ANNEX II

Work Package IV Protocol

European Hospital Benchmarking by Outcomes in Acute Coronary Syndrome Processes

EURHOBOP Project

Manual of Procedures and

Instructions for Data Extractors

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SCHEDULE FOR THE DATA EXTRACTORS TRAINING COURSE

Day	Hour	Content	Lecturer	Room
January 25th	09:30	Brief Introduction: EURHOBOP Project	Jaume Marrugat	Rodes
	10:00	Preliminary Concepts on Study Management	Maria Grau	Rodes
	10:30	Variable Definition I	Maria Grau	Rodes
	11:30	COFFEE BREAK		PRBB Terraces
	12:00	Variable Definition II	Maria Grau	Rodes
	12:30	Roadmap for Data Extraction	Maria Grau	Rodes
	14:00	LUNCH		PRBB Terraces
	15:00	Workshop	Paula Cabero Maria Grau Ruth Martí Martina Sidera Cristina Soler	Rodes
January 26th	09:30	Summary	Maria Grau	Corsega/Cerdenya
	10:15	Accreditation	All	Corsega/Cerdenya
	11:15	COFFEE BREAK		PRBB Terraces
	11:45	Concluding Remarks		Corsega/Cerdenya

SUMMARY

Project Objectives

EURHOBOP seeks to validate a set of predictive mathematical functions that include indicators of in-hospital case fatality outcome to assess the quality of myocardial infarction (MI) or unstable angina (UA) patient management and of the following three procedures: coronary angiography, thrombolysis, and percutaneous intervention.

The indicators will be adjusted for patient, hospital and country characteristics and will permit hospitals to benchmark their performance in these procedures.

Methods and Means

We will consider in-hospital case-fatality as the outcome indicator in patients admitted for an acute coronary syndrome (ACS) who receive a discharge diagnosis of MI or UA and undergo coronary angiography, thrombolysis, or percutaneous revascularisation (angioplasty with or without stenting) for general MI and UA patient management.

We will validate several risk functions (GLM multilevel models) with different levels of adjustment, developed in the EUPHORIC DG SANCO project (2004-08), and we will develop new ones. The validation will be performed on a sample of 200 consecutive MI or UA patients from 10 hospitals per participant country (in total, 70 hospitals and 14,000 patients).

The expected results consist of a set of hospital-validated mathematical functions suitable for European hospital benchmarking of cardiovascular disease management performance and for European citizens to determine their risk of in-hospital death when submitted to these procedures.

METHODOLOGY

Cardiovascular Benchmarking

Patients admitted for an acute coronary syndrome (ACS) receive a discharge diagnosis of myocardial infarction (MI) either with or without Q-wave in the electrocardiogram, or unstable angina (UA). ACS does not exist as an entry in the international classification of diseases (ICD), which is used in discharge diagnosis in European hospitals. MI and UA are easily identified, clearly ICD-defined conditions with a high social impact, whose management includes a number of procedures.

List of Partners Involved

Acronym	Institution	Country
IMAS – IMIM	Institut Municipal d'Assistència Sanitària – Institut Municipal d'Investigació Médica *Municipal Institute for Health Services/ Municipal Institute for Medical Research*	Spain
DEASL	ASL Roma E - Dipartimento di Epidemiologia *Health Authority Roma E - Department of Epidemiology*	Italy
FMUP	Faculdade de Medicina da Universidade do Porto *University of Porto Medical School*	Portugal
HMGU	Helmholtz Zentrum München - Deutsches Forschungszentrum für Gesundheit und Umwelt *Helmholtz Center Munich - German Research Center for Environmental Health*	Germany
THL	Terveyden ja hyvinvoinnin laitos *National Institute for Health and Welfare*	Finland
AEPMCV	Association pour l'étude et la prévention des maladies dégénératives du système cardio-vasculaire - "Projet MONICA" *Research and Prevention on Cardiovascular Diseases – The Toulouse MONICA Project*	France
ISS	Istituto Superiore di Sanità *National Institute of Health*	Italy
HOPE	European Hospital and Healthcare Federation	Belgium
HCS – ATTIKON	Ελληνική Καρδιολογική Εταιρεία *Hellenic Cardiologic Society*	Greece

Study Population

Each participating country will recruit 2,000 admitted patients (200 consecutive patients in 10 different hospitals, preferably 7 University and 3 non-University).

INITIAL STUDY MANAGEMENT CONCEPTS

Arrangement with Representatives of Candidate Hospitals

EURHOBOP Researchers should contact candidate hospitals representatives and explain to them the objectives and methodology of the study. Once the hospital representatives have agreed to participate in the study, EURHOBOP Researchers complete the "Collaborating Hospital Characteristics Data Collection Form" (Annex 1).

Death Registry

The main objective of the EURHOBOP Study is to classify European hospitals according to their performance. Therefore, individuals diagnosed with ACS who die before discharge are of particular interest. EURHOBOP researchers and data extractors should be thoroughly knowledgeable about the procedures used to register in-hospital deaths.

Patient Inclusion

Patients to be included must be consecutive and diagnosed with ACS. There are no age or severity restrictions. Inclusion of the required 200 patients may require different periods of time depending on the Hospital's care level, reference population and activity.

All 200 patients will be investigated, including those who die before hospital discharge.

Patient Identification

All patients in the EURHOBOP Study will be identified by a string code consisting of three elements:

Country Code. Each participant country will be identified by a number from 1 to 7.

Hospital Code. Each hospital will require a unique code, typically 1 to 10, but a number up to 20 is permitted to cover possible dropouts or additional recruitment centers. The hospital code must always have two digits. For values from 1 to 9, enter a zero as a placeholder: 01 … 09, 10, etc..

Patient ID. Consecutive patients will be numbered from 1 to 200 in each hospital. When data extractors are unable to identify a particular patient (e.g. typo in patient's last name), this patient will be replaced by a new one with the same ID. The patient ID must always have three digits. Type in zero as a placeholder for values from 1 to 99: 001…009, 010 … 099, 100.

Patient Identification String Code Example

Patient Code 510008 = Patient Troy McClure from the Pink Hospital in Germany

Country	Code
Spain	1
Greece	2
Italy	3
Portugal	4
Germany	5
Finland	6
France	7

Hospitals (example)	Code
Red Hospital	01
Orange Hospital	02
Yellow Hospital	03
Green Hospital	04
Blue Hospital	05
Purple Hospital	06
White Hospital	07
Black Hospital	08
Brown Hospital	09
Pink Hospital	10

Patients (example)	Code
Waylon Smithers	001
Nelson Muntz	002
Timothy Lovejoy	003
Montgomery Burns	004
Seymour Skinner	005
Clancy Wiggum	006
Martha Quimby	007
Troy McClure	008
Marvin Monroe	009
Selma Bouvier	010
...	...
Nedward Flanders	200

Confidential Data

To guarantee participants confidentiality, all identifying data will be dissociated. For this purpose, data extractors should register each patient's name and surname, medical record number, sex, age, and date of admission in an independent table (see Annex 2), one for each hospital. These registries will remain at the participating hospitals.

Patient Data Collection Form

When a country's full list of collaborating hospitals has been forwarded to the coordinator and to Marina Torre (ISS partner) and acknowledged, you may assign hospital codes and begin patient data collection, using the Patient Data Collection Form (Annex 3).

Please extract data from (in order of preference):

1) letter of discharge

2) computer records from emergency room

3) computer records from admission

4) medical records.

The form contains two variable categories, color-coded on the form and in this manual:

- Black variables collect the information about the performance of ACS treatment and procedures. Work Package 4

- Red variables collect the information about the ACS treatment cost. Work Package 7

Data Extractor Identification

Data extractors are identified by an alphanumeric code that must be included in all submitted forms as proof of authenticity. If this field is empty or contains a nonexistent code, the system will reject the submission.

VARIABLE DEFINITION

Patient Identification Variables

Country
Choose your country: Spain, Greece, Italy, Portugal, Germany, Finland, or France.

Hospital code
Enter the code (typically 1-10) you have assigned to the hospital in which you are extracting data.

Patient ID
You may construct this code in any way that permits accurate access to the original patient data in the event of a query from the coordination center's data management department.

Medical record extractor
Enter your assigned personal code.

Diagnosis Variables

Type of Acute Coronary Syndrome on admission
Choose Non ST Elevation Acute Coronary Syndrome (**Non-STEACS**) or ST Elevation Acute Coronary Syndrome (**STEACS**), referring to electrocardiographic characteristics observed on patient arrival to emergency room. This finding guides clinicians in the best choices for patients according to the presence or not of these characteristics. If this information is not found in the records and you have made every effort to determine ACS type for this patient, choose "Not stated".
In case of subacute MI, with Q or QS wave in the admission electrocardiogram, left bundle branch block or pacemaker, choose "Non classifiable".

Discharge diagnosis
Choose myocardial infarction (**MI**) or unstable angina (**UA**). No other diagnosis is relevant to this study.

Basic data

Age
State the age in years of the patient on admission (e.g., 59 years, 11 months=59 years).

Sex
Choose Male or Female as appropriate.

Weight
Record the patient's weight in kg. If not stated in any source, choose "Not stated".

Height
Record the patient's height in cm. If not stated in any source, choose "Not stated".

BMI
Record the patient's body mass index determined as weight divided by squared height in kg/cm. Fill in with four numbers: two integers and two decimals.
Note: Never type the decimal point. Use "zero" as a placeholder, as appropriate. Do not estimate BMI. If not stated in any source, choose "Not stated".

Obesity
This condition is typically stated if it pertains. Collect the history of this condition as "Yes", "No" or "Not stated".

Previous History

Smoking
This condition is typically stated if it pertains. Collect the history of this condition as "Yes" for current smokers, "No" for never smokers or smokers >1 year, or "Not stated". Ex-smokers <1 year will be considered as "Current smokers". If a patient is considered ex-smoker in the discharge note or medical records, whatever the time since quitting or if there is no mention to time since quitting, the answer to the question smoking is "No".

Diabetic
This condition is typically specified if it pertains. Collect the history of this condition as "Yes, type I", "Yes, type II", "Yes, type not stated", "No", or "Not stated".

Hypertension
This condition is typically stated if it pertains. Collect the history of this condition as "Yes, treated", "Yes, not treated", "Yes, treatment not stated", "No" or "Not stated".

Past history of CV disease
This condition is typically specified if it pertains. Collect the history of this condition as "MI", "Other CHD", "Stroke", "PAD", "Previous PCI", "Previous CABG", "Previous heart failure", "Oral anticoagulation", "Atrial fibrillation", "None" or "Not stated".

Renal failure, Alzheimer/ other dementia
These conditions are typically stated if pertinent. Collect the history of these conditions as "Yes", "No" or "Not stated".

Other serious illness
These conditions are typically stated if pertinent. Type the considered illness.

Admission Data

Coming from

Choose whether the patient came from home, nursing home/residential care center, other hospital, primary care or somewhere else. If not stated in any source, choose “Not stated”.

Date of admission

Provide this date in day/month/year format (dd/mm/yy) to compute the length of stay.

Heart rate and Systolic blood pressure on admission

These data are very easy to locate, particularly if emergency room records are computerized. However, they are rarely found on discharge letters (otherwise the preferred data source). Record the corresponding data or choose “Not stated” as appropriate.

Acute pulmonary edema on admission

This is an expression of a degree of cardiac failure of considerable importance and severity.

Note: Usually if a patient has developed this condition before admission, it is so stated; the opposite is not true. Therefore, the option “No” will be seldom used. Choose “Yes”, “No” or “Not stated” as appropriate.

Cardiogenic shock on admission

This is an expression of cardiac failure of great severity.

Note: Usually if a patient has developed this condition before admission, it is so stated; the opposite is not true. Therefore, the option “No” will be seldom used. Choose “Yes”, “No” or “Not stated” as appropriate.

Initial Creatinine

The preferred laboratory results are the values obtained on admission, usually stated on the emergency room records but computerized laboratory records also could be checked. The letter of discharge might include values for admission or the earliest taken if no other value is provided. Fill in the values under the appropriate units (mg/dl or µmol/l).

Fill in with four digits: when mg/dl units are used, two integers and two decimals; when values are expressed in µmol/l, three integers and one decimal.

Never type the decimal point. If no value is available, choose “Not stated”.

Initial Glucose

The preferred laboratory results are the values obtained on admission, usually stated on the emergency room records but computerized laboratory records also could be checked. The letter of discharge might include values for admission or the earliest taken if no other value is provided.

Fill in with two digits: one integer and one decimal. Never type the decimal point.

Fill in the values under the appropriate units (mg/dl or mmol/l). If no value is available, choose “Not stated”.

Initial Hemoglobin

The preferred laboratory results are the values obtained on admission, usually stated on the emergency room records but computerized laboratory records also could be checked. The letter of discharge might include values for admission or the earliest taken if no other value is provided. Fill in with three digits: two integers and one decimal. Never type the decimal point.
Fill in the values under g/dl units. If no value is available, choose "Not stated".

Procedure Variables

Thrombolysis

Collect this procedure as "Yes, prehospital", "Yes, in hospital", "Yes, in other hospital", "Yes, but unknown place of administration" or "No".

Coronary angiography

Collect this procedure if used on the patient during the hospital stay as "Yes", or enter "No".

Percutaneous intervention (PCI)

Collect this procedure if used on the patient during the hospital stay as "Primary", "Rescue", "Other urgent [PCI] during same hospitalization", "Elective" when time elapsed between admission and this procedure is longer than 72 hours, or enter "No".

If any PCI has been done, collect the next two variables.

Time after admission

Collect the elapsed time between admission and the first percutaneous intervention.
Fill in the values in hours and minutes. If no value is available, choose "Not stated".

Type of PCI

This is a multiple choice variable. Collect the type of PCI (if done) as "Bare metal stent", "Drug-eluting stent", "POBA", "Thromboaspiration" or "Not stated".
Fill in the values in hours and minutes. If no value is available, choose "Not Stated".

Coronary artery by-pass surgery, Cardiac ultrasound examination (echocardiogram), Intravascular ultrasound (IVUS), Fractional flow reserve (FFR), Optical coherence tomography (OCT), Intracardiac defibrillator (ICD), Intra-aortic balloon pump (IABP)

Collect these procedures as "Yes", "No" or "Not stated".
Note: Usually if these procedures have been used on a patient during hospitalization, it is so stated; the opposite is not true. Therefore, the option "No" will be seldom used. Choose "Yes", "No" or "Not stated" as appropriate.

Severity indicators & complications during hospitalization

TIMI risk (0-14) and GRACE (0-372) scores

Record the values if available on the documents examined; otherwise, mark "Not stated".

Q-wave in the evolving electrocardiograms

Record whether patient had a Q-wave in any electrocardiogram subsequent to the emergency room electrocardiography. A diagnosis of unstable angina means that this variable must be disregarded.

In case of subacute MI, with Q or QS wave in the admission ECG the answer here should be "no" because we cannot discard that such Q waves are old – they could have been present in the patient's ECG before the current event.

Note: Mark "Unstable angina" to indicate the reason for not providing this datum.

Anterior ECG MI location

The area of myocardial infarction that died during the heart attack can be anatomically located by the electrocardiographic characteristics i.e., ST elevation higher than 1mm observed in at least two precordial leads. Usually this location is described in the letter of discharge. Choose "Yes", "No" or "Not stated" as appropriate.

Troponin

Troponin reference values could vary between hospitals. Record the corresponding value, the upper limit considered in the hospital, and the type of troponin measured (I or T), or choose "Not stated" as appropriate.

Left systolic ejection fraction

The ejection fraction is the fraction of blood pumped out of a ventricle with each heartbeat. Record the corresponding value (%) and choose "Normal (>55)", "Slightly depressed (45-55)", "Moderately depressed (35-45)", "Severely depressed (<35)" or "Not stated" as appropriate.

The most severe category should be always considered. For example: "moderately to severely depressed systolic ventricular function" should be considered "severely depressed".

Acute pulmonary edema during hospital stay

This is an expression of cardiac failure of great severity. Usually if a patient has developed this condition during the hospital stay, it is so stated; again, the opposite is not true. Therefore, the option "No" will be seldom used. Choose "Yes", "No" or "Not stated" as appropriate.

Cardiogenic shock during hospital stay

This is an expression of cardiac failure of great severity. Usually if a patient has developed this condition during the hospital stay, it is so stated; the opposite is not true. Therefore, the option "No" will be seldom used. Choose "Yes", "No" or "Not stated" as appropriate.

Cardiac arrest, Acute renal failure, Reinfarction, Stroke/TIA, Intracraneal bleeding

These are three common ACS complications of considerable importance and severity. Usually if a patient has developed this condition during the hospital stay, it is so stated; the opposite is not true. Therefore, the option "No" will be seldom used. Choose "Yes", "No" or "Not stated" as appropriate.

Bleeding with a drop in hemoglobin >50g/L

Usually if a patient has developed clinically overt signs of bleeding associated with a drop in hemoglobin >50g/l during the hospital stay, it is so stated; the opposite is not true. Therefore, the option "No" will be seldom used. Choose "Yes", "No" or "Not stated" as appropriate.

Bleeding with a drop in hemoglobin >30g/L but <50g/L

Usually if a patient has developed clinically overt signs of bleeding associated with a drop in hemoglobin >30g/l and <50g/l. during the hospital stay, it is so stated; again, the opposite is not true. Therefore, the option "No" will be seldom used. Choose "Yes", "No" or "Not stated" as appropriate.

Days in Coronary Care Unit

Provide the number of days in the Coronary Care Unit to compute the length of stay.

Days in Intensive Care Unit

Provide the number of days in the Intensive Care Unit to compute the length of stay.

Discharge

Date of discharge/death

Provide this date in day/month/year format (dd/mm/yy) to compute the length of stay. Double-check that Date of admission + total Days in Coronary/Intensive Care Unit does not exceed Date of discharge/death.
Note that in case of patient death, the date of death (dd/mm/yy) is required.

Discharge vital status

This information refers to survival status. Choose **alive** or **dead**.
Note: Filing of discharge reports may vary by hospital. "Not stated" should be an extremely rare entry, to be used only after making every effort to determine the patient's survival status from available hospital data.

Discharge to

Choose the place where the patient goes at discharge: home, nursing home, other hospital, or dead, in case of patient death.

Data Sources

Data source(s) screened

Indicate all the data sources you checked to complete the Data Form for this patient: letter of discharge, computer records from emergency room,

computer medical records, medical records on paper, and/or computerized laboratory records.

ROADMAP FOR DATA EXTRACTION

1. Where can I find the on-line forms?

You are expected to complete both the Hospital Characteristics and the Patient Characteristics at the EUPHORIC (http://www.euphoric-project.eu/) web site. You will need to login, and then go to the "EURHOBOP Home" menu under the "EURHOBOP Bridge" heading on your left.

To choose an option, just click on it. If you need to complete the form by hand, use a black pencil or black ballpoint pen.

Data extractors will be assigned a personal ID and a password that will be required to enter the data.

2. How do I identify the patients in the EURHOBOP Study?

Patients will be identified in the EURHOBOP Study by country code, hospital code and patient code (see page 8, "Patient Identification" Section).

Before filling in the form, register the patient (age, sex, name, surname and data of admission) in the Confidential Data table (Annex 2).

3. Where can I find the information required in the forms?

Extract data from (in order of preference): 1) letter of discharge, 2) computer records from emergency room 3) computer records from admission, or 4) medical records.

Data extractors should become familiar with the data sources of the hospital before starting. All information requested in the form should be collected whenever possible.

Note: The **Data sources screened** field should always indicate all the data sources that have been checked to find the required information.

4. Quality Control

For quality control, please check carefully to ensure accuracy and avoid impossible combinations that are incompatible for data analysis:

1. **Complete all fields** in the form.

   If a particular field cannot be filled in from the information included in the letter of discharge, data extractors must check the remaining data sources in the correct order and indicate their efforts in the **Data sources screened** field.
2. **Do not estimate BMI** even when "weight" and "height" are stated.
3. **Ensure accuracy in dates:** "Date of admission" must precede "Date of discharge".
4. **Ensure accurate length of stay:** "Date of admission" plus the total number of "Days in Coronary Unit" and/or "Days in Intensive Care Unit" must not exceed "Date of discharge".

5. **Check for the following data combinations:**
    a. **PCI and coronary angiography** must both be marked, by definition, because a PCI cannot be done without a coronary angiography. The opposite is not true.
    b. When **unstable angina** is the "**Discharge Diagnosis**", unstable angina must also be marked in "**Q-wave in the evolving ECG**".
    c. If "Discharge vital status" is "**Alive**", then "Discharge to" will always be "**Home**" or "**Nursing home**" or "**Other hospital**".
    d. If "Discharge vital status" is "**Dead**", then "Discharge to" will always be "**Dead**".
6. "**Data source**" must always be filled with all the sources actually checked.

5. How to send the form

Press "**Print and Send**" button when all fields have been filled in.

At this moment the submission process will start. Once the submission has been completed, a confirmation screen appears and an automatic PDF file with the completed form will be generated. Remember that this PDF will serve as a proof that could be used if the sending procedure fails (Annex 4).

To obtain this PDF file for each submitted form, you must have PDF Creator, the software selected by EURHOBOP to manage PDF documents, installed in your computer. This software is available for free download at a number of sites, including http://sourceforge.net/projects/pdfcreator/. When you are doing EURHOBOP data entry, we strongly recommend selecting this PDF software as the default printer in your computer.

ANNEX 1. Collaborating Hospital Characteristics Data Collection Form

EURHOBOP Project

European Hospital Benchmarking by Outcomes in Acute Coronary Syndrome Processes

COLLABORATING HOSPITAL CHARACTERISTICS COLLECTION FORM

COUNTRY: ○ Finland ○ France ○ Germany ○ Greece ○ Italy ○ Portugal ○ Spain

Provide a unique code for this hospital (1 to 20) in your country: _____

Name of contact person: _____

e-mail: _____

Hospital Name: _____

Address: _____

Street: _____

Postal Code: _____

City: _____

Telephone: _____

Web site: _____

Total number of beds: _____ Patients discharged in the cardiology dept. in last year: _____

Coronary Care Unit:	○ Yes	○ No			
Intensive Care Unit:	○ Yes	○ No			
Catheterization Laboratory:	○ Around the clock	○ Working time	○ On call	○ No	
Cardiac surgery:	○ Around the clock	○ Working time	○ On call	○ No	
University Hospital:	○ Yes	○ No			

Other investigators in this hospital (maximum 3):

1. _____
2. _____
3. _____

Main data sources used:

- ○ Letter of discharge
- ○ Computer records from emergency room
- ○ Computer medical records
- ○ Medical records on paper
- ○ Computerized laboratory record

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ANNEX 2. Confidential Data Table

Country # (1 – 7)	Hospital # (1 – 20)	Patient # (1 – 200)	Medical Record #	Patient's Name	Patient's Surname	Sex	Date of Birth	Date of Admission
		01						
		02						
		03						
		04						
		05						
		06						
		07						
		08						
		09						
		10						
		11						
		12						
		13						
		14						
		15						
		16						
		17						
		18						
		19						
		20						

ANNEX 3. Patient Data Collection Form

EURHOBOP Project

European Hospital Benchmarking by Outcomes in Acute Coronary Syndrome Processes

PATIENT DATA COLLECTION FORM

Country: ○ Finland ○ France ○ Germany ○ Greece ○ Italy ○ Portugal ○ Spain

Hospital code: _____ Medical record extractor: _____

Patient ID: _____

Type of Acute Coronary Syndrome on admission: ○ STEACS ○ Non-STEACS ○ Non classifiable ○ Not stated

Discharge diagnosis: ○ Myocardial Infarction ○ Unstable Angina

Basic data

Age: _____ years

Sex: ○ Male ○ Female

Weight: _____ kg ○ Not stated

Height: _____ cm ○ Not stated

BMI: _____,_____ kg/m2 ○ Not stated Obesity: ○ Yes ○ No ○ Not stated

Previous history

Smoking: ○ Yes ○ No ○ Not stated

Diabetic: ○ Yes, type I ○ Yes, type II ○ Yes, type not stated ○ No ○ Not stated

Hypertension: ○ Yes, treated ○ Yes, not treated ○ Yes, treatment not stated ○ No ○ Not stated

Past history of CV disease: ○ MI ○ Other CHD ○ Stroke ○ PAD ○ Previous PCI ○ Previous CABG ○ Previous heart failure ○ Oral anticoag. ○ Atrial fibrillation ○ None ○ Not stated

Renal failure: ○ Yes ○ No ○ Not stated

Alzheimer/Other dementia: ○ Yes ○ No ○ Not stated

Other serious illness, describe:

Admission data

Coming from: ○ Home ○ Nursing home ○ Primary care center ○ Other hospital ○ Other place ○ Not stated

Date of admission: ____ (dd) / ____ (mm) / ____ (yy)

Heart rate on admission: _____ bpm ○ Not stated

Systolic blood pressure on admission: _____ mm Hg ○ Not stated

Acute pulmonary edema on admission: ○ Yes ○ No ○ Not stated

Cardiogenic shock on admission: ○ Yes ○ No ○ Not stated

Initial Creatinine: ____,____ mg/dl ____,__ µmol/L ○ Not stated

Initial Glucose: _____ mg/dl __,__ mmol/L ○ Not stated

Initial Haemoglobin: ____,__ g/dl ○ Not stated

Procedures used during hospitalization

Thrombolysis : ○ Yes, prehospital ○ Yes, in other hospital ○ Yes, in hospital ○ Yes, unknown place of administration ○ No

Coronary angiography: ○ Yes ○ No

Percutaneous intervention (PCI): ○ Primary ○ Rescue ○ Other urgent during same hospitalization ○ Elective ○ No

Time after admission: ____ (hours) / ____ (min) ○ Not stated

If any PCI is done: ○ Bare metal stent ○ Drug-eluting stent ○ POBA ○ Thromboaspiration ○ Not stated

Coronary artery bypass surgery: ○ Yes ○ No ○ Not stated

Cardiac ultrasound examination (echocardiogram): ○ Yes ○ No ○ Not stated

Intravascular ultrasound (IVUS): ○ Yes ○ No ○ Not stated

Fractional flow reserve (FFR): ○ Yes ○ No ○ Not stated

Optical coherence tomography (OCT): ○ Yes ○ No ○ Not stated

Intracardiac defibrillator (ICD): ○ Yes ○ No ○ Not stated

Intra-aortic balloon pump (IABP): ○ Yes ○ No ○ Not stated

Severity indicators and complications during hospitalization

TIMI (0-14): ____ or GRACE risk score (0-372): _____ ○ Not stated

Q-wave in the evolving ECG: ○ Yes ○ No ○ Unstable angina ○ Not stated

Anterior ST elevation: ○ Yes ○ No ○ Not stated

Troponin peak : ____,____ Upper limit value for normality: ____,____ ○ T ○ I ○ Not stated

Left systolic ejection fraction: ____ % ○ Normal ○ Slightly depressed ○ Moderatedly depressed ○ Severely depressed ○ Not stated

Acute pulmonary edema: ○ Yes ○ No ○ Not stated

Cardiogenic shock: ○ Yes ○ No ○ Not stated

Cardiac arrest : ○ Yes ○ No ○ Not stated

Acute renal failure: ○ Yes ○ No ○ Not stated

Reinfarction: ○ Yes ○ No ○ Not stated

Stroke / TIA: ○ Yes ○ No ○ Not stated

Intracranial bleeding: ○ Yes ○ No ○ Not stated

Bleeding with a drop in haemoglobin >50 g/L: ○ Yes ○ No ○ Not stated

Bleeding with a drop in haemoglobin >30 g/L but <50g/L: ○ Yes ○ No ○ Not stated

Days in Coronary Care Unit: ____

Days in Intensive Care Unit: ____

Discharge

Date of discharge/death: ____ (dd) / ____ (mm) / ____ (yy)

Discharge vital status: ○ Alive ○ Dead

Discharge to: ○ Home ○ Nursing home ○ Other hospital ○ Dead ○ Not stated

Data sources screened:

Letter of discharge: ○ Computerized ○ Central registry ○ Medical record ○ No

Computer records from emergency room: ○ Yes ○ No

Computer medical records : ○ Yes ○ No

Medical records on paper: ○ Yes ○ No

Computerized laboratory record: ○ Yes ○ No