

APPENDIX B: STATISTICAL METHODS

The statistical analysis described below was conducted on data collected in the NCVd-ACS Registry from year 2011 to 2013. Inclusion criteria were:

- all patients who had ACS procedures performed between 2011 and 2013
- all patients who are aged 20 years and above

Patients with unknown or missing ACS stratum and with the final diagnosis of either stable angina or non-cardiac conditions were excluded from the analysis. In general, the unit of analysis was the number of patients with admission due to ACS.

Statistical methods for most chapters involved descriptive analysis. For discrete data, we calculated frequency and percentage; for continuous data, the mean, standard deviation (SD), median, minimum and maximum values were calculated. An exception to this was survival analyses, which were performed to evaluate the prognostic factors for in-hospital and 30-day mortality in Chapter 5.

For all variables, percentages were only calculated for categories listed in the CRFs.

Missing data were reported for both discrete and continuous data. No statistical imputation was applied to replace missing data. However, to avoid illogical ranges in the data, outliers were set to missing data based on acceptable range, as presented in a table below:

Fields	Acceptable range
Age	≥ 20 years old
Number of distinct episodes of angina	≤ 20 (0 = no episodes)
Heart rate	20 – 200 beats/min
Systolic BP	50 – 270 mmHg
Diastolic BP	10 – 170 mmHg
Height	130 cm – 250 cm
Weight	30 kg – 200 kg
Body Mass Index (BMI)	14.0 – 50.0 kgm ⁻²
Waist circumference	70 – 130 cm
Hip circumference	80 – 200 cm
LDL-C	0.5 - 20.0 mmol/L
HDL-C	0.5 - 5.0 mmol/L
Triglycerides (TG)	0.5 - 15.0 mmol/L
Fasting Blood Glucose	3.0 - 50.0 mmol/L
HbA1c	4.0 - 32.0%
Left Ventricular Ejection Fraction	5.0 - 90.0%
Door to needle time (mins)	1 - 1440 minutes (apply only for patients with STEMI and receiving thrombolysis at the centre)
Door to balloon time (mins)	1 - 1440 minutes (apply only for patients with STEMI and planned for primary PCI)
Days in CCU	≤ 30 days
Days in ICU	≤ 30 days



The data was analysed based on the focus of each report chapter as described below.

Patient Characteristics

Patient characteristics were summarised in Chapter 2. Number of patients in each year was determined based on their admission year due to ACS. The results presented the patients' age, gender, ethnicity, coronary risk factors, co-morbidities and other variables in the CRF.

Cardiac Presentation

Chapter 3 includes an analysis of the clinical presentations, baseline investigations, electrocardiography, clinical diagnosis at admission, fibrinolytic therapy and invasive therapeutic procedures. An analysis of STEMI time-to-treatment was performed in which we excluded any illogical values of time-to-treatment (such as negative values for pain-to-needle time and door-to-balloon time).

Treatment

Summary of treatment is presented in Chapter 4. The summary of treatment includes duration of hospitalisation days, admission days in CCU and ICU, types of treatment and pharmacological therapy given during admission.

Clinical Outcomes

The patient outcomes at discharge and 30-day follow-up are presented by their ACS stratum, by pre-morbid conditions and types of treatment. In order to evaluate the status of alive or deceased, individual patients were matched against the status provided by the Malaysian National Registration Department (NRD). Patients were considered as alive at the time of follow-up if the date of their death was not provided in the NRD dataset. Prognostic factors for in-hospital and 30-day mortality were also presented in Chapter 5.