

A Model of Oncologic Care in General Medicine

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ABSTRACT

The problems related to cancer and its control initially manifest in local community, and general practitioners are those who most commonly have to face them there. The aim of the study was to develop a program of comprehensive oncologic care for primary care physicians, which would be highly professional, efficient, economically justified and feasible, with the ultimate goal of upgrading the target population health and quality of life. Opinions on the priorities and intensity of work in particular activities of general practitioners in the field of oncologic care were obtained from 54 Croatian experts in oncologic care. An Expert Opinion was designed to collect oncologists' opinions by use of Delphi method. The study was performed in two runs, yielding a high rate of accordance among the oncologists. 38 of 54 participants responded in the first run, and 40 of 54 (74%) responded in the second run. The results indicated pain therapy and terminal care to be given highest priority, whereas measures of primary prevention ranked first as a group. There was a unanimous agreement that current activities of primary care physicians in the field of oncologic care were not satisfactory, and that they should take the role of a coordinator of the oncologic care of both individual patients and the population at large. The study showed that a model of oncologic care applicable throughout the country could be developed by combining data from a small health care office with the knowledge of renowned experts in the field.

Key words: cancer control, general practitioner, expert opinion, prevention, early detection, pain therapy

Introduction

Cancer is the leading public health problem worldwide and, according to epi-

demiological data, the second leading cause of death in industrialized countries,

next to cardiovascular diseases¹. Data of the Croatian Institute of Public Health show the cancer incidence and mortality rates to be on an increase in Croatia². Bronchial and lung cancer is the most common cancer type in the world, being the leading one in men and showing an increasing incidence in women. In women, breast cancer is most common, with colorectal carcinoma ranking second in both men and women¹. According to the present state-of-the-art, environmental and hereditary factors also play a role in the etiopathogenesis of cancer.

Cancer control can be defined as a scientific discipline trying to apply in practice the achievements of basic or clinical research on cancer performed in a large target population. Cancer control is aimed at reducing the rates of cancer incidence, mortality and morbidity³. The problems associated with cancer and its control primarily manifest in local community, thus general practitioners are those to face them first. In spite of great advancements in the diagnostic and therapeutic methodology, the patient to personal physician relationship remains the most important component. As general practitioner is a health professional of the first contact with the population in the health care system, his role in cancer control is crucial and irreplaceable. The role of general practitioner is as relevant in the prevention and management as in rehabilitation of cancer patients^{4,5}.

Cancer prevention implies primary prevention and secondary prevention or early detection of the disease. The aim of primary prevention is to preclude the disease to occur, this by avoiding or reducing the individual or population exposure to known carcinogens and risky behavioral patterns, which is achieved by various administrative and legal as well as educational measures⁶. The widely spread habit of cigarette smoking, especially among the young population, and strong

association between cigarette smoking and both morbidity and mortality from respiratory, cardiovascular and neoplastic diseases, make it a major preventable cause of premature death in industrialized countries⁷. Early detection includes use of screening, examination and tests for cancer detection in the earliest stage before the signs and symptoms of the disease have occurred⁸.

The role of primary care physician in the treatment of cancer patients primarily refers to pain therapy and terminal care, whereas his participation in the administration of chemotherapy should be limited to strictly selected cases⁹. The primary care physician could be involved in monitoring of side – effects of chemotherapy and in supportive care. With prolonged life expectancy of cancer patients, general practitioner also plays an important role in both physical and psychosocial rehabilitation of oncologic patients and their family members¹⁰.

The aim of the study was to develop a program of comprehensive oncologic care for primary care physicians, which would be highly professional, efficient, cost-effective and feasible, with the ultimate goal of upgrading the target population health and quality of life.

Methods

The study was carried out in the Stone area with 3,330 inhabitants and two general practitioner teams working at the Primary Health Care Office. Delphi method of obtaining consensus from a group of experts in the respective field, in this case the field of oncology, was used in the study.

The method consists of the following steps:

- 1) choice of experts in the field (oncology);

- 2) the experts respond anonymously using an appropriate method to express their opinion;
- 3) each individual expert receives analysis of all anonymous responses; and
- 4) the procedure is repeated as long as consensus on the issue is achieved.

This relatively inexpensive method allows for unbiased expert opinions to collect. In our study, a questionnaire in the form of an Expert Opinion containing a survey of oncologic situation in the area of Ston was distributed to the chosen experts. The questionnaire covered 22 activities in the field of oncologic care to be performed by a general practitioner, classified into 5 groups, so there were several items for each of the five groups (Table 1). The present state in the oncologic care in the Stone area was presented for each individual activity. Presentation of the current situation included the size of the activity catchment population and current practice in solving the issue. Expert Opinion also included assessment of activity

intensities required for solving particular issues, i.e. mode of the medical team work. Five possible intensities were offered for each activity, one of them to be chosen by the participating professionals as most appropriate:

- 0 – activity does not belong to the scope of work of the general practitioner's team;
- 1 – current practice should be continued;
- 2 – the service should be provided to those who request it;
- 3 – a program of measures to be offered to the risk population and to implement it if accepted; and
- 4 – the risk group should be actively selected and efforts should be made for them to accept and implement the program of measures.

At the end we measured how many experts have chosen every of the offered intensities. The other assessment referred to priorities, through which the experts evaluated the role of a particular activity in the overall oncologic care, and was

TABLE 1
GROUPS OF ACTIVITIES IN ONCOLOGIC CARE TO BE POTENTIALLY PERFORMED BY GENERAL PRACTITIONER

Prevention and control	Early detection of cancer	Treatment	Rehabilitation	Research and role of CIHI
– Education	– Breast	– Chemotherapy	– Patient physical rehabilitation	– Research
– Continuous education of medical personnel	– Cervix	– Pain therapy	– Patient psychosocial rehabilitation	– Role of CIHI
– Professional risks	– Colon and rectum	– Terminal care	– Family psychosocial rehabilitation	
– Prevention of lung cancer	– Oral cavity		– Family psychosocial rehabilitation	
– Prevention of smoking in elementary school	– Prostate		– Family psychosocial rehabilitation after patient's death	
– Patient control	– Testis			
	– Skin			

CIHI = Croatian Institute of Health Insurance

scored 1–10, where 1 and 10 denoted activity of least and highest importance, respectively. Only one score could be chosen here too.

Fifty-four Croatian experts in oncologic care, both from primary and secondary medical care, participated in the study. On choosing the experts, the criterion was that they had rich experience in at least one of the activities specified in the questionnaire. Care was taken to include representatives from Ston, a town where the study office is located, and from Dubrovnik, a city where the hospital is located in which the majority of diagnostic and therapeutic procedures were performed. However, most of the included ex-

perts were from Zagreb, a city where the majority of Croatian medical experts work and where patients from Dubrovnik are being referred to for additional diagnostic and therapeutic procedures (Table 2). According to the level of medical education, physicians and nurses as well as patients engaged in the struggle against cancer were included in the study (Table 3).

All study participants received the questionnaire, Expert Opinion, on two occasions. Firstly they received it personally, and two months later those who failed to respond were contacted by telephone. In the first run, 38 of 54 participants responded. Their answers were statistically analyzed and sent by mail back to all participants. Two months later, the nonresponders were asked by mail to send their answers, which resulted in 40 responses.

Results

In the first and second run, 38 and 40 of 54 (70.3% and 74.07%, respectively) experts responded to the distributed Expert Opinion questionnaire (Table 4). Only results obtained in the second run were considered relevant and included in the analysis. The first run responses were merely used as additional information, whereas the second run responses were considered as final opinion.

According to the data thus obtained, in the group of prevention activities the experts think that general practitioners should take an active approach in each prevention activity, especially in relation to risk groups. This active approach especially referred to the prevention of cigarette smoking and patient control as well as to medical staff target education and training. Interestingly enough, none of the experts thinks that the current practice should be continued (Table 5). In this group of activities, general practitioner

TABLE 2
STRUCTURE OF PARTICIPANTS ACCORDING
TO PLACE OF WORK

Place (town)	Number of participants
Ston	3
Dubrovnik	14
Zagreb	34
Split	1
Rijeka	1
Osijek	1

TABLE 3
STRUCTURE OF PARTICIPANTS ACCORDING
TO PROFESSION

Profession	Number of participants
Medical doctors	47
Nurses	3
Social workers	1
Patients	3

TABLE 4
RESULTS OF PARTICIPANT'S RESPONSES

	Number of parti- cipants	Number of res- ponses	%
I. Round	54	38	70
II. Round	54	40	74

TABLE 5
RESULTS OF ASSESSMENT OF REQUIRED INTENSITY
FOR THE PREVENTION AND CONTROL GROUP

Intensity	Education		Training		Professional risk		Lung cancer prevention		Smoking prevention		Control of patients	
	N	%	N	%	N	%	N	%	N	%	N	%
0	0	0	1	2.5	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0
2	1	2.5	3	7.5	0	0	1	2.5	1	2.5	3	7.5
3	12	30	7	17.5	19	47.5	31	77.5	8	20.0	6	15.0
4	27	67.5	29	72.5	21	52.5	8	20.0	31	77.5	31	77.5

TABLE 6
RESULTS OF ASSESSMENT OF REQUIRED INTENSITY FOR THE EARLY DETECTION GROUP

Intensity	Breast		Cervix uteri		Colon and rectum		Oral cavity		Prostate		Testes		Skin	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0	0	0	1	2.5	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	3	7.5	0	0	2	5.0	8	20
2	1	2.5	0	0	10	25.0	4	10.0	1	2.5	10	25.0	1	2.5
3	16	40.0	8	20.0	12	30.0	23	57.5	25	62.5	12	30.0	3	7.5
4	23	57.5	31	77.5	18	45.0	10	25.0	14	35.0	16	40.5	28	70.0

TABLE 7
RESULTS OF ASSESSMENT OF REQUIRED INTENSITY FOR THE REHABILITATION GROUP

Intensity	Physical		Patient psychosocial RHB		Family psychosocial RHB		Family psychosocial RHB after patient's death	
	N	%	N	%	N	%	N	%
0	3	7.5	0	0	0	0	0	0
1	0	0	0	0	1	2.5	18	45.0
2	12	30.0	3	7.5	3	7.5	5	12.5
3	7	17.5	10	25.0	21	52.5	5	12.5
4	18	45.0	27	67.5	15	37.5	12	30.0

RHB = rehabilitation

was ranked first in oncologic care by the experts (Table 11).

The group of early detection included activities leading to early detection of cancer at seven localizations that are of a major public health significance (Table 6). On priority assessment of particular activities, early detection of breast cancer

as the most common cancer in women was ranked high, i.e. third, by the experts, immediately followed by detection of cervical carcinoma (Table 10). Furthermore, 57.5% of the experts believe that general practitioners should actively approach the group at risk of breast cancer and encourage them for complete preven-

TABLE 8
RESULTS OF ASSESSMENT OF REQUIRED INTENSITY FOR THE
TREATMENT GROUP

Intensity	Chemotherapy		Pain therapy		Terminal care	
	N	%	N	%	N	%
0	3	7.5	0	0	0	0
1	1	2.5	7	17.5	2	5.0
2	2	5.0	1	2.5	1	2.5
3	30	75.0	2	5.0	6	15.0
4	4	10.0	30	75.0	31	77.5

tive care. As many as 97.5% of the experts consider the role of general practitioner in detection of cervical carcinoma to be most important in women's education about the importance of gynecologic examination and Pap test (Table 6). Concerning early detection of colorectal carcinoma, all 40 experts think – when they were offered this intensity in early detection of colorectal carcinoma – that general practitioner should perform digitorectal examination in all individuals at risk. In case of prostate cancer, 62.5% of the experts think that all men older than 40 should be informed on the signs of prostate cancer. Early detection of testicular cancer was ranked lowest on assessing the priority of individual activities (Table 10), whereas no consensus was achieved in the assessment of activity intensity (Table 6). Concerning oral cancer, most experts think that the risk population should be examined on each visit to general practitioner's office, whereas in case of skin cancer 70% of the experts consider that general practitioners should actively approach the individuals at risk (Table 6).

In the group of activities with rehabilitation as a common denominator, most experts advocate an active general practitioner's approach in organizing rehabilitation for cancer patients; as many as 67.5% and 45% of them support an active approach in organizing psychosocial and physical rehabilitation of cancer patients,

TABLE 9
RESULTS OF ASSESSMENT OF REQUIRED
INTENSITY OF RESEARCH AND ROLE OF
THE INSTITUTE OF HEALTH INSURANCE

Inten- sity	Research		CIHI	
	N	%	N	%
0	0	0	0	0
1	0	0	0	0
2	5	12.5	1	2.5
3	12	30.0	13	32.5
4	23	37.5	26	65.0

CIHI = Croatian Institute of Health Insurance

respectively, whereas 52.5% of the experts think that measures of psychosocial rehabilitation should be offered to family members of cancer patients. As many as 45% of the experts consider that general practitioners should continue with their current activities in providing psychosocial rehabilitation to family members after cancer patient's death (Table 7).

In the group of treatment activities, pain therapy and terminal care of oncologic patients are considered the most important role of general practitioner, and these two activities were ranked first and second on priority assessment (Table 10). So, 75% of the experts think that general practitioners should take an active role in pain therapy, whereas 77.5% of them advocate an active approach in terminal care of oncologic patients. 75% of experts think that general practitioners should

TABLE 10
PRIORITY ASSESSMENT OF ACTIVITIES – RANKING LIST

Rank	Activity	Average score
1	Pain treatment	9.55
2	Terminal care	9.52
3	Early detection – breast	9.45
4	Early detection – cervix	9.20
5	Smoking prevention – elementary school	9.10
6	Education	9.00
7	CIHI role	8.75
8	Health staff education	8.61
9	Control of patients	8.53
10	Early detection – colon	8.48
11	Early detection – skin	8.30
12	Psychosocial rehabilitation of patients	8.20
13	Scientific investigations	8.07
14	Lung cancer prevention	7.85
15	Psychosocial rehabilitation of family	7.83
16	Early detection – prostate	7.83
17	Professional risks	7.77
18	Physical rehabilitation	7.20
19	Early detection – oral cavity	7.15
20	Chemotherapy	7.00
21	Psychosocial rehabilitation of families after death	6.25
22	Early detection – testis	6.10

CIHI = Croatian Institute of Health Insurance

be involved in chemotherapy if it is accepted (Table 8). Also, most experts support an active approach of general practitioners in the scientific research and in designing oncologic care programs (Table 9).

Discussion

Results of the study have revealed that current activities of general practitioners in cancer control cannot be considered satisfactory. Number of participants in the study is relatively small, but they represent the best Croatian experts from both primary and secondary medical care in oncology, so we could consider they are representative of groups from

TABLE 11
PRIORITY ASSESSMENTS – GROUPS OF
ACTIVITIES - RANKING

Rank	Group	Average score
1	Prevention	8.48
2	Treatment	8.36
3	Early detection	8.08
4	Rehabilitation	7.12

which they were selected. All experts included in the study proposed a more active approach of general practitioners in the oncologic care activities. The measures of primary prevention as a group were given highest priority, with a major role of education to be continuously performed by the physicians for the popula-

tion at large, through public lectures, leaflets, booklets and posters. Printed material and continuous education of medical staff should be ensured by large hospital centers and Public Health Institute with financial support from the Institute of Health Insurance, School of Medicine and Ministry of Health. It has been observed that less attention is paid to education on cancer than on some other diseases, and when it is performed, public education and prevention are given preference to individual cancer patient education¹¹. Anti-smoking campaign is the most important measure of both cancer prevention and health promotion. Data indicate that schools are the place where the majority of smokers acquire this risky habit. Therefore, schools are the setting where preventive measures against cigarette smoking should be performed¹². Some industrialized countries have favorable experiences with a very aggressive mass media campaign against cigarette smoking¹³. Studies have shown that the physician's advice and support can motivate at least 5% of cigarette smokers to quit smoking¹⁴.

According to groups of activities, those related to treatment, primarily pain therapy and terminal care, were ranked as second priority for general practitioners. These two activities individually were ranked first and second priority for general practitioners in the scope of oncologic care. As many as 92.5% of study participants think that general practitioners should take an active role in pain therapy of oncologic patients, and in alleviating all three pain components, i.e. physical, psychological and social, in consultation with respective specialists. The term of terminal care implies patient care, primarily pain therapy, to achieve the highest possible quality of life in the terminal stage of disease. One of the most important issues of terminal care is the setting of providing terminal care, i.e. at home or

in the hospital. New studies in Ireland and Italy found that most patients would prefer to die at home (more than 80% in Ireland), and a systematic review concluded that, with appropriate support and facilities primary care physicians have been shown to deliver effective care^{15–17}. As for pain alleviation, studies show it to be inadequately performed at home, and in 90% of patients who were unsuccessfully managed at home, a satisfactory pain alleviation was achieved by simple therapeutic procedures upon their transfer to the hospital. Studies conducted all over the world indicate that general practitioners have inadequate knowledge about some therapeutic procedures, thus proper education of medical personnel on the measures of maintaining and upgrading the quality of life of terminal patients being absolutely necessary⁹.

The activities related to early cancer detection were ranked third among general practitioner priorities. The measures of early detection that have been demonstrated to reduce the cancer mortality rate are annual Pap test for cervical carcinoma of sexually active women older than 18 and regular annual breast examination and/or mammography in women older than 50. The measures that have not been demonstrated to decrease the cancer mortality rate but lead to detection of minor tumors include the following: regular annual digitorectal examination for colorectal cancer and prostate cancer in persons older than 40, examination of oral cavity in persons older than 40, examination of testes in young men, and skin examination and breast self-examination in women younger than 50⁸. Initial results of a large randomized Leningrad study on the role of breast self-examination, launched in 1985 and including 150,000 women aged 40–60, revealed the average tumor size in patients performing breast self-examination to be 3.2 cm *versus* 4.5 cm in the control group.

During the first 15 months of the study, 5% of the women performing breast self-examination presented to the physician for breast problems *versus* 1% of women from the control group. Furthermore, additional treatment was required in only 12% of the women performing breast self-examination as compared with 26% in the control group¹⁸. These results point to the value of breast self-examination, however, it has also provoked some criticism stating that not all cases of breast cancer have been detected by self-examination but quite accidentally, and that the women performing self-examination tend to present for medical examination and mammography at a higher rate than those who do not perform it. Medical examination and/or mammography reduce breast cancer mortality in all age groups by 4% to 33%¹⁹. A Cochrane review on breast self-examination showed no evidence of benefit, but not evidence of harm. Some 50% of all cases of breast cancer can presently be detected by mammography, and only 10% by palpation²⁰.

General practitioner usually is a person of highest confidence for the patient and his family; he is familiar with the patient's health, socioeconomic and other circumstances and, as judged by 87.5% of the present study participants, is the

right person to coordinate all activities related to the patient's treatment and rehabilitation. Based on this study, we believe that the role of primary care physician as a person coordinating the oncologic care activities in the catchment population would be considerably upgraded by the introduction of prevention and oncology sheets as part of the integral medical file. The prevention segment of the sheet of an asymptomatic individual would contain history data related to the increased risk of cancer, data on risk behaviors, and data on examinations and tests that may lead to an early detection of cancer. The prevention segment of the sheet should be of use for both physicians and patients, whereby the individuals complying with all the recommended measures under professional surveillance and control, and their physicians should be financially stimulated for this practice. The oncology segment of the sheet would contain data related to all aspects of the disease, i.e. medical, socioeconomic and psychological ones. We do believe that such a practice would allow for the general practitioner to participate most efficiently in the measures aimed at improving the quality of life of the patient and his family.

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PROGRAM ONKOLOŠKE ZAŠTITE U PRIMARNOJ ZDRAVSTVENOJ ZAŠTITI

S A Ž E T A K

Svi problemi koji se javljaju u vezi s rakom i njegovom kontrolom, prvo se pojavljuju u lokalnoj zajednici i sa njima se najčešće suočavaju liječnici opće medicine. Cilj ove studije bio je na osnovi sagledavanja problema onkološke zaštite u lokalnoj zajednici i dosadašnje prakse rješavanja problema, te na osnovi najnovijih stručnih saznanja i mišljenja stručnjaka izraditi program cjelokupne onkološke zaštite za liječnika opće medicine, koji bi bio stručan, djelotvoran, ekonomski opravdan i provediv radi unaprjeđenja zdravlja i kvalitete života ciljne populacije. U studiji se pokušalo dobiti mišljenje 54 onkološka stručnjaka iz Hrvatske o prioritetu i intenzitetu rada u svakoj pojedinoj aktivnosti liječnika opće medicine sa područja onkološke zaštite. Korištena je Delphi metoda za dobivanje mišljenja stručnjaka. Provedena su dva kruga istraživanja kojim se je dobio visoki stupanj suglasnosti stručnjaka. U prvom krugu je sudjelovao 38 od 54 stručnjaka, a u drugom 40 od 54 (74%). Dobiveni rezultati pokazuju da terapija bola i terminalna skrb imaju najveći prioritet, a kao grupu na prvo mjesto stavljaju mjere primarne prevencije. Jednoglasno je mišljenje da dosadašnje aktivnosti liječnika opće medicine u području onkološke zaštite nisu zadovoljavajuće, te da bi oni trebali imati ulogu koordinatora aktivnosti onkološke zaštite pojedinca i populacije. Istraživanje je pokazalo da je moguće, koristeći podatke iz male zdravstvene stanice i znanja najpoznatijih stručnjaka iz zemlje napraviti model onkološke zaštite, koji je primjenjiv na području cijele države.