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## REVIEW

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# Implementation of the Program for Early Detection of Cervical Cancer in the Federal Republic of Germany

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## ABSTRACT

**Introduction:** There are many cervical cancer screening programs in the world. Germany, as well as a number of other countries in the world, carry out its national cervical cancer screening program. **Aim:** In order to improve screening results, new guidelines for cervical cancer screening are in force in Germany. **Methods:** Authors used descriptive-analytical method to describe advantages and disadvantages of new adopted Guidelines for screening program according to experiences of used previous program in Germany. **Discussion:** These guidelines have been adopted and approved by the competent Federal Committee for the implementation of cervical cancer screening in Germany. The committee is under the independent management of doctors and health insurance companies. The Committee is also under the legal control of the German Federal Ministry of Health. **Conclusion:** New Guidelines for Cervical Cancer Screening in Germany has an unchanged part relating to cervical cytodiagnosics. In addition, HPV typization has been integrated in the new screening guidelines to further improve the quality of cervical cancer screening in Germany.

**Keywords:** Cervical cancer screening, German guidelines, HPV typing.

## 1. INTRODUCTION

Germany, as well as a number of other countries in the world, carry out its national cervical cancer screening program (1-5). Based on current medical and scientific advances, efforts are being made to further improve the results of cervical cancer screening in Germany. A new national cervical cancer screening program in Germany has been approved in 2018 by the responsible federal committee to implement

a screening program. The board is under the management of doctors and health insurance companies. The committee is also under the legal control of the German Federal Ministry of Health. The new guidelines have the unchanged part regarding the cytodiagnosis of the cervix. The cytodiagnostic guidelines also integrate HPV typization. The goal of new cervical cancer screening in Germany is to further improve the quality and improve the results in the diagnosis and treatment of cervical cancer. New cervical cancer screening program in Germany, effective from 1.1.2020. includes a group of women age 35-65 (6, 7). With this group of women, it is planned to take cervical sampling every year for cytodiagnosics.

In the Netherlands and Australia, HPV screening is performed exclusively for cervical cancer screening. The new screening program in Germany integrates the collaboration of gynecologists and cytologists. In the new cervical cancer screening program in Germany, cytological sampling of the cervix is applied, as it has been so far. This approach has already contributed to the decline in the incidence of invasive cervical cancer. It has been statistically proven that by carrying out the aforementioned cytological screening of cervical cancer since 1971 reduced the incidence of cervical cancer by 75%. The incidence was also reduced by almost 90% in the group of women who underwent regular gynecological monitoring (1-5).

New guidelines for the implementation of cervical cancer screening approved in 2018 came into force on 1.1.2020. In addition to cytodiagnosics, which has remained unchanged, HPV typization has been introduced, and there are very high and positive expectations from the implementation of the new cervical cancer

CONTROL AFTER (MONTHS)	GROUPS	II-p, IIg, IIID1 20-29 year	II-p, IIg, IIID1 30-34 year	II-p, IIg, II 30-34 year	IV,V
3 month			6-12 month HPV		Unconditional (immediately) COLOSCOPY SOLUTION
6 month				In 3 month COLOSCOPY SOLUTION	
12 month	screening	6-12 months Cytological control	HPV neg. HPV poz.		
24 month	screening	24 monts control In 3 monts COLOSCOPY SOLUTION	In 3 monts COLOSCOPY SOLUTION screening		

Table 1. Solution algorithm - cervical cancer prevention women under 35 years (annual cytology)

screening program (1-5).

## 2. NEW CHOICE STRATEGIES IN GERMANY

New guidelines for cervical cancer screening include a group of women up to 35 years of age. In the first line, they are recommended to take cytological smear of the cervix and cervical canal every year. News in the cervical cancer screening program in Germany refer to a group of women between 35-65 years who are included with HPV typization in addition to cytodiagnosics. This combining review is referred to as the Co-test. After this age, the screening interval is extended to three years, while the upper limit does not exist. These guidelines have a normative character for all health insured women. The implementation of the new cervical cancer screening program in Germany is planned for a period of 6 years (2020-2025). During the mentioned period, the Institute for Quality and Transparency in Healthcare will continuously monitor and analyze the implementation of screening. Based on the results mentioned, further activities and improvements will be undertaken (5).

In order to implement the new cervical cancer screening program in Germany, harmonization and negotiation of the strategy was conducted with competent federal health insurers. Collaboration with insurance companies is very important for the organizational and financial viability of the cervical cancer screening program in Germany. Special attention will be paid to the group of women aged 24 to 34 years of age, and special attention to the group of women over 35. In doing so, the specifics that have been in the old screening programs will be taken into account, with the strict implementation of the new guidelines for cervical cancer screening. Taking into account all the above, the point and price components of the program costs are determined. From 1.1.2020. a letter inviting women to be included in the new cervical cancer screening program in Germany is entitled "Early detection of cervical cancer". It is also a health insurance offer to encourage women between the ages of 20 and 34 (Table 1) and those over 35 years (Table 2). The brochure will be sent to women every 5 years until 65 years of age. The text can be found in the brochure itself under paragraph G-BA (1st Annex VI, p.18) (5).

## 3. METHODOLOGY

Conventional cytology has proven its place throughout history through numerous programs. There are numerous results that indicate the value of cytodiagnosics in the early detection of cervical cancer. Regardless of the great benefit that cytodiagnosics has in detecting cervical cancer, efforts are being made to improve and upgrade it. For this reason, research is being carried out to completely or segmentally replace conventional cytology. In doing so, the role of thin-layer cytology, which is just as conventional as cytology, is explored. The advantage of thin-layer cytology would only be that in the Ko-test, the cytological preparation and the HPV test can be made from a single drop. The disadvantage would be that it is twice as expensive as conventional cytology. Whether decisions are made according to economic criteria, then conventional cytology (Wanz criteria) is preferred (1-5).

There are over a hundred types of HPV tests available worldwide. All available HPV tests do not meet the criteria for quality of sensitivity (over 90%) and specificity of cytological findings (over 98%) for the detection of intermediate grade dysplasia (CIN 2). This refers to international recommendations and criteria, which have also been recommended by the German Society for Virology. FDA-approved HPV tests do not differ in substance-based screening. Most cytology laboratories have already made the decision on the type of HOPV tests they use and will use in the future. It is very important that the tests that will be applied satisfy the prerequisites mentioned above. In order to be licensed, cytologists in Germany, had to undergo additional training in the fields of gynecological exfoliation cytology, HPV diagnostics and immunocytology to perform HPV testing. The mentioned solution was proposed by the German Association of Gynecologists and Pathologists (5, 6).

In doing so, we emphasize the following: the competent medical panel has determined whether the above-mentioned recommendations can be implemented in the clinical practice of individual states in Germany. If this is the case, then this is determined by the competent medical insurance association (CV). The screening process can be carried out by current program holders. This is sufficient for the transitional phase of program implementation to be

Control After (months)	HPV GROUP	I, II-p, II-g negativ	I pozitiv	IIID-1 negativ	II-p, II-g, IIID1 pozitiv	III-p, III-g IIID2 neg./poz.	IV, V
3 month					In 3 month	In 3 month	Unconditional (immediately)
6 month					COLOSOPY SOLUTION	COLOSOPY SOLUTION	COLOSOPY SOLUTION
12 month			Ko -	Test			
18 month			group 1 and HPV neg.	≥ II-p or HPV poz.			
-----					In 3 month COLOSOPY SOLUTION		
36 month		screening					

Table 2. Women Over 35 (3 Year Ko-Test)

examined by a designated commission that is licensed and licensed to carry out program implementation.

The German Federal Association of Gynecologists is on track to find the best solutions. The decisive factors for program implementation will certainly be based on exact financial indicators. It is significant that each of the gynecologists who will carry out the program of early detection of cervical cancer must make 100 colposcopies, because it has been determined that this is a number that guarantees the quality of the program. Of these, it is recommended that 50 patients a year have abnormal colposcopic findings (acetylation, leukoplakia, erosion, atypical vascularization, etc.) and their control findings. There must be 30 histologically confirmed low grade dysplasias (> CIN 1). For the quality of colposcopy to be successfully maintained, gynecologists must be licensed to perform colposcopy from competent structures (DGGG–German Society for Gynecology and Obstetrics, DKG, AG–CPC). The prerequisite for better clinical work was mentioned. The conclusions are based on the statistics of cytological screening of cervical cancer in Germany for 2015. They are also based on the processing of unexplained colposcopic findings, as well as the application of MN11 in clinically manifest findings. The subject of research related to the new cervical cancer screening program in Germany is the identification of unexplained colposcopic cases depending on the prevalence of HPV in Germany. This refers especially to the group of women over 35 years of age (5, 6).

**4. FURTHER ORGANIZATIONAL NEEDS**

A number of dilemmas and questions had to be resolved in order to have a quality implementation of the new cervical cancer screening program in Germany. It was necessary to transform the existing Form No. 39. So far, the data in Form 39 have been entered manually. Digital data entry is planned, which is desirable and should bring many benefits. The German Gynecological Society is also involved in the implementation of the screening program. Mentioned is warranty (guaranty) of improving the quality of the program and better processing and evaluation of data obtained from gynecologists, cytologists, pathologists and colposcopists have been mentioned. The information mentioned should be made publicly available. In doing so, it is important to use standardized procedures and equipment. Samples should be sampled, transported, processed

and interpreted in a standardized manner. This is guaranty that the new cervical cancer screening program in Germany will be transparently and satisfactorily remunerated. This is based on the determinants in the EBM system, with emphasis on new interpretations related to colposcopy (5, 6).

**5. DISCUSSION**

The German Society for Gynecology and Obstetrics (DGGG) as well as the Working Group on Cervical Cancer Screening, Pathology and Colposcopy in close cooperation with the Federal Association of German Pathologists until 1.1.2019. conducted a series of activities to implement the new screening. Numerous activities have been carried out in order for the new cervical cancer screening program in Germany to be implemented in the best possible way. In the future, the dilemmas of insisting on early colposcopies for borderline findings will need to be addressed. This refers to G-BA requirements in a group of patients with verified positive low-risk HPV infection of group II-p-g and III-D1. Although the aforementioned requires a timely colposcopic explanation, taking into account the international literature references regarding the odds of spontaneous remission and the expected low risk, it is evident that colposcopy is not justified in the mentioned patients. The aforementioned unnecessary insistence on early colposcopy leads to problems in the procedure of borderline cases, which can cause poor quality treatment of patients (5, 6).

It is anticipated that in the first six years of the implementation of the new Cervical Cancer Screening Program in Germany (IQTIG), stability in the implementation of the program is expected. The program is structured to allow quick adjustments and changes in the event of a need for change and improvement. There is no need to go back to the old methods and insights, as the new program is the best guarantee to further reduction of the incidence of cervical cancer, which is the interest of everyone (5, 6).

In order to ensure the necessary quality in the implementation of the new cervical cancer screening program in Germany, it is that the authorized laboratories conducting the HPV analysis must have between 10,000 and 20,000 HPV tests processed annually. The HPV test itself does not make a definitive diagnosis, but provides assistance for further orientation and selection of patients with risky findings. The finding is of great help for the detection of CIN II and also low grade dysplasia. HPV typization results must

be applied in clinical practice together with colposcopic treatment. This is regulated by the G-BA algorithm. The algorithm is explained in detail in a booklet for healthcare professionals and patients. The algorithm itself dictates that women under 30 years of age follow the results of cytological diagnostics. A transient solution was established in patients between 30 and 35 years of age: an HPV test was integrated into the algorithm to objectify the diagnostic procedure (5, 6).

Details of the implementation of the new cervical cancer screening program in Germany are also based on an analysis of the incidence of HPV-positive findings in Germany's Optima study, which included 10,000 women over 30 years of age. In the mentioned group of women, a positive HPV test was found in 7% of cases, and among the mentioned patients, only one part of them was referred for colposcopy for clarification of the findings. In principle, the G-BA Co-test is designated as a combination examination. On this basis, recommendations were made for its operational application in clinical practice. In order to guarantee the quality of the procedure as well as the safety aspects, and the recommendations of the Association of German Pathologists, they must be applied to all screening participants. In doing so, gynecologists send cytologists both samples in a mail (sample for cytodiagnosics and test tube for HPV detection). A licensed cytology laboratory processes both samples and ultimately diagnoses them. In addition, the laboratory makes a binding recommendation that is structured based on the latest guidelines. If the laboratory does not have the capability to perform the HPV test, then it is sent to another laboratory, which quickly provides the findings – mentioned is the guarantee of making a very accurate diagnosis and making precise recommendations for further treatment (5, 6).

## 6. CONCLUSION

It is doubtless that colposcopy also has a significant place in the new screening program. It has very few links with orienting colposcopy (EBM, codes 08211 and 01822). The latest guidelines for early detection of cervical cancer have not confirmed the role of colposcopy as a primary method, despite numerous efforts. This has not been described in the EBM system, nor it is justified in terms of cost and the procedure itself. The BVF and the Working Group on the Implementation of the New Cervical Cancer Screening Program in Germany are making efforts to ensure the sustainability and financial viability of the program. The joint work of KBV and the insurance companies plays an important role in this, in order to provide the necessary infrastructure for the implementation of the program and to provide funding for it. These are the prerequisites for the motivation of gynecologists who have obtained certification in colposcopy, how to implement the program in their subspecialty offices for cervical pathology, and the same program to establish the program in clinical practice. In Germany, there are over 160 certified subspecialists in

cervical dysplasia and colposcopy. The mentioned offices have a regulation on 100 performed colposcopies a year. In doing so, the prescribed colposcopic findings must be issued and at least 30 cervical biopsies should be performed for high-risk cervical dysplasia.

In addition, additional quality indicators are being sought that would result in the implementation of new guidelines in clinical practice. The operationalization of the new cervical cancer screening program in Germany has been agreed by several companies (G-BA, DGGG and DKG). At the same time, it was concluded that the development of the program itself will be intensively monitored from 2020 to 2022, so that it can be reacted in a timely manner. From the point of view of BVG, the number of 100 colposcopies per year could be reduced (at least in the transitional years) so that the appropriate program infrastructure could be developed more easily. All of the above is a guarantee of a good program implementation and an additional reduction in the incidence of cervical cancer. OKFE-RL cervical cancer screening has been in official use in Germany since 1.1.2020.

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