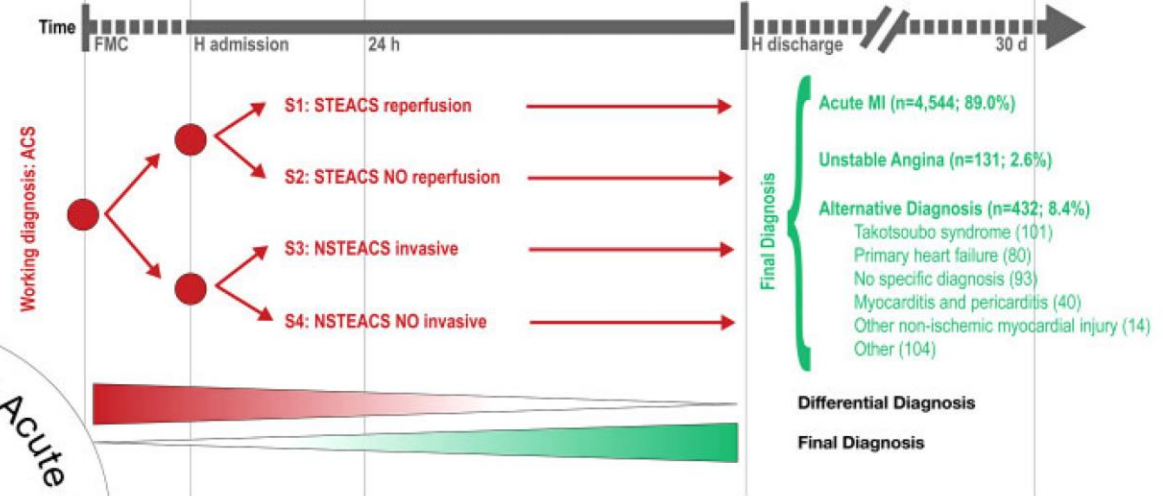

LDL-C target: <55 mg/dL

Optimal LLT:
≥80 y or LDL-C <70: high dose statin and ezetimibe.

<80 y and LDL-C≥70: High dose statin, ezetimibe, and PCSK9i.

Equity

Inclusiveness

Time | FMC | H admission | 24 h | H discharge | 30 d

Working diagnosis: ACS

S1: STEACS reperfusion
S2: STEACS NO reperfusion
S3: NSTEACS invasive
S4: NSTEACS NO invasive

Acute MI (n=4,544; 89.0%)

Unstable Angina (n=131; 2.6%)

Alternative Diagnosis (n=432; 8.4%)
Takotsoubo syndrome (101)
Primary heart failure (80)
No specific diagnosis (93)
Myocarditis and pericarditis (40)
Other non-ischemic myocardial injury (14)
Other (104)

Final Diagnosis

Differential Diagnosis
Final Diagnosis

Clinical Governance of Acute Coronary Syndromes

Transparency

Effectiveness

Timely Reperfusion — 0.60
Optimal Medical Therapy — 0.50
Radial Access — 0.58
LVEF assessed — 0.79

Adjusted HR (95% CI)

NNT for timely reperfusion: 65.4
NNT for OMT: 98.2
NNT for radial access: 72.5

International Audit & Feedback MetaLab Meeting: **Putting A&F into real world practice**

Implications and Impact

- We will assess if a collaborative and open A&F initiative of clinicians, epidemiologists, and health regulators could synergistically drive quality improvement by promoting transparency, equity, accountability, and public awareness.

- This model could improve ACS care in our hospitals, may inform future iterations of the PNE, and potentially contribute to transform health care delivery in Italy.

GRAZIE

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