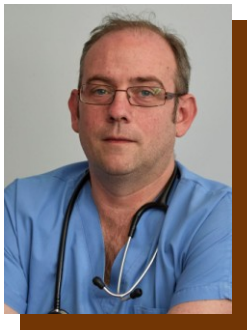
Country report Serbia – April 2017



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Health care l Risk factors l Prevention methods l Prevention activities l Cardiac Rehabilitation l Future

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- **Prof. Branko Beleslin**, MD, PhD, FESC, FACC - President of Cardiology Society of Serbia
- **Prof. Ana Djordjevic-Dikic**, MD, PhD, FESC, FACC – President Elect of Cardiology Society of Serbia

I. Structure of Health care in Serbia

The estimated population of the Republic of Serbia in 2015 was 7,095,383 inhabitants, with 18.7% of the population being older than 65 years. Life expectancy in Serbia in 2015 was 75.1 years (72.6 for males and 77.7 for females). Health care is provided through the network of health care institutions mainly belonging to the public health system that is owned and controlled by the Ministry of Health (MoH). The public health system is predominantly financed by the Health Insurance Fund (HIF). The HIF collects the revenue from the mandatory insurance (based on 10.4% of payroll tax), which represents the largest source of its income (about 70%) and distributes it to health providers. Additional funding is provided from the state budget for health care. Some services, especially co-payment for certain types of medication, are paid out of pocket. The main characteristic of the health system lies in its accessibility to all citizens. The private health sector is not a part of the public funding scheme, but may be included through contracts in case of deficient services. Private health care providers mainly provide services on out-patient basis, whereas its contribution to the stationary treatment is negligible.

Health care in Serbia is divided in primary, secondary and tertiary level. Primary health care is provided in 158 primary health care centres in Serbia by general practitioners, paediatricians and gynaecologists. The provision of primary health care is relatively decentralized and primary health care centres can provide additional services. Secondary and tertiary health care services are offered to both inpatients and outpatients in health institutions across the country, including general hospitals, specialised hospitals or institutes, and academic hospitals. Overall, 20 450 different physicians work in Serbia's

public health sector, or 288 physicians per 100 000 inhabitants, which is below European average. The Cardiology Society of Serbia, which has 975 active members, offers the membership to all physicians who are involved in the treatment of cardiac patients at each level of health care.

Government's priority in health policy is to increase capacity and availability of diagnostic and curative medicine. Most of the government's health budget (6.4% of the gross domestic product [GDP]) is directed to hospitals (56% in 2013). Curative and rehabilitative services account for about half of all the health expenditures, whereas around 7.5% of the total health expenditures are allocated to prevention. This is slightly above the OECD average in relative terms, but very low expenditure in absolute terms due to the low GDP. The government is aware that the cardiovascular diseases are the leading cause of morbidity and mortality in Serbia. However, currently the major issue in health policy is the optimal treatment of the disease rather than its prevention.

Preventive measurements are mainly paid by the HIF by financing primary health care system. However, it should be noticed that primary health care physicians are not paid separately for prevention activities, but they are included in their every day practice. Additionally, the government invests in prevention through national campaigns (for example smoking prohibition) and through the development and distribution of preventive guidelines. The Cardiology Society of Serbia finances different preventive campaigns from its own funds, such as campaigns for World Heart Day.

Medications are paid by the Health Insurance Fund, and 25% of the total health spending in 2013 was for pharmaceuticals. Additional spending on pharmaceuticals is driven by private out of pocket expenditure for drugs that are not on the positive list such as novel oral anticoagulants (NOACs), statins for primary prevention, as well as for the co-payment for drugs that are on the positive list but are only partially paid for by HIF.

Three weeks stationary cardiac rehabilitation is paid by HIF for patients with previous myocardial infarction, coronary and valve surgery as well as for those with post-surgery congenital heart diseases.

References:

http://www.batut.org.rs/download/publikacije/pub2015.pdf (available in Serbian and English)

Stosic S, Karanovic N. Health care economics in Serbia: Current problems and changes. Vojnosanit Pregl 2014; 71(11): 1055–1061. (available in English)

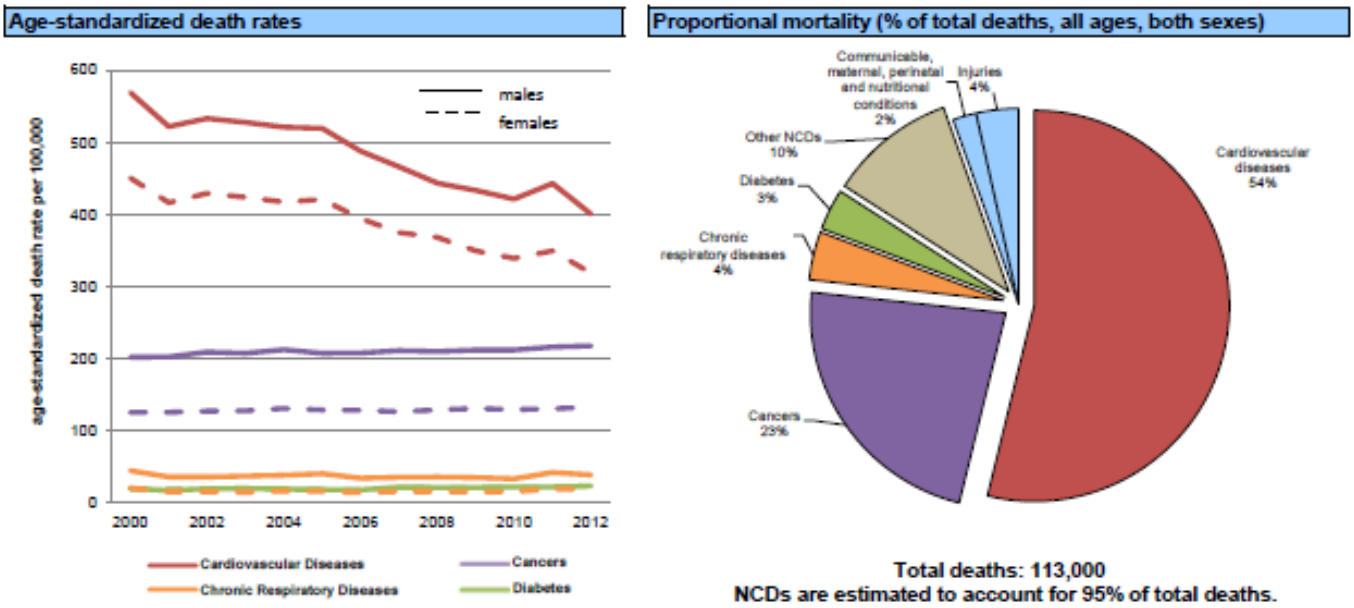
http://pubdocs.worldbank.org/en/776271446462342355/PFR-eng-web-final.pdf

II. Risk factor statistics

CVD Mortality

Cardiovascular diseases are the leading cause of morbidity and mortality in Serbia. According to the epidemiological data from the Public Health Institute, CVD were responsible for 53.9% of all deaths in Serbia in 2011 and for 52.4% in 2015. According to the European Society of Cardiology, Serbia is considered as high risk country. The CVD death rates per 100 000 in 2011-2015 are listed in this table:

Mortality rate per 100 000	2011	2012	2013	2014	2015
	764,8	763,6	744,9	757,1	766,4



Source: WORLD HEART ORGANIZATION – Noncommunicable Diseases (NCD) Country Profiles 2014

PCI resources

In Serbia, there are 12 PCI centres (1.7 PCI centres per 1 million inhabitants). Six out of 12 centres are located in the capital of Belgrade. Currently, 12 PCI centres perform both primary PCI as well as elective procedures. Important input for primary PCI in Serbia occurred in 2010, when the country joined the „Stent for Life" initiative. In the last several years around 4500 primary PCI procedures were performed in Serbia annually.

Main CVD risk factors

Three national surveys of the health status in Serbia were conducted in year 2000, 2006 and 2013. Comparative data (where possible) are presented in this table:

Risk factor	2002	2006	2013
Hypertension (%)	44.5	46.5	31.3
Obesity (%)	17.4	18.3	21.2
Physical activity at least 3times/week (%)	13.7	25.5	11.3
Smoking (%)	40.5	33.6	34.7

According to the survey conducted in 2013, 13.2% percent of the population has increased cholesterol levels, 7.4% are treated for diabetes. Regarding eating habits, only 12.5% participants in the survey stated that they eat fish at least twice a week, 57.1% of the population eats vegetables every day, whereas 45.6% eats fruit daily.

The important problem for CV prevention is childhood obesity. The percentage of obese children (age 7 to 14) rose from 8,5% in 2006 to 13,7% in 2013.

References:

http://apps.who.int/iris/bitstream/10665/128038/1/9789241507509_eng.pdf

http://www.batut.org.rs/download/publikacije/2013SerbiaHealthSurvey.pdf

http://www.batut.org.rs/download/publikacije/National%20Health%20Survey%20Serbia%202006.pdf

http://www.health.gov.bt/wp-content/uploads/moh-files/nationalHealthSurvey2000.pdf

Townsend N, Nichols M, Scarborough P, Rayner M. Cardiovascular disease in Europe — epidemiological update 2015. Eur Heart J. 2015; 36(40):2673-4.

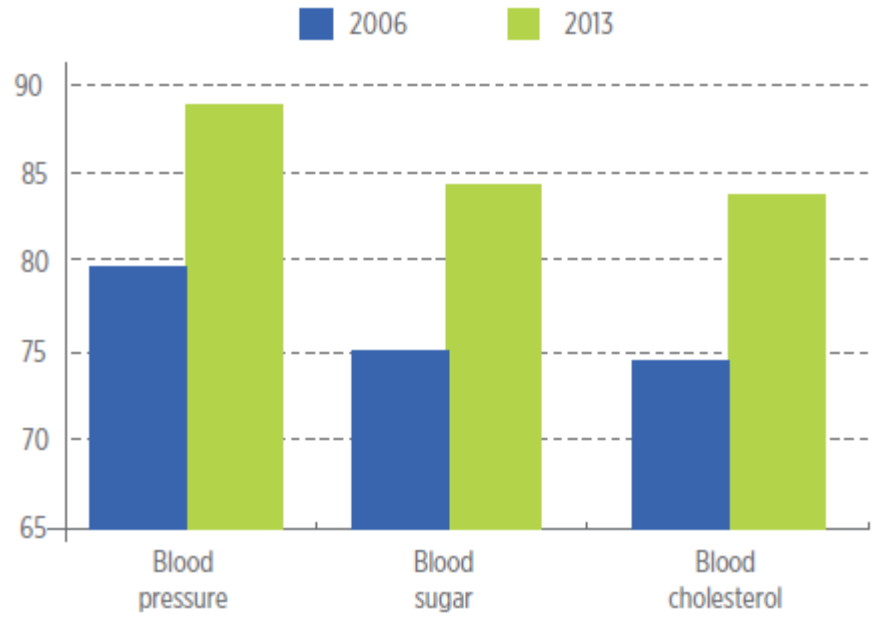
III. Main actors and Prevention methods

Who delivers?

Prevention strategies in Serbia are defined through the joint actions of the Ministry of Health and the National Public Health Institute. The Public Health Institute analyses health statistics in Republic of Serbia on annual basis, and suggests prevention priorities accordingly. Furthermore, it monitors effects of different prevention programmes. The Ministry of Health approves and supports action plans. The Cardiology Society of Serbia through its contacts with authorities modifies prevention strategies in the field of cardiovascular disease (CVD) prevention and releases its own preventive campaigns and actions. The Cardiology Society of Serbia also cooperates with different non-governmental organisations interested in CVD prevention.

General practitioners should be involved in cardiovascular prevention, especially through the treatment of cardiovascular risk factors. However, general practitioners are highly overloaded with number of examination - an average of 6567 patient visits per physician per year in primary health care facilities. General practitioners should be offered more time dedicated to prevention in every day practice. Nevertheless, the number of preventive examinations in primary health care increased in the last five years.

(Percentage of population with a preventive examination in the past 5 years)



Source: National Health Survey 2006, 2013.

Primary CVD prevention is also supported by 25 regional public health authorities in 25 different, evenly distributed Serbian cities. The main activity of regional public health authorities is the promotion of healthy life style.

Cardiologists in Serbia are mainly involved in secondary prevention of cardiovascular patients. However, since the number of cardiologists is insufficient for the needs of population secondary prevention is also provided by internal medicine specialists.

Where?

General practitioners offer the majority of primary prevention in primary care settings. Cardiologists or internal medicine specialists offer secondary prevention of cardiovascular diseases mainly in hospitals on outpatient basis. There are four specialised rehabilitation centers responsible for secondary prevention on in-hospital basis in selected group of patients. Specialised private institutions dedicated to CV prevention and nurse based programmes are not currently available in Serbia.

Guidance

The Cardiology Society of Serbia endorses guidelines and position papers related to CVD prevention. They are available on-line on the website of the Cardiology Society of Serbia, some of them in Serbian. Also, the Ministry of Health published and distributed guidelines on cardiovascular prevention for general practitioners in 2005. General practitioners are strongly encouraged to use the SCORE charts for the estimation of CVD risk. The guidelines on prevention are part of the education for cardiologists in training.

Quality control

Public Health Institute audit efforts in CVD prevention through the annual analysis of health status in Serbia. These reports provide data on morbidity and mortality from the most common diseases including CVD. Also, the Ministry of Health and the Public Health Institute conducted National Health Surveys in 2000, 2006 and 2013 that enabled analysis of risk factors in Serbia.

Prevention efforts could be partially assessed through the Acute Coronary Syndrome registry. Since 2008 the registry provides data on morbidity and mortality from acute coronary syndromes on yearly basis.

References:

http://pubdocs.worldbank.org/en/776271446462342355/PFR-eng-web-final.pdf
(available in English)

http://www.uksrb.rs (available in English)

IV. Main Prevention activities

Campaigns

The importance of cardiovascular diseases for national health is acknowledged by the Ministry of Health (MoH). In 2010, MoH adopted the National Strategy for the Prevention of CV disease in Serbia that is to be implemented by the end of 2020.

In order to decrease the number of smokers in Serbia, the MoH released a campaign against smoking, with broad media coverage. The campaign was accompanied by a legislative framework. Serbia adopted a law against smoking in public places in 2010 and forbade smoking in work and public places and public transportation. However, smoking is still allowed in restaurants if its area is larger than 80m^2. According to the National Survey, 77% of the participants support the law against smoking, although only 20% of the participants support smoking ban in restaurants. This suggests that a vast majority of the population in Serbia still tolerates smoking.

The Cardiology Society of Serbia participates every year in the World Heart Day campaign. Different activities across Serbian cities take place during this manifestation such as walking tours and risk factors estimations in public places (blood pressure measurement, risk calculation). The whole campaign includes extensive media coverage such as TV shows, newspaper articles and interviews with members of the Cardiology Society of Serbia.

Since 2012, Serbia has actively participated in:

- ***Heart Failure Awareness Day***
- ***"25 by 25"*** global campaign for the 25% reduction of CV mortality by 2025
- ***"Pace for Heart"*** campaign which promotes physical activity for the prevention of cardiovascular diseases

Projects

The project ***"Cigotica"***, intended for obese children in Serbia, is supported by the Republic Health Insurance Fund that covers expenses for the programme that includes supervised exercise and dietician counselling for obese children. The project "***Cigota***" intended for the treatment of adulthood obesity, through supervised exercise and dietician counselling

Serbia took part in:

- ***EUROASPIRE IV***
- ***Stent for Life Initiative***
- **Activities on Individual Level**

On individual level, main prevention activities are organised in the primary health care settings and are based on the different counselling for life style modification and identification of high risk patients using SCORE charts. The Cardiology Society of Serbia endorses the ESC guidelines on CVD Prevention in Clinical Practice and developed

National Guidelines on Cardiovascular disease Prevention aimed to help general practitioners in preventive efforts.

Education

Cardiovascular prevention is part of cardiology but is not part of student training in Serbia.

V. Cardiac Rehabilitation (CR)

For whom

Patients who are eligible for CR are defined according to the current legislation that is available only for inpatients programmes (out-patient CR is not defined by law). CR is available for patients after first or recurrent myocardial infarction, by-pass surgery, or after heart valve surgery, and for patients with diabetic angiopathy without specific age limit. Also, CR is provided for children up to 18 years old that were operated for congenital heart disease. For these groups, a 3 week rehabilitation programme is completely paid by Health Insurance Fund without the possibility of reimbursement for extended rehabilitation (more than 3 weeks). Repeated CR is possible only for patients with diabetic angiopathy 12 months after the completion of previous programme. Patients could be referred to CR either by cardiologists or general practitioners. CR should be started within 2 to 3 months (depending on the diagnosis) after the discharge from hospital. There is no CR programmes for heart failure patients in Serbia.

By whom and how

Phase II CR is provided only as inpatient programme and is conducted in four specialised institutions for 3 weeks. There are some Phase III CR programmes in Serbia, but they are not clearly structured.

CR is conducted through the multidisciplinary approach. After admission all the patients undergo detailed clinical examination, electrocardiography, laboratory assessment, echocardiography and other non-invasive assessments if needed. Cornerstone of CR is dosed physical training, based on individually estimated cardiovascular risk. Second, an important part of CR is life style modification, through the individual contact with physicians and dieticians as well as through a set of appropriate lectures. CR is conducted by cardiologists, internal medicine specialists, dieticians and trained nurses.

Unfortunately, there is no available data on number of eligible patients participating in Phase II and Phase III CR programmes in Serbia.

During the cardiology training there is only theoretical training in CR. Every institution provides training programmes for staff according to local practice and based on European Guidelines.

Audit and costs

There is no system for quality and outcome control in CR. For the indications approved by HIF the expenses of 3 weeks CR are completely covered by HIF. Currently, there are no available private institutions for CR.

References:

Cardiac rehabilitation in Europe: results from the European Cardiac Rehabilitation Inventory Survey.
Bjarnason-Wehrens B, et al. Cardiac Rehabilitation Section European Association of Cardiovascular Prevention and Rehabilitation.
Eur J Cardiovasc Prev Rehabil. 2010 Aug;17(4):410-8.

VI. The Future

Needs

The main needs in CV prevention include:

- Better financial support for preventive campaigns and programmes by the government
- Increased public awareness of the importance CV disease prevention through more active media coverage
- Cooperative work of local communities and state in the development of dedicated prevention programmes especially for the prevention of childhood obesity
- Increase in referral rate to CR and inclusion of heart failure patients in CR

Possibilities

- The observed increase in percentage of patients with preventive examination from 2006 to 2013 could enable earlier detection of CV risk factors (hypertension, hypercholesterolemia, etc.) in the population and their adequate treatment
- Strict adherence to smoking restrictions in public places should be achieved
- Promotion of exercise and healthy diet could be obtained through public campaigns

Obstacles

There are four main obstacles for implementing prevention and rehabilitation:

- Lack of financial resources
- Lack of public interest in CV prevention
- Lack of commitment by the health care providers for prevention mainly due to the lack of time dedicated for preventive work
- Lack of nurse based programmes for prevention

Plans

- To establish an action plan to reduce the burden of cardiovascular disease and to define indicators for the achievement of the goals
- To decrease the percentage of patients with high blood pressure, high cholesterol levels both in primary and secondary prevention
- To launch a promotion campaign of regular exercise as important part of risk reduction
- To establish national data registry for CR in order to detect obstacles for better referral to rehabilitation programmes