

Improving Cardiovascular Prevention and Risk Management in European Primary Care

Project Report for the conference on 18 – 19 June 2009 in Berlin

Michel Wensing, Jan van Lieshout, Stephen Campbell, Sabine Ludt,
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EPA-Cardio – Cardiovascular Prevention and Risk Management in Primary Care

The book is a result of the EPA-Cardio project. EPA-Cardio is a European project coordinated by Bertelsmann Stiftung, Germany and the Scientific Institute for Quality of Healthcare, Radboud University Nijmegen, Netherlands.

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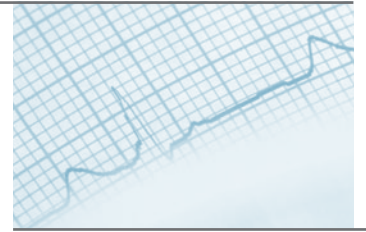
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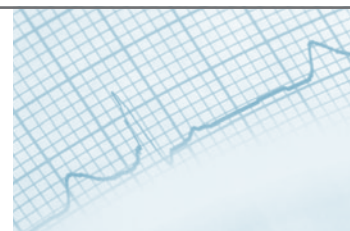
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Preface

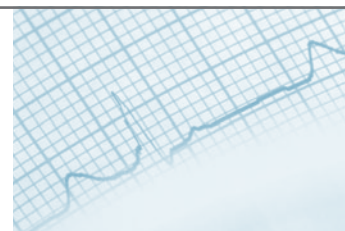
The Bertelsmann Stiftung is a think tank and a catalyst for social change. As a private operating foundation, our primary goal is to make a meaningful and enduring contribution to society.

In healthcare we are working to establish a healthcare system that places equal emphasis on promoting, maintaining and restoring health. A high-quality healthcare system ensures access to medically necessary services for all citizens and promotes personal responsibility among healthcare consumers. It allows effective competition between service providers and insurance funds and creates incentives for high-quality and efficient care. At the same time, it provides transparency in relation to the quality of care offered by service providers. All healthcare services, from wellness initiatives and prevention to emergency medical care, rehabilitation, and ongoing care are closely interlinked. Wellness initiatives and prevention are anchored in the lives of children, adults and seniors.

The Bertelsmann Stiftung promotes better quality and transparency in healthcare. Incentive systems ensure that care is high quality and cost-effective, and that clear and comprehensible information on the quality of care is available to all healthcare consumers. This is based on the firm belief that transparency is essential to patient choice and sound management both in individual practices and at a national level. We support a shift towards a more prevention-oriented healthcare system. More prevention can reduce the onset and severity of chronic diseases and improve long-term quality of life. With the help of the “EPA-Cardio” project we aim to strengthen primary care and wish to make an active contribution to improving quality in the field of cardiovascular prevention and risk management. The project also contributes to prevention of other diseases, particularly those related to the same unhealthy lifestyles as cardiovascular diseases. EPA-Cardio builds on a previous project, the EPA project also led by Bertelsmann Stiftung and IQ healthcare, which focused on optimum practice management in primary care.

European healthcare systems are facing important challenges, such as ageing populations, an increase in lifestyle-related health problems and limitations of healthcare resources. Strengthening primary care is an important step in meeting those challenges and a central starting point for many health-system reforms aimed at greater effectiveness, efficiency and patient orientation. Many countries are therefore searching for the most suitable primary care structure and organization, as well as appropriate ways to improve the quality of care.

Healthcare usually emphasizes episodic treatment for acute symptoms. Care management, proactive or planned care, active cross-disciplinary management, and preventive care are often services not covered by insurance schemes and are poorly reimbursed. Because the requirement for the management and prevention of chronic illness are not urgent, they are often not addressed, not assessed and not treated. Healthcare needs to move away from episodic, illness-oriented, complaint-based care towards patient-centred, preventive, longitudinal care.



Cardiovascular diseases have a major impact on mortality as well as on cost and quality of life in all European countries. A high proportion of CVD could be prevented by lifestyle modifications alone. Despite numerous advances in the understanding of the epidemiology of cardiovascular diseases and the enormous cost of diagnostics and therapeutic interventions, the public disease burden remains high and may even be on the increase. A balanced mix of community and medical approaches holds the most promise for preventing CVD.

A previous report by the EPA-Cardio group, “Prevention of cardiovascular diseases: The role of primary care in Europe”, described strategies for improving quality in the field of cardiovascular prevention in the participating countries. This report provides country-specific information on large-scale programmes for improving cardiovascular prevention and risk management and answers the following questions:

- How are preventive services structured and which preventive activities are provided in primary medical care in the participating countries?
- How favourable are conditions for cardiovascular prevention in primary medical care?
- Can specific patients be listed and identified in a primary care practice?
- Which professions are currently involved in cardiovascular prevention in primary care?
- What financial incentives exist for cardiovascular prevention in primary care?

The present project report entitled “Improving Cardiovascular Prevention and Risk Management in European Primary Care – EPA-Cardio” focuses on results of assessing cardiovascular risk management in primary medical care and delivers recommendations for improving and implementing best practice.

EPA-Cardio is a European project coordinated by Bertelsmann Stiftung, Germany and the Scientific Institute for Quality of Healthcare (IQ Healthcare), Radboud University Medical Centre, Nijmegen, Netherlands. The EPA-Cardio project once again brings together a consortium of researchers, general practitioners and stakeholders to provide evidence and develop instruments and policies for improving cardiovascular risk management in Europe. There are several reasons why EPA-Cardio mainly concentrates on prevention and risk management of cardiovascular diseases in primary care:

- Cardiovascular diseases have a major impact on mortality, cost and quality of life in all European countries and are largely preventable.

- Primary care plays an important role in the detection, treatment, and monitoring of patients at higher risk of cardiovascular diseases.
- The quality of cardiovascular risk management shows variation across countries, general practices, and patients.
- Evidence suggests that detection, treatment, lifestyle advice and monitoring of cardiovascular diseases can be improved in primary care in Europe.
- Many patients are not informed of treatment options, have no care plan and self-care plan and medicine is not used as intended.
- Prevention and risk management of cardiovascular diseases is closely interlinked with the prevention of other unhealthy lifestyle-related diseases.

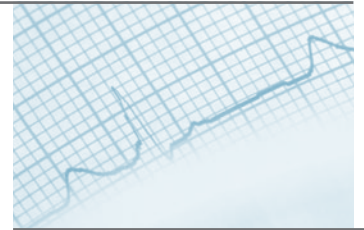
With the help of 30 practices in each of the ten participating countries, the potential for systemic improvement and the strengths and weaknesses at individual practice level have been assessed. Thus the project delivers information on the performance of individual healthcare institutions as well as systemic information for the further development of primary care in Europe. Stakeholders across Europe need to be closely involved in identifying best practices within their various organizational and cultural settings. They need to assess the factors that underlie best practices, and provide feasible and country-specific policy recommendations for effective implementation.

The EPA-Cardio project was only possible by the support of a large group of primary care practitioners and researchers in Europe. It has provided a range of findings, which should guide European health policy on cardiovascular prevention and primary care development.

We hope this project will foster an effective mix of meaningful strategies for improvement and better preventive care and will facilitate the process of mutual learning and implementation by providing internationally validated information and instruments.

Dr. Brigitte Mohn

Member of the Executive Board
Bertelsmann Stiftung



1. Summary

The European Practice Assessment Cardiovascular (EPA-Cardio) project was initiated and coordinated by the Bertelsmann Foundation and the Scientific Institute for Quality of Healthcare of the Radboud University Nijmegen. A large group of primary care practitioners and researchers from 11 countries contributed to the project in the period 2006–2009. The project was linked to the Topas Europe Association, an international organization for promoting the validation and implementation of indicators, instruments and tools for assessing and improving healthcare practices and professionals. The EPA-Cardio project aims to enhance the transparency of cardiovascular prevention delivered in European primary care, in order to inform and support primary care practitioners as well as national health policies. In this way the project enhances the implementation of a balanced set of effective preventive interventions in European primary care, addressing the needs of various subgroups – ranging from individuals with unhealthy lifestyles but as yet unaffected by cardiovascular risk, to the large numbers of patients with established cardiovascular disease.

1.1 Overview of the project

The project had five components, each with stand-alone objectives. The first component was the drawing up of a set of quality indicators for cardiovascular prevention. Consensus was sought in relation to these indicators to allow international comparison of cardiovascular preventive services. A total of 101 general practitioners from nine countries were involved in the rating and selection of indicators. From an initial list of 650 indicators, 44 were rated as valid by expert panels in all participating countries. Only indicators that scored high on necessity and feasibility in each of the country panels were included. These indicators covered lifestyle, clinical performance, and organizational aspects of practice management.

The second component was the development and piloting of measurement instruments based on these indicators. In addition, other measures were selected to provide a comprehensive perspective on cardiovascular prevention, including aspects that were not covered by performance indicators. Valid and feasible measurement tools were selected or developed, that can be used for audit and evaluation purposes. The following measurement instruments were developed and used in the EPA-Cardio project: abstraction tools for a medical record audit in both CHD patients and high-risk patients, questionnaires for patients with coronary heart disease, high cardiovascular risk (defined in terms of mortality risk in 10 years), and young adults, and an interview guide for an interview with the GPs.

The third component comprised of an assessment of programmes within different countries aimed at improving cardiovascular prevention. In total, 42 programmes were identified. Almost all were targeted at health professionals and included an educational component. In countries with a strong primary care system, many programmes focused exclusively on the management of established

cardiovascular disease, while less than a third targeted lifestyle intervention. One explanation for this may be that the evidence base is strongest for cardiovascular risk management in patients with established cardiovascular disease. Furthermore, in countries with a weaker primary care system, most programmes were targeted at lifestyle improvement and less than a third on disease management.

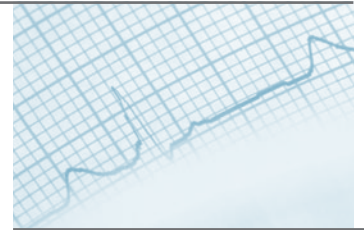
The fourth component was a large empirical project in 10 countries using medical audit and patient surveys: Austria, Belgium, England, Finland, France, Germany, Netherlands, Slovenia, Spain and Switzerland. In addition, Israel contributed data to specific parts of the audit project (not included in this report). In each of the countries, stratified samples of 16–36 general practices were included, with the aim of providing nationally representative data. Data has been included from 283 general practices from the 10 countries. In this report we present the results of:

- a written survey in 3,661 adults (18–45 years), recruited through general practices;
- an audit of 5,106 medical records on patients with high cardiovascular risk in these practices;
- an audit of 6,085 medical records on patients with coronary heart disease in the same practices.

The samples represented 94 to 99% of the targeted patient sample sizes in the participating practices. The fifth component was an international exploration of methods for involving patients more actively in cardiovascular prevention, particularly focused on risk communication. Adequate discussion of the risks and benefits associated with different choices with patients is often required if involvement is to be effective. A systematic review of the literature has been conducted on the effectiveness of different methods for presenting/communicating cardiovascular risk. This showed a number of challenges for the development and implementation of tools for communication of cardiovascular risk.

1.2 Results of the audit project

In the survey of 3,661 young adults, we explored the potential value of different approaches to (cardiovascular) prevention in young adults, focusing on lifestyle intervention, delivered in primary care. This study was based on a newly developed patient questionnaire and the results should not be used to assess the quality of preventive care in different countries and practices. The data showed that small to substantial minorities of young adults (mostly between 10 and 30%) were favourably disposed to receiving specific items of lifestyle advice in primary care practices. These adults seemed most receptive to advice on physical exercise. The items which were assessed least favourably (smoking, heart disease in family, lifestyle advice for children) may not apply to large numbers of respondents. The findings may also imply that young adults at low risk for cardiovascular disease need to be motivated actively to receive advice on their lifestyle.



Few respondents (5 to 25% of the total sample) were positive about innovative formats for delivering lifestyle advice, such as advice from a primary care doctor or nurse about websites or advice about attending a sports club. This may suggest that they prefer to receive lifestyle advice within the traditional consultation with the doctor or nurse if they see this as helpful at all. This finding has implications for the development of methods for lifestyle intervention. Larger numbers of well-trained health professionals would be needed to provide lifestyle advice in face-to-face consultations. Alternatively, over time, patients may become accustomed to some of the innovative methods for providing lifestyle intervention in primary care.

From the audit of 5,106 high-risk patients, we found that none of the countries had implemented comprehensive recording of cardiovascular risk in patients' medical records. For instance, recording of smoking status varied from 36 to 97% across the participating countries. Recording of Body-Mass Index or weight varied from 40 to 89%. Recordings of lifestyle intervention were also mixed, but in most cases well below 50%. These findings show that there is room for improvement in both the recording and delivery of cardiovascular risk and lifestyle intervention in primary care.

The audit of 6,085 medical records of patients with coronary heart disease showed that documentation of cardiovascular risk factors was mixed and improvement is possible in many countries. For instance, recording of smoking status varied from 4 to 95%. Recording of risk factors was very high in England, possibly due to the long-standing tradition of audit and the recent Quality and Outcomes Framework. Preventive medication – statins and anti-platelet therapy – was recorded in 80% or more of the patients in several countries, but other countries showed lower figures. Recorded influenza immunization showed much variation across countries (31 to 95%). Figures on recording of lifestyle advice were lower than those on preventive medication and showed much variation across countries. For instance, an advice about physical exercise was found in 15 to 55% of the medical records across countries.

1.3 Potential implications for health policy

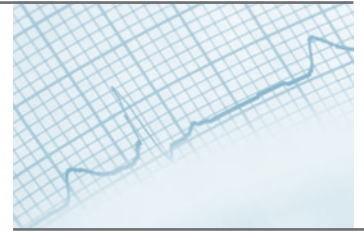
We suggest that the EPA-Cardio project has the following implications for health policy:

- EPA-Cardio has provided a set of indicators for cardiovascular risk management in primary care that are internationally developed and integrated into specific measurement tools. Wide use of this set of indicators and measurements is recommended. It would be undesirable if different stakeholders were each to use their own set of performance indicators for cardiovascular prevention.
- Published research suggests that secondary prevention for patients with established heart disease is an effective approach to reducing death and disability from heart disease. Healthcare systems need to be organized in order to provide such care in a systematic way for people with heart disease. We found that countries with a strong primary care system seemed to focus their improvement programmes on these patients with established cardiovascular disease.

- Many societies consider it a challenge to enhance the lifestyle of the population. There is a weaker evidence base for intervention focusing on primary prevention in healthy populations. Many patients do not see this as an important function of the healthcare system, but some seem receptive to receiving lifestyle advice in primary care. More effective methods are needed for reducing cardiovascular risk in populations at lower risk.
- Providing lifestyle intervention in primary care may be most effective if this is done as part of the 'traditional' consultation with a primary care doctor or nurse. Larger numbers of well-trained health professionals would be needed to provide lifestyle interventions in face-to-face contacts with patients. Additional approaches are needed to improve the effectiveness of this approach, such as referral to websites and local sports groups by doctors and nurses. However, many healthy adults are not yet particularly enthusiastic about such approaches. Stronger evidence based on effectiveness and feasibility in daily practice is needed before such approaches can be recommended.
- Comprehensive recording of cardiovascular risk factors is recommended in patients who are at high risk and patients who have established disease. None of the countries have yet achieved this completely. It requires the presence of adequate information systems and adequate registration routines in daily practice. The audit in England showed high scores for recording, which may be related to comprehensive computerization of primary care and the reimbursement system in the United Kingdom, which financially rewards recording of desired performance.
- Preventive medication is provided to many patients at high risk and patients with coronary heart disease, although further improvement may be possible in some countries. Despite the nominal potential for improvement in some countries, improvement programmes should continue to focus on secondary prevention, as this can be highly effective, particularly in the case of patients with established cardiovascular disease. Complete implementation of recommendations for preventive medication in cardiovascular prevention remains an important target for programmes for improving healthcare delivery.
- Lifestyle intervention in patients at high risk and patients with coronary heart disease are not delivered to large numbers of eligible patients in primary care. This is probably due to both poor registration and a problem of suboptimum delivery of such lifestyle intervention. Innovative methods for sustained implementation of lifestyle intervention in cardiovascular patients are needed.
- Communication of cardiovascular risk is one of the innovative methods for providing lifestyle intervention and enhancing adherence to medical treatment. Effective communication of cardiovascular risk is the key to involving patients more actively in their treatment. Further development and evaluation of specific tools for risk communication is recommended, focused on their uptake in daily practice.

Conclusion

EPA-Cardio is a very special project, which was only possible by the support of a large group of primary care practitioners and researchers in Europe and the leading role played by the Bertelsmann Stiftung. It has provided a range of findings, which should guide European health policy on cardiovascular prevention and primary care development.



2. The EPA-Cardio project

2.1 The challenge of cardiovascular prevention

Cardiovascular diseases (CVD) have major impact on the mortality and quality of life of human populations across the world, despite improvements in lifestyle and innovations in the prevention and treatment of CVD in previous decades [1]. Cardiovascular prevention includes the clinical risk management of established CVD, management of cardiovascular risk in patients at high risk of developing CVD, and cardiovascular prevention in individuals with unhealthy lifestyles but as yet unaffected by cardiovascular risk [2]. While in recent years the mortality from coronary heart disease (CHD) in developed countries has declined [3] and cardiovascular treatment has improved [4], many eligible individuals still do not currently receive the best available preventive treatment and counselling for cardiovascular risk [5].

The importance of cardiovascular prevention and risk management is further underlined by the high prevalence of related co-morbidity, particularly diabetes mellitus and chronic heart failure. These co-morbid diseases also have a high and increasing prevalence across Europe with high impact on mortality and quality of life and their treatment has major implications for costs of health-care. In addition, cardiovascular risk management can be seen as an example for preventive care more broadly, particularly regarding lifestyle components. Reducing rates of smoking and obesity, for instance, has implications for health more broadly than with respect to cardiovascular diseases. Lessons learnt on how to improve cardiovascular prevention will apply to other areas of prevention as well as cardiovascular diseases.

Data is required on currently provided cardiovascular prevention and risk management and on patients' lifestyles. This data would help to identify performance gaps and set specific targets for improvement and to tailor interventions to relevant barriers for change in both patients and health-care providers. Inadequate delivery of cardiovascular risk management may be related to various factors. For instance, it may be related to inadequate perception of cardiovascular risk by physicians [4], as well as to concerns about the efficiency and ethical implications of providing cardiovascular prevention to individuals at low risk of developing CVD [6]. The clinical benefits and efficiency of cardiovascular prevention are an ongoing topic of scientific debate [7]. Alternatively, it may be related to organizational and financial barriers in practice organizations for providing cardiovascular risk management. For instance, the organizational attributes of general practices, such as size and teamwork, which have been shown to be associated with providing cardiovascular risk management [8].

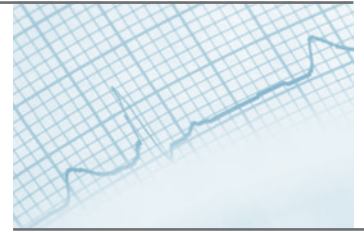
While data on cardiovascular risk management is available in a number of countries, internationally comparative data has potential advantages compared to national data. Trends and associations identified in international datasets are more robust for the confounding influence of national

healthcare systems and national cultures. For instance, studies in different European countries have shown that patient report more positive evaluations of accessibility in smaller general practices [9], and that physician workload is consistently lower in larger practices [10]. The consistency of these findings makes it more likely that the associations were not confounded by the characteristics of a specific healthcare system or national culture. Furthermore, international comparison of performance between different countries can stimulate stakeholders to improve, although national differences can often be attributed to many other factors than those of interest.

Our focus is on primary care, because a substantial part of prevention and chronic care for CVD is delivered in these settings. Many countries have large-scale programmes for improving cardiovascular risk management in primary care, such as disease management programmes in Germany [11], indicator-based incentive contracts in the United Kingdom [3], and practice support in outreach visits in The Netherlands [12]. It is important to describe what impact exposure to such programmes has on the quality of cardiovascular risk management delivered in primary care. Internationally comparative data can enable a comparison of programmes across countries. As part of the EPA-Cardio project, we identified 42 programmes for improving cardiovascular prevention in 10 European countries (Austria, Belgium, Finland, France, Germany, The Netherlands, Spain, Slovenia, Switzerland, United Kingdom) and Israel [13]. Almost all were targeted at health professionals and included an educational component. In countries with a strong primary care system (Finland, Israel, the Netherlands, Spain, Slovenia and the UK) many programmes were exclusively focused on the management of established cardiovascular disease, while less than a third targeted lifestyle intervention. In countries with a weaker primary care system most programmes were targeted at lifestyle improvement and less than a third at disease management. Our findings suggest that a strong primary care system implies efforts to improve disease management, but not necessarily efforts to improve delivery of lifestyle intervention. This may be a missed opportunity, given the potential benefits of lifestyle improvement in the population and the potential of primary care to influence lifestyle.

Analysis of programmes for improving cardiovascular prevention

A growing body of evidence on the prevention and treatment of cardiovascular diseases (CVD) has resulted in a large number of recommendations for cardiovascular risk management, e.g. in guidelines developed by the American Heart Association and the European Society of Cardiology. All developed countries have large-scale programmes to improve prevention and management of cardiovascular diseases, but the content and focus of these programmes varies substantially. For instance, some programmes focus on improving the management of chronic care of patients with established CVD, including strategies for implementing lifestyle change in these patients and for improving pharmaceutical treatment. These programmes are generally referred to as ‘disease management programmes’. Another type of programme focuses on lifestyle improvement in patients in the general population, irrespective of the presence of CVD or known risk factors such as hypertension. Primary care has a crucial role to play in both



the prevention and management of cardiovascular diseases. Primary care opens opportunities for disease prevention and health promotion as well as the early detection of problems and, as such, acts a bridge between personal healthcare and patients' families and communities.

We aimed to identify commonly shared features of successful programmes for improving cardiovascular risk management and prevention and to assess differences in their content and focus. In addition, we considered whether the focus of these improvement programmes was related to the strength of primary care.

A total of 42 programmes from 11 countries were identified. Features shared by the programmes included: intervention targeted at professionals (95%); intervention aimed at education and motivation (86%); and inclusion of an evaluation, either completed or planned (100%). A small majority of projects (62%) were targeted at the public and patients as well as at healthcare professionals. About one third of the programmes (38%) included organizational changes.

In countries with a strong primary care system most reported programmes (63%) were exclusively focused on improving the management of cardiovascular disease or risk. In contrast, in countries with a weak primary care system, most programmes (78%) were focused on improving the delivery of lifestyle intervention. Three of the four disease management programmes in weak primary-care-oriented countries were diabetes programmes. Considering the importance of primary care in the prevention of cardiovascular diseases, these findings suggest that more effort is required in implementing lifestyle improvement programmes in primary care in countries with strong primary care orientation.

2.2 Aims of this report

The EPA-Cardio project is an international project of cardiovascular risk management in primary care in Europe. Its overall aim is to provide insight into the current services delivered in primary care to prevent CVD, with the aim of informing and supporting primary care practices as well as national health policies and decision makers in this domain.

The key objectives for this report are:

- 1) To describe the views of young adults (18–45 years) in relation to the delivery of primary prevention of cardiovascular disease in primary care.
- 2) To describe the cardiovascular risk management services provided to patients with high risk for developing CVD and for patients with coronary heart disease in primary care.

2.2.1 Design and methods

The audit study was cross-sectional and observational in design. Ethical approval for the study has been obtained in each of the participating countries, according to national laws and regulations.

2.2.2 Countries

The project involved 10 countries: Austria, Belgium, England, Finland, France, Germany, Netherlands, Slovenia, Spain, and Switzerland. Furthermore, Israel also participated in specific parts of the study (not included in this report). This represents a comprehensive sample of countries in North, West, South and Central Europe. Although all of these countries have primary care practices, there is substantial heterogeneity regarding the position of primary care in the healthcare system. For instance, primary care physicians coordinate access to specialized medical care only in some countries, while medical specialists can be consulted directly in other countries.

2.2.3 Practices

Stratified random sampling of 36 practices per country was planned, although not entirely achieved. Practice stratification involved two dimensions: 'urban versus rural' and 'small practices versus large practices'. The practice area was considered urban if located in a city with >100,000 inhabitants and otherwise considered rural (including smaller towns). Practice size was defined as large if two or more full-time equivalent general practitioners worked in the practice and small if less than two full-time equivalents. In addition, each country had the option of stratifying their sample to reflect national contexts. For instance, table 2.1 shows the stratification in the Netherlands with an extra stratum in the 'small practices' group.

Table 2.1: Practice stratification scheme in The Netherlands (example)

		'Rural'	'Urban'
'Small' ≤2 fte GP	1 GP	10	5
	2 GPs	9	4
'Large' >2 fte GP		6	2

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Table 2.2 shows the results produced from the stratification of practices per country. Practice size shows significant variation. In Switzerland for example all practices are small (≤2 FTE GP), which contrasts with Spain where all practices but one are large. With the exception of England, all countries have most practices included in towns with less than 100,000 inhabitants.

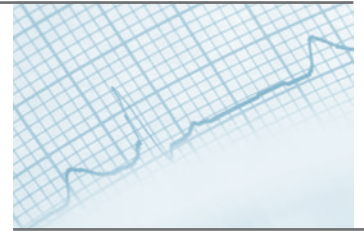


Table 2.2: Description of general practices included in EPA-Cardio project (April 2009)

	'Rural' (including towns < 100,000 inhabitants)		'Urban' (cities with > 100,000 inhabitants)	
	'Small' ≤2 fte GP	'Large' >2 fte GP	'Small' ≤2 fte GP	'Large' >2 fte GP
Belgium	13	6	2	1
England	1	7	9	17
France	14	4	4	2
Germany	13	7	10	3
Netherlands	19	5	10	2
Spain	1	20	0	15
Switzerland	8	0	2	0

Note. Not all practice data was as yet available for this table.

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2.3 Health professionals

The study considers all staff physically working in each general practice, including physicians, nurses (nurse practitioners, practice nurses, specialized nurses, psychiatric nurses etc.), practice assistants (whether or not with clinical tasks), allied health professionals (physiotherapists etc.), psychologists, midwives, physician assistants, administrators, and managers. The staff may be employed by the practice or by another organization (e.g., nurses in the practice, who are employed by mental health organization). The study does not include staff working in the same health centre, or other larger organization, but based in a different practice.

2.4 Patients

The audit was focused on three patient samples in each of the participating practices. The targeted sample size was 15 patients per practice in each of the following groups:

- Patients aged 18 to 45 years (unselected), registered or regular visitors in the practice. The underlying reasons for focusing on this age group is that we assume that health behaviour pattern at a younger age tend to be continued throughout life.
- Patients at high risk of developing CVD. These include patient who meet one of the following criteria: 10% CVD mortality risk or 20% CVD morbidity risk in 10 years, ideally based on an individual risk assessment using validated CVD risk tables. If this has not been available, we defined a proxy measure: presence of three out of the following four risk factors: hypertension, hypercholesterolemia, smoking, men over 60 years (cut-off points as defined nationally). Patients with established diabetes or established CVD were not included in this group.

- Patients with established coronary heart disease (CHD). This includes myocardial infarction, angina pectoris, or vascular surgery (diagnoses based on medical records at the general practice). Patients with established diabetes were not included in this group.

For the CHD patients and high-risk patients we planned to collect data from medical records and from patient questionnaires. For the young adults, we took a random sample from a list of patients registered at each practice. In countries where there is no patient registration, alternative methods were based on a sample of patients taken from a list, e.g. by taking every second or third patient until 40 patients have been selected.

Table 2.3 provides an overview of the data available as of April 2009 and used in this report. It shows that 79% of the planned overall sample of general practices was included (36 per country). For the three patient samples included in this report (audit of CHD patients, audit of high-risk patients, and survey of healthy patients) between 94% and 99% of the target samples (15 patients from each practice) have been included in this report. Some countries planned to deliver more data in the coming months, so this dataset is not yet complete and the findings reported here are preliminary.

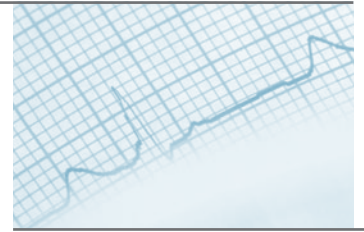
Table 2.3: Overview of available data (April 2009)

	General practices	Audit of CHD patients	Survey of CHD patients	Audit of high-risk patients	Survey of high-risk patients	Survey of healthy patients	Procedure #
Austria	25	311	371	287	366	365	1
Belgium	25	243	316	237	324	250	1
England	36	540	449	535	445	269	2
Finland*	16	253	244	147	136	164	1
France	26	234	244	291	261	327	3/1
Germany	29	412	419	434	404	512	1
Netherlands	31	302	498	284	488	459	1
Slovenia	36	843	787	850	800	937	3/1
Spain**	36	2590	–	1682	–	–	n.a.
Switzerland	23	357	357	359	359	378	1
Total	283	6,085	3,685	5,106	3,583	3,661	

Legend: * These represent larger health centres; ** A random sample will be taken from this later.

#Procedures: 1. First survey patients, then audit medical records; 2. First audit medical records, then survey patients;

3. Prospective inclusion of patients for audit and survey. The table does not include Israel, which provided data on practices.



2.5 Measures

In the study of young adults, we used a questionnaire to explore the views of patients regarding what general practices could contribute to the primary prevention of CVD. These questions were future-oriented, which implies that many doctors and patients are expected to have little or no experience with specific preventive activities.

In the audit of primary care for high-risk patients and coronary heart disease patients, we used data extracted from medical records. The specific items were linked to the EPA-Cardio indicators, which were derived from a modified Delphi procedure [14]. A total of 101 GPs from nine countries (80% of those invited) were involved in both rounds of this procedure. These countries were again included in the observational study, with the exception of Spain, which was added later. From an initial list of 650 indicators, 202 indicators were generated after removing duplicates etc from which 44 were rated valid (22%). Only indicators that scored high on necessity and feasibility in each of the country panels were included. These indicators covered lifestyle (8), clinical performance (27), and organizational aspects (9), and are incorporated in specific instruments.

EPA-Cardio indicators [14]

There is increasing pressure for health policy to be seen as an international issue. With free movement of labour in Europe, European guidelines on cardiovascular care and the enlargement of the European Union to include countries with disparate healthcare systems, it is important to develop common quality standards for cardiovascular prevention and risk management across Europe. However, quality indicators cannot be simply transferred between countries without a process to reflect variation in clinical practice and differences in healthcare systems.

In this study, we developed indicators for the quality of CVD care that could be applied in nine European countries with different health systems and cultures.

Nine countries with diverse healthcare systems participated: Austria, Belgium, Finland, France, Germany, Netherlands, Slovenia, Switzerland and the United Kingdom. Panels were convened in each country consisting of general practitioners with a specific expertise in CVD and understanding of the evidence underpinning each indicator in their country.

First, we developed a conceptual framework for cardiovascular risk prevention and management based on four key domains: 1) Lifestyle management, 2) Clinical processes, outcomes and risk assessment /communication, 3) Organization of care and 4) Patient perspective. The conceptual framework and indicators sought to cover primary, secondary and tertiary prevention.

Next, a set of indicators relating to CVD prevention and risk management was collated from relevant international indicators and guidelines and literature. The conceptual framework

was then used to organize the indicators into relevant dimensions. 650 indicators were identified and edited to 186 following the removal of duplicates and the combination of similar indicators.

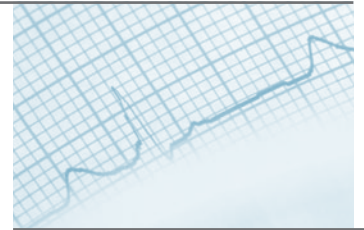
A two-stage modified Delphi process was used to identify indicators that were judged valid for necessary care. These 186 indicators were included in round one. Sixteen new indicators were added in round two as a result of comments received from panellists in round one (lifestyle: n=3; clinical processes/outcomes: n=13), resulting in the inclusion of 202 indicators in round two. No indicators were dropped between rounds.

All measures were translated systematically, using a forward and backward translation procedure and a testing phase with interviews. The final instruments were tested and adapted in a pilot project. In this project, the prototypes were piloted in two practices respectively in five countries. This experience led to some minor adjustments in the audit forms and questionnaires. The measurements on primary prevention and the patient questionnaire for the 18 to 45 year age group were added after discussion to broaden the scope of the study: not just patients with established CVD (especially CHD) and patients at high risk, but also the 18 to 45 year age group.

The study protocol for the EPA-Cardio project has been published [16].

2.6 References

1. Weisfeldt ML, Zieman SJ: Advances in the prevention and treatment of cardiovascular disease. *Health Aff* 2007, 26: 25–37.
2. Fourth Joint Task Force of the European Society of Cardiology and Other Societies. European guidelines on cardiovascular disease prevention in clinical practice: executive summary. *Eur Heart J* 2007; 28: 2375–2414.
3. Ford ES, Ajani UA, Croft JB, Critchley JA, Labarthe DR, Kottke TE, Giles WH, Capewell S: Explaining the decrease in U.S. deaths from coronary disease, 1980–2000. *N Engl J Med* 2007, 356; 2388–98.
4. Campbell SM, Roland MO, Middleton E, Reeves M: Improvements in quality of clinical care in English general practice 1998–2003: longitudinal observational study. *BMJ* 2005, 331: 1097–1098
5. Mosca L, Linfante AH, Benjamin EJ, Berra K, Hayes SN, Walsch BW, Fabunmi RP, Kwan J, Mills T, Simpson SL: National study of physician awareness and adherence to cardiovascular disease prevention guidelines. *Circulation* 2005, 111: 499–510.
6. Getz L, Kirkengen AL, Hetlevik I, Romunstad S, Sigurdsson JA: Ethical dilemmas arising from implementation of the European guidelines on cardiovascular disease prevention in clinical practice. *Scan J Prim Healthcare* 2004, 22: 202–208.



7. Unal B, Critchley A, Capewell S: Modeling the decline in coronary heart disease deaths in England and Wales, 1981–2000: comparing contributions from primary and secondary prevention and secondary prevention. *BMJ* 2005, 331: 614
8. Lobo CM, Frijling BD, Hulscher MEJL, Bernsen RMD, Braspenning JC, Grol RPTM, Prins A, Van der Wouden JC: Organisational determinants of cardiovascular prevention in general practice. *Scan J Prim Healthcare* 2003, 21: 99–105.
9. Wensing M, Hermsen J, Grol R, Szecsenyi J: Patient evaluations of accessibility and coordination in general practice in Europe. *Health Expect*, 2008; 11: 384–390.
10. Wensing M, Van den Hombergh P, Van Doremalen, Grol R, Szecsenyi J: General practitioners' workload associated with practice size rather than chronic care organization. *Health Policy* 2008; 89: 124–129.
11. Beyer M., Gensichen J., Szecsenyi J., Wensing M., Gerlach FM.: Wirksamkeit von Disease-Management-Programmen in Deutschland – Probleme der medizinischen Evaluationsforschung anhand eines Studienprotokolls. *Zeitschrift für Ärztliche Fortbildung und Qualität in Gesundheitswesen* 2006, 100: 355–364.
12. Hulscher ME, Van Drenth BB, Van der Wouden JC, Mokkink HG, Van Weel C, Grol R: Changing preventive practice: a controlled trial on the effects of outreach visits to organize prevention of cardiovascular disease. *Qual Healthcare* 1997; 6: 19–24.
13. Van Lieshout J, Wensing M, Campbell S, Grol R: Primary care strength linked to prevention programs for cardiovascular disease. *Am J Manag Care* 2009; 15: 255–262.
14. Campbell S, Ludt S, Van Lieshout J, Boffin N, Wensing M, Petek D, Grol R, Roland M: Quality indicators for the prevention and management of cardiovascular disease in primary care in nine European countries. *Eur J Cardiovasc Prev Rehab* 2008; 15: 509–515.
15. Engels Y, Dautzenberg M, Campbell S, Broge B, Boffin N, Marshall M, Elwyn G, Vodopivec-Jamsek V, Gerlach FM, Samuelson M, Grol R: Testing a European set of indicators for the evaluation of the management of primary care practices. *Fam Pract* 2006, 23: 137–147.
16. Wensing M, Ludt S, Van Lieshout J, Campbell S, Roland M, Szecsenyi J, Grol R. European Practice Assessment of Cardiovascular risk management (EPA-Cardio): Protocol of an international observational study in primary care. *Implem Science* 2009; 4: 3.

3. Cardiovascular prevention in young adults

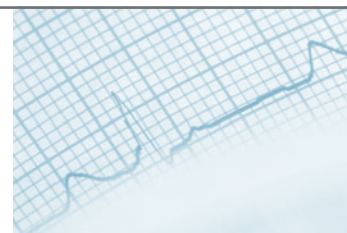
3.1 Key findings

- ▶ 3,661 young adults (18–45 years) from 10 countries responded to a questionnaire on cardiovascular prevention.
- ▶ Small to substantial minorities (often 10 to 30%) felt that receiving lifestyle advice in primary care would be helpful to them, particularly regarding weight, physical activity, blood pressure and cholesterol level. This perception might be appropriate for specific respondents, but it is not correct for the total population as unhealthy lifestyles are highly prevalent. The respondents seemed most receptive to advice on physical exercise.
- ▶ Small to substantial minorities (mostly 5 to 25%) had favourable views on innovative formats for delivering lifestyle advice, such as referral to a website for education or sports club by the physician or nurse. The traditional consultation with a doctor or nurse may still be the best way to provide advice on healthy lifestyles.

3.2 Background

The unhealthy lifestyles of many children, adolescents and young adults in the western world have been well documented, particularly in relation to smoking, insufficient physical exercise, poor diet, and excessive use of alcohol. Biomedical research has clearly shown that unhealthy behaviour patterns put individuals at higher risk of developing cardiovascular disease and many other diseases. In addition, some individuals have increased cardiovascular risk because of genetic factors (e.g. familial hypercholesterolemia). Preventive medication and lifestyle intervention can effectively reduce cardiovascular risk [1]. Cardiovascular risk is concentrated in specific family and friendship networks [2,3], in patients with low socio-economic status and in countries with lower income levels [4]. Everybody has a risk for developing cardiovascular disease, which increases with age, but some people have an increased risk, depending on lifestyle, biomedical and societal factors.

2. The challenge of cardiovascular prevention has received much attention from policy makers, organizations of health professions, and funders in healthcare across the world. Cardiovascular prevention is aimed at reducing cardiovascular risk, ideally in those who are not yet affected by cardiovascular disease. Prevention can take two broad approaches: screening for high risk in populations, followed by counselling and intervention if needed and health education targeted at populations, focused on lifestyle changes. Cardiovascular prevention in relatively healthy individuals raises ethical concerns and questions about effectiveness, efficiency and feasibility. If it is seen as desirable, there is a need for further debate concerning the best setting for delivering preventive programmes: schools, public health providers, primary care, hospitals and working environments. The EPA-Cardio project focused on the benefits and feasibility of cardiovascular prevention in primary medical care.



3.3 Results of EPA-Cardio

This section presents results from the EPA-Cardio survey in young adults. Generally, for the analysis, we determined the number of respondents who said ‘yes’ (numerator) compared to the total number of respondents, ignoring missing values and ‘not applicable’ answers (denominator). Note that this chapter does not report on EPA-Cardio indicators, as no consensus on such indicators for prevention in healthy adults was found in our Delphi procedure with GPs.

Table 3.1 provides descriptive information on the patient samples. The sample size in this analysis is 3,661, which is 99% of the targeted sample (on average, 15 respondents per practice). A preliminary calculation found a response rate of 42%. The mean age of the respondents was between 34 and 36 years. Women accounted for 54 to 74% of the country samples. Few respondents had low education (less than 9 years), probably less than in the total population in these countries. Outliers were Austria and Switzerland, each of which had about 28% low educated respondents. Self-perceived health status was ‘very good’ or ‘excellent’ in 28% to 52% per country. Between 4% and 30% of the respondents reported that they smoked.

Table 3.1: Description of the patient populations (total n=3,661)

	Mean age	% Women	% < 9 years (= low) education	% Self- perceived very good / excellent health status	% Self-reported smokers
Austria	36	232 (64%)	104 (29%)	185 (51%)	108 (30%)
Belgium	35	156 (62%)	7 (3%)	90 (36%)	11 (4%)
England	35	162 (60%)	16 (6%)	139 (52%)	53 (20%)
Finland	34	122 (74%)	12 (7%)	83 (51%)	45 (27%)
France	34	189 (58%)	13 (4%)	136 (42%)	92 (28%)
Germany	35	332 (65%)	57 (11%)	157 (31%)	130 (25%)
Netherlands	35	245 (53%)	11 (2%)	181 (39%)	83 (18%)
Slovenia	35	528 (56%)	134 (14%)	347 (37%)	236 (25%)
Switzerland	35	236 (62%)	106 (28%)	190 (50%)	94 (25%)

Note. Spain was not included in this part of the study.

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When asked about the helpfulness of lifestyle advice on various aspects of lifestyle, small to substantial minorities agreed with the helpfulness of specific items (Table 3.2). Relatively high numbers said that lifestyle advice would be helpful regarding weight (9 to 33%); physical activity (12 to 47%); blood pressure (9 to 35%); and cholesterol level (8 to 27%). Lower scores were found for smok-

ing (7 to 21 %), heart disease in the family (5 to 16 %), and lifestyle of children (2 to 17 %). Countries with most favourable views on lifestyle advice were Belgium, France and Slovenia; less favourable views were particularly found in England, The Netherlands and Switzerland.

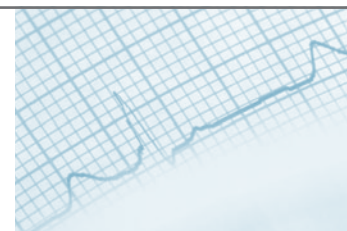
Table 3.2: Is receiving lifestyle advice in general practice helpful for you? (total n=3,661)

	Smoking	Weight	Physical activity	Blood pressure	Cholesterol	Heart disease in family	Lifestyle of your children
Austria	42 (12 %)	70 (19 %)	79 (22 %)	127 (35 %)	78 (21 %)	n.i.	29 (8 %)
Belgium	53 (21 %)	78 (31 %)	95(38%)	77 (31 %)	58 (23 %)	41 (16 %)	33 (13 %)
England	33 (12 %)	24 (9 %)	27 (10 %)	23 (9 %)	21 (8 %)	14 (5 %)	12 (5 %)
Finland	18 (11 %)	29 (18 %)	42 (26 %)	25 (15 %)	26 (16 %)	9 (6 %)	17 (10 %)
France	63 (19 %)	89 (27 %)	138 (42 %)	33 (10 %)	46 (14 %)	45 (14 %)	51 (16 %)
Germany	63 (12 %)	108 (21 %)	163 (32 %)	78 (15 %)	77 (15 %)	n.i.	44 (9 %)
Netherlands	31 (7 %)	59 (13 %)	56 (12 %)	45 (10 %)	35 (8 %)	38 (8 %)	11 (2 %)
Slovenia	184 (20 %)	310 (33 %)	437 (47 %)	287 (31 %)	257 (27 %)	n.i.	161 (17 %)
Switzerland	33 (9 %)	70 (19 %)	105 (28 %)	52 (14 %)	35 (9 %)	n.i.	16 (4 %)

n.i. = question not included

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Table 3.3 presents patients' views on various more innovative formats for receiving lifestyle advice in primary care, which could be used in addition to advice given within the traditional consultation. Small to substantial minorities thought that the various formats would be helpful to them. Most variation was found between the country samples. For instance, in Slovenia 17 to 43 % of the respondents felt that the different formats would be helpful to them. In Germany, these figures ranged from 5 to 12 %. In The Netherlands, almost no patients were positive about the formats presented for lifestyle advice (2 to 4 %).



**Table 3.3: Is receiving the following items in primary care helpful to you?
(total n=3,661)**

	Two or more consultations with to provide advice on your lifestyle	Written information on lifestyle	Advice about websites for education on health risks or healthy lifestyle	Advice about attending a local sports club or physical exercise programme	Education on lifestyle for your children
Austria	43 (12%)	37 (10%)	30 (8%)	43 (12%)	18 (5%)
Belgium	39 (16%)	51 (20%)	35 (14%)	48 (19%)	73 (29%)
England	8 (3%)	11 (4%)	8 (3%)	8 (3%)	10 (4%)
Finland	23 (14%)	19 (12%)	13 (8%)	10 (6%)	13 (8%)
France	46 (14%)	26 (8%)	14 (4%)	58 (18%)	32 (10%)
Germany	52 (10%)	38 (7%)	31 (6%)	59 (12%)	23 (5%)
Netherlands	7 (2%)	15 (3%)	17 (4%)	17 (4%)	12 (3%)
Slovenia	406 (43%)	258 (28%)	235 (25%)	248 (27%)	161 (17%)
Switzerland	37 (10%)	18 (5%)	20 (5%)	23 (6%)	5 (1%)

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3.4 Comment

This component of the EPA-Cardio project explored the potential value of different approaches to (cardiovascular) prevention in young adults, focusing on lifestyle intervention. Prevention in healthy individuals has been discussed along several lines:

- effectiveness and efficiency of preventive services,
- ethical implications for patient autonomy and societal equity,
- feasibility and resource implications of nationwide cardiovascular prevention.

The contribution of EPA-Cardio concerns the feasibility and perceived benefits of implementation of cardiovascular prevention in primary care. Note that this study was not based on performance indicators, but on a newly developed questionnaire on the topic. The response rate was not very high, which may have reduced the representative nature of the samples. The figures should therefore not be used to assess the quality of preventive care in different countries and practices.

The figures showed that small to substantial minorities of young adults had favourable views on receiving specific items of lifestyle advice and different formats for providing this, in primary care settings. The items that were assessed least favourably (smoking, heart disease in family, lifestyle advice for children) may not apply to large numbers of respondents. This would suggest that broad screening for cardiovascular risk in the population is not effective, and certainly not efficient. On the other hand, other studies in the population suggest that unhealthy lifestyles are highly preval-

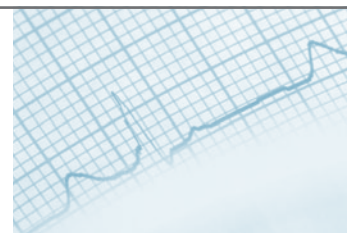
ent. The findings imply that young adults at low risk for cardiovascular need to be motivated to receive advice on their lifestyles. Though self-perceived health status and the prevalence of smoking are relatively evenly distributed across countries, opinions about the various aspects of lifestyle advice show more variance. This emphasizes the need for and importance of tailored intervention suited to the cultural context in each country.

With only a small number of exceptions, few respondents were positive about the innovative formats for delivering lifestyle advice, such as advice about websites or advice about attending a sports club. This may suggest that they prefer to receive lifestyle advice within the traditional consultation with the doctor or nurse if they see this as helpful at all. This finding has important implications for health policy, particularly regarding the numbers and required training of health professionals. Alternatively, over time, patients may get used to some of the innovative methods for providing lifestyle intervention in primary care.

An alternative approach to implementation in primary care would be to implement cardiovascular prevention in community healthcare services other than primary care, which exist in many countries separate from general practice, or through hospitals. Interestingly, we found that nationwide programmes for improving cardiovascular prevention which focused on lifestyle intervention were predominantly found in countries with relatively weak primary care [5]. This suggests that primary care in countries with strong primary care focuses on patients with established cardiovascular disease and less on lifestyle change in individuals at lower cardiovascular risk. This may be a missed opportunity, given the potential effect of repeated lifestyle intervention in primary care and the possibilities of tailor-made intervention and continuity of care.

3.5 References

1. Gaziano TA, Galea G, Reddy KS. Scaling up interventions for chronic disease prevention: the evidence. *Lancet* 2007; 370: 1939–1945.
2. Christakis NA, Fowler JH. The collective dynamics of smoking in a large social network. *N Engl J Med.* 2008 22; 358(21): 2249–58.
3. Christakis NA, Fowler JH. The spread of obesity in a large social network over 32 years. *N Engl J Med.* 2007; 357(4):370–9.
4. Fourth Joint Task Force of the European Society of Cardiology and Other Societies. European guidelines on cardiovascular disease prevention in clinical practice: executive summary. *Eur Heart J* 2007; 28: 2375–2414.
5. Van Lieshout J, Wensing M, Campbell S, Grol R. Primary care strength linked to prevention programs for cardiovascular disease. *Am J Manag Care* 2009; 15: 255–262.



4. Cardiovascular prevention in patients at high risk

4.1 Key findings

- ▶ We analysed 5,106 medical records from 10 countries of patients with high cardiovascular risk (without a pre-existing diagnosis of cardiovascular disease).
- ▶ None of the countries showed implementation of comprehensive recording of cardiovascular risk factors, demonstrating room for improvement in all countries. Recording of lifestyle intervention showed mixed figures, also suggesting room for improvement.
- ▶ Adequate communication on cardiovascular risk with the patient is crucial, and further development of effective methods for risk communication is recommended.

4.2 Background

High risk for cardiovascular disease has been defined in different ways, using risk for cardiovascular mortality (e.g. > 10% in 10 years) or risk for cardiovascular events (e.g. > 20% in 10 years). The calculation of cardiovascular risk should be based on a comprehensive set of prognostic factors, not just on hypertension or hypercholesterolemia. The choice of prognostic factors is studied and new factors may be included in the risk calculators in the future. The calculation differs somewhat across populations (e.g. North versus South Europe; Asian versus non-Asian groups), so that a population-specific risk calculator is recommended. Cardiovascular risk is not a dichotomous value but rather a continuous value; a judgement is inevitably involved in setting the cut-off point for 'high risk'. In EPA-Cardio, we used the nationally accepted definitions of high cardiovascular risk in each country – which shows little variation across the countries.

Providing cardiovascular prevention poses the same challenges as both prevention in young adults and management of established cardiovascular disease. Many individuals with high cardiovascular risk do not seek help for this and indeed they are not patients with a disease. Screening programmes and health education have been proposed and applied to identify those individuals in the population. This has raised a debate about similar issues to cardiovascular prevention in young adults. Once detected, patients with high cardiovascular risk should receive lifestyle advice, and possibly also prevention medication and monitoring. This raises challenges that resemble those in the management of patients with established cardiovascular disease.

4.3 EPA-Cardio indicators

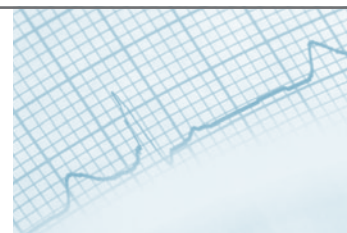
The following indicators from the EPA-Cardio set are relevant to cardiovascular prevention in patients at high risk:

- For patients aged ≥ 55 there is a record of blood pressure at least once in the last 5 years.
- For patients prescribed antihypertensive medication for diagnosed hypertension there is a record of blood pressure at least once in the last 15 months.
- All patients with hypertension should have their diastolic blood pressure controlled to < 90 .
- For patients at high risk for CVD there is a record of their cholesterol (general/total, HDL and LDL) at least once in the last 15 months.
- All patients with a record of persistent blood pressure elevation of $> 160/100$ mmHg are offered drug therapy to reduce their blood pressure.
- Drug therapies are offered in all patients with sustained (on more than 3 occasions) systolic BP ≥ 160 mm Hg or sustained diastolic BP ≥ 100 mm Hg despite up to six months of non-pharmacological measures, unless contraindicated or intolerant.
- CVD risk assessment includes age, gender, smoking status, blood pressure, family history of CVD, personal history of diabetes and diabetes status, blood plasma glucose within 10 years.
- For people with a CVD event risk of more than or equal to 20% (over 10 years) there is a record that specific advice about lifestyle has been offered at least once in the last 15 months.
- Patients who smoke and are recorded as being motivated to stop are offered at least one follow-up consultation within 3 months.
- The medical record contains a summary list of major medical problems; details of current actual prescribed medication; information about intolerances and contraindications to medication.
- Smoking status is clearly identifiable on the paper and / or electronic record.
- The diagnosis of hypertension is clearly identifiable on the paper and / or electronic record.

4.4 Results of EPA-Cardio

Medical record data was collected on 5,106 patients at high cardiovascular risk from 10 countries. Spain provided a relatively large sample due to a special selection procedure, based on electronic data sampling in a large database. In the nine remaining countries, we collected data on 3,424 patients. This is 94% of the target sample size for the practices in these countries.

The mean age of the patients varied across countries between 62 years (Finland) and 73 years (Netherlands). This variation is clinically relevant, for instance in terms of cardiovascular risk, and could reflect different ageing in European countries as well as different task profiles of primary care across countries. The percentage of women varied widely across countries, partly as a result of the procedure to select patients at high risk: some countries focused (almost) entirely on older men only, using the “male” risk factor as one of the selection criteria.



It is recommended that a complete cardiovascular risk profile should be recorded, rather than a single risk factor, such as hypertension or smoking. Table 4.1 and 4.3 provide data on this. BMI recording varied from 45 to 89% across countries; the highest value was found in France. Recording of blood pressure varied from 73 to 96%. This may reflect that in many countries patients were initially identified on the basis of anti-hypertensive medication. Recordings of cholesterol values varied largely, from about 40% in Switzerland and Spain to about 80% in a number of other countries. Smoking status was recorded in 53% to 82% of patients, with England as an outlier (97%). Spain also was an outlier (36%). In Spain smoking status was recorded only with smokers; there was no record of non-smoking.

Table 4.1: Recorded information on cardiovascular risk (medical records data, total n=5,106)

	Mean age (years)	% Women	% with recorded BMI	% with recorded blood pressure in last 15 months	% with recorded cholesterol levels in last 15 months
Austria	67	104 (36%)	179 (62%)	259 (90%)	235 (82%)
Belgium	68	55 (23%)	159 (70%)	218 (97%)	197 (83%)
England	68	1 (0%)	370 (69%)	489 (91%)	393 (74%)
Finland	62	62 (42%)	71 (48%)	125 (85%)	122 (83%)
France	65	129 (44%)	260 (89%)	279 (96%)	248 (85%)
Germany	69	221 (51%)	244 (56%)	356 (82%)	348 (80%)
Netherlands	73	37 (13%)	114 (40%)	217(76%)	152 (54%)
Slovenia	64	298 (35%)	602 (71%)	752 (88%)	699 (82%)
Spain	69	96 (6%)	770 (46%)	1230 (73%)	726 (43%)
Switzerland	68	156 (47%)	203 (57%)	309 (86%)	131 (37%)

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Lifestyle intervention is predominant in preventive care for patients at high cardiovascular risk. Recording of lifestyle intervention showed mixed figures across countries, which were lower than 50% in most cases (Table 4.2). An exception was recording for diet advice in Slovenia, which was found in 71% of the records. Somewhat higher scores were found for advice about physical activity (28–56%) and diet (21 to 70%). A possible explanation is that this type of advice often implies a referral to a physical exercise trainer or dietician.

Table 4.2: Preventive interventions in previous 15 months (medical records data, total n=5,106)

	Advice about physical activity	Advice about diet
Austria	132 (46 %)	141 (49 %)
Belgium	89 (38 %)	88 (37 %)
England	149 (28 %)	245 (46 %)
Finland	43 (29 %)	60 (41 %)
France	157 (54 %)	156 (54 %)
Germany	153 (35 %)	190 (44 %)
Netherlands	75 (26 %)	68 (24 %)
Slovenia	479 (56 %)	601 (71 %)
Spain	472 (28 %)	358 (21 %)
Switzerland	152 (42 %)	83 (23 %)

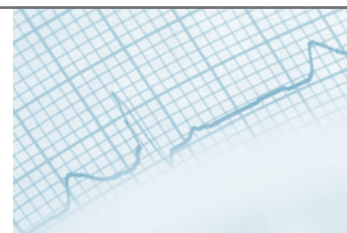
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Table 4.3 shows the data on the recording of smoking status, the numbers of people who smoke among those with a recorded smoking status and, finally, the advice to stop smoking given to known smokers. The percentage of recorded smokers varied across countries from 11% in Germany to 51% in England. A record of stop smoking advice in known smokers showed higher percentages, but there was still much variation across the countries: from 49 to 84% of these patients.

Table 4.3: Record of smoking status, recorded smokers and stop smoking advice for smokers

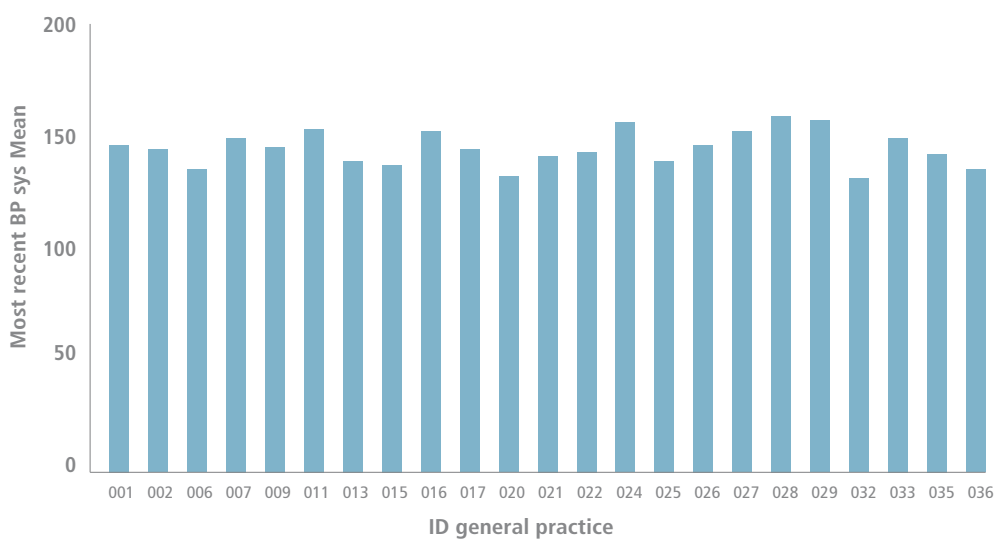
	Smoking status recorded	Smokers of those with a record of the smoking status	Stop smoking advice for recorded smokers
Austria	215 (72 %)	59 (27 %)	39 (66 %)
Belgium	181 (74 %)	72 (40 %)	44 (61 %)
England	517 (97 %)	264 (51 %)	222 (84 %)
Finland	93 (63 %)	39 (42 %)	24 (62 %)
France	193 (66 %)	47 (24 %)	28 (59 %)
Germany	336 (77 %)	37 (11 %)	23 (62 %)
Netherlands	149 (53 %)	38 (26 %)	22 (58 %)
Slovenia	695 (82 %)	181 (26 %)	135 (75 %)
Spain	602 (36 %)	602 (100 %)	292 (49 %)
Switzerland	221 (62 %)	61 (28 %)	39 (64 %)

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As an example of the variation within a country, figure 4.1 shows mean systolic blood pressure per practice in Germany. Table 4.4 shows data on systolic blood pressure and LDL cholesterol per country with the percentage of patients below threshold values. The lowest and highest values per practice showed much variation across practices in most countries, which could be related to practice characteristics, patient populations in the practices, or both.

Figure 4.1: Mean systolic blood pressure values, grouped per practice, in Germany



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Table 4.4: Percentage of high-risk patients with SBP \leq 140 mmHg and with LDL \leq 2.5 mmol/l per country and extremes per practice in each country (n=5,106)

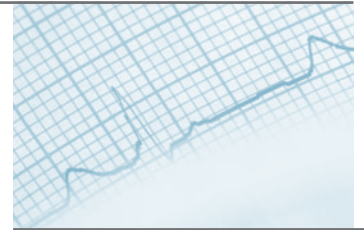
Risk	SBP \leq 140 mmHg		LDL \leq 2.5 mmol/l	
	% per country	Lowest – highest value per practice (%)	% per country	Lowest – highest value per practice (%)
Austria	54	20–88	14	0–30
Belgium	69	0–100	21	0–67
England	52	13–93	28	0–67
Finland	44	0–100	23	0–67
France	71	13–100	86	0–100
Germany	43	7–86	9	0–58
Netherlands	45	20–71	14	0–33
Slovenia	56	33–91	15	0–41
Spain	36	n.a.	36	n.a.
Switzerland	57	26–90	13	0–39

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4.5 Communication on cardiovascular risk

Risk assessment is based on the individual's most important risk factors (such as age, gender, smoking, systolic blood pressure and cholesterol) and is calculated for a certain time frame, usually 10 years, using formulae derived from epidemiological data. Risk calculators can be paper-based as risk tables or computerized. A number of algorithms and scoring systems have been developed to calculate this risk based on long-term prospective epidemiological studies. These range from simple-to-use scores and charts to complicated algorithms that require the use of a pocket calculator or computer. The calculated risk information can be presented as an absolute risk in a certain timeframe (e.g. 10 years); as a relative risk compared with a projected risk score assuming that the individual has a more preferable lifestyle or uses medication; or categorized in, for example, high, medium or low risk groups. Risk assessment – although recommended in guidelines – is still not common in daily practice.

The starting point for patient involvement in decision-making on cardiovascular risk management is communicating the CVD risk to the patient, in order to establish a common understanding. Risk perception among patients often does not match with the actual risk. The actual risk is under- and overestimated by both, low-risk and high-risk patients. In addition to risk explanation and perception, risk management involves many other factors, such as personal values, emotions or environ-



mental, social and economic conditions. Discussing risks and benefits of health interventions with low-risk or high-risk patients is becoming an increasingly essential part of modern healthcare.

However, there is still limited understanding of how best to present and discuss risks and benefits of healthcare for an individual. To highlight and answer the question “what are effective strategies to communicate cardiovascular risk to patients?” A systematic literature review was conducted from February to November 2008 by Ms. Cherry-Ann Waldron under the guidance of Prof. Glyn Elwyn (Cardiff University, UK) and Dr. Trudy van der Weijden (Maastricht University, Netherlands). The aim of this systematic review was to describe the most effective ways to inform individuals of their individualized CVD risk and to support future development of cardiovascular risk prediction tools.

Twenty-three studies were included in the review. Of these, only 11 of the studies assessed patients’ own cardiovascular risk profiles, with the rest using scenarios that required individuals to imagine hypothetical risks. Different methodologies were used; very few studies were randomized controlled trials, and interviews were a favoured technique used by many.

The main findings were:

- Clinicians must consider under-estimation in high-risk patients, and the gross over-estimation of personal risk estimates commonly seen in low-risk patients, regardless of the timeframe used in risk communication.
- The same risk message can have different impacts on various population groups.
- Graphical representations are appreciated by patients and reduce feelings of anxiety and/or worry.
- If inflated perceptions of cardiovascular risk do exist, they may be corrected more easily by using shorter (1 or 5 year) timeframes, than longer 10 year timeframes. Older patients may give more weight to the temporal time horizon of the disease risk estimate, rather than other factors, such as the actual probability, severity or controllability of the disease.
- Where possible (especially in younger age groups), individuals should be presented with both personal absolute risk information and information about their peer group risk (or comparative standing), as both affect patients’ responses and appear to interact. They increase perception of risk and emotional response to risk information; and do not lead to adverse events, if the social comparison information is unfavorable.
- Attention should be paid to way the risk communication message is framed, as this can affect the patient in a number of ways. For example, gain-framed messages increase efficacy in preventing heart disease more than loss-framed messages. Wellness framed messages are rated as more positive, less discomfoting and lead to increased intention to attending screening, than messages framed as threats. Additionally, negatively framed communication of absolute risk can encourage acceptance of treatment.

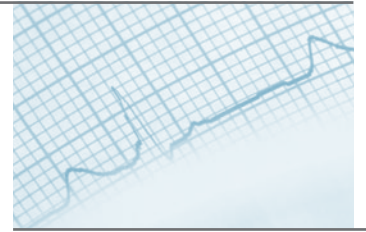
- No conclusions have been drawn regarding the single most appropriate format. More research is needed in order to achieve some consensus as to the most effective way to present cardiovascular risk, or how to choose a format tailored to the individual's needs or wishes. No differences between presenting risk in a frequency or percentage format are evident, but ratio formats have been shown to heighten emotional responses and increase intention to make lifestyle changes more than percentage formats.
- Caution should be applied in relation to the use of the numbers needed to treat format, as it has been shown that laypersons have difficulty in understanding the meaning of this format and can be unwilling to accept treatment when effectiveness is presented in this way.
- The argument against the isolated use of the relative risk format, when informing patients about treatment effectiveness, is strengthened by the finding that the presence or absence of baseline risk does not influence willingness to accept treatment suggesting that decisions are made without calculating the absolute effect of the treatment from the sufficient risk information provided. Even though the relative risk reduction format has been shown to elicit positive responses, there may be no benefit in supplementing this with quantitative information on baseline risk, as this does not increase patient's understanding of the format.

4.6 Comment

EPA-Cardio participants reported difficulty in identifying high-risk patients, but the number of identified patients shows that they managed to do so. For pragmatic reasons, different approaches to sampling patients were accepted, so data may not be entirely comparable across countries. Most countries focused on elderly men and on patients with hypertension and use of anti-hypertensives. Please note that the study refers to patients with recorded risk factors, so we cannot draw conclusions on the different methods used to identify high-risk patients in the population.

The data shows that none of the countries had completely implemented comprehensive recording of cardiovascular risk factors. The recording of risk factors was mixed across countries and showed opportunity for improvement. Recordings of lifestyle interventions were mixed across countries, but mostly lower than 50%. Again, this suggests room for improvement, although poor registration could partly explain the results. Recordings of achieved systolic blood pressure and LDL cholesterol levels show some differences between countries but variation between practices within each country are also clearly marked. Improvement programmes will have to take these differences into account.

As many adults visit a primary care practice at least once a year, these visits can be used to identify those at high risk. The differences between the countries may partly reflect the heterogeneity of the patient populations in primary care across the countries. For instance, countries with a strong primary care system may care for a larger number of patients with high cardiovascular risk. This would make it more challenging to yield high scores on our measures.



Communication in relation to risk, e.g. cardiovascular risk, is a central task of physicians in their daily practice. Effective and feasible (i.e. not time-consuming) instruments for the explanation of risk and for reassuring and counselling patients should be available in general practice. Investment is needed in the development of such instruments. In addition, there is a need to train doctors and/or practice teams in patient centred preventive cardiovascular care: how to evaluate multi factorial risk and use risk calculators, how to communicate risk and the effects of intervention, how to discuss treatment goals and follow up, how to motivate patients to change unhealthy habits.

5. Cardiovascular risk management in patients with coronary heart disease

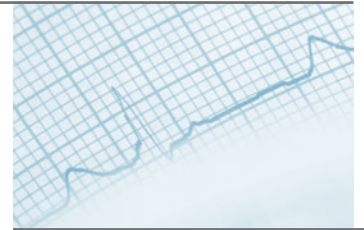
5.1 Key findings

- ▶ Medical records on 6,085 patients with coronary heart disease from 10 countries were analysed.
- ▶ Recording of cardiovascular risk factors – smoking status, body-mass index, blood pressure, cholesterol levels – showed mixed values across countries. England had high recording scores, possibly due to the reimbursement system in the UK and to features of the information system.
- ▶ Recording of preventive medication – statins and anti-platelet therapy – showed figures of 80% or higher. A few countries yielded lower scores, suggesting opportunities for improvement.
- ▶ Recording of lifestyle intervention and influenza vaccination yielded mixed, but overall lower values than those for preventive medication. Lifestyle advice may be provided without recording it, but we suggest that both provision and recording can be improved.

5.2 Background

Many health professionals, scientists and stakeholders in health policy agree on the most crucial clinical aspects of the management of patients with coronary heart disease. This consensus is supported by a relatively strong body of research evidence, which shows the beneficial effects of preventive medication and lifestyle intervention. Many EPA-Cardio indicators refer to patients with established cardiovascular disease. The absolute reduction of cardiovascular risk, which can be gained by effective treatment, is substantial in this group, both in terms of mortality and in terms of cardiovascular events.

Nevertheless, studies from different countries and settings have shown that patients with coronary heart disease do not all receive the recommended medical care. Cardiovascular prevention in primary care has been studied extensively in some countries, such as UK and Scandinavia, but in other countries data is more limited. International data, based on a common set of indicators for cardiovascular performance, is needed for comparisons between countries and practices. In this way, current performance can be determined and best practices can be identified and examined as examples for others.



5.3 EPA-Cardio indicators

The following indicators from the broadest EPA-Cardio set are relevant to cardiovascular risk management in patients with coronary heart diseases:

- For patients with CVD (CHD, stroke, TIA, or PVD), there is a record of smoking status in the past 15 months except those who have never smoked, whose smoking status should be recorded at least once
- For patients with CVD (CHD, stroke, TIA, or PVD), there is a record of their physical activity/exercise capacity at least once in the last 15 months.
- For patients with CVD (CHD, stroke, TIA, or PVD), there is a record of their weight or Body Mass Index at least once in the last 15 months.
- For patients with CVD (CHD, stroke, TIA, or PVD), there is a record of advice about regular physical activity at least once in the last 15 months, unless contraindicated.
- For patients with established CVD (CHD, stroke, TIA, or PVD), there is a record of blood pressure at least once in the last 15 months.
- For patients with CVD (CHD, stroke, TIA, or PVD), there is a record of their cholesterol (general/total, HDL and LDL) at least once in the last 15 months.
- All patients with CVD (CHD, stroke, TIA, or PVD) should have their systolic blood pressure controlled to < 140.
- All patients with CVD (CHD, stroke, TIA, or PVD) should have their diastolic blood pressure controlled to <90.
- All patients with CVD (CHD, stroke, TIA, or PVD) are offered a statin.
- For patients with CVD (CHD, stroke, TIA, or PVD) or after a cerebrovascular ischemic event, there is a record that anti-platelet therapy (aspirin, clopidogrel or equivalent) at least 75 mg daily has been offered, unless contraindicated.
- For patients who have heart failure there is a record that an ACE-I has been offered.
- For patients who have had a Myocardial Infarction, there is a record that a beta blocker has been offered (unless a contraindication or side-effects is recorded).
- CVD risk assessment includes age, gender, smoking status, blood pressure, family history of CVD, personal history of diabetes, blood plasma glucose within 10 years.
- For patients with CVD Blood Plasma Glucose is tested at diagnosis.
- Patients who smoke and are recorded as being motivated to stop are offered at least one follow-up consultation within 3 months.
- All patients at high risk (e.g. chronic respiratory disease, established CVD, chronic heart disease, chronic renal failure, diabetes, immunosuppression of any cause, residents of nursing homes etc, anyone aged >65) are offered influenza vaccination in the preceding influenza season.
- The medical record contains a summary list of major medical problems.

- The medical record contains details of current actual prescribed medication.
- The medical record contains information about intolerances and contraindications to medication.
- Smoking status is clearly identifiable on the paper and / or electronic record.
- The diagnosis of hypertension is clearly identifiable on the paper and / or electronic record.
- The diagnosis of CVD is clearly identifiable on the paper and / or electronic record.

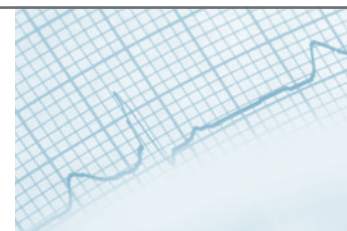
Selected EPA-Cardio indicators on diabetes patients have not been included in this list, as these patients were excluded in this part of the EPA-Cardio study. Most items of cardiovascular risk management in CVD patients applied to diabetes patients as well. To arrive at an internationally comparable patient group, we chose to focus on patients with coronary heart disease (CHD). Diabetes was used as an exclusion criterion.

5.4 Results of EPA-Cardio

Data from medical record was available on 6085 patients with coronary heart disease. Again, as in the high-risk group, Spain provided data based on a large electronic data base with many patient records. The nine remaining countries in EPA-Cardio included 3495 patients. This is 94% of the targeted sample size from the practices in these countries. Table 5.1 shows that patients' mean age varied between 67 and 74 years across countries; the percentage of female patients included in country samples varied from 21 to 38%.

Recording data on cardiovascular risk factors is an important aspect of good clinical practice in primary care for coronary heart disease. Tables 5.1 and 5.3 show the figures for a number of key items. Recording of BMI varied from 40% (Netherlands) to 84% (England). Recorded blood pressure in the last 15 months showed high scores (87 to 98%), except for The Netherlands (64%) and Spain (74%). These high figures may reflect the fact that the prescribing of anti-hypertensive medication was used in many countries for an initial selection of patients. Recorded cholesterol levels in the last 15 months varied across countries, from 37% (Spain) to 94% (England). Recording of smoking status varied from 51% (Netherlands) to 75% (Belgium, France); outliers were Spain (4%) and England (95%). In the data from Spain there is only a record of the smoking status if the GP records the patient as a smoker. There is no record of non-smoking status.

Preventive interventions are presented in table 5.2 and regarding smoking cessation advice in table 5.3. Advice about physical activity was found in 15% to 55% of the medical records across countries. Recording of dietary advice was found in 11% to 48% of the records across countries, with England as an outlier (66%). Recording of statins (provided or offered) – preventive medication for cardiovascular disease – was found in 64% to 90% of the records, with Spain as an outlier (24%). Influenza vaccination was offered to 31% to 95% of the country samples, showing a wide variation. Smoking cessation advice was given to 55% to 73% of the recorded smokers across the countries, with France (37%), Spain (40%) and England (93%) as outliers.



**Table 5.1: Recorded information on cardiovascular risk
(medical records data, total n=6,085)**

	Mean age (SD)	% Women	% with recorded BMI	% with recorded blood pressure in last 15 months	% with recorded cholesterol levels in last 15 months
Austria	72	106 (34%)	159 (51%)	268 (86%)	271 (87%)
Belgium	67	61 (25%)	187(77%)	228 (94%)	226 (93%)
England	68	205 (38%)	456 (84%)	531 (98%)	507 (94%)
Finland	72	97 (38%)	125 (49%)	225 (89%)	221 (87%)
France	69	78 (33%)	193 (83%)	226 (97%)	191 (82%)
Germany	69	151 (37%)	291 (71%)	383 (93%)	359 (87%)
Netherlands	69	39 (23%)	68 (40%)	107 (64%)	88 (52%)
Slovenia	68	292 (35%)	548 (65%)	749 (89%)	675 (80%)
Spain	74	898 (35%)	1,109 (43%)	1,920 (74%)	948 (37%)
Switzerland	68	76 (21%)	228 (64%)	312 (87%)	282 (79%)

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**Table 5.2: Preventive interventions in previous 15 months
(medical records data, total n=6,085)**

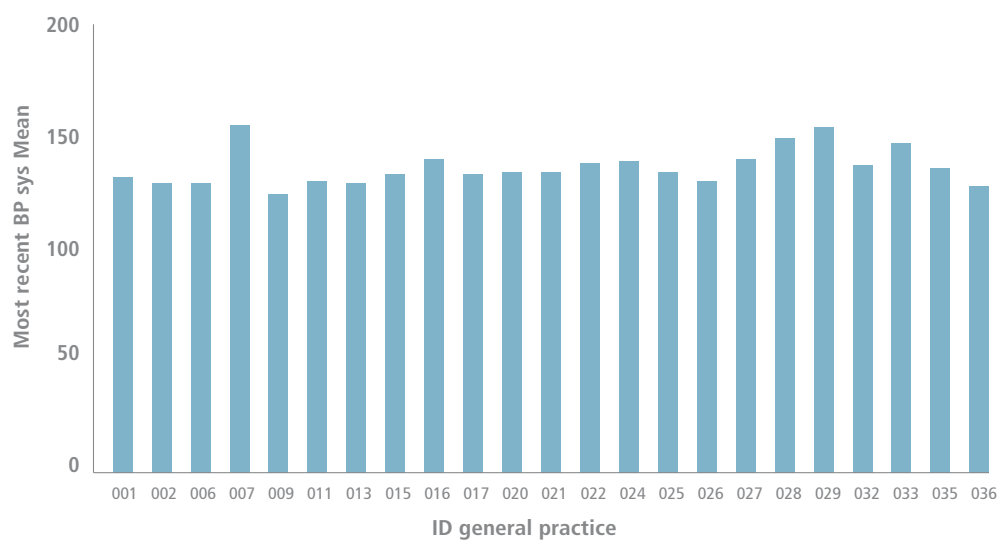
	Advice about physical activity	Dietary advice	Statins recorded/offered	Anti-platelet therapy /contraindication	Influenza vaccination offered
Austria	168 (54%)	145 (47%)	228 (73%)	204 (66%)	152 (49%)
Belgium	111 (46%)	97 (40%)	210 (86%)	200 (82%)	219 (90%)
England	269 (50%)	357 (66%)	485 (90%)	445 (82%)	465 (86%)
Finland	72 (29%)	90 (36%)	212 (84%)	224 (89%)	174 (69%)
France	128 (55%)	113 (48%)	199 (85%)	195 (83%)	152 (65%)
Germany	190 (46%)	175 (43%)	264 (64%)	226 (55%)	289 (70%)
Netherlands	84 (28%)	61 (20%)	235 (78%)	220 (73%)	289 (95%)
Slovenia	444 (53%)	474 (56%)	695 (82%)	726 (86%)	258 (31%)
Spain	396 (15%)	294 (11%)	625 (24%)	620 (24%)	1995 (77%)
Switzerland	181 (51%)	87 (24%)	287 (80%)	302 (85%)	185 (52%)

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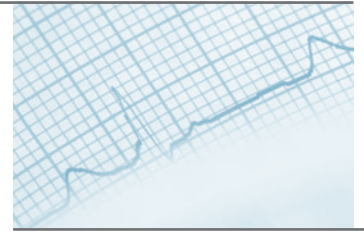
Table 5.3: Record of smoking status, number of smokers, and advice to stop smoking

country	Smoking status recorded	Smokers of those with a record of the smoking status	Stop smoking advice for recorded smokers
Austria	220 (69%)	29 (13%)	21 (73%)
Belgium	182 (69%)	37 (20%)	23 (62%)
England	515 (95%)	86 (17%)	80 (93%)
Finland	140 (55%)	12 (9%)	7 (58%)
France	177 (75%)	35 (20%)	13 (37%)
Germany	360 (88%)	32 (9%)	23 (72%)
Netherlands	155 (51%)	33 (21%)	18 (55%)
Slovenia	614 (73%)	57 (9%)	41 (72%)
Spain	109 (4%)	109 (100%)	44 (40%)
Switzerland	228 (64%)	42 (18%)	25 (60%)

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Figure 5.1: Mean systolic blood pressure values, grouped per practice, in Germany

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As in the previous chapter on patients at risk, we here present mean systolic blood pressure values per practice in Germany as an example (Figure 5.1) Table 5.4 shows data on systolic blood pressure and LDL cholesterol per country with percentage of patients below threshold values. Per country the extremes per practice are displayed showing significant variation, often from 0 to 100 %, between practices within the same country.

Table 5.4: Percentage of CHD patients with $SBP \leq 140$ mmHg and with $LDL \leq 2.5$ mmol/l per country and extremes per practice in each country (n=6,085)

	SBP ≤ 140 mmHg		LDL ≤ 2.5 mmol/l	
	% per country	Lowest-highest per practice (%)	% per country	Lowest-highest per practice (%)
Austria	70	41–100	43	0–91
Belgium	71	0–100	42	0–85
England	78	57–100	54	13–87
Finland	49	0–80	62	0–100
France	75	50–100	83	0–100
Germany	72	25–100	25	0–53
Netherlands	55	25–92	63	13–100
Slovenia	69	25–100	31	0–67
Spain	64	n.a.	64	n.a.
Switzerland	70	41–100	35	0–79

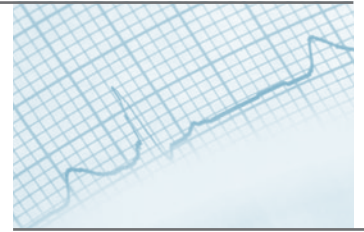
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5.5 Comment

The EPA-Cardio indicators for coronary heart disease showed variation across countries and also across practices. Recording of risk factors for cardiovascular disease is recommended to facilitate monitoring and preventive treatment of patients. Our analysis of medical records has shown that documentation of cardiovascular risk factors was mixed and that there is still room for improvement in many countries. Recording of risk factors was very high in England, possibly due to comprehensive computerization within primary care and the Quality and Outcomes Framework.

Preventive medication – statins and anti-platelet therapy – was recorded in 80% or more of the patients, except for some countries that showed lower figures. The high scores are consistent with recommended pharmaceutical treatment in prevailing clinical guidelines for cardiovascular risk management. A possible explanation for a lower score could be that medication prescribed in hospital is not always included in the medical record in primary care. Recorded influenza vaccination showed much variation across countries. The high figure in the Netherlands reflects a well-established system for delivering this annual vaccination and financial reimbursement of the general practice for providing it.

Figures on recording of lifestyle advice were lower than those on preventive medication and showed variation across countries. For instance, advice about physical exercise was recorded in about 50% of the patients in a number of countries, but in fewer records in Finland, Netherlands and Spain. Obviously, unlike medication, lifestyle advice can be given without recording it. This suggests that the figures might reflect both underreporting and undertreatment.



6. Implications of EPA-Cardio for health policy

6.1 Key messages

- ▶ EPA-Cardio has provided a set of indicators for cardiovascular risk management in primary care that are internationally developed and integrated into specific measurement tools. Wide use of this set and measures is recommended.
- ▶ Healthcare systems need to be organized in order to provide such care in a systematic way for people with heart disease. We found that countries with a strong primary care system seemed to focus their improvement programmes on patients with established cardiovascular disease.
- ▶ Many societies consider it a challenge to enhance the lifestyle of the population, but many patients do not see this as an important function of the healthcare system. More research is needed on effective methods to reduce cardiovascular risk in populations who are at lower risk.
- ▶ Providing lifestyle intervention in primary care may be most effective if it is done as part of the 'traditional' consultation with a primary care doctor or nurse. However, more ways are needed to improve the effectiveness of this approach, such as referral to websites and local sports groups by doctors and nurses.
- ▶ Comprehensive recording of cardiovascular risk factors is recommended in patients at high risk and patients with established disease. None of the countries have yet achieved this completely.
- ▶ Preventive medication is provided to many patients at high risk and patients with coronary heart disease, although further improvement may be possible in some countries. Complete implementation of recommendations for preventive medication in cardiovascular prevention remains an important target for programmes for improving healthcare delivery.
- ▶ Lifestyle interventions in patients at high risk and patients with coronary heart disease are not delivered to large numbers of eligible patients in primary care. Innovative methods are needed for sustained implementation of lifestyle interventions in cardiovascular patients.
- ▶ Cardiovascular risk communication is one of the innovative methods for providing lifestyle intervention and enhancing adherence to medical treatment. Effective communication of cardiovascular risk is important in order to involve patients more actively in their treatment.

The EPA-Cardio project has provided a range of results to date, and more results will become available in the coming months when the data has been completed and analysed. This chapter describes potential implications of the project for health policy.

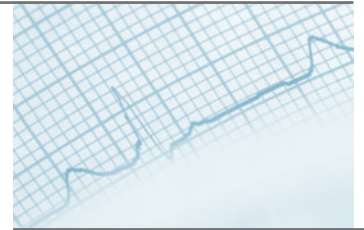
6.2 Indicators for cardiovascular prevention and risk management

A set of indicators for cardiovascular prevention and risk management was systematically developed, using a broad inventory of published indicators and panels of general practitioners from 10 countries. This set of indicators reflects a diversity of cultures and healthcare systems, as indicators were only included in the set if these were positively assessed in all countries. The indicators can be seen as a core set; national indicators can be added, as appropriate. The EPA-Cardio set can be applied internationally, which has the major advantage of allowing international comparison of cardiovascular care. This is important in studies of the impact of national health systems and in studies of the impact of factors in patients and health providers on cardiovascular risk. Various sets for cardiovascular care have been developed or are under development. It would not be desirable for different stakeholders each to use their own set of performance indicators for cardiovascular prevention. Better co-ordination of national and international indicator development is therefore recommended.

It is important to place the EPA-Cardio set of indicators within a broader perspective. The process of seeking consensus probably resulted in the exclusion of indicators for more innovative aspects of care for instance, indicators for structured chronic care or patients self-management. Most of the indicators included relate to cardiovascular risk management in patients with established cardiovascular disease or diabetes mellitus. This reflects the research evidence and consensus among clinicians regarding cardiovascular risk management in these groups. This implies that other important domains of cardiovascular prevention are not well represented in the indicators. The same is true for indicators on patients' active role in cardiovascular prevention. Additional measures are needed for those aspects, and such measures have in fact been included in the EPA-Cardio project.

6.3 Analysis of nationwide programmes to improve cardiovascular care

Many nationwide and large-scale programmes exist in Europe. An example is the Quality and Outcomes Framework in the United Kingdom, a pay-for-performance system, which includes a substantial number of cardiovascular performance indicators. Another example is the Disease Management Programme in Germany, a regulatory approach that also includes reimbursement. A third example is the National Practice Accreditation for primary care practices in The Netherlands, which is a voluntary educational approach that involves a substantial focus on cardiovascular care. In addition, there are many programmes, that target cardiovascular prevention more specifically. These programmes differ from each other in several ways. Our analysis of successful programmes suggested that different types of programmes can effectively implement lifestyle intervention and improve medical care.



We have found that in countries with strong primary care orientation, the programmes for CVD improvement tend to focus on patients with established cardiovascular disease, while in countries with weak primary care systems the programmes tend to focus on lifestyle improvement. We can only speculate about the underlying reasons for these differences. For instance, it may also reflect a stronger orientation on research evidence (which is strongest for secondary prevention) in countries with a strong primary care system. In countries with weaker primary care, more patients with established cardiovascular disease or diabetes may be treated by internists, cardiologists and other hospital specialists. Thus, primary care may have the opportunity and incentive to focus more on lifestyle intervention.

We do not believe that any single programme can completely bring cardiovascular prevention up to date. The Quality and Outcomes Framework has shown high levels of achievement on targets for CVD in England. However, studies have shown that improvements in cardiovascular care were already evident in the years before it was implemented. Previous activities in the United Kingdom, such as medical audit and local quality improvement projects, had provided a baseline that has been subsequently consolidated with further improvements. We would suggest that a mix of activities is often needed: professional education, information for patients and the public, organizational changes in healthcare including investment in computerization, and financial incentives. Moreover, efforts to improve cardiovascular care have to be sustained over time.

Although we cannot guarantee success, on the basis of studies in a wide range of improvement programmes (broader than cardiovascular care), we can suggest that specific factors contribute to the effectiveness:

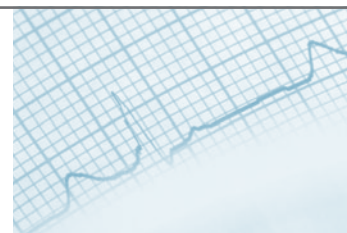
- activities are tailored to local needs and at different levels;
- physicians are engaged in the programme;
- there is an evaluation linked to the programme;
- a substantial investment is made in the organization of preventive services;
- financial compensation is provided as appropriate.

6.4 Recommendations for cardiovascular prevention in young adults

There are many advantages to delivering cardiovascular preventive services in primary care settings, particularly in groups with low socioeconomic status, including efficiency and acceptability to the general population. However, there is only limited research evidence showing that cardiovascular preventive activities in healthy individuals are effective in terms of improving the health of the population. We recommend that further development and implementation of specific preventive services should be accompanied by the evaluation of such services.

The results of EPA-Cardio provide warnings regarding the feasibility of innovative approaches to providing lifestyle interventions. Many adults are not particularly receptive to advice about their lifestyle and not very positive about innovative formats for receiving it, outside the traditional consultation with a doctor or nurse. This conclusion could hide the fact that some primary care practices successfully provide lifestyle advice and use innovative formats, such as the Internet or referral to a physical exercise group. Nevertheless, it is too early for nationwide campaigns to promote lifestyle intervention in primary care in young adults, particularly if these use innovative approaches such as the Internet or local sports clubs. Small-scale projects are needed to test innovative approaches before wider implementation, and projects like these may change the views of participants.

Larger numbers of well-trained health professionals would be needed to provide lifestyle intervention in face-to-face contact with patients and a stronger evidence base is needed before such approaches can be recommended. Delivering preventive services has substantial implications for resource use in primary care, which needs to be compensated financially. This is particularly true if lifestyle interventions imply more consultations with doctors and nurses. Workload in primary care is already high and it will further increase in the coming years, because of ageing populations and frequent earlier discharge from hospitals. Many countries have a shortage of nurses, so that it is not always possible to add nurses to increase the capacity of primary care. Not only patients, but also some primary care professionals are sceptical about cardiovascular prevention. This scepticism needs to be overcome in order to achieve success.



6.5 Recommendations for management of high cardiovascular risk

Primary care is a good point for identifying people at high risk of developing cardiovascular disease, particularly if primary care is accessible for all types of patients with all types of health problems. On the other hand, patients at high cardiovascular risk are mostly middle-aged, so opportunities to enhance a healthy lifestyle may have been missed earlier in their life. Systematic screening for high cardiovascular risk in large groups of adults is probably not efficient, but opportunistic screening (in consultations for a different purpose than cardiovascular problems) may be insufficiently systematic. One problem is that specific subgroups in the population cannot be effectively reached, such as people in hard to reach groups, some ethnic groups and people of low socioeconomic status. The EPA-Cardio project did not focus on cardiovascular screening, but on the management of identified patients with high risk for cardiovascular disease.

None of the countries involved in EPA-Cardio has implemented a comprehensive recording of cardiovascular risk factors in primary care. There is clearly room for improvement of risk assessment routines, registration behaviour, and facilities provided by medical record system for appropriate recording of cardiovascular risk. The less than optimum recording of cardiovascular risk posed a challenge for the recruitment of high risk patients in the EPA-Cardio project, as this is often based on medical records. The differences between countries may be partly explained by the heterogeneous nature of the patient populations in primary care. Recording lifestyle intervention in primary care showed mixed results, which is probably due to poor registration and a problem of less than optimum delivery of these lifestyle interventions. Again, this suggests room for improvement for either recording or providing lifestyle intervention or both.

6.6 Recommendations on the role of the patient

The patient is expected to play an active role in cardiovascular prevention, at least by some stakeholders. The expectation is based on different, potentially conflicting considerations, including ethical ideas of patient autonomy (patient involvement is good in itself), pragmatic ideas on effective treatment (active patients may comply better with treatment and advice), and societal requirements (self management may be cheaper for healthcare). An active patient role can be achieved in different ways. The EPA-Cardio project focused on involving patients more actively in the communication with a doctor or nurse about cardiovascular risk. We found many experiences with risk communication in cardiovascular prevention, but also many questions for further development and research. We recommend that future projects should focus on applications of risk communication in clinical practice settings (not in laboratory settings) and on methods to enhance the implementation of risk communication in primary care. Further development and evaluation of specific tools for risk communication is recommended, focused in their uptake in daily practice.

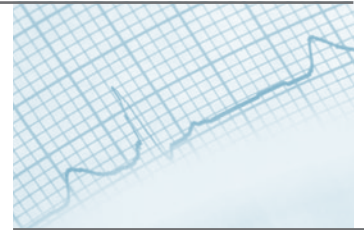
6.7 Recommendations for management of coronary heart disease

Published research suggests that secondary prevention for patients with established heart disease is the most effective approach to reducing death and disability from heart disease. Despite the nominal potential for improvement in some countries, improvement programmes should continue to focus on secondary prevention as this is highly effective, particularly in patients with established cardiovascular disease.

Optimum management of coronary heart disease provides many clinical and organizational challenges. The clinical challenge for health professionals is to know and apply prevailing recommendations on diagnostic procedures, lifestyle counselling, pharmaceutical treatment, and (refer for) surgical treatment. The organizational challenge is to model the care process in a systematic way, so that patients receive planned, continuous and coordinated treatment. It has been debated whether primary care can meet these challenges. Indeed, the EPA-Cardio study showed that primary care performance showed much variation. On the other hand, in other projects and studies some primary care practices have been shown to provide excellent cardiovascular performance. So the most important question is: What conditions are needed to provide optimum medical care for coronary heart disease in primary care settings?

For primary care practices – the organizational units that provide preventive and curative services – meeting the challenges means that structured chronic care should be implemented. In broad terms, this means a systematic design of the care process, optimum decision support and information technology, and organized self-management education for patients (the domains of the Chronic Care Model). In practical terms, meeting the challenges has many implications. For instance, patients with coronary heart disease should be identified in the medical records, so that they can be followed up individually and as a group. The patients should be included in a structured follow-up programme, in which they have regular contacts with the practice. The primary care professionals should have knowledge of lifestyle programmes in the local environment, so that they can adequately refer. However this requires that physicians and nurses receive continued education, to learn about prevailing recommendations for cardiovascular care.

Decision makers who work at the level of healthcare systems can enhance optimum management of coronary heart disease in different ways. Most directly, they can set up or facilitate programmes for improving cardiovascular care – like those that exist in many countries. Continued education of health professionals is an important component of such programme. More indirectly, they can work on conditions that may be favourable for structured chronic care, such as a payment that provides positive incentives, ongoing measurements and evaluations focused on cardiovascular care, and improved collaboration across different sectors in the healthcare system.



6.8 Recommendations in a broader perspective

Prevention of cardiovascular diseases can be carried out in different ways. The challenge is to balance the mix of population-wide strategies (community interventions) and high-risk strategies (primary care interventions) to match available resources and achieve health improvements that are efficient and equitable from a societal perspective. This requires a well-resourced national population strategy that tackles the major determinants of cardiovascular diseases and gives support for primary care interventions.

General practitioners and practice teams at primary care level should be supported and motivated in playing an active role in cardiovascular prevention. Lack of time, organizational problems and low confidence in preventive activities are the barriers most often mentioned by GPs. The absolute risk approach enables the individuals most likely to benefit from treatment to be selected through risk stratification and can improve health outcomes. However, as indicated in the literature, the implementation of risk assessment, risk communication and shared decision-making however is a difficult matter.

- Primary care teams need training, time and incentives for risk assessment and patient counselling.
- Continuing medical education programmes are required for the ongoing professional development of healthcare providers.
- User-friendly practice guidelines and checklists are needed.

In countries where GP-centred healthcare with special contracts exists, CVD risk assessment and counselling together with appropriate tools could be implemented by integrating these contents in contracts with GPs.

- Audit and feedback could improve CVD-risk management performance.
- Quality indicators could be used to provide feedback and to improve performance.
- To assess and to improve quality of CVD risk management in primary care practices it would be necessary to simplify the documentation and collection of data.
- User friendly electronic documentation systems should be provided tailored to document risk factors as well as behaviour counselling activities.
- Risk assessment tools should be available and fit into the medical record system.
- To assess quality indicators, it should be possible to abstract data electronically from the medical record to avoid extra documentation.
- To support practice teams in lifestyle advice community-based interventions and evidence-based patient-information, as well as quality proven websites should be provided.
- Major CVD risk factors and their social and economic determinants could be reduced through cooperation between public health services and practice teams, e.g. community based programmes for integrated prevention of CVD.

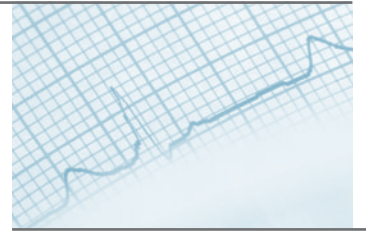
In large groups of individuals at increased cardiovascular risk, there is an insufficient patient awareness of the importance of healthy behaviour patterns and regular use of medications for the prevention of cardiovascular events.

- Effective patient education programmes should be implemented to improve the knowledge and behaviour of patients.
- In primary prevention individuals should be prepared for CVD prevention strategies.

As our study shows patients are not generally in favour of preventive actions and lifestyle advice. They must be better prepared to play an active role in CVD risk management and shared decision making. To achieve these changes, more media participation in the dissemination of evidence-based risk-modifying information and health promotion could be helpful. Individuals may be insecure because there is an overflow of inconsistent health information and commercial interests. There is a shortage of patient-specific information on CVD risk management.

6.9 Conclusion

EPA-Cardio is a very special project that has only been successful because of the active involvement of the participants and the leading role of the Bertelsmann Stiftung. Data was brought together from medical records and patient surveys in different samples, gathered through reasonably representative samples of primary care practices in 10 countries. The project has developed specific tools, such as an international set of performance indicators and tools for risk communications, as well as research-based guidance to health policy. The EPA-Cardio project is relevant to cardiovascular prevention, but also relates to the broader context of the development of primary care and prevention in European healthcare systems.



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Improving Cardiovascular Prevention and Risk Management in European Primary Care – EPA-Cardio

This project report focuses on the assessment of cardiovascular risk management in primary medical care and describes first results and recommendations for improving and implementing best practice. It will facilitate the process of implementation and mutual learning by providing internationally validated information, instruments and policy recommendations.

EPA-Cardio is a European project coordinated by Bertelsmann Stiftung, Germany and the Scientific Institute for Quality of Healthcare, Radboud University Medical Centre, Nijmegen, Netherlands. The EPA-Cardio project has again brought together a consortium of researchers, general practitioners and stakeholders to provide evidence and develop instruments and policies for improving cardiovascular risk management in Europe. The EPA-Cardio project was only made possible by the support of a large group of primary care practitioners and researchers in Europe. It has provided a range of findings, which may guide European health policy on cardiovascular prevention and primary care development.

We hope the project results will foster an effective mix of effective improvement strategies and better preventive care.

Further information

<http://www.epa-cardio.eu>

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