

Medical and social substantiation of early detection and prevention of visual forms of cervical cancer

Iryna A. Holovanova¹, Orest Ya. Vovk², Tetiana P. Mats¹, Valentina L. Filatova¹, Olena V. Filatova¹, Alla M. Podvin¹, Maksim V. Khorosh¹

¹POLTAVA STATE MEDICAL UNIVERSITY, POLTAVA, UKRAINE

²MUNICIPAL ENTERPRISE "POLTAVA REGIONAL CLINICAL ONCOLOGY DISPENSARY OF THE POLTAVA REGIONAL COUNCIL", MUNICIPAL ENTERPRISE "POLTAVA REGIONAL CLINICAL ONCOLOGY DISPENSARY OF THE POLTAVA REGIONAL COUNCIL", POLTAVA, UKRAINE

ABSTRACT

Aim: The purpose of the study was to provide a comprehensive medical and social justification for the feasibility and necessity of timely detection of pathology, taking into account existing risk factors, barriers to access to health care services, and the potential for public influence to increase participation in screening.

Materials and Methods: The following research methods were used in the study: sociological; systematic approach and analysis; monitoring and evaluation of indicators of the model implementation process; expert assessments.

The focus is on the aspects of early detection and prevention of visual forms of cervical cancer. Women's health indicators – incidence, prevalence and mortality from cervical cancer – are studied. Data from the State Statistics Service of Ukraine, the National Cancer Registry of Ukraine, the Center for Medical Statistics of the Ministry of Health of Ukraine, and the Department of Health of the Poltava Region for 2010–2021. Legislative acts and regulatory documents governing the organization of medical, physical, psychological, and social assistance to women with cervical cancer in Ukraine. Results of a sociological survey – 140 questionnaires.

Results: The functional and organizational model of early detection and prevention of visual forms of cervical cancer is proposed, which allows a woman to undergo a preventive examination in two ways: through non-admission to work or voluntarily, when a woman becomes a subject of her own health, and her husband and relatives can support her on the way to the doctor.

Conclusions: In the proposed model of early detection and prevention of cervical cancer, a woman is seen as an element of the ecosystem, which makes it possible to involve her family and friends in preventive examinations and provide support.

KEY WORDS: cervical cancer, visual forms, prevention, early detection, functional and organizational model

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INTRODUCTION

Cervical cancer remains one of the leading causes of morbidity and mortality among women worldwide, especially in low- and middle-income countries. Despite the availability of effective prevention and screening methods, a significant proportion of cases are diagnosed at late stages, which significantly reduces the chances of successful treatment [1].

As of 2022-2024, cervical cancer remains a serious medical and social problem in Ukraine. According to the National Cancer Registry, in 2023, 2962 new cases of cervical cancer were registered, of which 1075 were fatal.

In 2022, there was a 20% decrease in the number of new cases of cervical cancer compared to previous years, which may be due to the impact of the war and limited access to healthcare services.

As for the prevalence of cervical cancer in the regions, the highest incidence rates were recorded in Dnipropetrovska and Lvivska oblasts and the city of Kyiv. A significant number of cases were also detected in Odesa, Kyiv, Khmelnytsky, Poltava, Ivano-Frankivsk, and Zakarpattia regions.

In total, at the end of 2024, 58,419 women diagnosed with cervical cancer were registered in Ukraine. The distribution by stage of the disease was as follows: Stage I – 31.5%, Stage II – 26.0%, Stage III – 25.3%, Stage IV – 10.7%.

These data emphasize the need to strengthen preventive measures, including screening and vaccination against human papillomavirus, which is the main etiological factor in the development of cervical cancer. On January 1, 2025, the Procedure for Screening and Early Diagnosis of Cervical Cancer and Monitoring the Health

Status of Patients at Risk came into force in Ukraine, which aims to reduce morbidity and mortality from this disease.

The World Health Organization identifies two key strategies for combating cancer: early diagnosis of symptomatic cases and population screening among apparently healthy individuals [2,3]. At the same time, the effectiveness of these measures is complicated by a number of medical and social factors, such as insufficient public awareness, economic barriers, lifestyle influences, and limited involvement of men in women's health. In this context, special attention should be paid to the importance of early detection of visual forms of cervical cancer, which are relatively easy to diagnose in the initial stages but often remain untreated due to low motivation for preventive examinations.

AIM

The purpose of the study was to provide a comprehensive medical and social justification for the feasibility and necessity of timely detection of pathology, taking into account existing risk factors, barriers to access to health care services, and the potential for public influence to increase participation in screening.

Objectives:

1) to substantiate the functional and organizational model of early detection and prevention of cervical cancer; 2) to identify modern innovations that form the basis of the functional and organizational model of early detection and prevention of cervical cancer; 3) to define the role of public health professionals.

MATERIALS AND METHODS

The following research methods were used in the study:

- sociological – to survey women on the issue of cervical cancer and determine the role of men in early detection and prevention of the disease (Appendix 1);
- systematic approach and analysis – used at all stages of the work to study and analyze aspects of the organization of early detection and prevention of cervical cancer;
- monitoring and evaluation of indicators of the model implementation process;
- expert assessments – to determine the feasibility of applying the proposed model in institutions that provide early detection and prevention of cervical cancer.

The focus is on the aspects of early detection and prevention of visual forms of cervical cancer. Women's health indicators – incidence, prevalence and mortality from cervical cancer – are studied.

Data from the State Statistics Service of Ukraine, the National Cancer Registry of Ukraine, the Center for

Medical Statistics of the Ministry of Health of Ukraine, and the Department of Health of the Poltava Region for 2010–2021.

Legislative acts and regulatory documents governing the organization of medical, physical, psychological, and social assistance to women with cervical cancer in Ukraine.

Results of a sociological survey – 140 questionnaires.

RESULTS

The World Health Organization has identified two distinct but interrelated strategies to promote early detection of cancer and early diagnosis, i.e., recognition of symptomatic cancer at an early stage; and screening, i.e., detection of asymptomatic disease among a target group of apparently healthy people [2].

The main components that determine the need for early detection of visual forms of cervical cancer are epidemiological; risk factors (behavioral risk factors, poor financial situation, risk factors); awareness of cervical cancer (women may have barriers to screening, men may have rejection of a woman who has lost her femininity, doctors may have no experience in diagnosis); lack of appropriate early diagnosis programs at the state level.

In the modern scientific environment, a logical model for early detection and prevention of cervical cancer has been developed, based on human papillomavirus vaccination and periodic medical examinations [4].

Nevertheless, despite the developed strategy for prevention and early detection, the epidemiological factor of the ratio of cervical cancer mortality to morbidity remains high.

The main risk factors for cervical cancer are: urban residence, poor financial situation, childlessness, smoking, history of abortion, use of oral contraceptives, lack of diet, eating red meat three or more times a week, while eating fish and fruit 1-2 times a week.

We found that women are often not sufficiently aware of the issue of cervical cancer, and also point to existing barriers to screening.

A small proportion of men were convinced that prevention and early detection is a woman's personal business.

Awareness of primary care physicians was studied by Majid E et al and Qazi OA et al [5, 6]. The participants were 144 (41.5%) nurses and 203 (58.5%) doctors. Overall, 239 (68.8%) were well aware that the Pap smear is a screening test; 85 (24.5%) were aware of the current recommendations for repeating the test; 152 (43.8%) had an understanding of the exact application of the acetic acid visual examination; 61 (17.6%) had had a Pap smear;

and 156 (45%) believed they were at risk for cervical cancer. The common risk factors identified were multiple sexual partners 254 (73.2%), age at first intercourse 160 (46%), smoking 131 (37.8%), smelly discharge 221 (63.7%), and postcoital bleeding 231 (66.6%) [6].

The study of the legal framework showed that there are no programs for early detection and prevention of cervical cancer, and as a result, there is a lack of appropriate financial support.

Today, prevention and early detection of cervical cancer in Ukraine is clearly justified by the requirements of the Medical Guarantees Program 2025. If a healthcare facility has a contract with the National Health Service of Ukraine for the package "Prevention, diagnosis, monitoring and treatment on an outpatient basis," women can receive appropriate care without a referral from their family doctor.

The patient's route for early detection and prevention of cervical cancer is as follows: a woman can visit a gynecologist for an examination without a family doctor's referral, or with a referral. If we consider early detection and prevention as a model with established stages of its implementation and actors, in our case, two pairs: a woman and a gynecologist, a woman and a first aid doctor, then this model appears as an autonomous system. Unfortunately, this model does not meet the needs of the actors in the course of value creation – prevention and early detection of cervical cancer, when – in the first case – a woman does not get sick, and in the second – detection at an early stage of the disease will restore the lost health.

If early detection and prevention of cervical cancer were a separate innovation, it would involve only medical professionals: a gynecologist, a first-aid doctor, on the one hand, as service providers, and a woman, as a consumer, on the other. But a woman is in a personal environment, which may consist of her own and her parents' family, her team at work, friends, relatives. In turn, a doctor is in the health care system, performing his or her medical functions. Thus, the system is failing, and it needs new elements – participants in the process of early detection and prevention of cervical cancer. Such a community of interconnected actors, for which the network of connections is the determining factor, will be an ecosystem [7].

Ecosystems are inherently interdependent. We cannot consider early detection and prevention of cervical cancer as an autonomous innovation, but only as an ecosystem. To make this transition from an autonomous innovation to an ecosystem, it is necessary to see the so-called management blind spots.

The health of the woman in this ecosystem is at the center and she is the consumer of the services provided

by the health care system. Do all women go to the doctor for a preventive examination? Our research has shown that they do not. Women who are aware of early detection and prevention are more likely to go for a preventive examination. In this case, they play a major role in the ecosystem they have created. In this case, a woman's concern about her health does not require additional efforts and time for educational work aimed at herself, and the medical examination will be successful in terms of timeliness and frequency. In this case, a woman acts from the position of accepting the rules of the ecosystem in which she is and chooses the position of being healthy, and only then the means and sequence of events that will contribute to her early solution of the problem – an appointment with a gynecologist.

Unfortunately, prevention and early detection are not enough for the ecosystem if only a part of strong-willed and motivated women solve their health problems. The uninformed are left out of the picture, as they will visit a doctor at a certain stage of the disease, or even with an inoperable form.

The role of the "arbiter" of values – a woman's health and safety – is played by her family, her husband as a partner with whom she shares responsibility and duties for the family, possibly minor children, when innovations depend on these partners and their processes need to be changed. Men should be involved in prevention, as they can provide a completely different level of support than a specialist. The formation of a future woman's health culture begins in childhood, when a great responsibility is placed on parents who visit doctors with their child on time and instill behavioral factors that would promote a healthy lifestyle.

The information world has changed. The circle of communication has expanded with the help of social networks, including those filled with advertising about women's health. Thus, in our proposed ecosystem, the following participants and elements are represented on the woman's side: husband, parents, social networks, schools.

The healthcare system is represented by a primary care physician and a gynecologist, with the National Health Service of Ukraine as an external financial partner and the registry, which operates through the latest E-health network, as an internal element. The material and technical base of the gynecological service is being improved annually, and the human potential of the service cannot keep up with its innovations.

In general, if we consider the health care system, which has undergone reforms since 1991, with the introduction of E-health, the strategy aimed at improving women's health care should have changed

accordingly. But, as the results of our research show, this did not happen, because the risk of joint innovation and the risk in the chain of change approval are hidden in the blind spot of the traditional strategy. The risk in the chain of change approval is a product of the struggle between innovation and the status quo.

Under the old model, the doctor used paper records that contained the results of laboratory tests and medical examinations of the woman. These data were entered into an outpatient card, which was either stored in the clinic or with the patient. When E-health was introduced, it was expected that the data entered into this system would be available to all healthcare facilities and all doctors. However, experience shows that this did not happen, as each healthcare facility chose and implemented its own provider, thus limiting doctors' access to women's health indicators.

At the same time, the introduction of the function of interaction between health care facilities through the E-health network would lead to new opportunities for interaction between a general practitioner and a gynecologist. If a woman uses a specialized E-health application, she can track her health indicators. In this case, she becomes an active participant in the ecosystem we offer.

In the early detection and prevention of cervical cancer, the participation of primary care physicians is undeniable, as they refer women for preventive cancer examinations.

The National Health Service of Ukraine is an undoubted external actor, which currently provides guaranteed packages for examinations when concluding contracts with health care facilities, while the logistics and its updating are the responsibility of local communities.

When all the elements of the ecosystem in which a woman is involved are involved, it is necessary to establish a chain of approval for changes with each element of the system so that early detection and prevention of cervical cancer can be effective. That is why we take a structured approach to implementing innovations in ecosystems.

As already mentioned, there are a number of intermediaries between the doctor and the patient: parents who once taught them to take care of their health, teachers who taught them to pay attention to changes in the body, a husband, a family where a woman has her responsibilities.

Functional elements include accessibility, awareness of the need for preventive examinations, and knowledge of the route to the doctor. Awareness is based on a woman's values about her own health as a consumer of the service. In our proposed ecosystem, each participant has its own value and benefit.

In order for a woman to seek early detection and prevention of cervical cancer, it is necessary that all elements of the ecosystem in the chain of change approval are focused on the woman's health values:

1. Family: proper upbringing, support of the husband.
2. Psychological: fear of examination, fears of a fatal diagnosis, uncertainty at the thought of going to the doctor, feeling of shame.
3. Economic: knowledge that the service is free.
4. Accessibility: availability of a gynecologist whom a woman would trust.
5. Awareness: orientation about the route to the doctor and about the health care facilities that provide services.

Then, the risk in the chain of approval of changes on the part of a woman regarding the prevention and early detection of cervical cancer is as follows: at the stage of childhood and adolescence, under the influence of upbringing by parents, teachers, and health care workers, a girl's worldview of a healthy lifestyle is formed, which continues to be formed in adulthood under the influence of her own family, husband, and environment (team, employer, friends). A risk or blind spot in this chain is when a woman has not received adequate knowledge or support, and then she does not visit a doctor. Involving women in tracking the Helthy app with a reminder function and entering data into the medical information system by a doctor will help women pay attention to the need to see a doctor, in addition to monitoring the results of clinical tests and instrumental research methods, would allow them to manage their health status independently, including both prevention and early detection.

The point of early detection and prevention of cervical cancer is a preventive examination of a woman who has visited a gynecologist. A preventive examination will be effective if all possible risks in the chain of approval of changes by the woman's health care system are taken into account. First of all, it is a high-quality staffing of doctors, both primary care and specialized medical care, and the possibility of training.

A general practitioner of family medicine and a gynecologist of any health care facility should be connected through a medical information system, where they could see the results of the examination, test data, and instrumental methods of examining a woman, which would allow them to draw up an individual portrait of the patient and make decisions about her further treatment. Since the doctor is engaged in personal prevention, early detection and treatment of women, the state of women's health at the community level remains out of his or her attention. We propose to solve this problem with the help of public health specialists, who should

have information on community health indicators. The medical information system should be built in such a way that a separate module for a public health specialist is opened, where information about patients would be depersonalized. Then, through the medical information system, he or she would be able to communicate with doctors, both general practitioners and gynecologists, which would allow for health information education of the entire community. Conducting a sample survey of the population by the Public Health Centers on risk factors and access to medical care would provide an opportunity to get feedback. All these predictable and unpredictable issues would be discussed at joint conferences of doctors and public health professionals, where oncologists would be invited to gain a deeper understanding of the situation. Such an event would allow identifying blind spots in the chain of change approval and actively managing them.

The inclusion of external partners in our proposed ecosystem – the National Health Service of Ukraine and local governments – will allow us to provide preventive examinations with a logistical component. To do this, the National Health Service of Ukraine should conclude an agreement with health care institutions, and local governments should inform them about the need to purchase or improve modern medical equipment, such as an ultrasound diagnostic device, colposcope, which should be available to any gynecologist. Every gynecological office should have such a set of material and technical resources. The results of the examination are entered into the E-health database available to other doctors, which in turn helps the GP to monitor the woman's health. In this case, when all the chains in the chain of early detection and prevention are coordinated, an effective preventive examination will take place.

So much depends on the chain of approval for change. And to understand this interdependence, it is necessary to identify stakeholders in women's health, because in today's interdependent world, a successful innovator must treat each partner as a consumer.

Each partner or intermediary mentioned above, who is part of the ecosystem, should see their own benefit from a woman's timely and regular medical check-up.

Family members of a girl – parents, and women – husband, children have the most to gain from a woman's health. Parents do not spend extra time, money, or effort on treatment, and manage their child's health with lesser expenses, such as preventive examinations. For her husband and children, a healthy woman is a person who fulfills her marital and household responsibilities to the fullest.

There is a benefit for the territorial community, which is seen as a set of people who ensure the economic

stability of the region and the country as a whole. Due to the high incidence of cervical cancer among women, women's reproductive health is deteriorating, which affects the birth rate and deepens the demographic crisis. This situation is not conducive to economic development and destabilizes the labor market (shortage of personnel).

Timely and regular preventive examinations reduce the workload of a general practitioner in terms of medical work, improve the quality of the doctor's work, as timely examinations reduce the number of women with advanced cancer and increase the number of women satisfied with the quality of medical care.

Women's activity in taking care of their health, their desire to have information about their own health status will affect the work of the electronic healthcare system, which will allow the developers of the medical information system to successfully pass tenders in procurement, trying to improve their system, and will have advantages in competition.

A healthy woman in the workplace is the key to a well-coordinated workflow at any production facility and to creating a healthy psychological atmosphere in the team

Risk can be proactively managed if it is recognized in advance. From the perspective of the ecosystem, the biggest beneficiary is a woman – a patient who, when seeking help, receives the greatest value – her own health. The blind spot in this chain is the patient's own visit to the doctor, which will need to be taken into account when creating a functional and organizational model for the early detection and prevention of visual forms of cancer. A gynecologist is the most motivated subject in the process of success – the implementation of a preventive examination, as this is the quintessence, the essence of his or her professional purpose. The gynecologist's interests are represented by the director of the healthcare facility, who is directly interested in the availability of patients.

However, in practice, the most interested parties do not notice the intentions and motivation of intermediaries with whom they are not directly connected. Untrained healthcare professionals are more likely to make a false diagnosis of cancer. Thus, the importance of both systemic and patient-related delays should not be underestimated [8]. Lack of quality communication between participants in a woman's reproductive health reduces to zero the efforts of doctors aimed at early detection and prevention.

In order to address these gaps, it is necessary to coordinate changes with all participants in the process through communication in the form of meetings where a public health specialist would act as a coordinator.

When women go to the doctor for a checkup, the chain of approval of changes is transformed accordingly. The following elements of the process of providing a woman with a preventive examination appear: logistical support for the process – the actual preventive examination, the doctor's level of knowledge – category, sanitary conditions, a registrar who guides and explains her actions to the patient.

The functional and organizational aspect of women's health care management is included in the list of problems that require immediate and systemic solutions, especially during hostilities, when changes in the population occur due to high mortality rates and mechanical movement – emigration, which can lead to a demographic crisis. We took visual forms of cancer in women – cervical cancer, as a unit of detection and prevention, bearing in mind that during one visit to the gynecologist she will be fully examined: palpation of the mammary glands, screening from the cervical canal – cytological smear according to Papanicolaou (Pap test). Strict hierarchy and accountability will allow us to coordinate and implement the model in such a way that the goal – covering as many women as possible with preventive examinations – would be achieved. At the top of our pyramid is the Cabinet of Ministers of Ukraine, which, due to the recognition of the priority of maternal and child health care – coordinates the work between the ministries – health care and social policy. In the first case, the Cabinet of Ministers of Ukraine approves the National Program for Early Detection and Prevention of Cervical Cancer, which would include vaccination against human papillomavirus. This program would become a guide for our model. The Ministry of Education and Science assigns responsibility for creating a regulatory framework for including the prevention and early detection of cervical cancer in the training program for doctors to higher medical institutions. The National Health Service of Ukraine provides opportunities for creating communications between users of the medical information system, which would include all participants in the process: a general practitioner of family medicine, a gynecologist, a public health specialist, and the woman herself.

At the top of our pyramid is the Cabinet of Ministers of Ukraine, which, recognizing the priority of maternal and child health, coordinates the work between the ministries of health and social policy. In the first case, the Cabinet of Ministers of Ukraine approves the National Program for Early Detection and Prevention of Cervical Cancer, which would include vaccination against human papillomavirus. This program would become a guideline for our model. The Ministry of Education and Science is responsible for creating a regulatory

framework to include cervical cancer prevention and early detection in the curriculum of medical schools. The National Health Service of Ukraine provides opportunities to create communications between users of the medical information system, which would include all participants in the process: a general practitioner, a gynecologist, a public health specialist, and the woman herself.

The legal justification for recommending that employers not allow women who have not undergone a preventive examination to work is a peremptory, economic approach that would force women to go for a preventive examination. In contrast to this governmental approach, under the Ministry of Health program, a public health center would motivate women by promoting the need for preventive screening through health education for both women and men and at all age levels, working with educators. The next stage is a visit to a doctor, who informs the woman about the need for a preventive examination and refers her to a gynecologist. The specialized level – a visit to a gynecologist – is where early detection and secondary prevention actually take place. Specific prevention in the form of vaccination against human papillomavirus is the responsibility of an infectious disease specialist at a children's clinic, where parents and their child are referred by a pediatrician. While early detection is the prerogative of the gynecologist and specific prevention is the responsibility of the infectious disease specialist, the public health center should be responsible for general primary prevention as part of the Ministry of Health program. They are responsible for both sanitary and educational work and the coverage of women's health indicators by the medical information system.

Thus, the first stage of information collection will allow the public health specialist to monitor and evaluate women's health indicators at the population level, identifying the determinants that indirectly affect the occurrence of cervical cancer.

The proposed model was implemented sequentially, according to a preliminary plan. To this end, we have built a logical model for the implementation of a functional and organizational model for the early detection and prevention of visual forms of cervical cancer malignancies (Fig. 1).

Thus, our model allows a woman to get a preventive examination in two ways: mandatory – through not being allowed to work and voluntary, when a woman becomes the subject of her own health and can track it through the application of a medical information system, and her husband and relatives can support her on the way to the doctor.

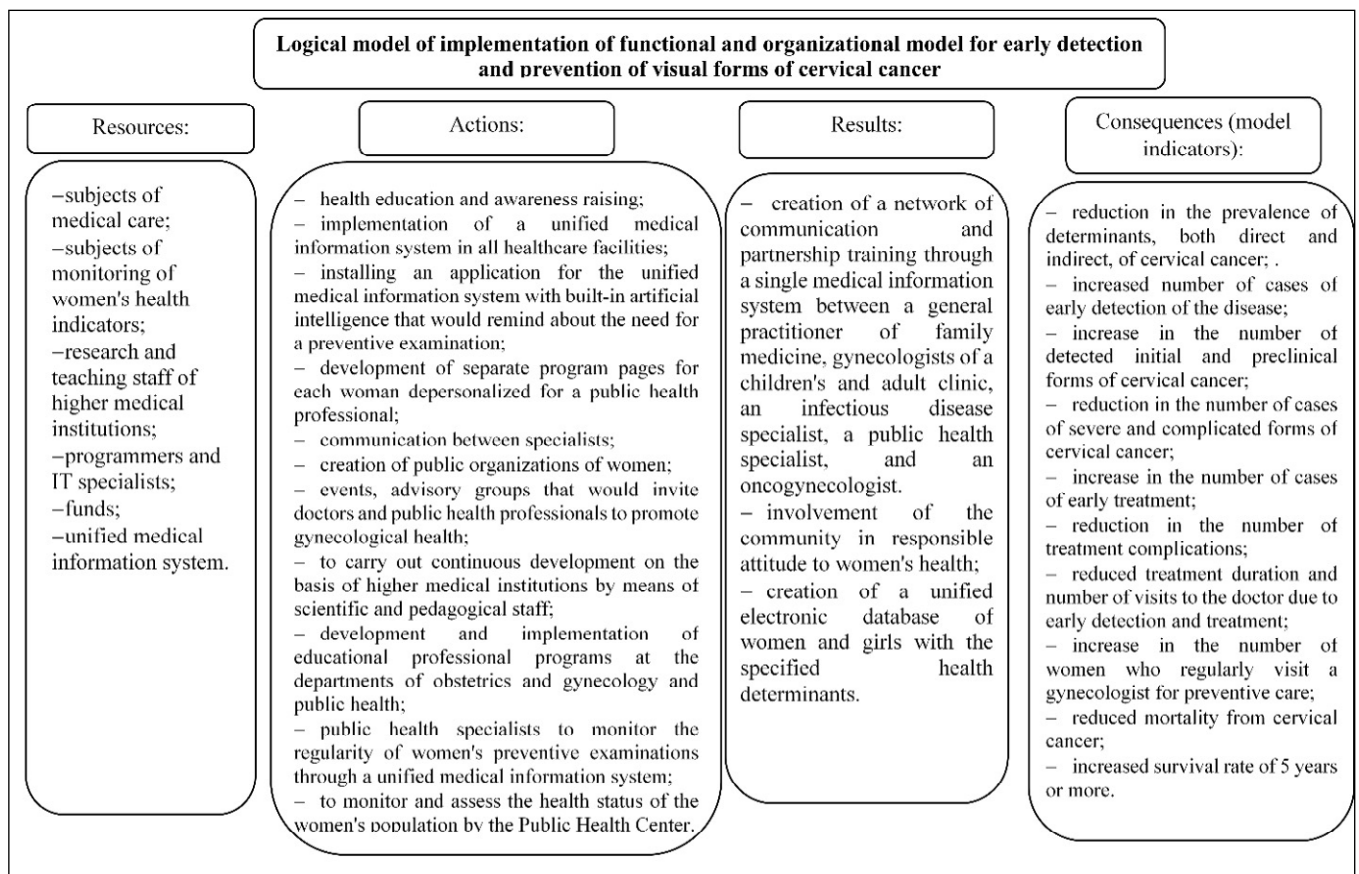


Fig. 1. Logical model of implementation of functional and organizational model for early detection and prevention of visual forms of cervical cancer

Source: compiled by the authors of this study

DISCUSSION

Cervical cancer (CC) remains a pressing public health problem, especially in low- and middle-income countries, including Ukraine. Despite the fact that the disease is among the visually identifiable oncopathologies, it is often diagnosed at late stages, which significantly worsens the prognosis and increases mortality. Visual forms of SCC – those that can be detected by simple cervical examination with acetic acid and Lugol's solution – have a high potential for early detection and prevention.

In terms of medical and social feasibility, early declaration (early diagnosis and public awareness) of visual forms of RSM is closely related to the level of health literacy of women, the availability of screening programs, and the cultural and social characteristics of the region. Studies show that programs focusing on visual inspection with acetic acid (VIA) are an effective and cost-effective alternative to cytology screening in resource-limited settings [9].

Health and social aspects of prevention also include vaccination against human papillomavirus (HPV), which is a major etiologic factor of RSM. According to a meta-analysis by Drolet et al. (2019), the introduction

of HPV vaccination in national programs demonstrates a reduction in the incidence of HPV-associated precancerous lesions and visually prominent forms of RSM within 5-10 years of program initiation [10].

Thus, early declaration and prevention of visually visible forms of RSM should be based on a multidisciplinary approach that includes education, vaccination, accessible screening, and social support. Timely implementation of these interventions in the Ukrainian health care system will contribute to reducing the disease burden and improving women's health indicators.

CONCLUSIONS

The functional and organizational model of early detection and prevention of visual forms of cervical cancer is based on modern innovations: a medical information system, involvement of the public health system.

The role of a public health specialist is defined, who, thanks to a unified medical information system for all health care facilities, will be able to monitor and evaluate women's health indicators through the

analysis of women's surveys, health indicators that will be detected during preventive examinations.

In our proposed functional and organizational model of early detection and prevention of cervical cancer, a

woman is considered as an element of the ecosystem, so that it becomes possible to involve close and supportive family members of women in preventive examinations.

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CONFLICT OF INTEREST

The Authors declare no conflict of interest

CORRESPONDING AUTHOR

Tetiana P. Mats

Poltava State Medical University
24 Shevchenko st., 36000 Poltava, Ukraine,
e-mail: tetiana.mats.p@gmail.com

ORCID AND CONTRIBUTIONSHIP

Iryna A. Holovanova: 0000-0002-8114-8319 A F

Orest Ya. Vovk: 0000-0003-4364-5493 E

Tetiana P. Mats: 0000-0001-6793-0892 B C D

Valentina L. Filatova: 0000-0001-5247-1144 E

Olena V. Filatova: 0000-0001-6264-570X B C D

Alla M. Podvin: 0009-0008-5946-7621 B C D

Maksim V. Khorosh: 0000-0002-2083-1333 B C D

A – Work concept and design, B – Data collection and analysis, C – Responsibility for statistical analysis, D – Writing the article, E – Critical review, F – Final approval of the article

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APPENDIX 1

QUESTIONNAIRE ON AWARENESS OF CERVICAL CANCER

This questionnaire is intended for academic research and is designed to identify barriers that affect cervical cancer screening among women in Poltava. Your answers will be kept confidential, and all information will be presented as aggregate data. Therefore, you are not required to write your name. There are no wrong or right answers. This is just to find out your opinion on this issue. Please check the appropriate boxes or write your opinion in the open-ended questions. We would appreciate it if you could answer all the questions as best you can. Thank you.

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. Please indicate your age _____ years old.
2. Occupation _____.
3. Education

☐ Secondary	☐ Higher
☐ Secondary specialized	☐ Academic degree
4. Religious beliefs

☐ Christian	☐ Buddhist
☐ Muslim	☐ Other _____
5. Marital status

☐ Married	☐ Widowed
☐ Single	☐ Informal marriage
☐ Divorced	
6. Number of children born _____
7. Family history of cervical cancer

☐ Yes	☐ No
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8. Are you a healthcare professional?

☐ Yes	☐ No
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SECTION B: AWARENESS OF CERVICAL CANCER

9. Have you heard anything about cervical cancer?

☐ Yes	☐ No
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10. Who first told you about cervical cancer?

☐ Never heard of it until today	☐ From school staff
☐ From a family member	☐ From radio, television, magazine
☐ From a friend	☐ I don't remember
☐ From a doctor/nurse	☐ Other sources _____

APPENDIX 1 cont.

11. Is cervical cancer a sexually transmitted disease?

- ☐ Yes ☐ No ☐ Difficult to answer

12. Can cervical cancer be prevented?

- ☐ Yes ☐ No ☐ Difficult to answer

13. Cervical cancer can be prevented by vaccinating young girls.

- ☐ Yes ☐ No ☐ Difficult to answer

14. Is cervical cancer curable in hospitals if diagnosed early?

- ☐ Yes ☐ No ☐ Difficult to answer

15. Please indicate the risk factors for cervical cancer.

- ☐ Early onset of sexual activity ☐ Cigarette/tobacco smoking
☐ Sexually transmitted infection (HPV) ☐ Large number of sexual partners, promiscuous sexual behavior.
☐ Multiple male sexual partners ☐ Use of contraceptives

16. Please indicate the symptoms of cervical cancer.

- ☐ Intermenstrual vaginal bleeding ☐ Excessive vaginal discharge, often with an unpleasant odor
☐ Vaginal bleeding during menopause ☐ Pain in the lower abdomen
☐ Vaginal bleeding ☐ Pain in the genitals during sexual intercourse
☐ Vaginal bleeding after sexual intercourse

17. Have you heard of cervical cancer screening (examination and smear test)?

- ☐ Yes ☐ No

18. Have you ever been screened for cervical cancer (examination and smear test)?

- ☐ Yes ☐ No

19. If yes, when was your last screening?

20. How often do you go for screening?

- ☐ Once a year ☐ Every 2-5 years
☐ Less than every 5 years ☐ Difficult to answer

21. Are you interested in participating in cervical cancer screening?

- ☐ Yes ☐ No

APPENDIX 1 cont.

SECTION C: PERCEPTIONS ABOUT THE RISK OF CERVICAL CANCER

Which of the following issues would prevent you from participating in cervical cancer screening?

22. Does the thought of cervical cancer scare you?

- ☐ Yes ☐ No ☐ Difficult to answer

23. Do you think you are at risk for cervical cancer?

- ☐ Yes ☐ No ☐ Difficult to answer

24. Are you afraid of a bad diagnosis?

- ☐ Yes ☐ No ☐ Difficult to answer

SECTION D: WHAT ARE THE BENEFITS OF CERVICAL CANCER SCREENING?

25. Do you think cervical cancer screening is important?

- ☐ Yes ☐ No ☐ Difficult to answer

26. Do you believe that cervical cancer can be cured?

- ☐ Yes ☐ No ☐ Difficult to answer

SECTION E: BARRIERS TO CERVICAL CANCER SCREENING

Psychosocial barriers to cervical screening.

Which of the following questions would prevent you from participating in cervical cancer screening?

27. Do you consider cervical screening to be painful?

- ☐ Yes ☐ No ☐ Difficult to answer

28. Do you consider cervical screening to be inconvenient?

- ☐ Yes ☐ No ☐ Difficult to answer

29. Do you believe that cervical cancer is a curse from the gods?

- ☐ Yes ☐ No ☐ Difficult to answer

30. Does your religion have anything against cervical screening?

- ☐ Yes ☐ No ☐ Difficult to answer

31. Is cervical screening prohibited in your culture?

- ☐ Yes ☐ No ☐ Difficult to answer

Socio-economic barriers to screening.

Which of the following questions would prevent you from participating in cervical cancer screening?

32. Do you know that cervical cancer screening (examination and smear test) is free and does not require a referral?

- ☐ Yes ☐ No ☐ Difficult to answer

33. Is it easy to get to the medical facility where the examination will take place?

- ☐ Yes ☐ No ☐ Difficult to answer

34. Do you have time for cervical screening?

APPENDIX 1 cont.

☐ Yes ☐ No ☐ Difficult to answer

Barriers from the healthcare system.

Which of the following questions would prevent you from participating in cervical cancer screening?

35. Do you know of any health care facilities that offer cervical cancer screening services?

☐ Yes ☐ No ☐ Difficult to answer

36. Are you comfortable with male health care personnel providing screening services?

☐ Yes ☐ No ☐ Difficult to answer

37. Is there a long wait at the medical facility (queue to see a doctor)?

☐ Yes ☐ No ☐ Difficult to answer

38. Is it difficult to communicate with medical staff?

☐ Yes ☐ No ☐ Difficult to answer

SECTION F: RECOMMENDATIONS FOR ACTION

39. Do you think that the availability of screening from early in the morning (e.g., 7:00 a.m.) and late in the evening (e.g., 8:00 p.m.) for working patients would increase their adherence to screening?

☐ Yes ☐ No ☐ Difficult to answer

40. Do you think that improving patients' awareness of how cervical screening is performed would increase their willingness to undergo screening?

☐ Yes ☐ No ☐ Difficult to answer

41. Would the use of female medical staff to provide screening services encourage you to undergo screening?

☐ Yes ☐ No ☐ Difficult to answer

Thank you for your answers.