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#### **Review article**

## Analysis of clinical practice guidelines for cardiovascular disease prevention



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#### ABSTRACT

Cardiovascular diseases remain the leading cause of deaths and one of the most common causes of hospitalization in the Czech Republic. Due to the high increase in cardiovascular diseases, preventive measures to eliminate them were defined. One of the methods of prevention is the systematic clinical practice guideline focused on identifying and influencing cardiovascular risks. The aim of the survey study is to analyze the existing clinical practice guidelines aimed at preventing cardiovascular diseases. On the basis of keywords and specific criteria for the research strategy and classification, the researchers searched in electronic databases and websites of professional companies systematically all available clinical practice guidelines aimed at preventing cardiovascular diseases published between the years 2003-2013. Defined entry criteria were met by twelve clinical practice guidelines. There were four documents excluded on the basis of the specific exclusion criteria. The process of analysis was applied to eight clinical practice guidelines. The analysis was performed in preventive measures, methods of determining and influencing cardiovascular risk, implemented scoring system, sub-components of non-pharmacological interventions, the level of evidence, grades of recommendation and scope of the document. Given the socio-economic and organizational conditions in the Czech Republic, the most appropriate seem to be the clinical European guidelines on cardiovascular disease prevention in clinical practice (European Society of Cardiology), which were primarily designed for European countries. The European recommendations are also reflected by the Czech Clinical Guidelines for Prevention of Cardiovascular Diseases with a specific algorithm for determining cardiovascular risk in Czech population.

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#### Introduction

CPG (clinical practice guidelines) are the opinions containing recommendations aimed at optimizing patient care, which are based on a systematic review of evidence and evaluation of the benefits and risks of alternative care [1]. The aim of CPG is to provide public health workers with all the relevant evidence to the specific clinical issues and thus help weigh the benefits and risks of a particular procedure [2].

In developed countries, which also include Czech Republic, the major of health problems are still the atherosclerotic cardiovascular diseases, especially coronary heart disease, ischemic cerebrovascular stroke, peripheral arterial disease and its complications [3]. The incidence of cardiovascular diseases has reached the state of an epidemic and this disease is the major cause of morbidity and mortality in the Czech Republic [4]. Most causes of early clinical manifestations of cardiovascular disease are well known and controllable represented by the risk factors such as poor nutrition, nicotinism, dyslipidemia, hypertension, diabetes mellitus and others [5]. Effectiveness and impact of clinical interventions aimed at the prevention of cardiovascular disease can also be achieved by means of CPG [6]. The best practices bridge the gap between the current clinical practice and scientific knowledge [7].

The goal of the survey was to analyze the existing clinical practice guidelines aimed at preventing cardiovascular diseases.

#### Materials and methods

#### Design

Survey study with application of qualitative research techniques.

#### Selection criteria

The inclusion criteria included clinical guidelines reflecting the principles of evidence-based practice, created by a multidisciplinary team, freely available on the Internet, published in the years 2003–2013 and containing non-pharmacological interventions. The exclusion criteria for inclusion were CPGs focused on the prevention of cardiovascular diseases in children and adolescents and the prevention of cardiovascular diseases in people with metabolic diseases and rheumatoid arthritis.

#### Sources and research

The clinical practice guidelines for cardiovascular disease prevention were searched using the following keywords: clinical practice guidelines, cardiovascular disease, prevention, analysis. The search was performed in the databases of the guidelines (Guideline International Network, National Guideline Clearinghouse, Australia's Clinical Practice Guidelines Portal Guidelines Advisory Committee, National Institute for Health and Clinical Excellence, Scottish Intercollegiate

Guidelines Network, eGuidelines, GuidelineCentral), on the websites of the government and public organizations (World Health Organization, National Institute of Health, National Vascular Disease Prevention Alliance, Ministry of Health New Zealand, Ministry of Health British Columbia) and professional associations (International Council of Nurses, European Society of Cardiology, Royal College of Nursing, American Heart Association, Registered Nurses Association of Ontario, Canadian Association of Cardiac Rehabilitation, Canadian Cardiovascular Society) in databases of summaries, reports and evidence-based practice (Best Evidence for Nursing Care, Best Practice Information Sheets) and in bibliographic databases (CINAHL, ClinicalKey, Medline, SpringerLink, Cochrane Library, ProQuest, ScienceDirect, Web of Knowledge).

#### Selection and analysis of studies

The total number of relevant documents found were 93 of the 16,189 records that were retrieved based on the research strategy and defined criteria. Classification was done according to established inclusion and exclusion criteria for inclusion of CPG in the investigated group. Another screening excluded duplicate and obsolete guidelines, specifically aimed recommended procedures and best practices that did not involve complex data. The defined inclusion criteria were met by twelve guidelines. Four documents were excluded on the basis of the exclusion criteria. The basic file for evaluation was composed of eight CPGs (Chart 1).

#### Theory

Clinical practice guidelines should increase the effectiveness of the prevention strategies in clinical practice [8]. The implementation of scientific knowledge into practice requires

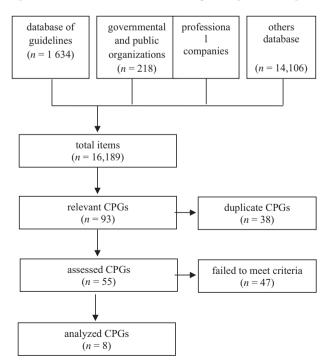


Chart 1 - Process of classification of clinical practice guidelines for cardiovascular disease prevention.

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