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CLINICAL TRIALS UNIT

Epidemiology and Outcome from Out of Hospital Cardiac Arrest in England during 2014

Samantha McDonnell

On behalf of the OHCAO Project Group.



Resuscitation Council (UK)

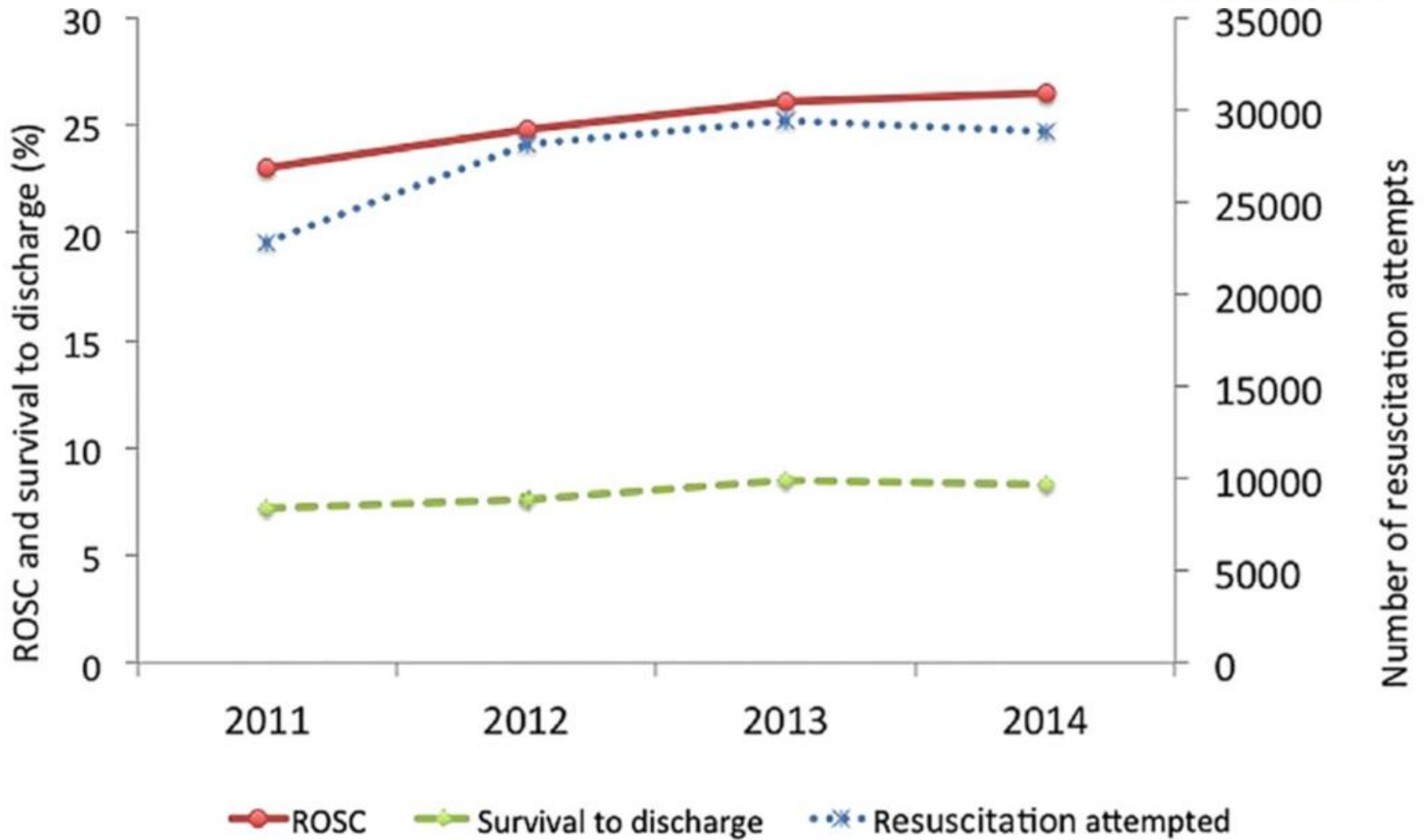
NHS
National Institute for
Health Research



ASSOCIATION OF
AMBULANCE
CHIEF EXECUTIVES

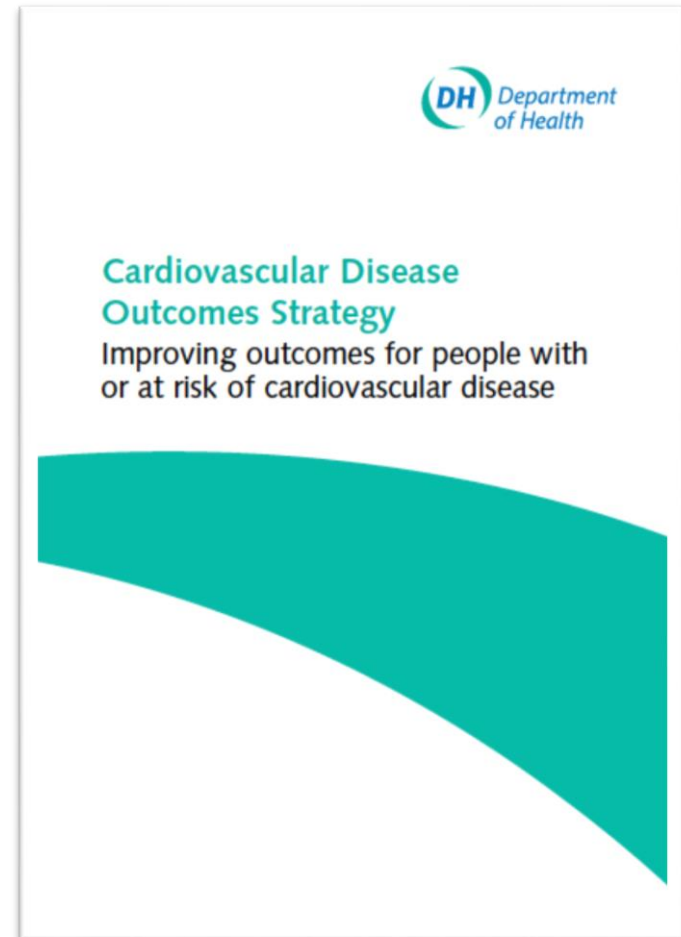
NASMeD
National Ambulance Service Medical Directors

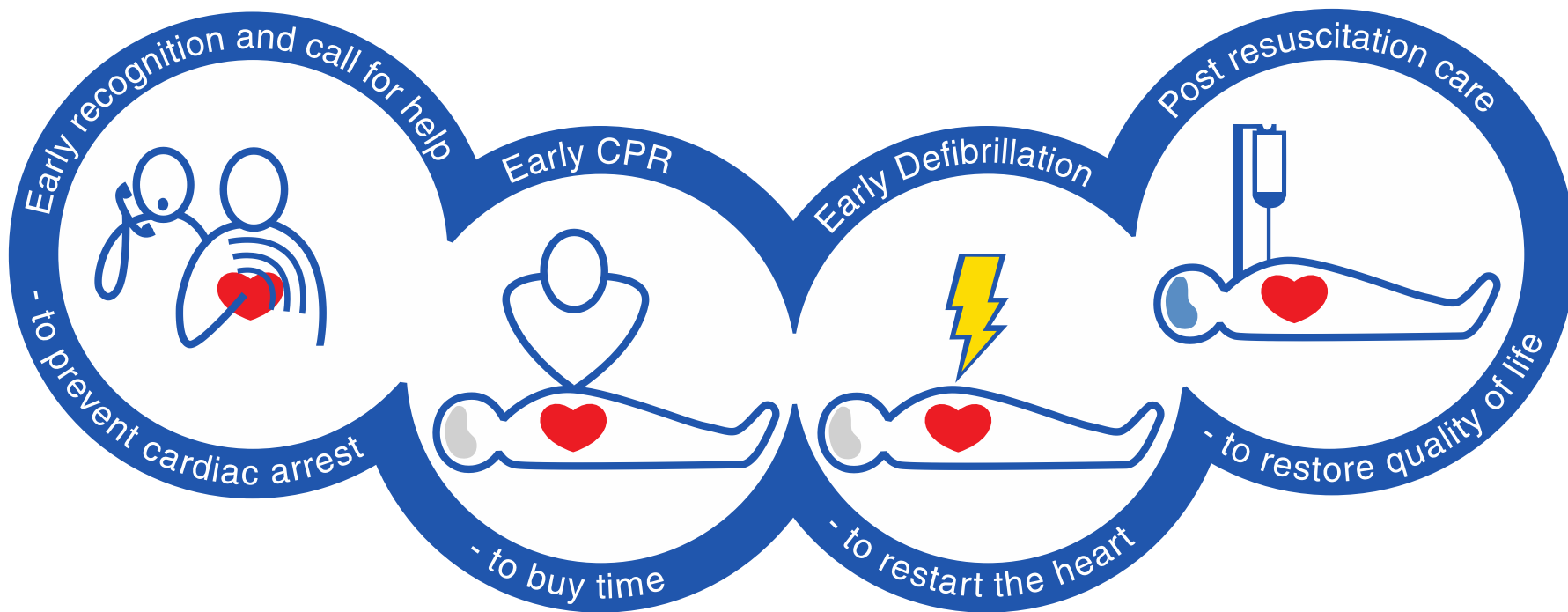
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“save 1000 lives a year”

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- (1) establish the epidemiology and outcome of OHCA
- (2) explore sources of variation in outcome
- (3) quality improvement and research



OHCAO group
BMJ Open 2015

Contributing Ambulances Services and Principle Investigators

Theresa Foster- East of England

Anne Spaight- East Midlands

Rob Andrews- Isle of Wight

Rachael Fothergill -London

Kevin Mackway-Jones- North West

Charles Deakin- South Central

Jane Pateman- South East Coast

Andy Smith- South Western

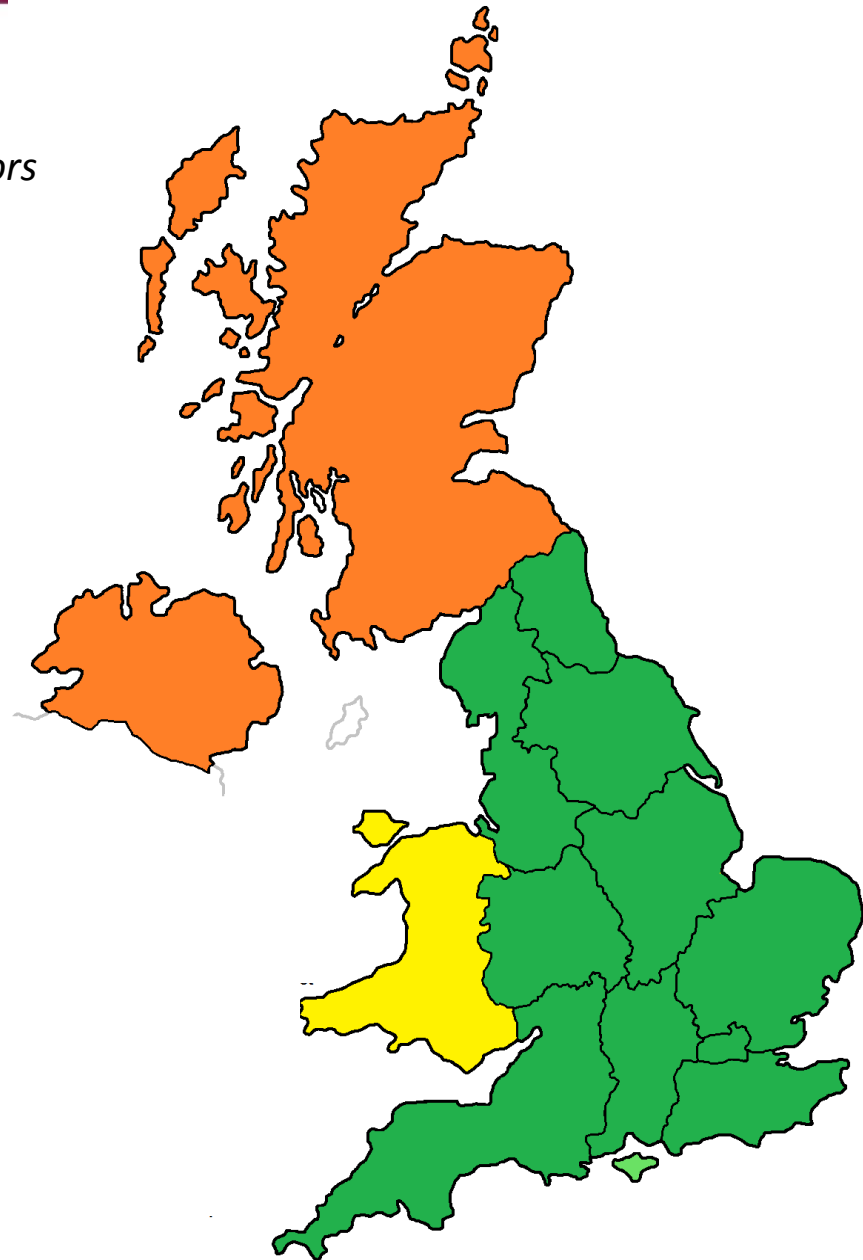
Andrew Carson - West Midlands

Julian Mark- Yorkshire

Richard Whitfield- Wales

David McManus - Northern Ireland

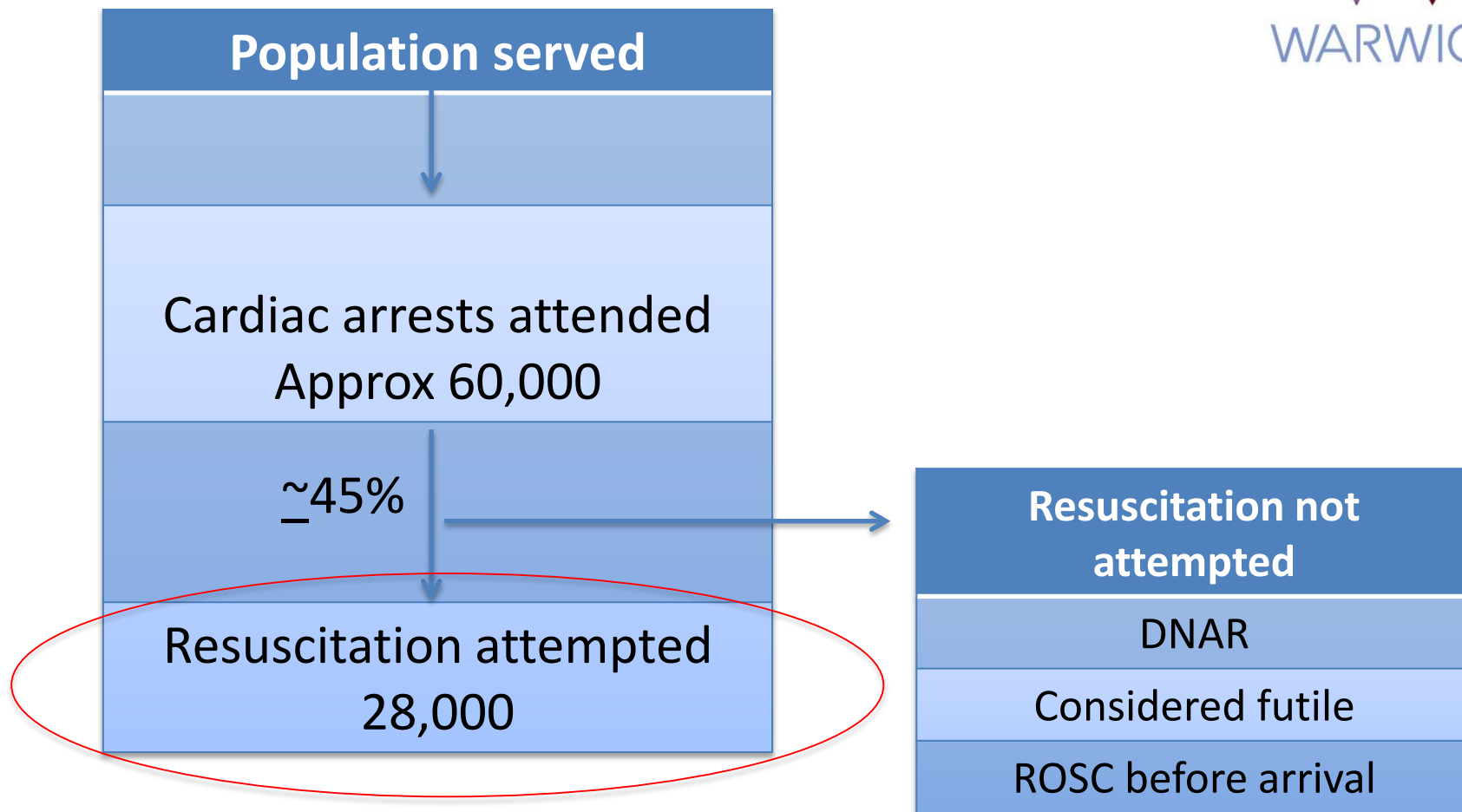
James Ward - Scotland



ILCOR Consensus Statement

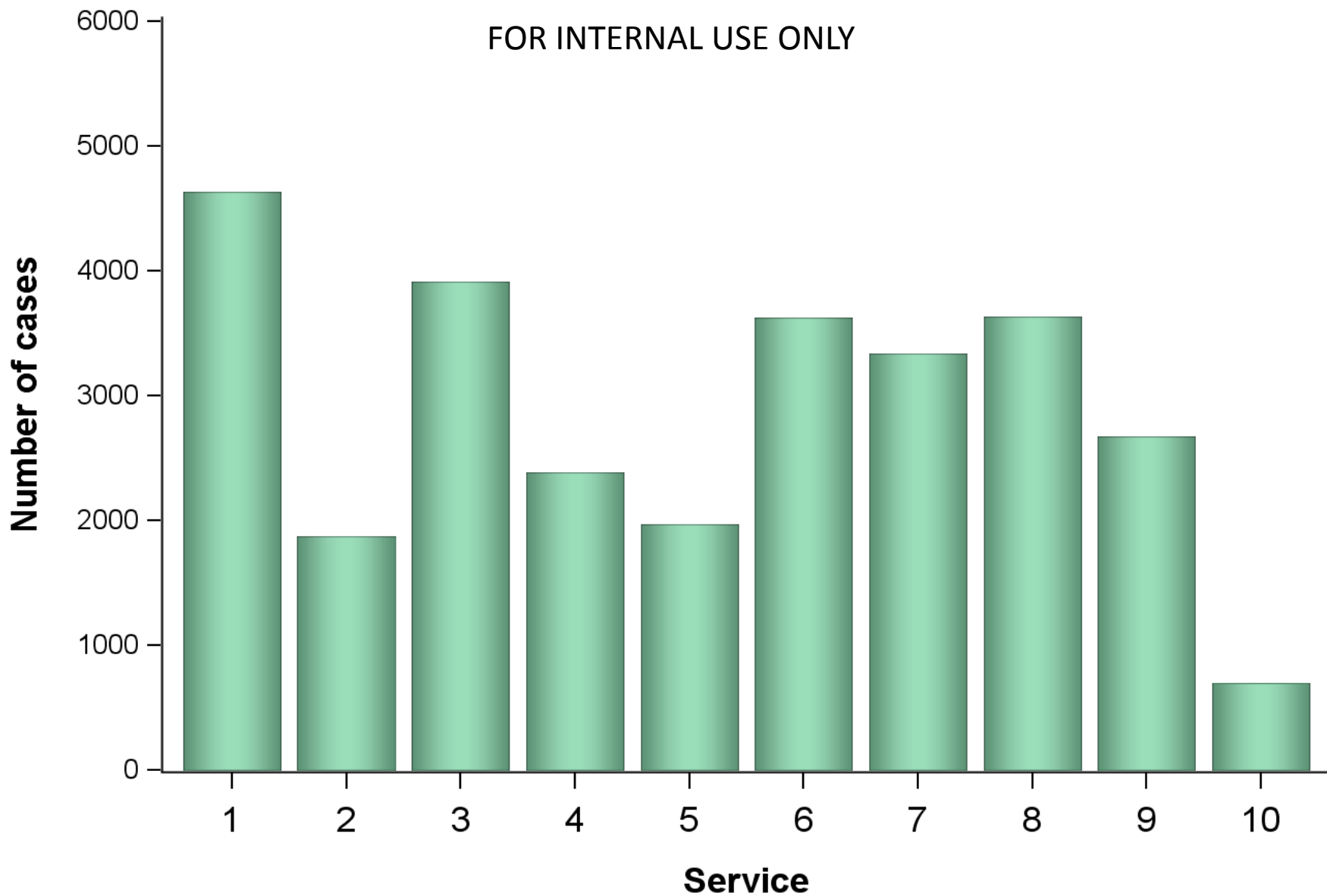
Cardiac Arrest and Cardiopulmonary Resuscitation Outcome Reports: Update of the Utstein Resuscitation Registry Templates for Out-of-Hospital Cardiac Arrest





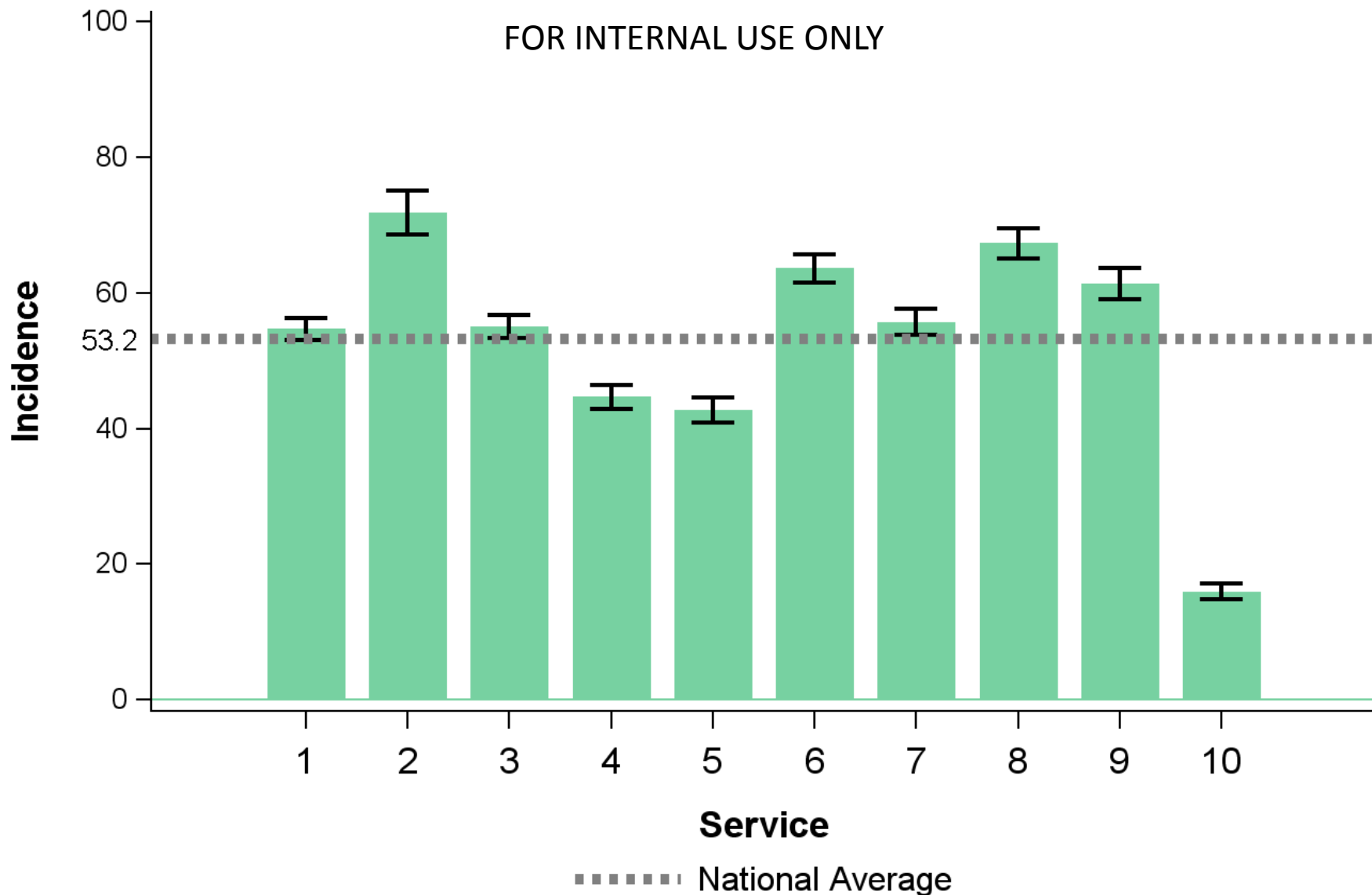
Total Resuscitation attempted cases by Service (N= 28,729)

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Incidence per 100,000 population by Service

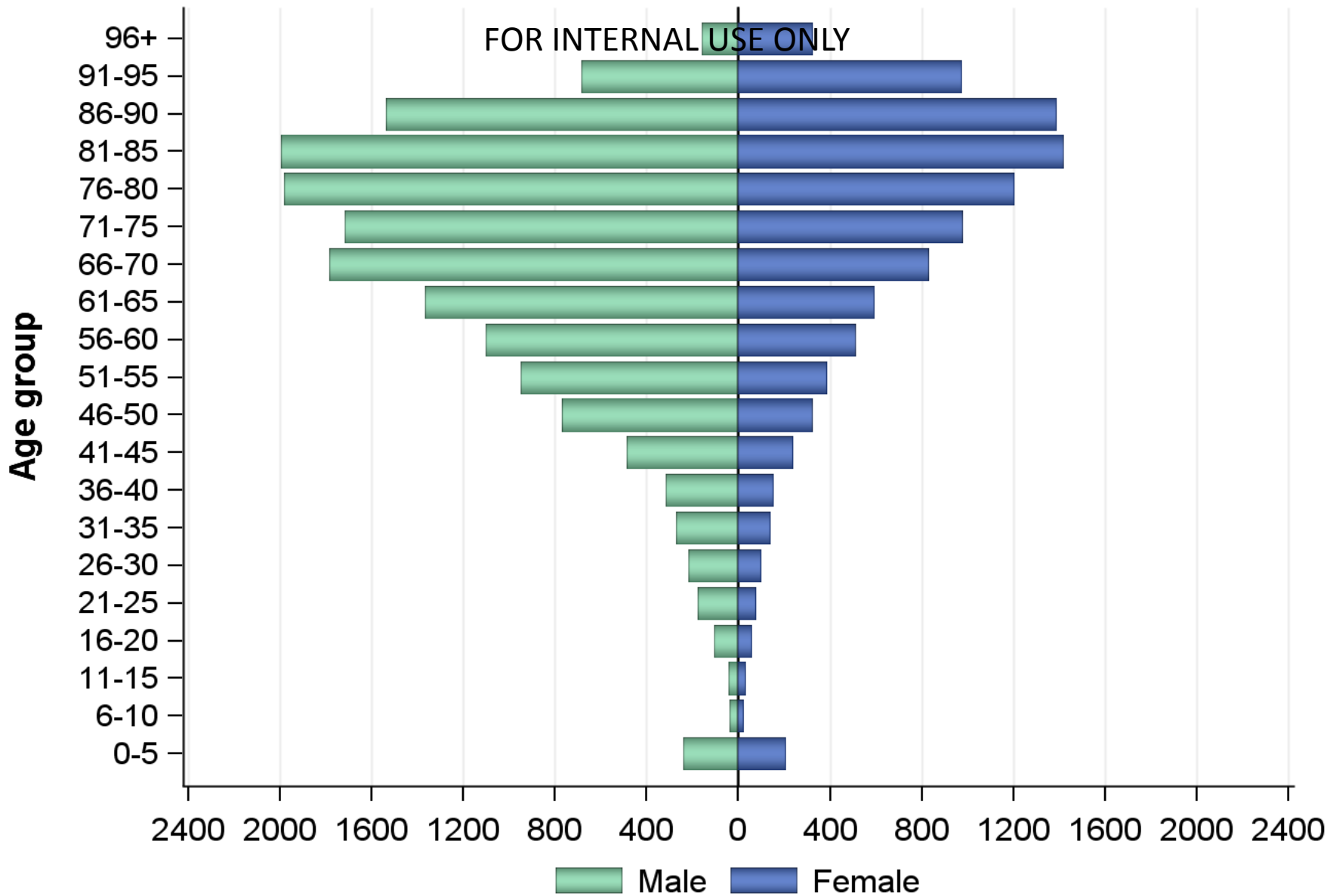
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2014 Population is estimated based on 2013/2014 ONS data

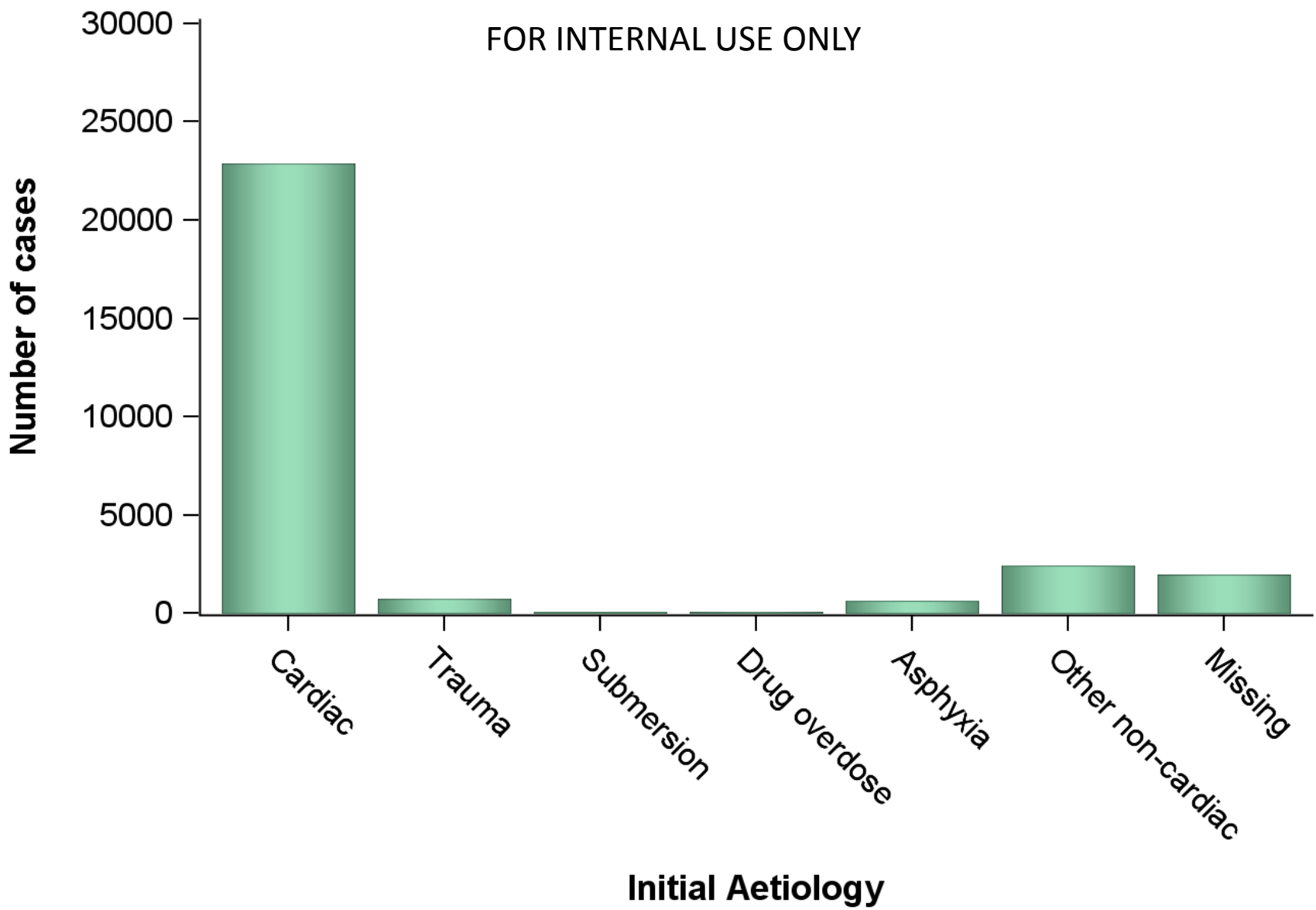
Cardiac Arrest by Age and Sex

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Initial Aetiology

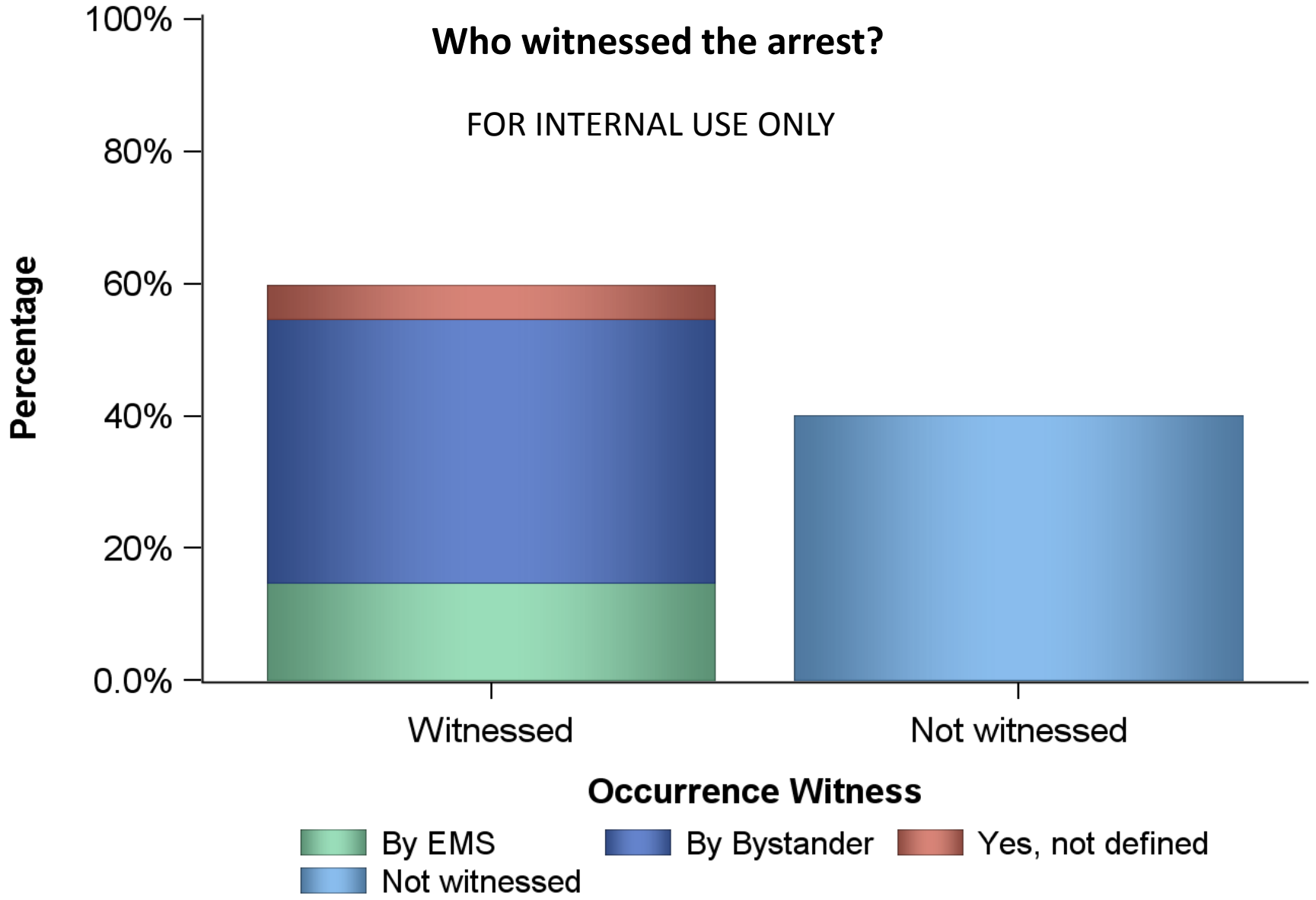
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Occurrence Witness

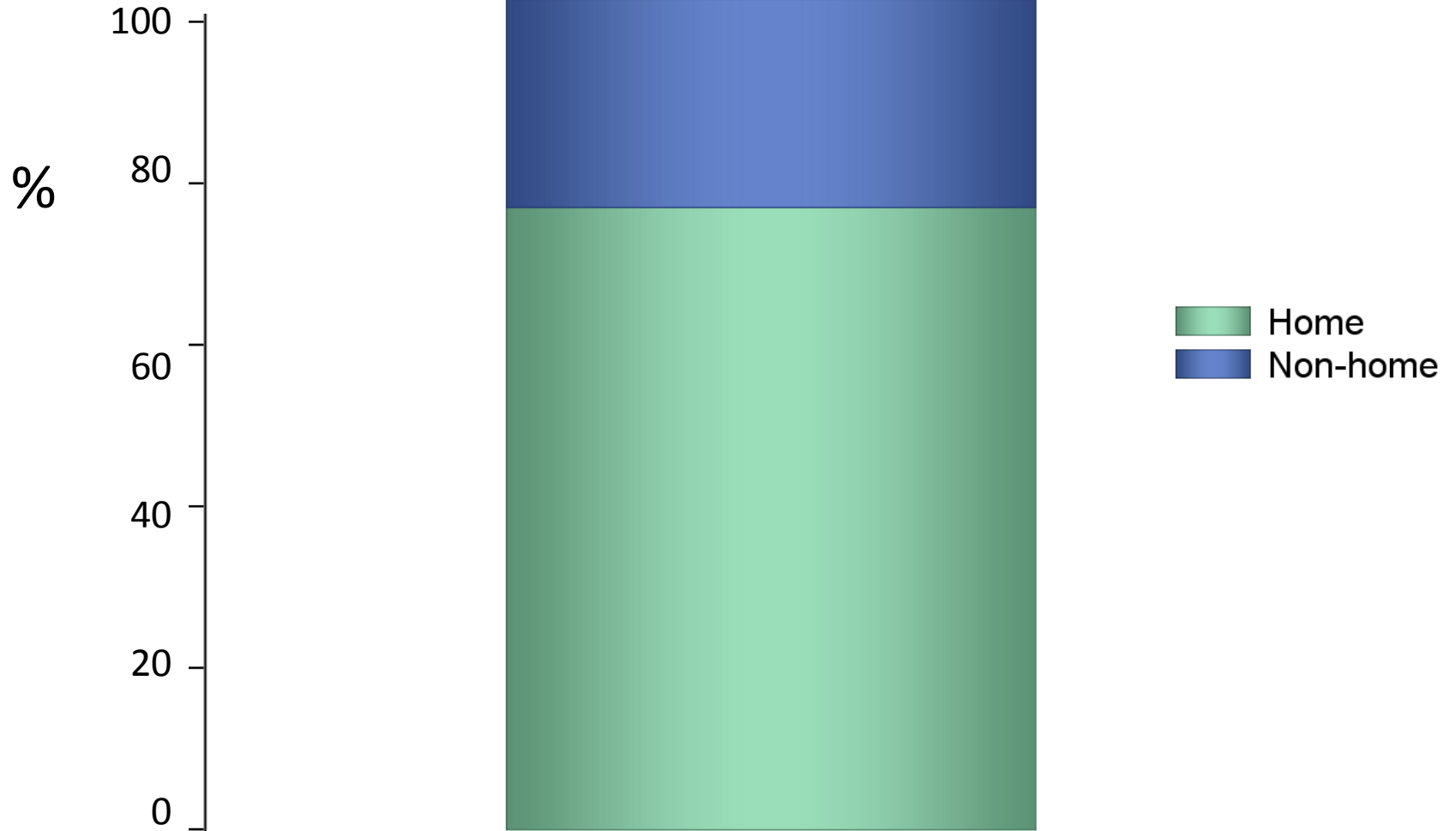
Who witnessed the arrest?

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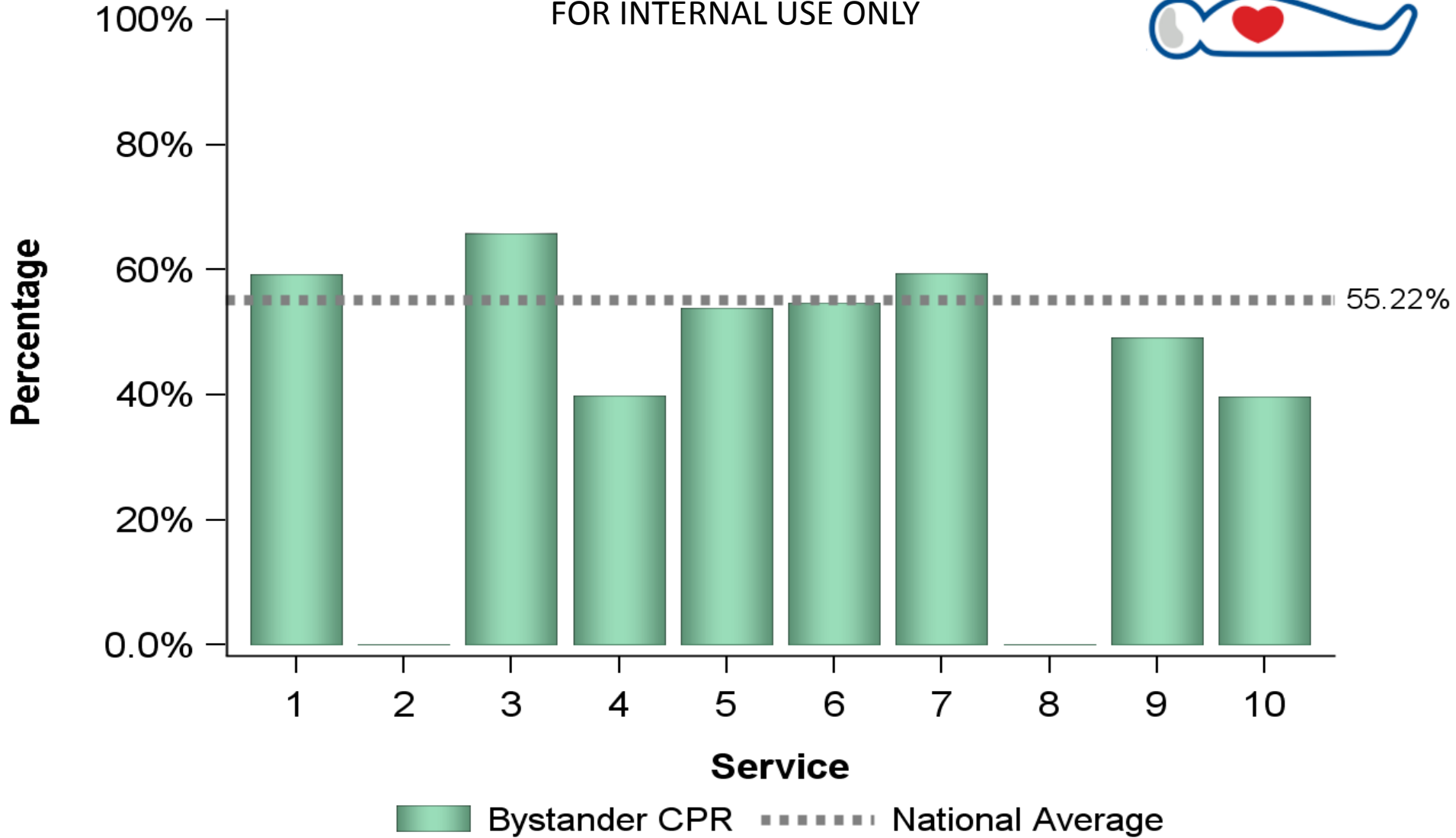
Cardiac Arrest Location

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Bystander CPR

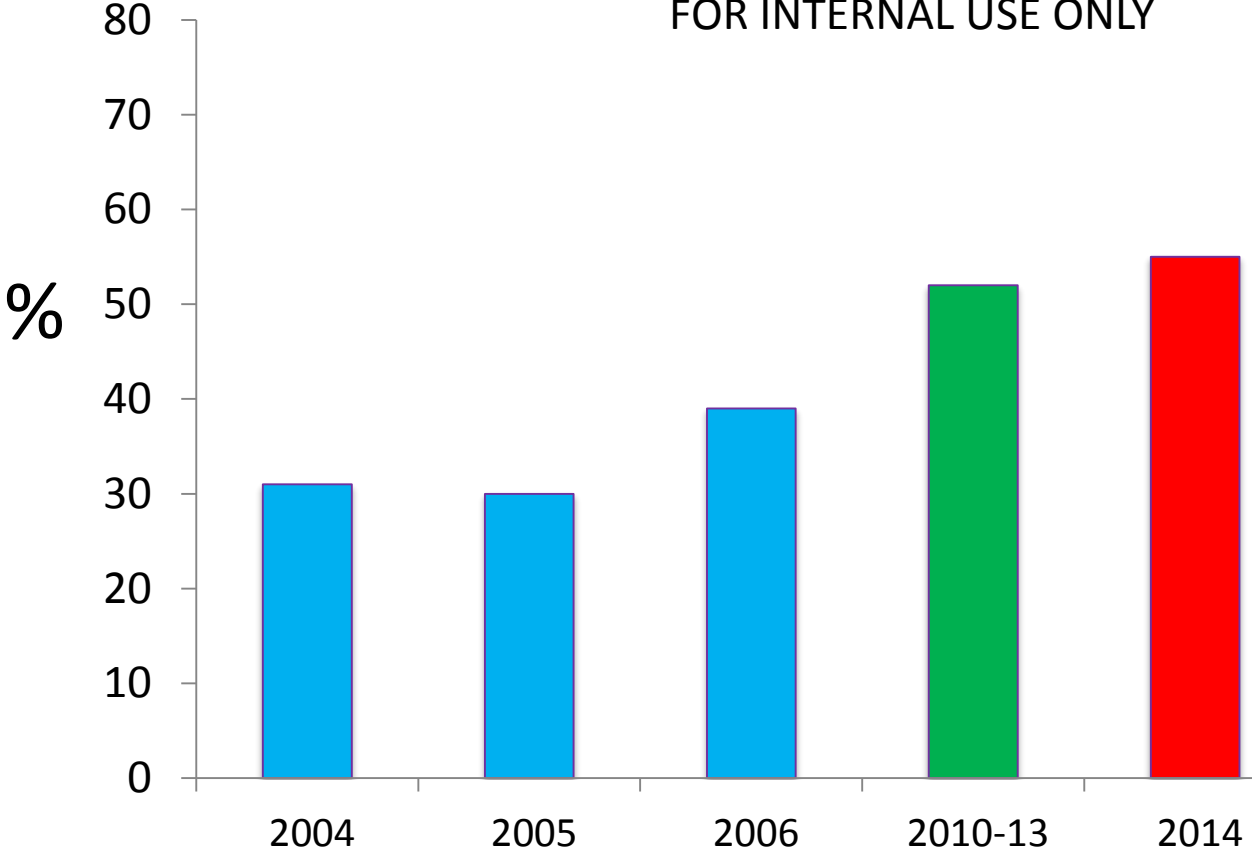
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Bystander CPR



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ASA reports

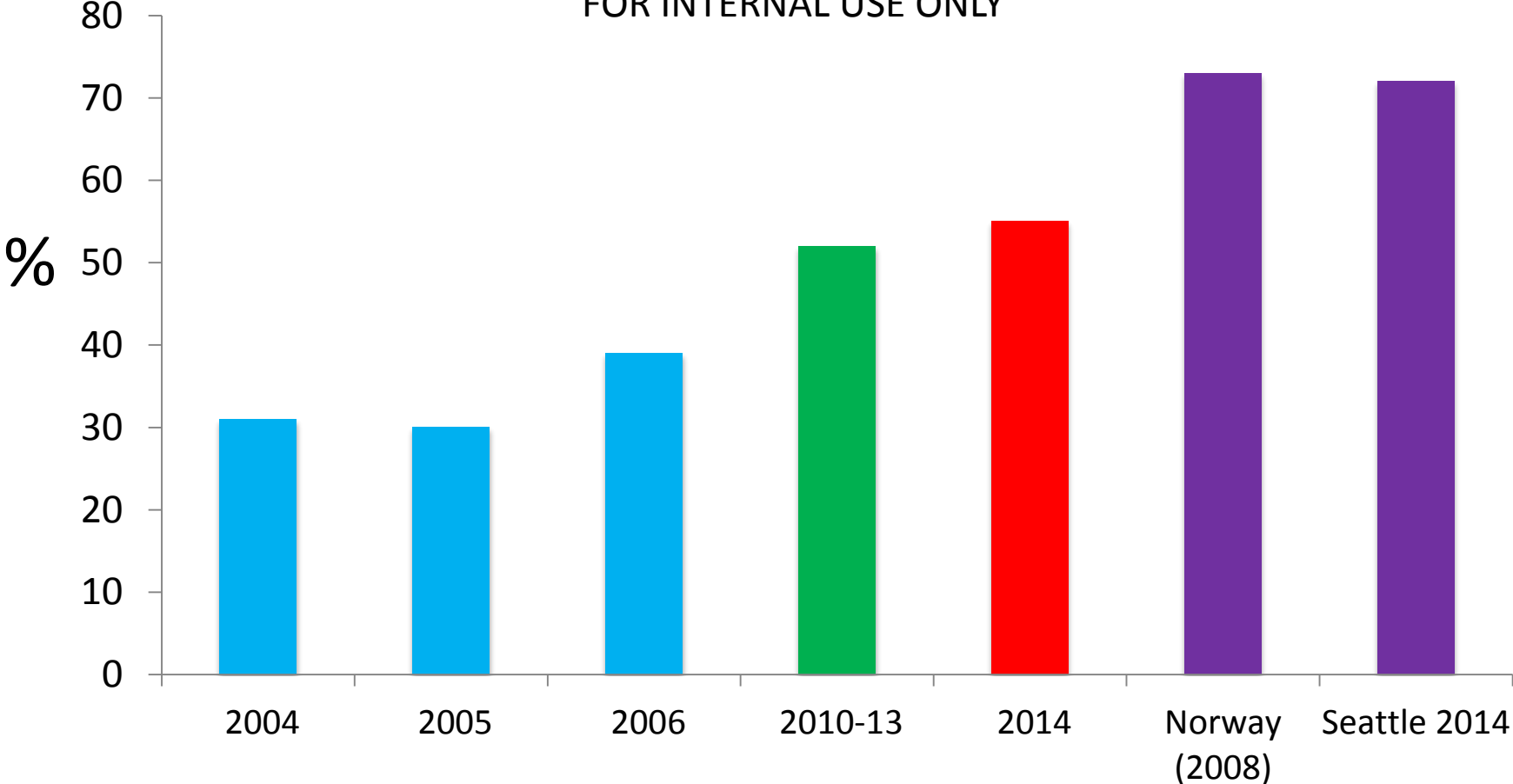


* Bystander CPR (EMS witnessed arrests excluded)

Bystander CPR



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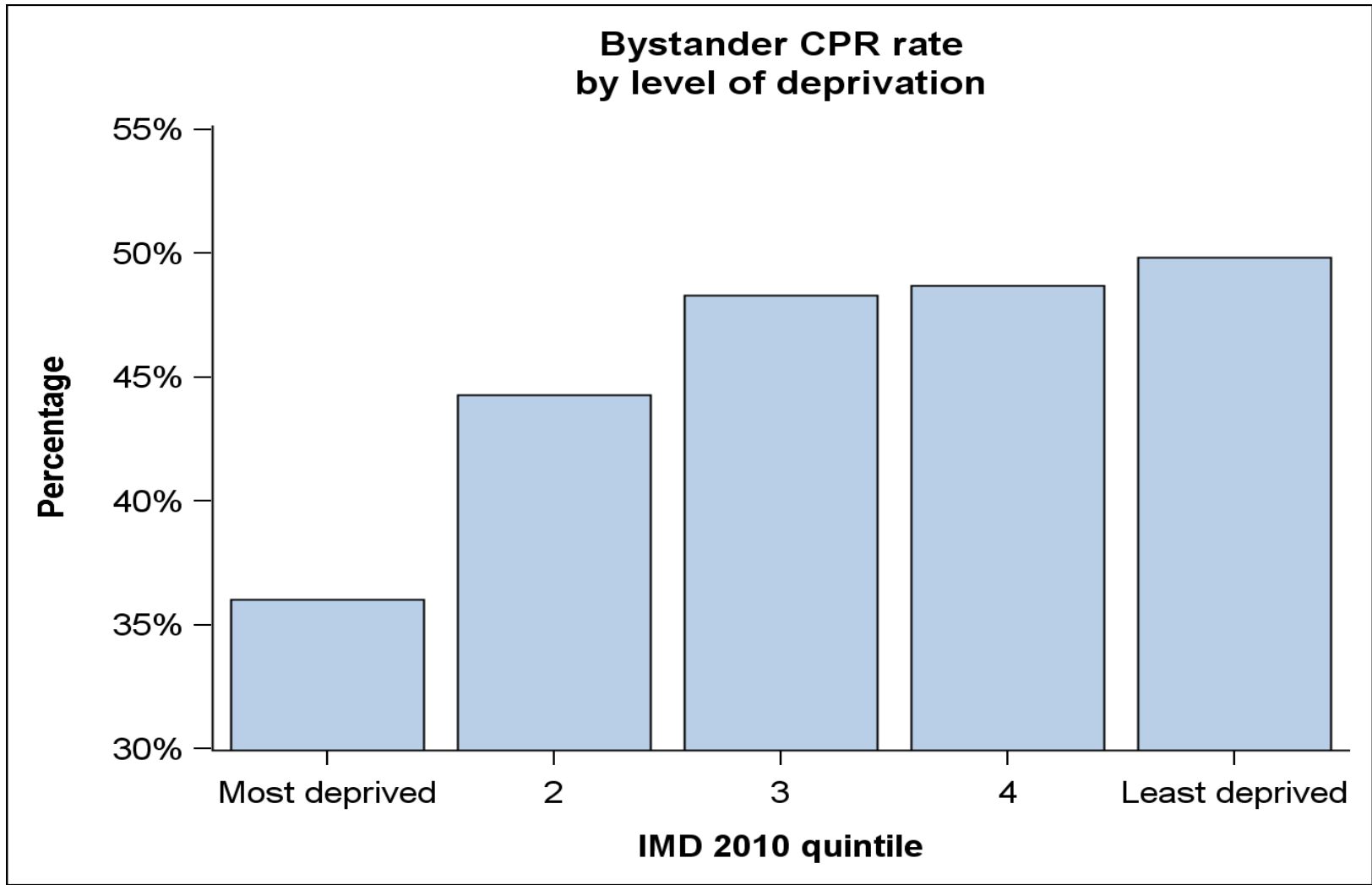
ASA reports



* Norway, cardiac cause arrests

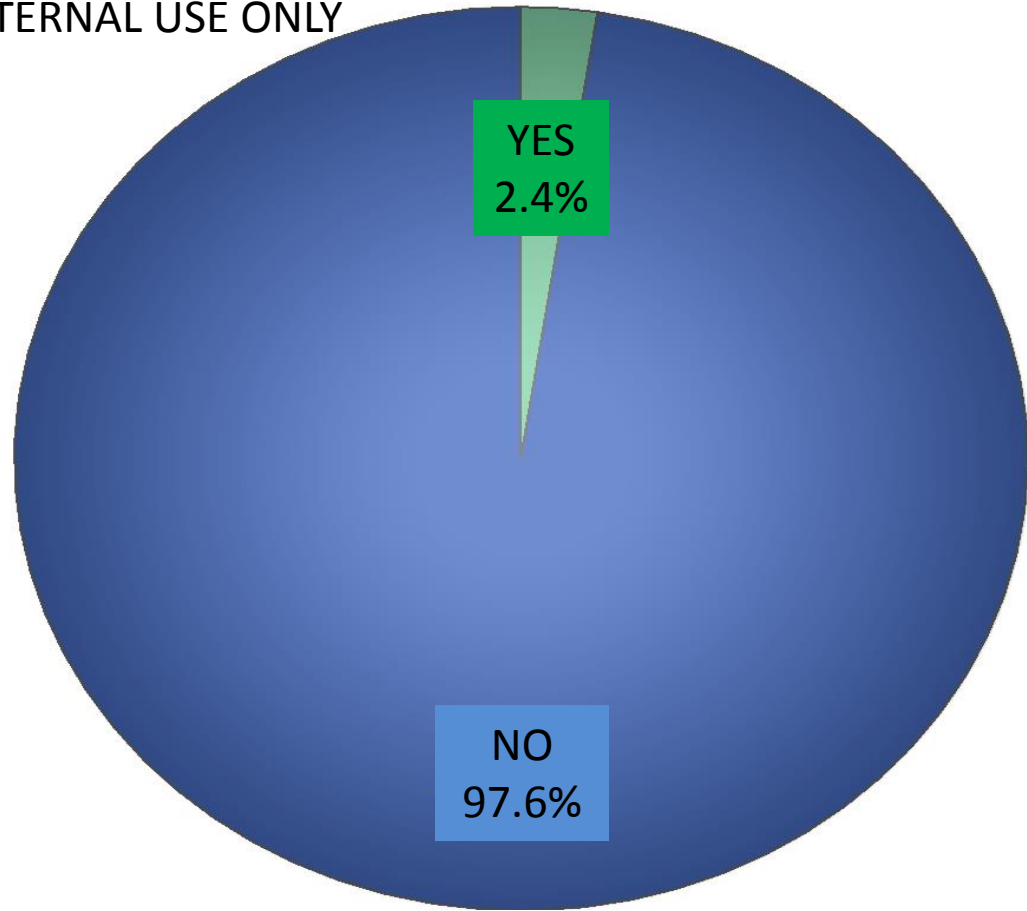
Health in-equalities: Bystander CPR rates lowest in most deprived areas

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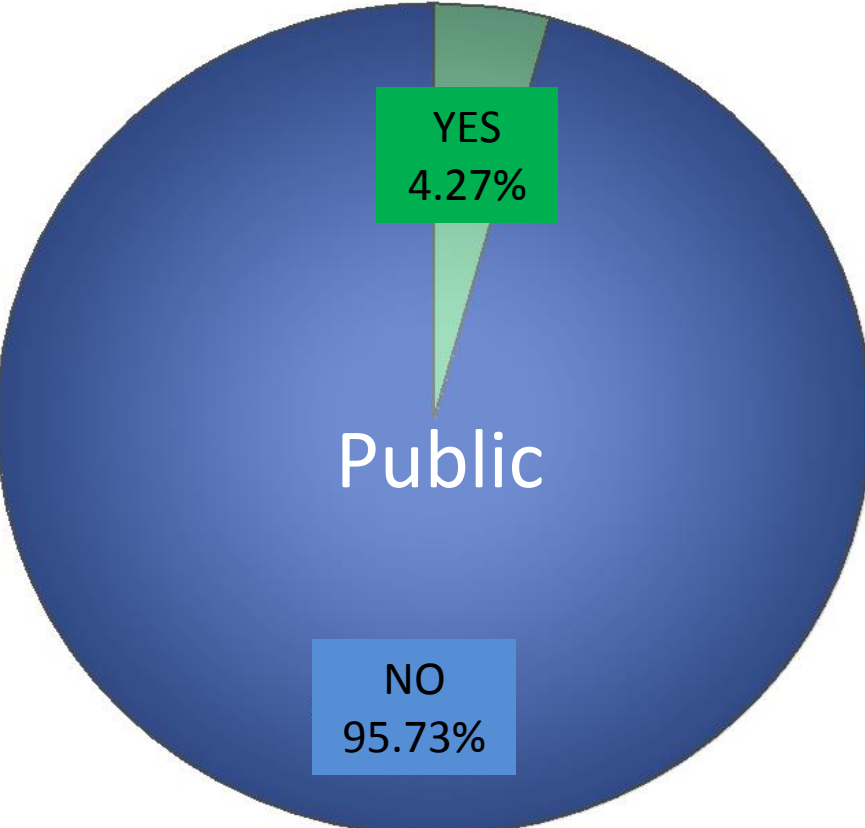
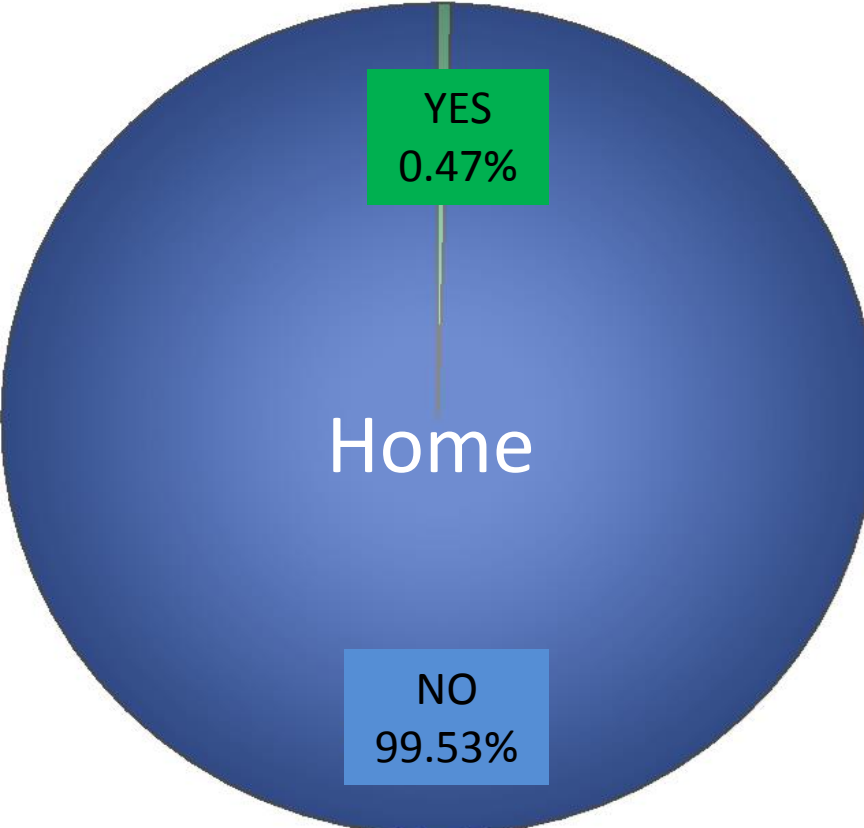
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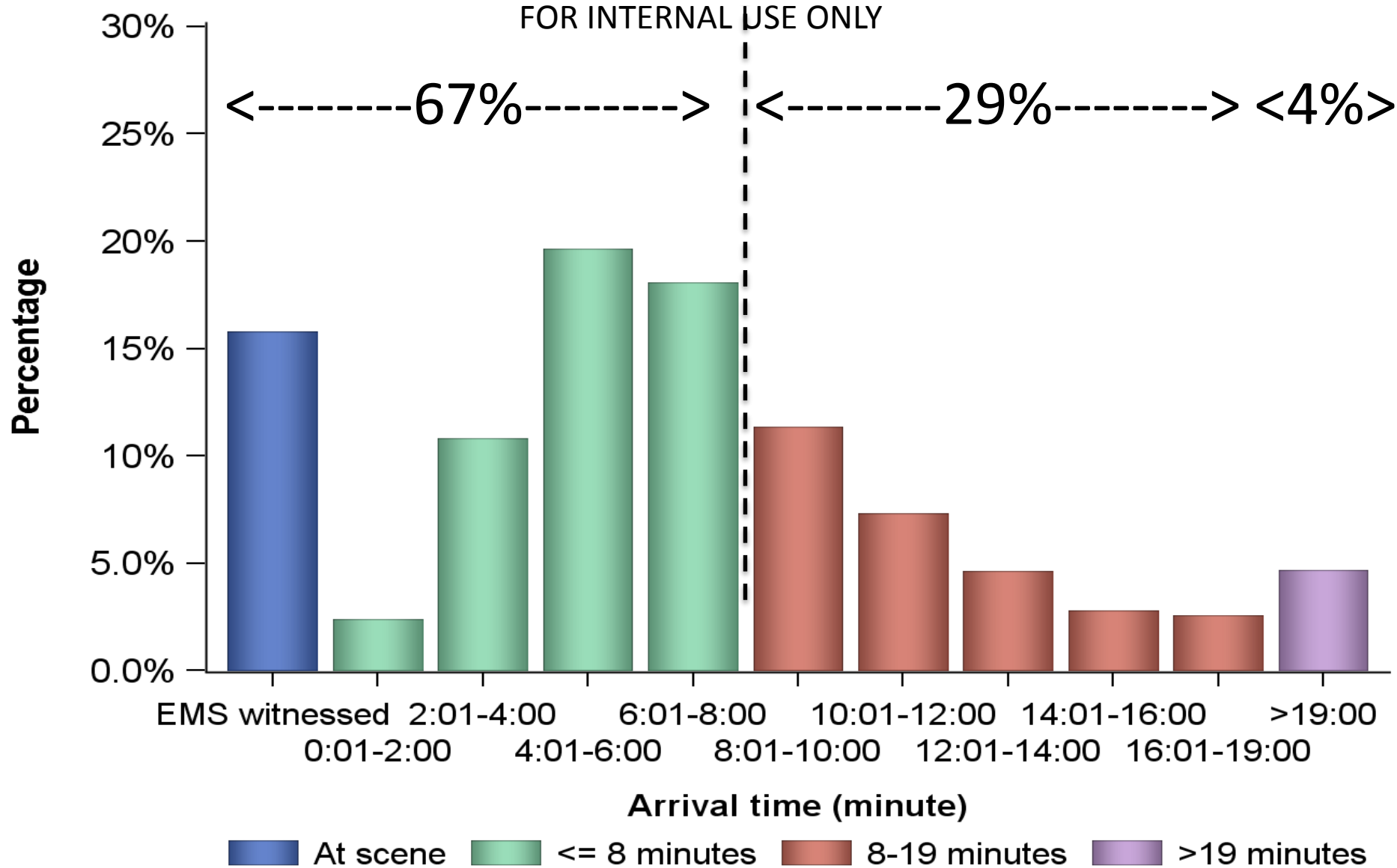


PAD used by Location

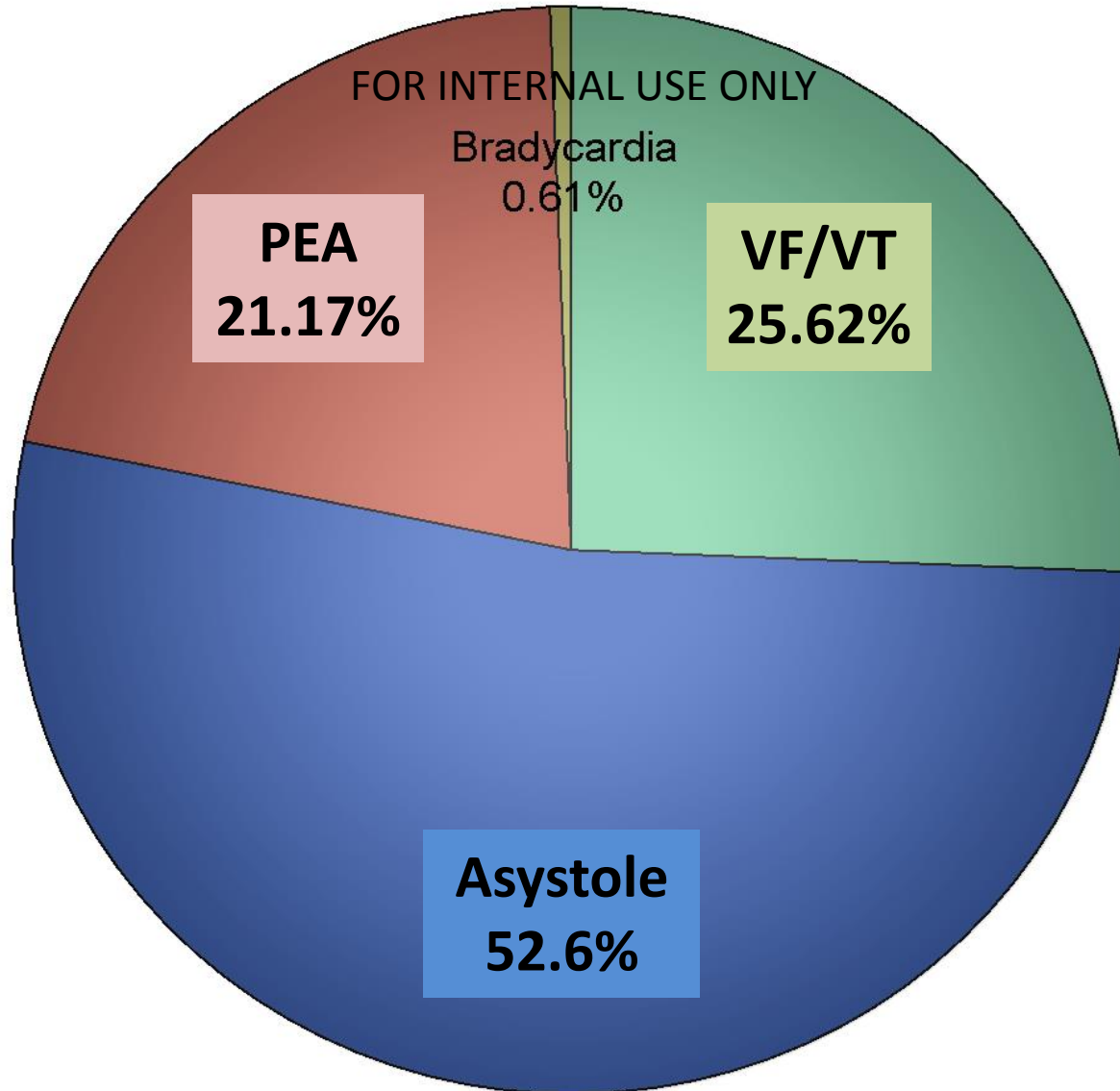
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Percentage of Arrival time

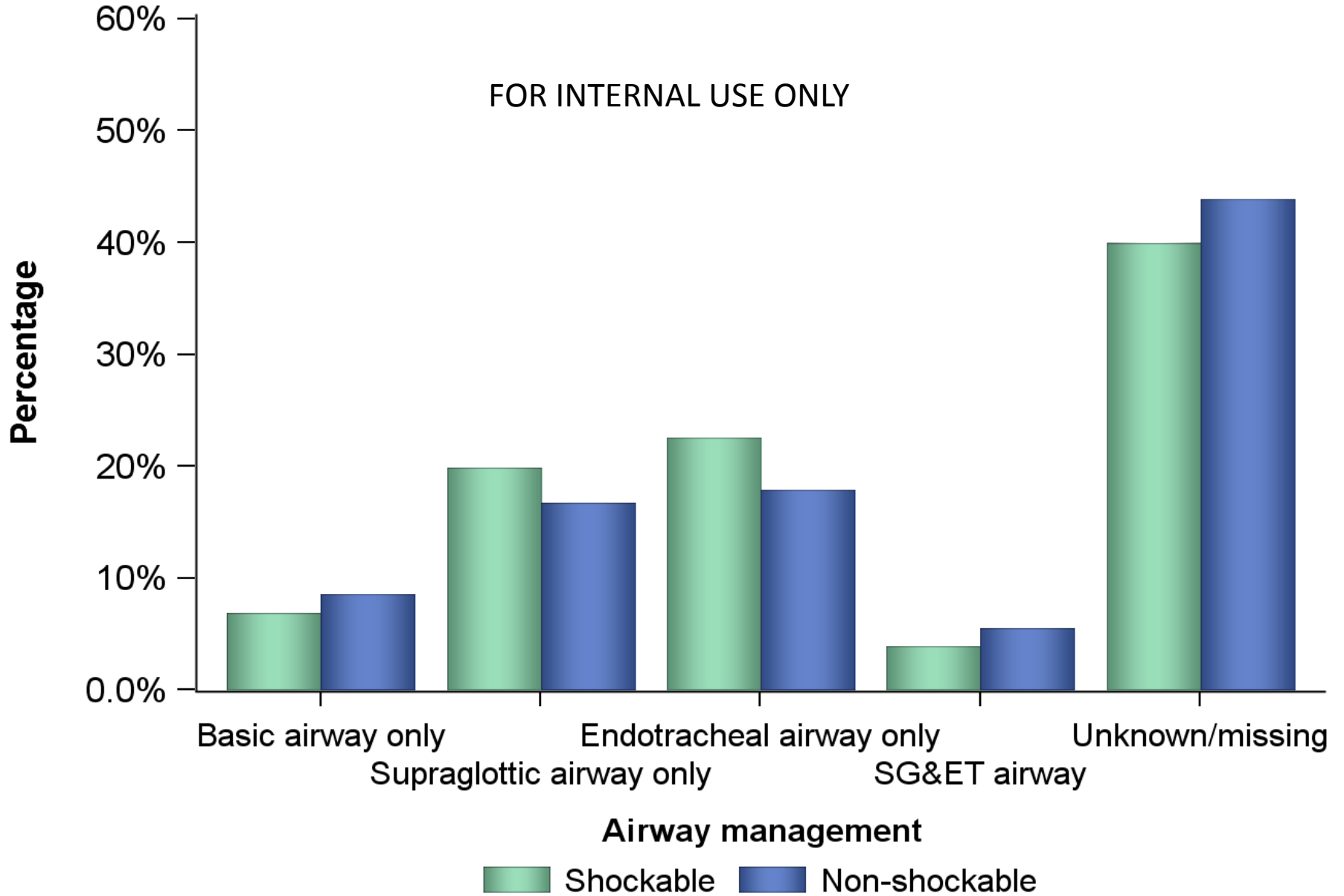


Initial Rhythm



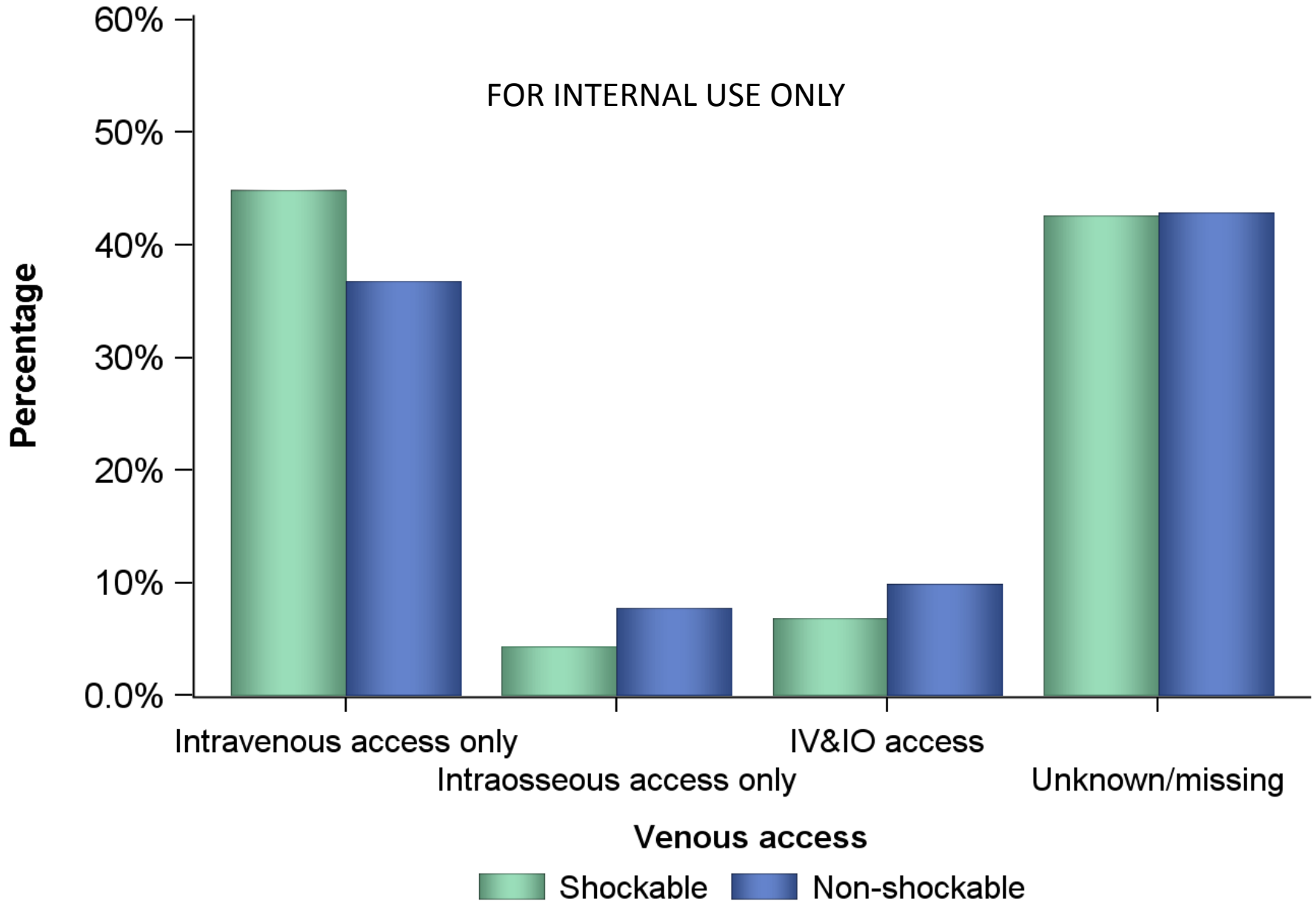
Airway management by Initial rhythm

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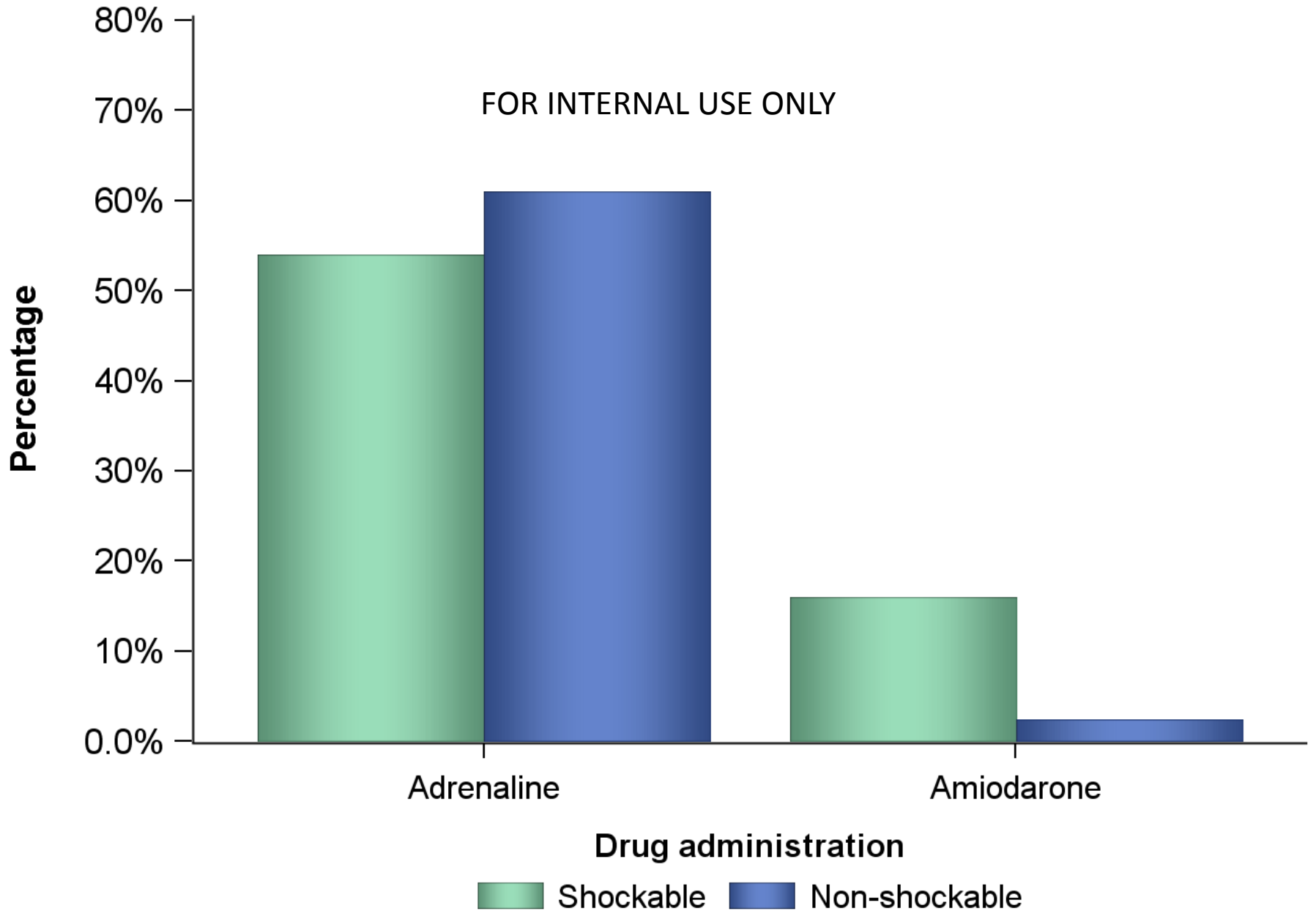
Venous access by Initial rhythm

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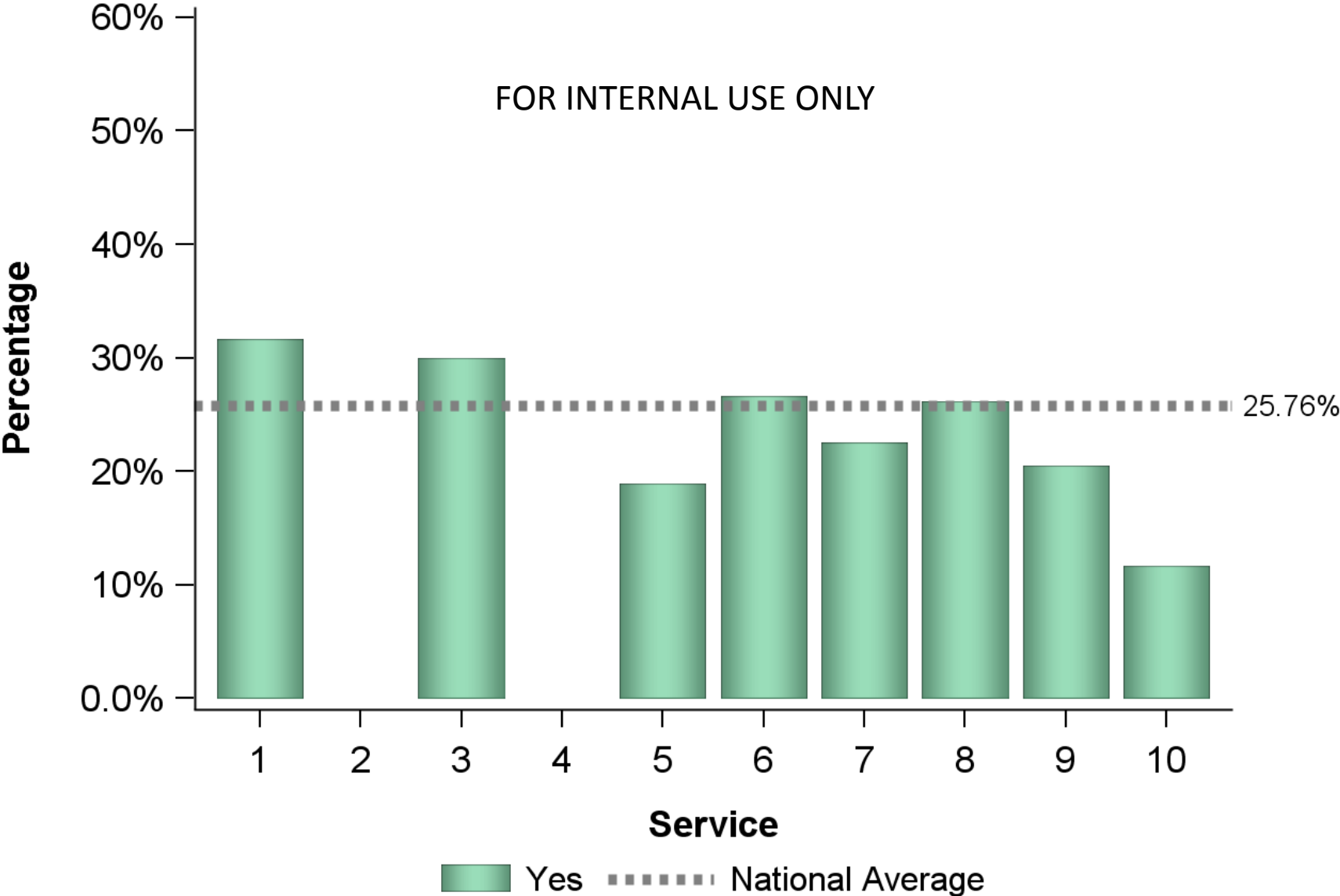
Drug administration by Initial rhythm

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ROSC at Hospital transfer by Service

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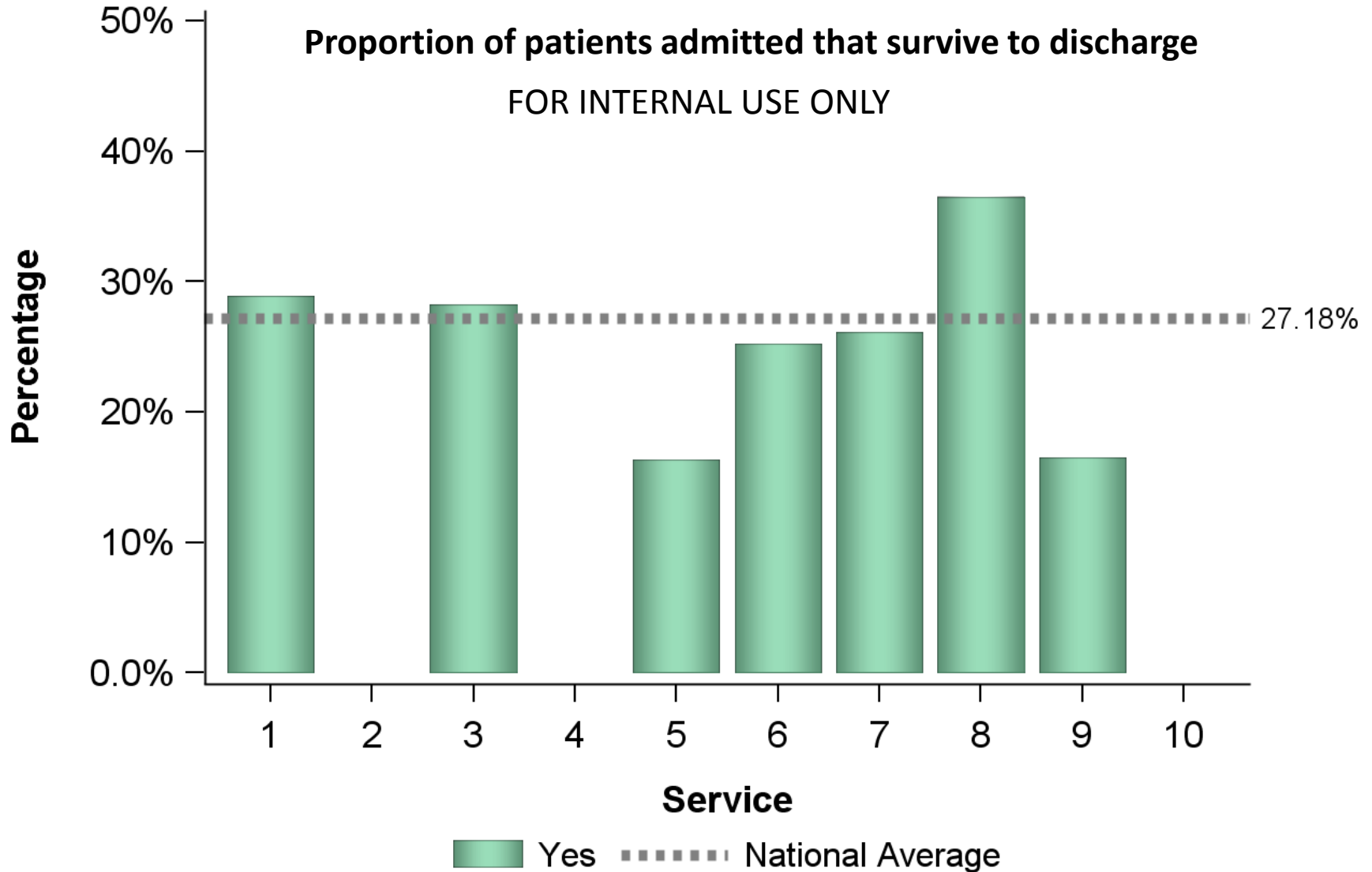


Service 2 & 4 excluded due to incomplete data

Survival to Hospital discharge by Service

Proportion of patients admitted that survive to discharge

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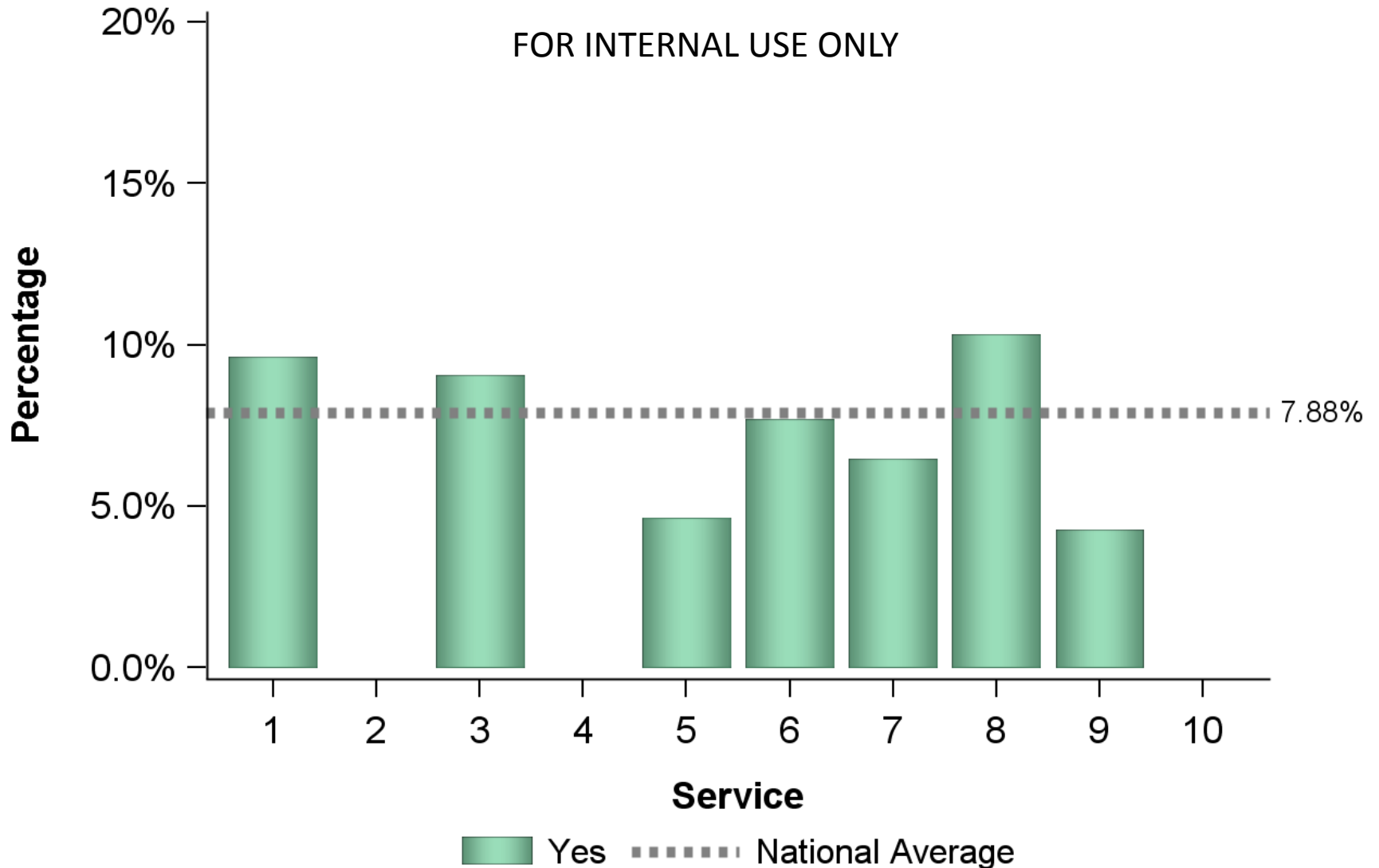


ROSC at Hospital transfer cases only

Service 2, 4 & 10 excluded due to incomplete data

Survival to Hospital discharge by Service in all EMS treated cases

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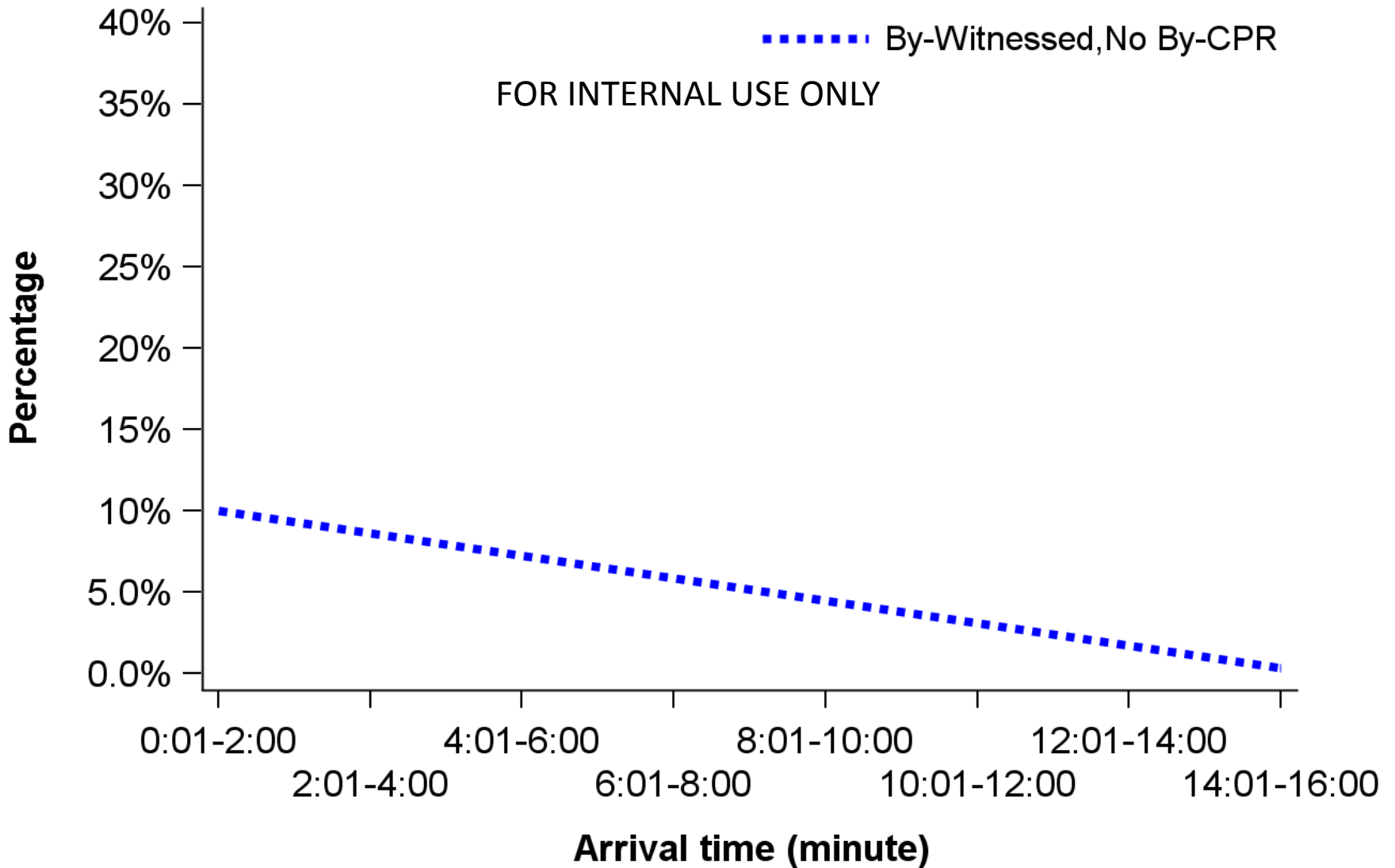


Service 2, 4 & 10 excluded due to incomplete data

Survival to Hospital discharge by Arrival time

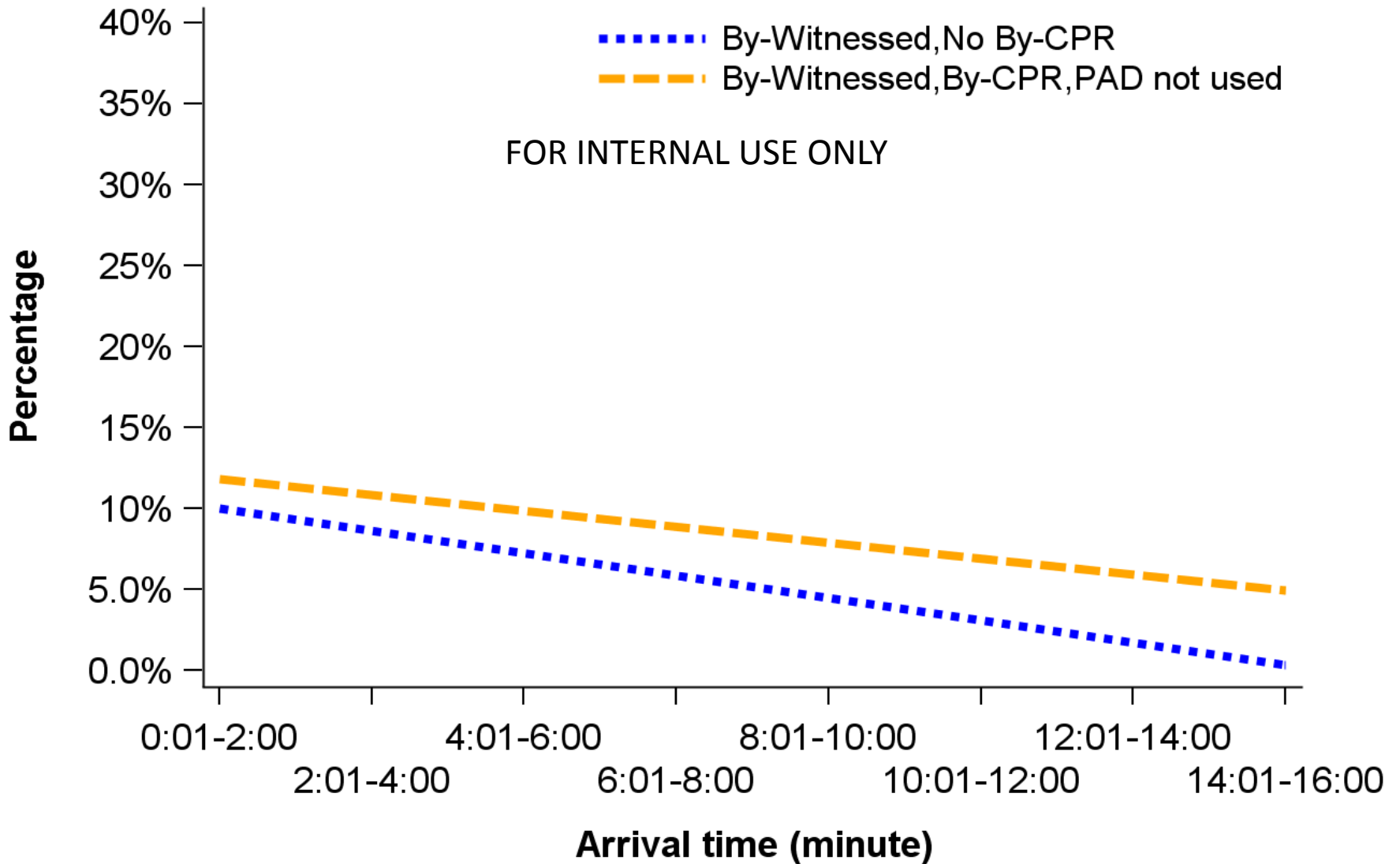
By-Witnessed, No By-CPR

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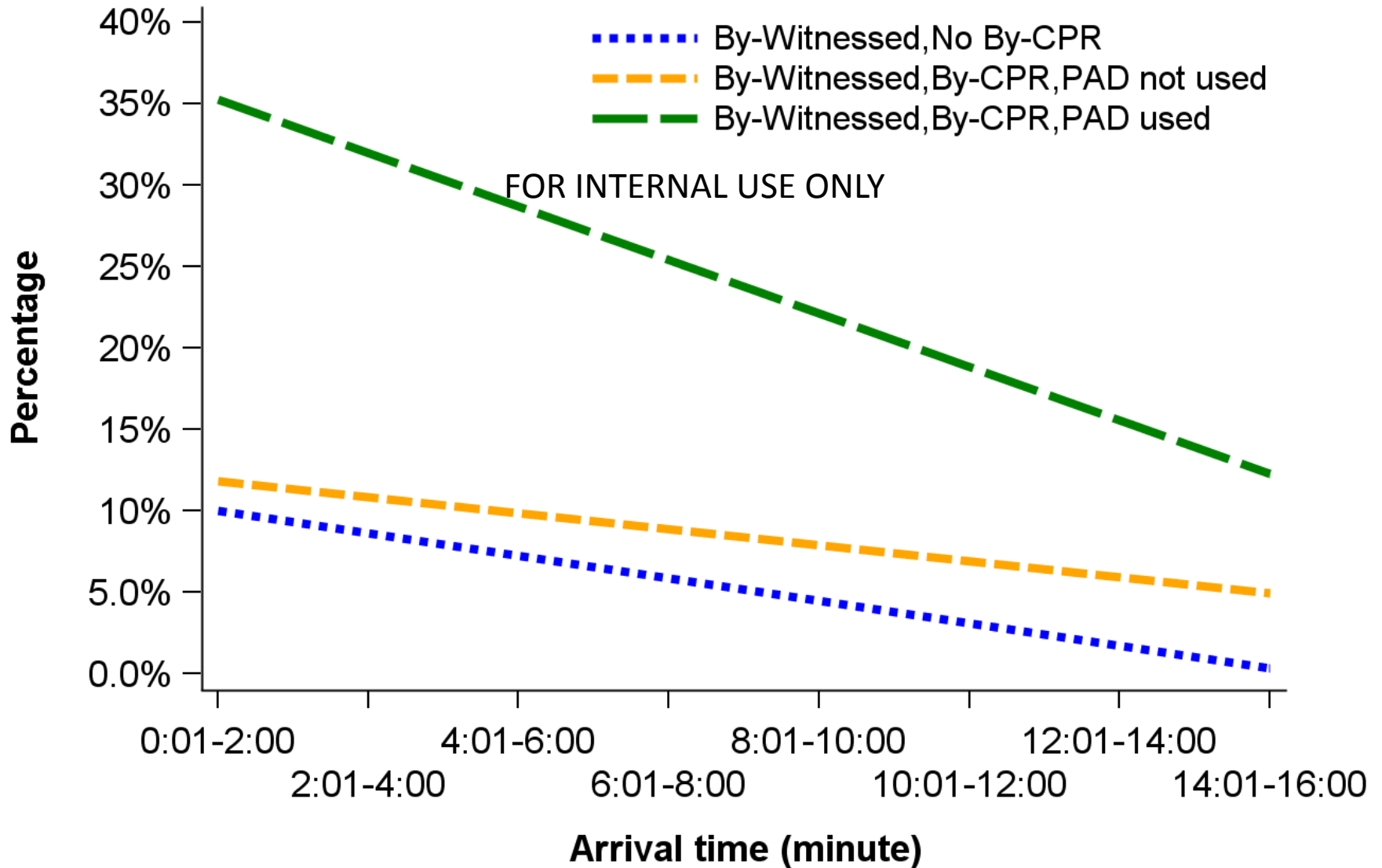
*Rate by time is based on Non-EMS witnessed cases only
Service 2, 4 & 10 excluded due to incomplete data*

Survival to Hospital discharge by Arrival time



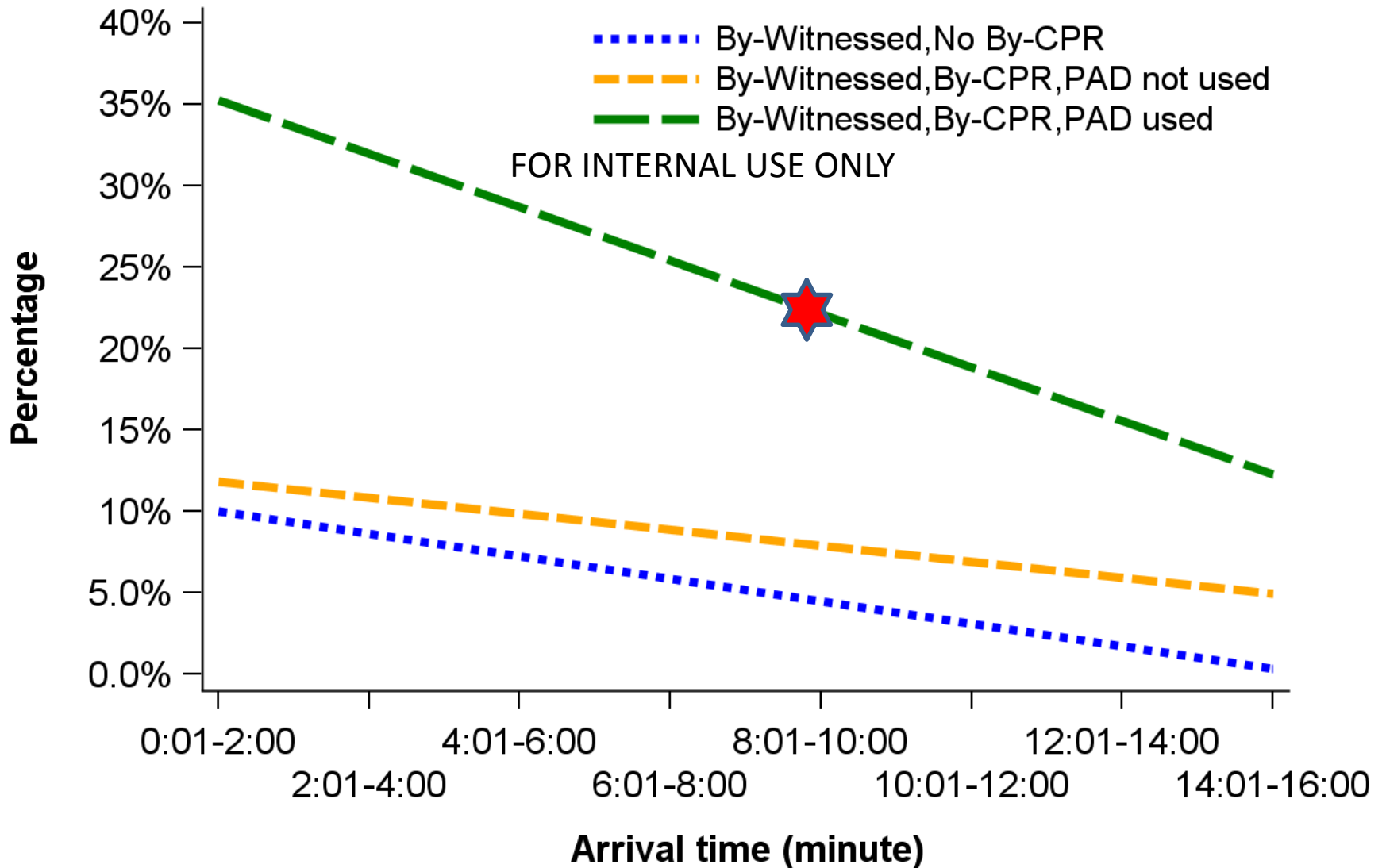
Rate by time is based on Non-EMS witnessed cases only
Service 2, 4 & 10 excluded due to incomplete data

Survival to Hospital discharge by Arrival time



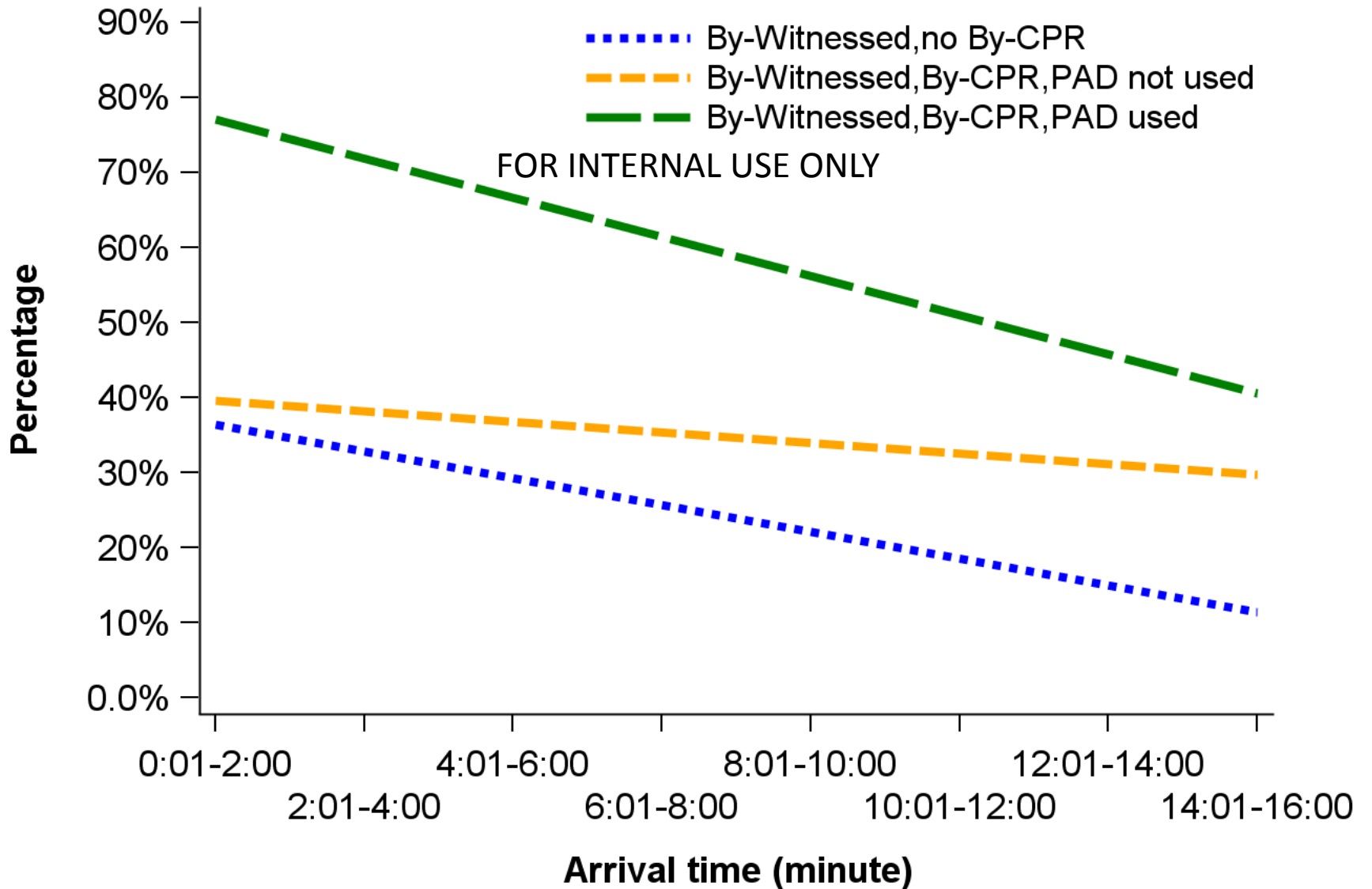
*Rate by time is based on Non-EMS witnessed cases only
Service 2, 4 & 10 excluded due to incomplete data*

Survival to Hospital discharge by Arrival time



*Rate by time is based on Non-EMS witnessed cases only
Service 2, 4 & 10 excluded due to incomplete data*

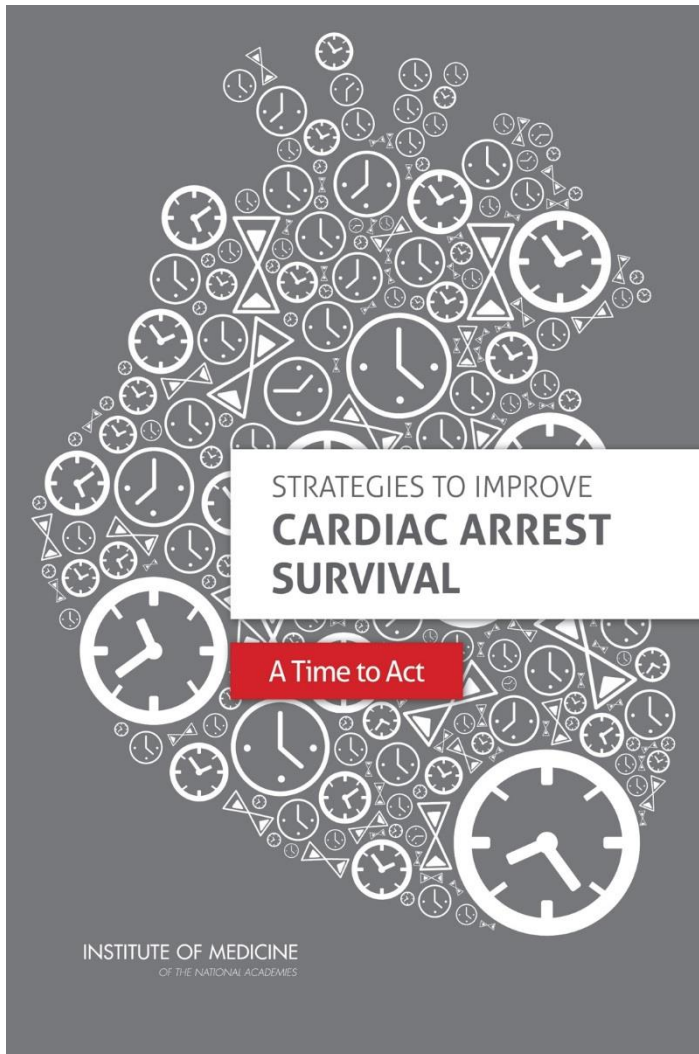
Shockable rhythm by Arrival time



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Rate by time is based on Non-EMS witnessed cases only

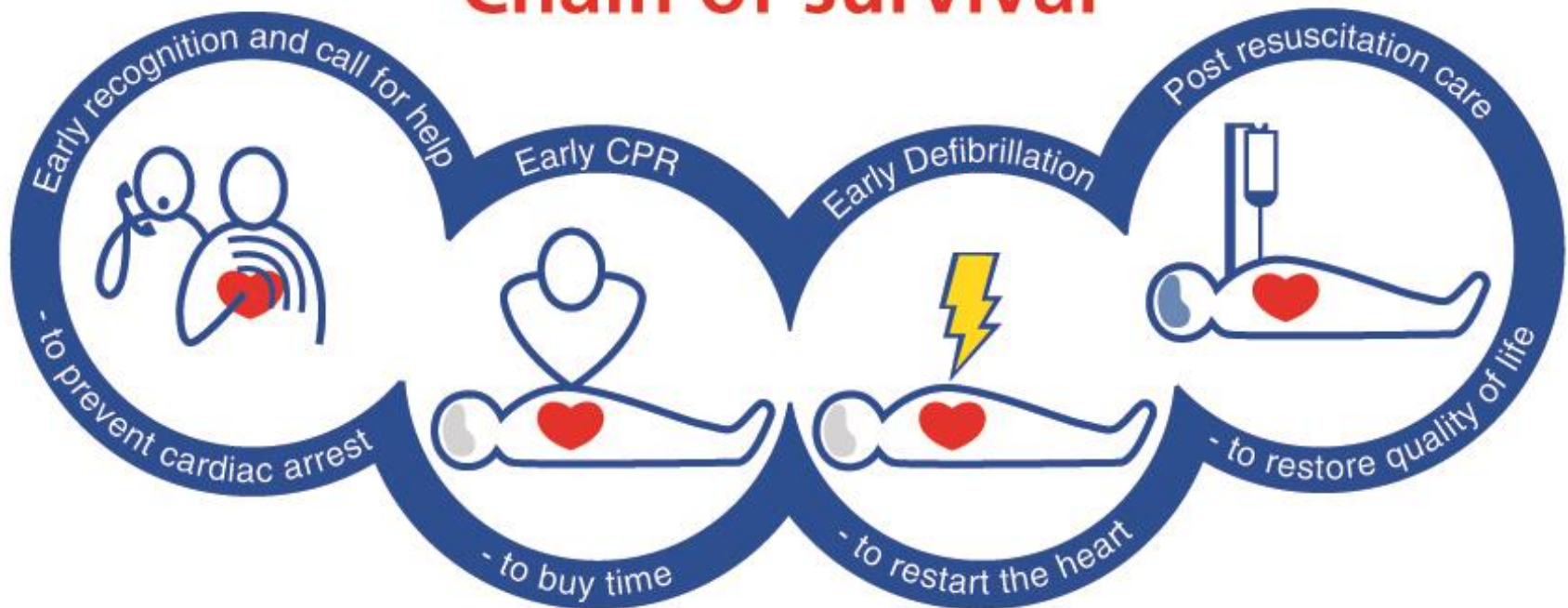
Cardiac arrest : Time to Act



- (1) Comprehensive surveillance and reporting,
- (2) Community engagement
- (3) New treatments and treatment paradigms
- (4) Training and education
- (5) Local translation of research into practice
- (6) Continuous quality improvement.

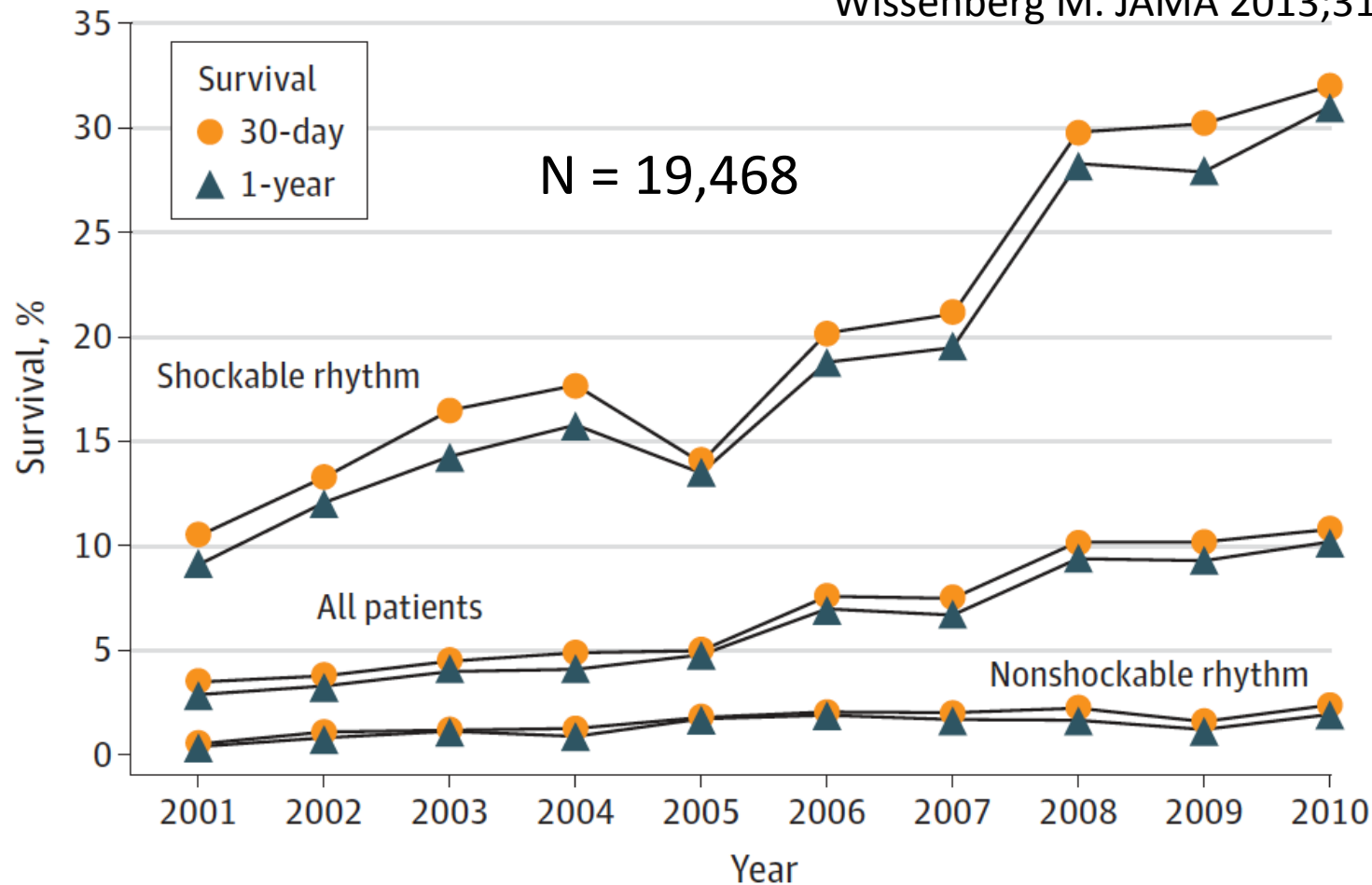
Evaluating the effectiveness of national initiatives to strengthen the chain of survival

Chain of survival



Association of National Initiatives to Improve Cardiac Arrest Management With Rates of Bystander Intervention and Patient Survival After Out-of-Hospital Cardiac Arrest

Wissenberg M. JAMA 2013;310:1377-84

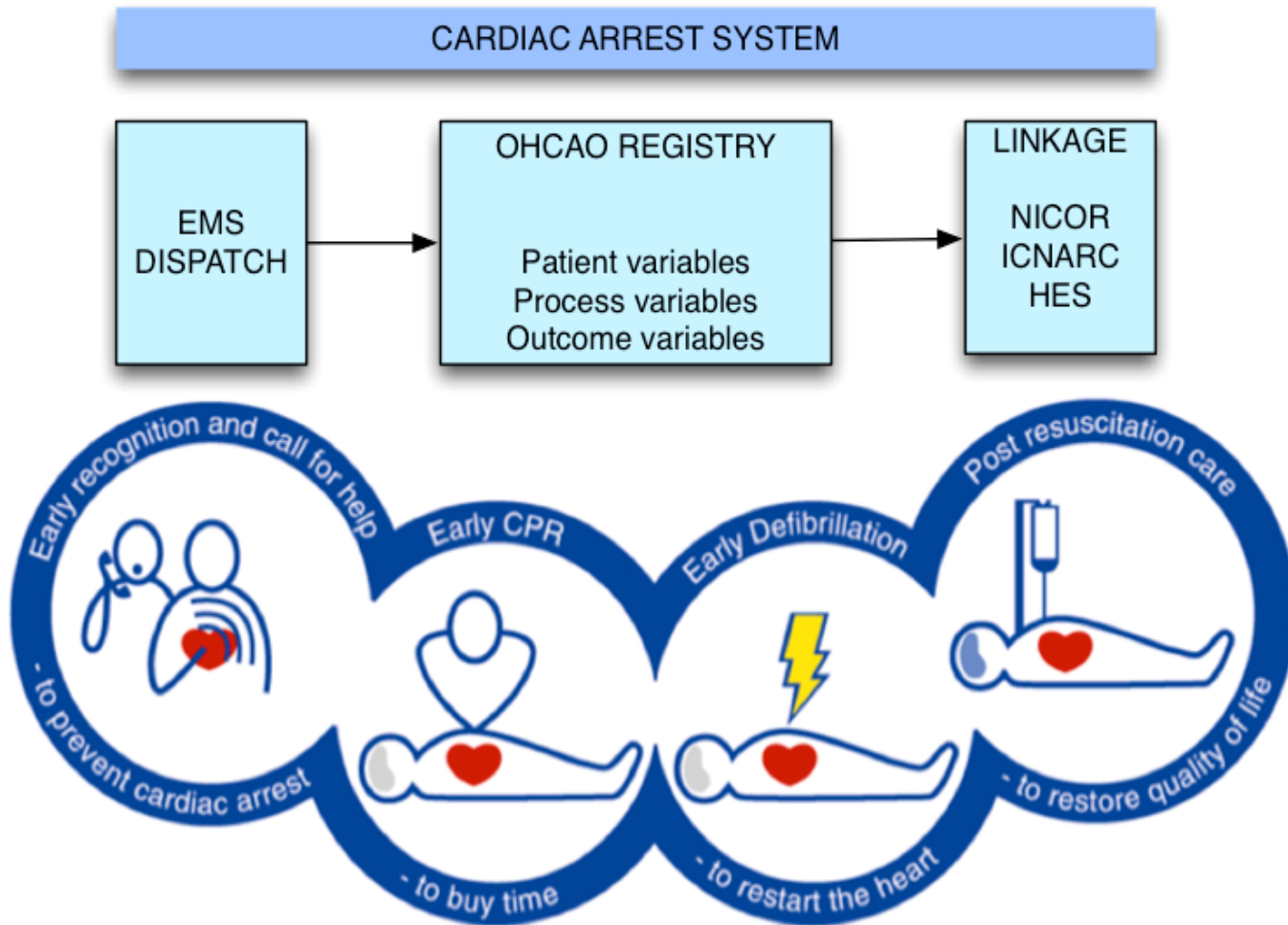


Nationwide Danish Cardiac Arrest Registry

Identify characteristics associated with high frequency of cardiac arrest and low uptake of bystander CPR in order to identify areas for targeted community campaigns



Enhancing the power of registries to comprehensively evaluate patient care pathways



Thank You to all contributors to the project



Resuscitation Council (UK)



Research Team:

Gavin D Perkins—Project Lead
Claire Hawkes, Senior Research Fellow
Samantha J McDonnell—Research Fellow
Scott Booth - Research Associate
Andrew Whittington—Network Coordinator
Charlotte Kaye and Claire Jacques - Trial Coordinators
Chen Ji, Siew Wan Hee - Statisticians
Susie Keohane and Sukhi Dosanji - Senior Project Managers

Ambulances Services:

East of England	East Midlands
Isle of Wight	London
North East	North West
South Central	South West
West Midlands	Yorkshire
Wales	South East Coast
Scotland	Northern Ireland

