

Projects and Developments

An evaluation of a chronic disease prevention program in the Republika Srpska (RS) of Bosnia and Herzegovina

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Abstract

Introduction: In 2002 the Republika Srpska of Bosnia and Herzegovina adopted goals for reducing the burden of chronic disease through a new screening program in its publicly funded health centers (“Dom Zdravljas”). This study evaluated the first year of program implementation.

Methods: The evaluation used in-depth interviews with 25 key stakeholders and in-person interviews with 1004 citizens.

Results: We found that many health care providers and citizens were unaware of the program. In addition, there was inadequate financing for the program, because the Health Insurance Fund does not collect revenue for uninsured citizens, more than 20 per cent of the population.

Conclusion: We recommend improved co-ordination among public and private organizations involved in implementation; increased promotion of the program with health care providers and citizens; and increased financial resources for providing screening for uninsured citizens.

Keywords

Eastern Europe, chronic disease prevention, screening for chronic disease, health care financing, Bosnia and Herzegovina

Introduction

In the late 1970s an increasing awareness of the importance of disease prevention in the U.S. culminated in Healthy People: The Surgeon General’s Report on Health Promotion and Disease Prevention [1]. This led to the Healthy People program, a major nationwide effort to monitor and reduce death and disability from chronic disease, building on efforts in Canada and Europe [2, 3]. One of the consequences of this increased focus on chronic disease prevention has been an increased emphasis on having screening incorporated into routine primary care. The US Preventive Services Task Force is charged with assessing the costs and benefits of screening and developing

guidelines for clinical preventive services [4–6]. Gradually, clinical preventive services guidelines, such as routine screening for breast and cervical cancer for women in certain age groups, have been adopted nationwide. In spite of this, a recent study showed that from 40 to 60 per cent of Americans (depending on age, gender or other factors) do not receive recommended preventive care [7].

The impact of chronic disease is not limited to developed countries, but rather is increasingly a source of death and disability world-wide [8]. Thus, many of the efforts to develop screening guidelines in the U.S. and Europe may be pertinent in such settings. However, guidelines may need to be modified in low resource settings where both the screening and the referrals from screening are unaffordable [9].

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Table 1. Trends in mortality by cause in the RS, 2001 and 2004

Disease	2001				2004			
	Deaths		Population	No. of deaths per 1000 people	Deaths		Population	No. of deaths per 1000 people
	No. of deaths	%			No. of deaths	%		
Deaths caused by leading chronic diseases	9349	69	–	6.3	9520	71	–	6.5
Heart disease	7194	53	–	4.8	7378	55	–	5.0
Cancer	1994	15	–	1.3	2001	15	–	1.4
Diabetes	161	1	–	0.1	144	1	–	0.1
Other deaths	4085	31	–	2.7	3952	29	–	2.7
Total	13,434	100	1,490,993	9.0	13,475	100	1,471,529	9.2

Data source: Demographic Statistics-Statistical Bulletins No. 5 (2002) and 8 (2005) issued by the RS Institute of Statistics.

Following the break-up of Yugoslavia, and the Balkan war, much of the health care infrastructure was damaged or destroyed and there was a severe shortage of health personnel due to outward migration [10]. As part of the international assistance (provided as part of the rebuilding effort), Michael McGinnis—who had been a developer of the Healthy People program in the U.S.—travelled to the Republika Srpska (RS), one of the two entities that formed Bosnia and Herzegovina after the war.¹ Dr. McGinnis advised the RS health ministry (led by Dr. Milorad Balaban) to implement a program of health goals and monitoring for the RS, and thus a program that resembles Healthy People was initiated.

On July 26, 2002, the National Assembly of the RS adopted the “Program of Health Policy and Strategies for Health in the RS by the year 2010”, with a goal of “continuous improvement of the health status of the population and improvement of conditions that influence health.” The four main objectives of the health policy are:

- Decreasing inequalities in health status and improving accessibility to health care
- Improving health status and increasing accessibility to health services for vulnerable groups
- Reorienting health services towards disease prevention
- Increasing the efficiency and quality of health care.

In addition, because chronic disease accounts for much of the disease burden in the RS (see Table 1), an emphasis was put on increasing access to screening services for such conditions. In April 2003, the RS government adopted the “Strategy for Prevention and Control of Non-Communicable Diseases.” This prevention strategy includes:

- A health-promotion program aimed at reducing risks;
- Screening to detect risks for selected conditions or the presence of the conditions;
- Early diagnosis and treatment.

More information on the program is contained in an RS government document [11] and the article by Atun et al. (January 2007) [12].

The conditions being emphasized are those with the highest mortality rates, including heart disease, cancer, and diabetes, with an overall goal of reducing mortality due to these diseases by 5% by 2010.

The specific 2010 objectives by disease category include:

- Decreasing cardiovascular mortality by 10% in people under 65;
- Decreasing cancer mortality by 5% in people under 65;
- Decreasing diabetes-related complications (blindness, amputations, renal failure) by 20%;
- Decreasing the number of adult smokers by 50% and the number of adolescent smokers by 80%;
- Prohibiting smoking in the workplace, public places and in public transportation;
- Decreasing the number of adults who regularly drink alcohol by 50% and the number of adolescent drinkers by 80%.

To provide a context for the screening program, it is important to understand the financing and delivery of health services in the RS. The health care financing system in the RS is based on the concept of universal public health insurance (the “Bismarck model”). Funds are provided by the RS Health Insurance Fund, which collects money for premiums from employers (a system that dates back to the days of the former Yugoslavia). While health insurance is theoretically

¹ Each entity has a separate health ministry and health budget.

Table 2. Planned preventive checkups in the DZs in 2004

Condition	Check-up	Frequency guidelines	Target population
High blood pressure	Blood pressure measurement	Once in two years	18+ years old
High blood sugar	Blood sugar measurement	Annual	With BMI > 30 with high blood pressure
High blood cholesterol	Blood cholesterol measurement	Annual	With BMI > 30 with high blood pressure
Obesity	Body index mass measurement	At first preventive exam	18–64 years of age
Smoking/tobacco addiction	Counseling	Annual	People smoking every day
Cervical cancer	Papanicolaou test	Once in three years	Women 25–60 years of age
Breast cancer	Breast palpation	Annual	Women > 40 years of age
	Mammography	Once in two years	Women 50–70 years of age
Prostate cancer	Digito-rectal exam	Once in two years	Men 50–70 years of age
Colon and rectal cancer	Digito-rectal exam	Once in three years	All persons > 50 years of age
	Fecal occult blood test	Once in two years	All persons > 50 years of age

universal in Bosnia and Herzegovina, the Health Insurance Funds in both entities (including the RS) are currently under-financed. This is because many employers or individuals do not contribute to the Fund. This is true for many private sector employers, particularly small businesses, and for self-employed and unemployed individuals. The result is that many people remain uninsured and there is under-financing of the Health Insurance Fund.

Health care delivery is the responsibility of the central RS government Ministry of Health and Social Welfare, which operates hospitals, and local governments which provide primary care in 63 “Dom Zdravljas” (DZs, or publicly-funded health centers) throughout the RS. There has been little investment in this health care infrastructure since the war. Another serious problem is a shortage of doctors and medical personnel. Many health professionals left during the war, immigrating to Europe or the United States, and have not returned.

In spite of these challenges facing the health system, the RS government adopted plans to implement a screening program in order to achieve the objectives outlined above. The screening program was to begin on January 1, 2004 and be implemented in all of the DZs. According to the government plan, each citizen of the RS was to be registered with a personal primary care provider at a DZ who would provide age-appropriate screening at a regular physical examination, as shown in Table 2. An estimate of the size of the population to be served by each DZ was developed, and some additional funds were provided to the DZs to accomplish their screening goals.

As an integral part of the screening program, the Ministry of Health and Social Welfare required the

family doctors at the DZs to keep a registry of people who were screened and found to be at high risk for one of the listed chronic diseases. They were then required to follow-up with those individuals on a regular basis.

Methods

In 2005, two years after the adoption of the prevention objectives, USAID provided funding through the Urban Institute to the Economic Institute of Banja Luka to perform an evaluation of the first year of the program. The purpose was to assess implementation and provide recommendations to the health ministry concerning possible program improvements, as well as to assess the adequacy of financing to the DZs for program implementation. To accomplish those goals the evaluation team, with a consultant from the Urban Institute, analyzed existing data from the RS government and collected new information from key stakeholders and citizens [13].²

The evaluation team at the Economic Institute of Banja Luka interviewed twenty-five key stakeholders using a semi-structured interview protocol. Interviewers asked about the stakeholders’ perceptions of implementation of the prevention program (both what has happened and how it is working); their opinions about the feasibility of achieving the prevention program’s goals; and issues concerning the adequacy of financing of the initiative. The individuals who were interviewed include the assistant minister for health of the RS; the director of the Public Health Institute (a quasi-governmental

² An English version of the full project report Rationalizing the Public Health System through a Cost-Effective Prevention Program (with more details about the methods and results), is available from the Economic Institute of Banja Luka (vladanamilak@ekinst.org).

organization that monitors quality of care); four representatives of the health insurance fund that provides funding to the DZs; and representatives from each of the DZs (for example the directors and one or more physicians).

To assess citizen awareness of and participation in the prevention program, Partner Marketing Consulting conducted an in-person interview with a sample of citizens in their homes. The questionnaire contained 23 questions concerning several topics including: (1) the citizens' familiarity with the screening program, and with disease prevention more generally; (2) their willingness to receive preventive health check-ups and whether they have done so recently; (3) whether they are enrolled with a doctor at a DZ; (4) whether they have health insurance; (5) the types of media they are exposed to; and (6) other socio-demographic characteristics. Experienced interviewers, who had been trained in this and other similar demographic in-person surveys, collected the data. Twenty per cent of interviews were back-checked by a field supervisor by phone or in person, for quality control purposes.

The sample—using methods adapted for polling in the RS—was a convenience sample with a substantial random component to the selection of respondents. The method uses 'geographic sampling.' Each interviewer begins at a precise pre-specified location and walks a randomly determined direction and distance to a particular house (or apartment house, where the interviewer randomly selects an apartment). They select one adult respondent per household, asking for the next adult who has a birthday. (Only individuals 18 years of age and older were included in the sample.) Usually there are two call-backs before a selected respondent is replaced (from a randomly selected household near the same sampling point). Each interviewer is asked to achieve a gender balance among

those interviewed, so that after 80% of their interviews are conducted they check the gender distribution. They then continue interviewing only males or females in order to have approximately half of their interviews of each gender.

Given the resources for the study, 1004 households were interviewed from across the RS, with stratification according to the size of each of eight districts of the RS. The initial geographic locations for the interviews were chosen to represent urban, suburban, and rural areas. The size of the sample in each district was selected to be proportionate to the population size according to recent estimates from the World Bank and Election Commission voter registration lists. This stratification assured that all areas of the RS were included in the study.

Table 3 shows the resulting number of interviews by district. Approximately the same number of males and females were interviewed, and the age distribution of the sample approximated the estimated age distribution of adults in the RS.

The questionnaire covered the following topics:

- Demographic characteristics (gender, age, education, income and employment)
- Health insurance status
- Registration with the DZ (whether and where)
- Receipt of diagnosis of chronic disease
- Awareness of prevention and of chronic disease
- Awareness of the prevention program
- Use of any health services and use of prevention program services
- Use of media (radio, TV, Newspapers, Internet)

There are several limitations to the methods of the study. The stakeholders who participated in the in-depth interviews do not represent the full range of stakeholders or a random sample of that group. Also,

Table 3. Sample design

District	RS population size (Estimate)	Geographic composition of population			Sample size
		Urban (%)	Rural (%)	Total	
Banja Luka	481,293	13%	18%	31%	308
Prijedor	194,966	4%	8%	12%	126
Bijeljina	136,423	3%	6%	9%	87
Zvornik	189,054	2%	10%	12%	121
Doboj	330,872	5%	16%	21%	214
I. Sarajevo	67,800	2%	2%	4%	44
Foča	86,832	2%	4%	6%	55
Trebinje	76,491	3%	2%	5%	49
Total population	1,563,731	34%	66%	100%	1004

because there is no full census of the population in the RS, it was necessary to use geographic sampling which under represents certain types of people, such as people who are rarely at home or do not have a fixed address.

Findings

Key informant interviews

Stakeholders believe that a prevention program is an obligation of the government, and that it is an important investment in population health. However, there are features of the current organization of the RS health system that make the implementation of the current prevention program very difficult. In particular, all interviewed stakeholders agree that the scope of the program (for example, the number and frequency of screening services) is overly-broad.

First, in order for the program to succeed as currently designed, it would be necessary to register every citizen with a family medicine team at the local DZ. However, most of the DZs are incapable of implementing the program due to a lack of enough medical personnel. As of April 2005, only 30 of the 54 DZs in the RS had a family doctor on their staff, and only 16 had 25% or more of the population in the service area registered at the DZ. Most patients still come to the DZ because of health problems, not for preventive care. Thus it is not possible to screen people who are in the early stages of disease or to identify those at high risk.

Medical staff in most of the DZs is already overworked providing curative services to patients. In a typical DZ, in order to accomplish the number of screenings necessary to cover the entire population served, it would be necessary to increase the number of patient encounters each day by about 50% according to one key informant. The extra time is not just the time to administer screening tests, but also to provide counseling to patients. For example one family medicine team might care for 30 sick cases in a day, and in addition would be asked to provide preventive screening for an additional 15 people. They commented that, practically, it is very difficult for a team to provide so many services each day during normal working hours. There are inadequate personnel to perform outreach to inform citizens of the program, or to conduct public information campaigns. The preventive care program also requires extra administrative time to track patients and document screening tests, as required by program guidelines.

Only one center (the Dom Zdravlja Laktaši) operates almost completely within the preventive care family

medicine model. They estimate that 98% of the population of their service area is registered with a family doctor. They used three communication methods to advertise the prevention program: media (radio and TV), direct mail, and telephone calls. All are effective, but the telephone calls—while expensive—are the most successful way to encourage registration and use of preventive care.

In addition, financing for the program is inadequate, and stakeholders commented that there was not a sufficient prior analysis of the cost of the program and the feasibility of implementing it as designed before putting it into place. Only insured people's health needs are financed through the Health Insurance Fund, but DZs are obligated to provide health services (with some co-payments) to anyone in their service area. According to key informants at the Health Insurance Fund, preventive services for uninsured people (approximately one-fourth of the population) should be financed by some other mechanism. Preventive care is not designated as a separate item in financial planning, so curative services are given priority in resource reallocation over preventive services.

Consequently, the Health Insurance Fund cannot provide adequate funds to each of the DZs to care for all individuals in their service area. These funds are needed to make the infrastructure improvements and to add personnel before the screening program can be thoroughly implemented. For example, representatives from only two of the eight DZs interviewed reported that they own the apparatus necessary for mammography screening. All the others are dependent on hospitals for such services. However, many doctors practicing in the hospitals are unaware of the screening program.

The hospitals are also under-funded. To the extent that the screening program reveals diseases requiring treatment, there must be sufficient resources for treatment at the hospitals, as well as closer coordination between the levels of care than is currently in place.

Beyond the cost of screening services, stakeholders had additional questions about the feasibility and acceptability of some of the services to their patients. In particular, many people are unwilling to have rectal exams.

Finally, there has been little monitoring of program implementation either at the DZ level or by the government. This is because there is little automation of data in the DZs, and collecting data for program monitoring and evaluation creates an additional burden for the already-stretched DZ staff. When requested monitoring data were provided by the DZs, most reported very low rates of screening, likely due to

underreporting in some instances. One reason for underreporting is that, even when DZs report on screenings provided during preventive visits, they usually cannot identify those provided during curative visits, leading to additional underreporting and lack of comparability between DZs.

Citizens survey

The survey of RS citizens' knowledge, attitudes, and practices of prevention enabled us to examine the degree to which citizens are aware of the importance of chronic disease prevention and control, whether they are informed about the prevention program in the DZs, and whether they have participated.

An important factor in whether citizens use preventive care is their health insurance status. Fully one-fifth of those surveyed report that they are not covered by the Health Insurance Fund (see Figure 1). Such individuals will be requested to pay out-of-pocket for preventive care services, a strong deterrent to using them.

As noted above, in order for the current prevention program to succeed, all citizens must be registered at a DZ and with a particular family doctor. However, most of the people surveyed report that they are not registered with a family doctor. Only 32% of them, a little less than one third, said that they have completed the registration process at a DZ (see Figure 2).

Survey results confirm much of the information gathered in the in-depth stakeholder interviews, in particular that there is a low level of awareness about the importance of chronic disease prevention and about the RS prevention program in particular. While awareness of the importance of prevention is lower than desirable, it is higher among insured citizens (78.1%) (see Figure 3). In addition, while a small minority of both insured and uninsured citizens is aware of the RS chronic disease prevention program, awareness

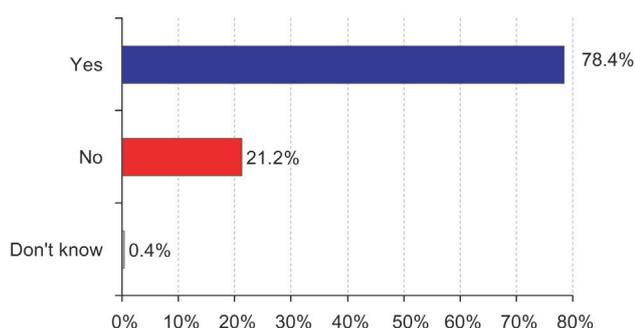


Figure 1. Health Insurance of citizens. Are you covered by health insurance through the Health Insurance Fund of the RS?

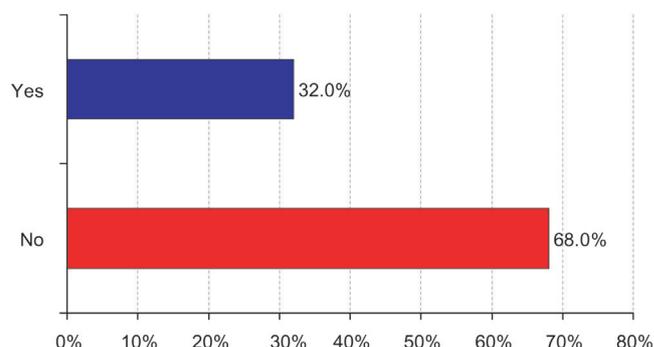


Figure 2. Citizen's registration with a family doctor. Are you registered with a family doctor at the DZ?

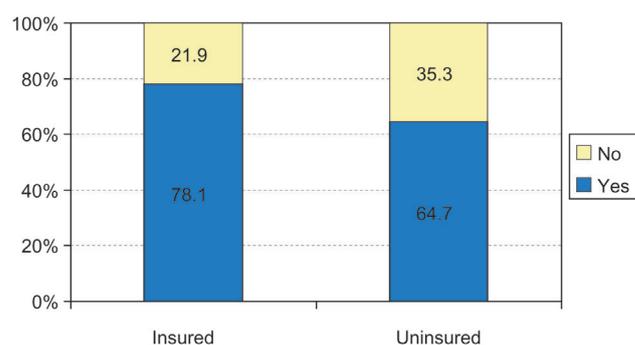


Figure 3. Familiarity with disease prevention. Are you familiar with the term "disease prevention"?

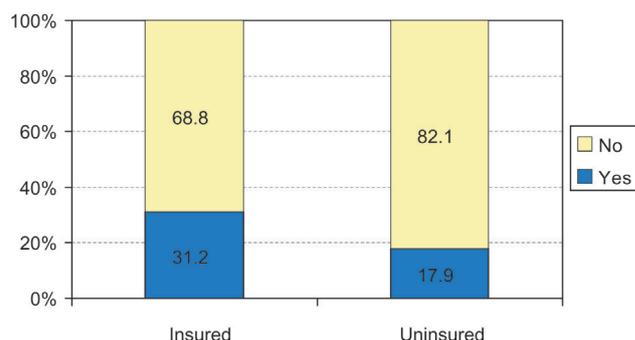


Figure 4. Familiarity with the program. Do you know that there is a program of chronic disease prevention in the RS?

is higher among the insured (31.2 per cent) (see Figure 4).

As shown in Figure 5, even those who are registered with a family doctor at the DZ are still usually unaware of the disease prevention program, showing that doctors are either not themselves aware of the program or are not educating their patients about it.

Confirming that cost is likely an issue in obtaining preventive care, insured citizens are more willing

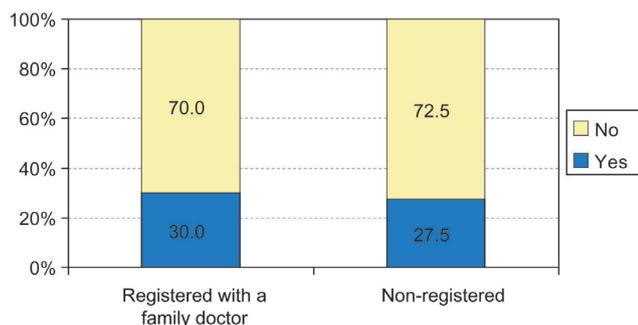


Figure 5. Familiarity with the program. Do you know that there is a program of chronic disease prevention in the RS?

to obtain preventive examinations than uninsured citizens (see Figure 6).

Rates of actual preventive care are low overall, but are higher among those who are registered with a family doctor (29.1%) (see Figure 7), and among insured citizens (24.1%) (see Figure 8).

Media play an important role in informing the public about the prevention program, since 44.2% of people who are aware of the program learn about it through the media. An additional 32.9% learn of it “from acquaintances” (see Figure 9).

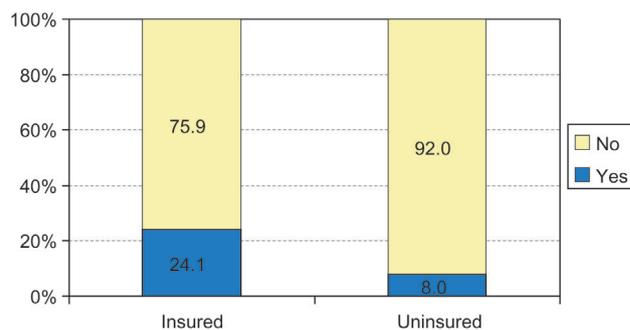


Figure 8. Health Checkups. Have you obtained a health checkup from a doctor, although you are healthy, in the past year?

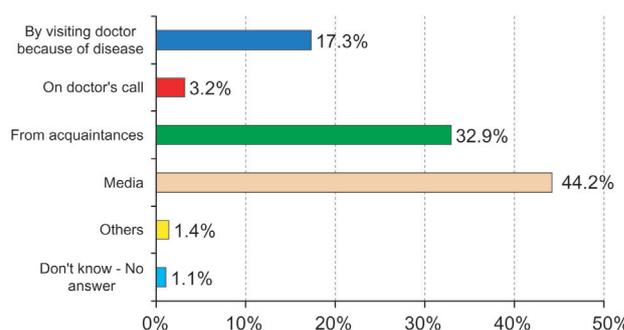


Figure 9. Sources of information about the program. How did you find out about the program?

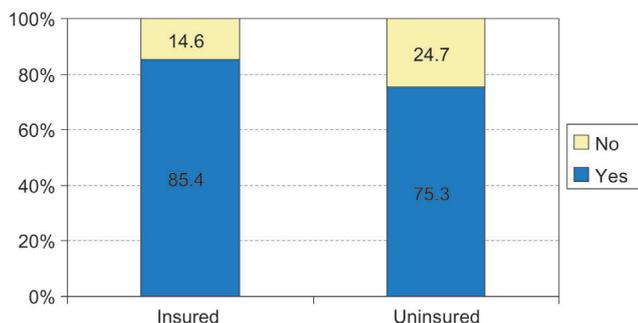


Figure 6. Preventive examination readiness for insured and uninsured citizens. Are you willing to respond to a call for a preventive examination?

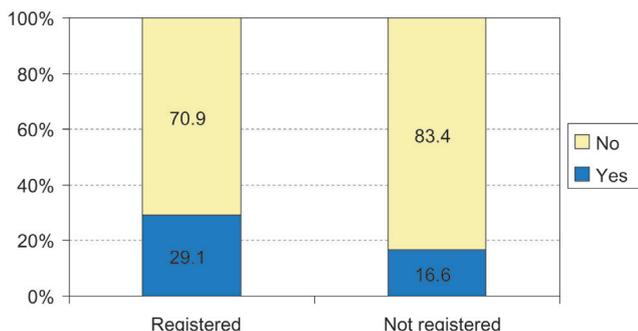


Figure 7. Health Checkups. Have you obtained a health checkup from a doctor, although you are healthy, in the past year?

Conclusions and recommendations

After one year of implementation, the RS Strategy for Prevention and Control of Non-Communicable Diseases still struggles with problems of awareness (both among the medical personnel who must implement the program and the citizens who must use it) and financing. In particular, the key factors slowing implementation are the following:

- There are insufficient financial resources to fund the facilities, equipment and personnel needed to fully implement the preventive screening program. For example, most of the DZs cannot do mammograms on site.
- Most RS citizens are unfamiliar with the program, and 68% of adults are not registered with a family doctor at the DZ. Over half of those not registered are not aware they are supposed to do so.
- Most DZs do not have sufficient medical personnel. In addition, many doctors either do not know about the program, or are not informing their patients about the program.
- Over 20% of the RS population has no health insurance. Since the Fund's policy is to finance health care for insured citizens, there is currently

no source of funding for the uninsured in the DZs. Such users of preventive checkups are charged for services in some DZs. This creates a strong financial disincentive to obtain preventive care.

- There is little cooperation between the DZs and the hospitals in providing services for the preventive care program. Many doctors in the hospitals are unaware of the program, but often they are the only doctors with access to screening equipment and they are the ones to provide follow-up treatment.
- Doctors in DZs are not motivated to implement preventive checkups due to time and cost constraints, since they receive no reimbursement for the additional administrative burden.
- Evaluation of the program is very difficult, because it must be based on manual chart reviews due to a lack of automated data.
- Finally, the survey shows that people are very receptive to information in various forms, especially from media (radio and television). This provides a good way to reach many people, as the program moves forward. Other strategies may be needed, since experience in one DZ shows that a direct telephone call is the most effective way to reach people.

As a result of this study, we have provided a series of recommendations to the government of the RS about how to improve the prevention program and its financing. First, we recommend that a broad coalition of stakeholders work together to improve the implementation of the preventive care program, including doctors at the primary and secondary level; the DZs; the Ministry of Health and Social Welfare; the Health Insurance Fund; the Ministry of Finance; the Ministry of Transport and Communications; the Public Health Institute; local authorities, NGOs; and private companies. Each of these stakeholders has a great interest in improving the health of the citizens of the RS and preventing death and disability from chronic disease. However, up to the time of the study there was a lack of information about the prevention program among many of the key participants.

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We also recommend increasing targeted promotion of the program, both among citizens and among the medical personnel who must implement the program. The promotion strategy should use the experience gained in Dom Zdravlja Laktasi about how to reach out to citizens in order to educate them about the importance of prevention for their health and the importance of registering with a family doctor.

Finally, the most pressing issue facing the prevention program is a lack of financial resources. If the program is to continue, more funding must be identified, especially for care for uninsured patients at the DZs. Some ideas for additional funds include a possible reallocation of Health Insurance Fund towards the prevention program. However, because of financial shortages system-wide and the fact that the Health Insurance Fund is designed to cover only insured citizens, new resources of revenue are needed. Possible sources include a tax on the registration of motor vehicles, or excise taxes on tobacco products, alcohol and alcoholic beverages. The latter form of taxes could also potentially further the goals of the prevention program by deterring the use of tobacco and alcohol, especially among younger drinkers and smokers.

These recommendations have contributed to improving the dialogue about how to prevent a continued increase in chronic diseases in the RS. Lessons from this area of the world should also have implications for developing countries and for low resource areas of developed countries, for example economically deprived inner city areas of the U.S.

Reviewers

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