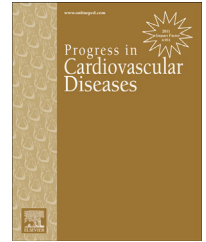


Available online at www.sciencedirect.com

ScienceDirect

www.onlinepcd.com

Cardiac Rehabilitation in Europe

Reed Humphrey^{a, c}, Marco Guazzi^b, Josef Niebauer^{c, *}

^aSchool of Physical Therapy & Rehabilitation Science, The University of Montana, Missoula, MT

^bCardiology, IRCCS Policlinico San Donato, University of Milano, San Donato Milanese, Italy

^cInstitute of Sports Medicine, Prevention and Rehabilitation, Paracelsus Medical University, Salzburg, Austria

ARTICLE INFO

Keywords:

Exercise training
Risk factor reduction
Aerobic capacity
Prevention

ABSTRACT

Cardiovascular disease (CVD) remains the main cause of death for men in most European countries, and in all for women. While mortality rates have been declining in most countries, hospital discharge for CVD has been stable since 2004, increasing the pool of patients eligible for cardiac rehabilitation (CR). The physical rehabilitation of patients with CVD has been practiced in Europe to varying degrees since the early 1970s with most countries now engaged in Phase I through Phase III programs. Funding for CR comes from a variety of sources including patient pay, private insurance, retirement and/or obligatory and governmental subsidy. CR is practiced based on best available evidence but participation rates range between 30–50% of eligible patients. Participation rates present one of several challenges and opportunities for future research in Europe, along with assessment of long-term CR outcomes and better extension to primary prevention.

© 2014 Elsevier Inc. All rights reserved.

The physical rehabilitation of patients with cardiovascular disease (CVD) has been practiced to varying degrees in Europe since the 1970s, although Karoff and colleagues note the recognition that exercise therapy instead of traditional immobilization of cardiac patients was proposed as early as 1885 by German physician Max Oertel.¹ Another German physician, Peter Beckman, employed Oertel's principles with his patients in the 1950s, and formal cardiac rehabilitation (CR) was conducted in Hamburg, Germany in 1970.¹ The first working group on CR was established in 1982 through the European Society of Cardiology (ESC) and in 2004 the working groups of CR and exercise physiology and on epidemiology and prevention formed the European Association for Cardiovascular Prevention and Rehabilitation (EACVPR), within the

ESC. Bjarnason-Wehrens and colleagues subsequently published a comprehensive survey of CR as it is practiced in Europe in 2010.² The advent of the EACVPR and annual Europrevent conferences has moved CR forward, helping to standardize practice and provide important scientific exchange to support contemporary CR.

CVD incidence and prevalence in Europe and the European Union (EU)

Using data compiled by the European Heart Network (EHN) for 2012, the annual mortality of CVD exceeds 4 million (i.e. 47% of

Statement of conflict of interest: see page 555.

* Address reprint requests: Professor Josef Niebauer, MD, PhD, MBA, University Institute of Sports Medicine, Prevention and Rehabilitation and Research Institute of Molecular Rehabilitation and Sports Medicine of the Paracelsus Medical University, Salzburg Institute of Sports Medicine of the State of Salzburg Sports Medicine of the Olympic Center Salzburg-Rif, Lindhofstraße 20, 5020 Salzburg, Austria.

E-mail address: j.niebauer@salk.at (J. Niebauer).

URL: <http://www.salk.at/sportmedizin> (J. Niebauer).

0033-0620/\$ – see front matter © 2014 Elsevier Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.pcad.2013.08.004>

Abbreviations and Acronyms

CHD = coronary heart disease

CR = cardiac rehabilitation

CVD = cardiovascular disease

HF = heart failure

PCI = percutaneous intervention

all deaths) in Europe and over 1.9 million (i.e. 40% of all deaths) in the European Union (EU). Furthermore, extracted directly from the EHN summary³:

- CVD is the main cause of death in

women in all countries of Europe and is the main cause of death in men in all but 6 countries (France, Israel, the Netherlands, San Marino, Slovenia and Spain).

- Death rates from coronary heart disease (CHD) are generally higher in Central and Eastern Europe than in Northern, Southern and Western Europe.
- CVD mortality is now falling in most European countries, including Central and Eastern European countries which saw large increases until the beginning of the 21st century.
- Overall CVD is estimated to cost the EU economy almost €196 billion a year.
- Of the total cost of CVD in the EU, around 54% is due to health care costs, 24% due to productivity losses and 22% due to the informal care of people with CVD.

Given the age bias of CVD mortality, it is relevant to note that CVD remains the primary cause of mortality before the age of 75 in Europe (~1.5 million deaths annually); 38% of female and 37% of male deaths, although the percentage of deaths attributable to CVD vary considerably, from as low as 13% (Iceland) to 57% (Ukraine). Considering CHD as a singular entity, 19% of deaths before the age of 75 in males and 17% in females are attributable to CHD. When the age threshold is lowered to 65, CHD still accounts for 16% of deaths in males and 10% in females and remains the most common cause of death. Northern and Western European countries have experienced a steady reduction in death rates from CHD over the past three decades, but rates are more mixed in Central and Eastern European countries and an observed increase in Ukraine and Belarus.^{3,4}

While decreases in CVD mortality are gratifying, owing largely to improved emergency response/early intervention, medical and surgical management and to a lesser degree, risk factor reduction, it is the incidence and prevalence of CVD and CHD that are most relevant to CR. Hospital discharge data as a measure of morbidity have been relatively stable since 2004.⁵ Thus, reduced mortality in the face of stable morbidity engenders a larger pool of patients eligible to benefit from CR. In addition, the rising morbidity for chronic heart failure (HF) in an aging population presents especially new challenges for health care, and an opportunity for CR in Europe.

Current CR delivery models in Europe

In Europe, local and national service frameworks significantly influence the delivery of CR. In an effort to assess this variability, the European Association for Cardiovascular Prevention and Rehabilitation developed the European

Cardiac Rehabilitation Inventory Survey that assessed national guidelines, legislation and funding mechanisms, the phases of CR programming provided and the characteristic of patients participating in CR.² The survey operationally defines Phase I as inpatient CR; Phase II, an early post-discharge program of 2–16 weeks post-discharge wherein “structured and closely monitored exercise, psychoeducational activities and lifestyle changes are encouraged intensively”; and Phase III, long-term maintenance where there is the continuation period of usually less-intense supervision. A summarization of the prevalence of programs, participation and funding for each phase is summarized in Table 1, appreciating that this summary is limited by survey respondents; responses were available from 28 of 39 (72%) countries surveyed. The survey also investigated the differing locations of inpatient, outpatient or home-supervised CR programs. For Phase II, the most common diagnoses of participants are acute coronary syndrome or status post coronary bypass; of note, patients with HF were seldom or not usually provided CR in 22 of the 28 country respondents (79%), and never provided in another two countries, leaving just four countries that responded they provided Phase II CR to patients with a primary diagnosis of HF. Also of note was a relatively lower participation than expected for patients undergoing percutaneous coronary interventions (PCI), whose inclusion was routinely included in just 10 of 28 country respondents (36%).

As Table 1 illustrates, there is substantial variation for participation in Phases I–III CR, and across settings, inpatient or outpatient. A number of countries have adopted legislation to address CR and this has had a substantial impact on the delivery model for those countries, as expected. Payer mix is likewise varied; for Phase I, 64% of funding is provided through the government or ministry of health, 25% from private health insurance, and 7% through a retirement insurance organization with 11% by others. Government or ministry of health funding rises to 75% of Phase II programs but drops to 38% of Phase III, while private and retirement insurance combines for 53% of funding in Phase II but just 11% of Phase III programs.²

For a more detailed analyses and country itemization the reader is referred to the original survey and paper, which also provides a comprehensive breakdown about what is known – and not known – with respect to CR participation in Europe and the European Union, patient demographics, funding and legislation, and also assesses clinical responsibility by profession (physician, nurse, exercise physiologist, physiotherapist, etc).² In contrast to the United States, for example, physiotherapists have, in conjunction with a cardiologist or specialist in internal medicine, overall responsibilities in 36% of Phase II and 46% of Phase III programs compared to exercise physiologists, who have responsibility in 11% for both Phase II and Phase III programs. Bjarnason-Wehrens et al. explore the issues underlying the variation in programming and participation rates, with recommendations to improve CR delivery in Europe, to wit:

- Improve participation rates in the acute care phase (I) of CR, and in Phase II CR. It is of note that there are both inpatient and outpatient categorizations for Phase II in Europe;

Download English Version:

<https://daneshyari.com/en/article/5996996>

Download Persian Version:

<https://daneshyari.com/article/5996996>

[Daneshyari.com](https://daneshyari.com)