EUROPEAN SOCIETY OF CARDIOLOGY®

Acute Cardiovascular Care Association ACCA
A Registered Branch of the ESC

ACCA WHITE BOOK

ALBANIA ALGERIA ARMENIA AUSTRIA AZERBAIJAN BELARUS BELGIUM BOSNIA & HERZEGOVINA BULGARIA CROATIA CYPRUS CZECH REPUBLIC DENMARK EGYPT ESTONIA FINLAND THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA FRANCE GEORGIA GERMANY GREECE HUNGARY ICELAND IRELAND ISRAEL ITALY KAZAKHSTAN KOSOVO KYRGYZSTAN LATVIA LEBANoN LIBYA LITHUANIA LUXEMBOURG MALTA MOLDOVA MONTENEGRO MOROCCO NETHERLANDS NORWAY POLAND PORTUGAL ROMANIA RUSSIAN FEDERATION SAN MARINO SERBIA SLOVAKIA SLOVENIA SPAIN SWEDEN SWITZERLAND SYRIA TUNISIA TURKEY UKRAINE UNITED KINGDOM

Preface: The ACCA White Book 2016: first edition

The management of acute cardiovascular diseases at a national level encompasses a complex relationship between professionals of different backgrounds and specialties, the organisation of the different levels of the healthcare system —pre-hospital care, emergency departments and hospital units—, available resources and local policies and cultures.

This complexity makes difficult to have recommendations for the management of patients with acute cardiovascular diseases that are valid in all environments and applicable in all countries. Moreover such organizational differences between countries in approaching the acute patient might translate into significant variations in outcome, thus making it necessary to look for any improvement.

The ACCA White Book is the first attempt to describe with detail the peculiarities of acute cardiovascular care in Europe. For that, Dr. Eric Bonnefoy with a large team of national experts has developed an analysis of most of the European and ESC-affiliated countries.

This includes basic statistics, resources, organisation, specialists and units involved, reimbursement policies and, interestingly, identification of difficulties for optimal acute cardiovascular care.

The ACCA White Book is a unique piece of information to understand the needs and the challenges to improve acute cardiovasculare care and, at the end to help achieving the ESC mission "to reduce the burden of cardiovascular disease in Europe".

Scope and Methodology

The ACCA White Book 2016 is the first edition of a project that was launched in an attempt to understand the national realities with regard to management of Acute Cardiac Care.
Our model has been the EHRA's WHite Book that provides every year an outstanding overview of management of cardiac arrhythmias in countries member of the European Society of Cardiology.
For each country, the document provides information on the following topics:

- How the Health Care System is organised to manage acute cardiac care?
- How hospitals are reimbursed for acute cardiac care patients?
- National or large regional registries
- Guidelines adhered to for the management of acute cardiac patients
- Education
- Specialists required for technical procedures in acute cardiac care
- Management of some common pathologies in acute cardiac care
- Units that manage patients who need acute cardiac care
- Sites and units that manage patients who need acute cardiac care
- What are the main difficulties encountered with acute cardiac care in the country?

The document has been built with the National representatives for the ACCA in each country member of the European Society of Cardiology. Each was responsible for compiling information about his/her country based on a questionnaire. The document in progress was circulated by e-mail and edited by all members of the group.
For each country the ACCA White Book provides an overlook on demographic and socioeconomic context, health status and mortality indicators, health services, health expenditure and health system coverage and utilization, human resources for health services. The sources for demographic, economic and health organisations came from the European Core Health Indicators last accessed in May 2016.
(http://ec.europa.eu/health/indicators/echi/index_en.htm).

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AUSTRIA

Demographic and socioeconomic context

Population (x1000)	Population Aged >65 (% of total population)	Life expectancy at 65 years	Urban (% of total population)	Real GDP, PPP$ per capita
8477	18.2	20.0	68	46 165

Health status and mortality indicators

Tobacco smoking*	Obesity**	Raised blood pressure***	Crude death rate per 1000	Age-standardized death rates****	Age-standardized death rates for circulatory diseases****
46	18.4	18.8	9.4	538.1	199.9

*Estimated age-standardized prevalence of tobacco smoking among people aged 15 years and over
**Estimated age-standardized prevalence of obesity (body mass inde≥30 kg/m²)
***Raised blood Raised blood pressure (systolic blood pressure ≥ 140 or diastolic blood Pressure ≥ 90)
****per 100 000 population

Health services, health expenditure and health system coverage and utilization

Hospitals*	Inpatient care discharges*	Total Health expenditure as % of GDP	Government expenditure on health as % of total government expenditure	Private households' out-of-pocket expenditure as % of total health expenditure
3.3	26.6	11.0	16.3	15.8

*per 100 000 population

Human resources for health services

Physician	Female (%)	Older than 55 years (%)	General practitioner*	Medical specialists*	Nurses	Physician Graduates*	Nurses Graduates*
499	46	27	77	110	787	14	55

*per 100 000 population

1. Name of National Cardiac Society (NCS)

Austrian Society of Cardiology

2. Name of National Working Group on acute cardiac care or of the NCS body that is more related to it

Working Group of Cardio-Vascular-Intensive Care Medicine
This working group is part of the Federation of Austrian Societies of Intensive Care Medicine (FASIM)

3. How the Health Care System is organised to manage acute cardiac care

- **In the pre-hospital setting**

Acute pre-hospital care is mainly organized by the different providers of ambulances and a variety of emergency companies. It is usual for emergencies to be attended by an emergency doctor. Additionally, there are several helicopter organizations providing emergency medicine in Austria, mainly during day time.

- **In hospitals**

Most hospitals in Austria have emergency departments. First response systems are mainly responsible for the initial acute care of cardio vascular patients and will contact cardiologists when necessary for further interventions.
There are some efforts to develop chest pain units for a more specific path with respect to acute cardiac care.

4. How hospitals are reimbursed for acute cardiac care patients

All hospitals are reimbursed by insurance agencies

- **Reimbursement availability for physicians and hospitals for acute cardiac care patients**

Physicians
Physician does not receive reimbursement or incentives
Hospitals
Hospital receives per patient reimbursement

- **Treatment availability for acute cardiac care**

Restricted to certain number of treatments/budget per year (in the case of device therapies)

5. National or large regional registries

Registries relevant to acute cardiac care	Yes	No	Name
Acute coronary syndromes	X		
Acute heart failure		X	
Cardiac arrest	X		

- **Availability of a national quality insurance system or complication registry**

Yes: A-IQUI

6. Guidelines adhered to for the management of acute cardiac patients

National Cardiac Society **No**
U.S. **No**
European **No**

7. Education

- **National certification available for acute cardiac care**

For physician?

Yes, it is required for practice (for a career in CCU). In smaller hospitals there are No requirements for a certification

For allied professionals?

Yes, but itis not required for practice

For training centres?

Yes, itis required for practice

- **National Cardiac Society supporting ACCA certification system**
  No

- **Official national competency guidelines for acute cardiac care organisation?**

Only for some entities are national guidance available (cardiogenic shock; devices, ECMO)

- **Required or suggested period of training to manage acute cardiac patients with invasive monitoring and treatment techniques.**
  Yes, required

- **Training centres availability. Please comment on acute cardiac care training in your country.**

Most training facilities are localized at the medical universities or some tertiary hospitals

8. Specialists required for technical procedures in acute cardiac care

List the specialties and units that are intervening in acute cardiac patients' management in the country.

Technical procedures	Specialty of the specialists	Where? (type of hospitalisation units)
Selected procedures considered as representative of active management of acute cardiac care patients	*Specialties that are intervening on a common basis. Priorities are indicated by numbers (1 is most common)*	*Units where the patient with the intervention is most commonly managed (first is most common).*
IABP	Cardiologist, Intensivist	Angio Lab, ICU
Hypothermia	Internists, Cardiologists	ICU
Mechanical ventilation	Internist, Cardiologists, Anaesths.	ICU
Dialysis	Internist, Cardiologists, Anaesths.	ICU
Endomyocardial biopsy	Cardiologist	Angio Lab
Percutaneous coronary angioplasty	Cardiologist	Angio Lab
ECMO/ECLS	Cardiologist, Surgeon, Intensivist	ICU; Angio Lab, Emergency Dep.
Non invasive ventilation	All physicians	IMCU / ICU
Insertion and monitoring of an arterial lines	All physicians	IMCU / ICU
Insertion and monitoring of a central venous catheter	All physicians	IMCU / ICU / emergency depart.
Insertion and monitoring of a pulmonary artery catheter	Cardiologist; Anaesthesiologist Intensivist	IMCU / ICU
Pericardiocentesis	Cardiologist, Surgeon	IMCU / ICU / Emergency depart.
Transvenous temporary pacing	Internist, Cardiologist	IMCU / ICU / Emergency depart.
Echocardiography transesophagial	Internists, Cardiologists	Labs, IMCU / ICU, Emergency depart.
Direct current cardioversion	Internists, Cardiologists	ICMU / Emergency department
Echocardiograhy transthoracic	Internists, Cardiologists	Labs, IMCU / ICU, Emergency depart.

9. Management of some common pathologies in acute cardiac care

List of specialties and units that are intervening in acute cardiac patients' management in a country.

Acute Cardiac Care diagnosis	Number per year	Specialists managing the pathology	Where? (type of hospitalisation units and sites)
Selected pathologies considered as representative of acute cardiac care patients		*Specialties that are intervening on a common basis. Priorities are indicated by numbers (1 is most common)*	*Units where the patient with the intervention is most commonly managed (first is most common).*
STEMI non complicated		Internists, Cardiologists	IMCU , CCU
NSTEMI		Internists, Cardiologists	IMCU , CCU
Sudden cardiac death		All physicians	IMCU / ICU / Emergency depart.
Pericarditis non complicated		Internists, Cardiologists	IMCU / CCU
Cardiogenic shock		Internists, Cardiologists	ICU / IMCU / Emergency departments
Cardiac tamponade		Internists, Cardiologists	ICU / IMCU / Emergency departments
Type A aortic dissection		Cardiologist, Surgeon	ICU / IMCU / Emergency departments Surgery
Conduction disturbances with syncope		Internists, Cardiologists	Ward, Syncope units, IMCU, ICU
pulmonary edema		Internists, Cardiologists	ICU / IMCU / Emergency departments
Non-complicated type B dissection		Internist, Cardiologist Surgeon	ICU / IMCU / Emergency departments

10. Units that manage patients who need acute cardiac care

Many patients with an acute cardiac care diagnosis are not hospitalised in a unit with specific monitoring capabilities. But many are. In this case, here are the units that participate on a reasonably frequent basis to their management.

	General Mixed Medical/Surgical unit	**General Medical unit**	**Dedicated Acute cardiac care** unit managed mainly by **non cardiologists**	**Dedicated Acute cardiac care** unit managed mainly by **cardiologists**
LEVEL B capabilities Monitoring: exclusively non-invasive. Diagnosis: echocardiography Treatment (non-medical): non-invasive ventilation might be possible.	Common in country? **Yes** Manage acute cardiac care patients? **No** Managed mostly by intensivists **No**	Common in country? **Yes** Manage acute cardiac care patients? **Yes** Managed mostly by intensivists **Yes**	Common in country? **Yes** Mostly in academic hospitals? **No**	Common in country? **Yes** Mostly in academic hospitals? **No**
LEVEL M capabilities # non-invasive and some invasive monitoring (central venous pressure, arterial lines) # echocardiography 24/7 # non-invasive ventilation	Common in country **Yes** Manage acute cardiac care patients **No** Managed mostly by intensivists	Common in country **Yes** Manage acute cardiac care patients **Yes** Managed mostly by intensivists	Common in country **Yes** Mostly in academic hospitals **No**	Common in country **Yes** Mostly in academic hospitals **Yes**

	YesNo ☐	YesNo ☐		
LEVEL I capabilities # Non-invasive and ALL invasive monitoring (PA catheter, central venous pressure, arterial lines…) # Echocardiography 24/7 # Mechanical ventilation, hypothermia initiation, continuous renal replacement possible.	Common in country **Yes** Manage acute cardiac care patients **Yes** Managed mostly by intensivists **Yes**	Common in country **Yes** Manage acute cardiac care patients **Yes** Managed mostly by intensivists **Yes**	Common in country **No** Mostly in academic hospitals **No**	Common in country **No** Mostly in academic hospitals **Yes**

11. Sites and units that manage patients who need acute cardiac care

In Austria we have currently four Medical Universities, soon increasing to five. Additionally, there are several tertiary hospitals mainly in the alpine region which are staffed with cardiologists. However, there are many smaller hospitals which do not have specialists in cardiology. That does not mean that these units are not adequately supported by physicians who may have training in cardiology, but do not have all the appropriate certificates.

12. What are the main difficulties (1= No to 5=very high) encountered with acute cardiac care in the country?

There are few difficulties in Austria.

		No obstacle	Some difficulties	Partial obstacle	Moderate obstacle	Severe obstacle
Lack of reimbursement,	1	X				
Lack of referral	1	X	X			
Lack of centres	2		X			
Limited financial resources	2		X			
Lack of trained personnel	2		X			
Lack of operators	2		X			
Low awareness of guidelines	3			X		