Evaluation of Quality Indices after Measures Promoted by External Monitoring of the Quality of Cervical Cytopathology Exams Performed by SUS in Espírito Santo

Avaliação de Índices de Qualidade após Medidas Promovidas pelo Monitoramento Externo da Qualidade dos Exames Citopatológicos Cervicais Realizados pelo SUS no Espírito Santo

Evaluación de los Índices de Calidad después de las Medidas Promovidas por el Monitoreo Externo de la Calidad de los Exámenes Citopatológicos Cervicales Realizados por el SUS en Espírito Santo

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ABSTRACT

Introduction: In recent decades, despite efforts by the Ministry of Health to expand access to screening programs and monitor the quality of cytopathological exams, morbidity and mortality rates from cervical cancer in Brazil have remained high. The persistence of these rates suggests flaws in the programs, probably due to low population coverage, failures in monitoring, and errors in the process of collecting and interpreting tests. To improve the prevention and screening of cervical cancer in Espírito Santo, the External Quality Monitoring Unit (UMEQ/Lacen-ES) implemented, in 2023, actions in partnership with laboratories that provide services to the SUS. **Objective:** To evaluate the impact of these actions on the quality of cytopathological exams. **Method:** The study compared quality indicators of exams obtained through SISCAN from 2023 to the previous five years, as well as evaluating the indicators of each provider between the years 2022 and 2023. **Results:** Significant improvements were observed, such as increased diagnoses of precursor lesions and a more adequate proportion of diagnoses, reflecting greater effectiveness in preventing cervical cancer in the state. Furthermore, there was an improvement in the quality standards of laboratories throughout the period. **Conclusion:** The actions implemented by UMEQ/Lacen-ES will contribute to improving the tracking and prevention of the disease, although it is necessary to continue investing in new technologies and the application of protocols to ensure agility and safety in the treatment of patients.
Key words: Uterine Cervical Neoplasms/prevention & control; Cervix Uteri/cytology; Quality Assurance, Health Care; Preventive Health Services.

RESUMO

Introdução: Nas últimas décadas, apesar dos esforços do Ministério da Saúde para ampliar o acesso a programas de rastreio e monitoramento da qualidade dos exames citopatológicos, as taxas de morbimortalidade do câncer cervical no Brasil permaneceram altas. A persistência desses índices sugere falhas nos programas, provavelmente em virtude da baixa cobertura populacional, falhas no acompanhamento e erros no processo de coleta e interpretação dos exames. Para melhorar a prevenção e o rastreio do câncer cervical no Espírito Santo, a Unidade de Monitoramento Externo da Qualidade (UMEQ/Lacen-ES) implementou, em 2023, ações em parceria com os laboratórios que prestam serviço ao SUS. **Objetivo:** Avaliar o impacto dessas ações na qualidade dos exames citopatológicos. Método: O estudo comparou indicadores de qualidade dos exames obtidos por meio do SISCAN de 2023 aos cinco anos anteriores, assim como avaliou os indicadores de cada prestador entre o ano de 2022 e 2023. **Resultados:** Foram observadas melhorias significativas, como o aumento de diagnósticos de lesões precursoras e uma proporção de diagnósticos mais adequada, refletindo uma maior efetividade na prevenção do câncer cervical no Estado. Além disso, houve aprimoramento dos padrões de qualidade dos laboratórios ao longo do período. **Conclusão:** As ações implementadas pela UMEQ/Lacen-ES irão contribuir para a melhoria do rastreamento e prevenção da doença, embora seja necessário continuar investindo em novas tecnologias e na aplicação de protocolos para garantir agilidade e segurança no tratamento das pacientes.
Palavras-chave: Neoplasias do Colo do Útero/prevenção & controle; Colo do Útero/citologia; Garantia da Qualidade dos Cuidados de Saúde; Serviços Preventivos de Saúde.

RESUMEN

Introducción: En las últimas décadas, a pesar de los esfuerzos del Ministerio de Salud para ampliar el acceso a los programas de detección y monitoreo de la calidad de los exámenes citopatológicos, las tasas de morbilidad y mortalidad por cáncer de cuello uterino en el Brasil se han mantenido altas. La persistencia de estas tasas sugiere fallas en los programas, probablemente debido a una baja cobertura poblacional, fallas en el monitoreo y errores en el proceso de recolección e interpretación de las pruebas. Para mejorar la prevención y el tamizaje del cáncer de cuello uterino en Espírito Santo, la Unidad de Monitoreo Externo de la Calidad (UMEQ/Lacen-ES) implementó, en 2023, acciones en colaboración con laboratorios que prestan servicios al SUS. **Objetivo**: Evaluar el impacto de estas acciones en la calidad de los exámenes citopatológicos. **Método**: El estudio comparó los indicadores de calidad de los datos obtenidos a través del SISCAN del 2023 con los cinco años anteriores, así como también evaluó los indicadores de cada proveedor entre los años 2022 y 2023. **Resultados**: Se observaron mejoras significativas, como un aumento en los diagnósticos de lesiones precursoras. lesiones y una proporción más adecuada de diagnósticos, lo que refleja una mayor efectividad en la prevención del cáncer de cuello uterino en el estado. Además, hubo una mejora en los estándares de calidad de los laboratorios a lo largo del período. **Conclusión**: Las acciones implementadas por la UMEQ/Lacen-ES fueron fundamentales para mejorar el seguimiento y prevención de la enfermedad, aunque es necesario seguir invirtiendo en nuevas tecnologías y la aplicación de protocolos para garantizar agilidad y seguridad en el tratamiento de las pacientes.
Palabras clave: Neoplasias del Cuello Uterino/prevención & control; Cuello del Útero/citología; Garantía de la Calidad de Atención de Salud; Servicios Preventivos de Salud.

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INTRODUCTION

According to the World Health Organization (WHO) and the International Agency for Cancer Research (IARC), in 2020, more than 600 women had cervical cancer (CC) worldwide, and approximately 340 died as a result of the disease[1,2]. In Brazil, this type of cancer is the third most incident in women, with about 17 thousand new cases estimated for each year of the 2023-2025 triennium, a gross incidence rate of approximately 15 cases per 100 thousand women[3]. Despite having one of the greatest potentials for prevention and cure among all types of cancer, and being a preventable cause of death when diagnosed and treated early[4,5], CC remains the main cause of death among women in Latin America, according to the Pan American Health Organization (PAHO)[5,6]. In the State of Espírito Santo (ES), in 2022, 260 cases were estimated, with an adjusted incidence of 9.40 cases per 100 thousand women, with an adjusted mortality rate of 5.64 cases per 100 thousand women[3,7].

The Brazilian National Health System (SUS) recommends screening CC through cytopathological examination in women aged 25 to 64, with intervals of three years after two negative annual examinations. The specific clinical conduct adopted follows the recommendations of the "Brazilian Guidelines for Cervical Cancer Screening"[8]. The program includes a quality control system for assessing the performance of cytopathological exam service providers, known as QualiCito, implemented in 2013[8].

Despite the Brazilian efforts in recent decades to expand and ensure access to[9] screening programs and monitoring the quality of cytological tests implemented by the Ministry of Health, the CC mortality rates did not show significant reductions[10]. In the years 2000, 2010 and 2020, the mortality rate due to the disease adjusted by the Brazilian population of 2010 was 5.33; 4.89 and 5.00[7] cases per 100 thousand women, respectively.

These data indicate that the mortality rates of the disease in Brazil remain high and stable, suggesting failures in prevention programs such as those already identified, lack of knowledge on the importance of testing[9], drop in the number of women who underwent cytopathological examination for the first time[11], low availability of tests for diagnostic confirmation, which hinders the follow-up of screened women[12]. In addition, other causes can be cited, such as the vulnerability of cytopathological examination, failures in the collection and preparation of slides, and subjectivity in the interpretation of the results.

Data from Brazil and ES show that low coverage can be considered a relevant factor in the persistence of high morbidity and mortality rates due to the disease[13].

Until 2023, the proportion of women who underwent the examination, within the age group recommended by the Ministry of Health, had not reached the national target of 40%[14] examination coverage stipulated by the Previne Brasil program, already in disuse, while in ES the observed proportion was 55%[15]. It should be noted that in countries with continental proportions, such as Brazil, it is important to refine the information at different scales, since the CC rates among women in the interior of the North Region and the capitals of the country are higher, even with descending rates[16]. In addition, the WHO proposed a population screening coverage of 70%[13] as a strategy for eliminating CC.

In view of this scenario and aiming to improve the process of CC prevention and screening in the State of ES, from February 2023, actions were implemented in the external monitoring program of the quality of cytopathological examinations performed by SUS service providers. Among these actions, the External Quality Monitoring Unit, represented by the Central Laboratory of Public Health of the State of Espírito Santo (*Laboratório Central de Saúde Pública do Estado do Espírito Santo*, UMEQ/Lacen-ES), began to provide detailed monthly reports on the quality monitoring of providers, as well as providing continuing education materials with guidance on the processes of collection, fixation and staining of samples, as well as materials for standardization of diagnostic criteria. In addition, as a way to improve the accuracy and precision of the cytomorphological criteria and the quality of the examinations, discussions of cases and diagnostic criteria were promoted, especially regarding the detection of CC precursor lesions as recommended by the Quality Management Manual for the Cytopathology Laboratory[17].

Therefore, the study aimed to evaluate the quality indicators of laboratories providing service to SUS in ES through a retrospective study after measures implemented by UMEQ in the period of 2023.

METHOD

Cross-sectional study, based on data from the Cancer Information System (SISCAN), available at the Department of Informatics of the National Health System (DATASUS) Tabnet[18], regarding the results of cytopathological tests performed by laboratories providing service to the SUS in the State of ES, between 2018 and 2023.

From February 2023, UMEQ/Lacen-ES began to inform, through monthly reports, the non-conformities detected in cases that underwent external quality monitoring, as well as the evaluation of the pre-analytical

phase and the results considered discordant. In addition, UMEQ/Lacen-ES promoted continuing education monthly collective meetings with the professionals of the laboratories involved in the discussion of cases and cytomorphological criteria. Additionally, given the need of each laboratory, individual meetings were held with professionals for the discussion of discordant cases or diagnostic doubts.

First there was an assessment of the impact on the quality of the tests offered by SUS in the State of ES before the measures implemented by UMEQ/Lacen-ES through the comparative analysis of six internal quality indicators recommended in the Quality Management Manual for the Cytopathology Laboratory[17] and in the literature[19,20]. This assessment compared the indicators from 2023 with the previous five years, time frame determined to enable the evaluation of a similar period before and after the COVID-19 pandemic.

Subsequently, the same indicators were used to evaluate the individual performance of each laboratory providing service to the SUS between 2022 and 2023, with the aim of verifying the impact of the changes implemented by UMEQ/Lacen-ES in February 2023. In total, the 15 state-owned laboratories were evaluated, covering 100% of the cytopathological tests performed by SUS.

The evaluated indicators are described below according to the recommendations of the Ministry of Health[17] and the literature[19,20].

Positivity index (PI): Total of cytopathological tests with altered results at a given location and period×100/ total of satisfactory cytopathological tests performed at the same site and period and can be classified as: Very low (<2.0%), Low (2.0-2.9%), Expected (3.0-10.0%) and Above expected (>10.0%).

The atypical squamous cells indexes (ASC)/altered and ASC/satisfactory are used to evaluate the exaggerated diagnosis of this category, suggesting possible problems in the sample and/or laboratory analysis, as well as a high rate of false-positive results. The ratio between ASC of undetermined significance and squamous intraepithelial lesions (ASC/SIL<3.0) estimates the difficulties of identifying low and high grade squamous intraepithelial lesions (LSIL and HSIL), calculated as ASC-US plus ASC-H divided by the sum of LSIL and HSIL cases. In this sense, the Ministry of Health recommends that this proportion should not be greater than three, that is, three or more cases of ASC for each case of SIL diagnosis[17].

The HSIL/satisfactory index (≥0.4%) is the percentage of HSIL compatible tests among satisfactory tests and evaluates the ability to detect cancer precursor lesions. The AGUS/satisfactory index (between 0.1-2.1%)[19,20] is the percentage of tests compatible with atypical glandular cells of undetermined significance (AGUS) among satisfactory tests and evaluates the screening of morphological alterations in glandular cells, which tend to be poorly diagnosed[19,20]. Finally, the calculations of the indicators expressed in ratios and proportions were performed using the Microsoft Excel 2007 program.

Since this study dealt with secondary, anonymized data of public access, it was not subjected to a Research Ethics Committee, according to Resolution no. 510/2016[21] of the National Health Council (CNS).

RESULTS

During the period evaluated in the historical series contemplated in this study, approximately 1.4 million cytopathological tests were performed by SUS in the State of ES. Although in the years 2020 and 2021, the period of the COVID-19 pandemic, the evaluated quantitative values were lower than the total average of 205,629 tests, there was no change in quality indicators in the same period (Table 1).

In 2023, there was a 143.8% increase in the number of altered tests diagnosed when compared to the average number of altered tests in previous years. When this result is compared with data for 2019, the year with the second largest number of altered cases, it was still possible to observe an increase of 109.8% in the number of altered tests (Table 1). This increase in the number of altered diagnoses in 2023 was accompanied by the adequacy of the PI and HSIL/satisfactory values, and improvement of the ASC/satisfactory, ASC/SIL and AGUS/satisfactory indexes compared to the previous years (Table 1).

When evaluated individually, in 2023, the State of ES had an average PI of 4.68% with 13 of the 15 laboratories within the established standards (86.77%). While in 2022, the mean PI observed for the State was 2.3%, with 7 of the 15 laboratories (46.67%) presenting indexes below the parameters and a laboratory with a value above the recommended one (Table 2). In 2023, the total HSIL/ satisfactory index showed adequacy to the limits stipulated by the Ministry of Health when compared to the previous year. In addition, while in 2023 only 20% of laboratories remained outside the expected parameters, this percentage in 2022 was 60%. Finally, it is noteworthy that one of the service providers (provider 7) presented high HSIL/ satisfactory diagnostic indexes in the two evaluated years and the provider 3 presented very low indicators when compared to the others (Table 2).

When comparing the ASC/satisfactory and ASC/ altered data of 2022 and 2023, an increase of 1.18% to 2.5% and from 51.2% to 53.4%, respectively, was observed. Both years evaluated had only one provider each,

Table 1. Number of examinations and indicators of internal quality monitoring of cytological examinations performed by SUS in the State of Espírito Santo in the years 2018 to 2023

Years	Total tests performed	Total satisf. tests	Total tests altered	PI 3-10%	ASC/ Satisf. <5%	ASC/ Altered <60%	ASC/ SIL <3	HSIL/ Satisf. ≥0,4%	AGUS/ Satisf. 0.1-2.1%
2018	229,466	224,918	4,548	2.02	1.14	56.22	1.68	0.25	0.20
2019	247,950	242,979	4,971	2.05	1.16	56.91	1.70	0.27	0.17
2020	125,431	122,871	2,560	2.08	1.19	57.19	1.86	0.25	0.22
2021	176,787	172,843	3,944	2.28	1.16	50.74	1.50	0.28	0.32
2022	209,236	204,529	4,707	2.30	1.18	51.29	1.52	0.32	0.33
2023	233,515	223,084	10,431	**4.68**	2.50	53.48	2.21	**0.57**	1.10

Source: *Sistema de Informação do Câncer* (Cancer Information System).

Captions: SUS = National Health System; PI = positivity index; Satisf. = satisfactory – diagnostic-suitable tests; ASC = atypical squamous cells of undetermined significance; AGUS = atypical glandular cells of undetermined significance; SIL = squamous intraepithelial lesions; HSIL = high-grade lesion.

Note: Values in bold indicate adequacy for 2023 regarding the Ministry of Health parameters.

with an average index above the recommended value of ASC/satisfactory (<5%) (Table 2). In addition, while in 2023 three laboratories were identified with values above the recommended ones, during 2022, two laboratories had values above the expected ones and one laboratory had a value of 0% for ASC/altered (Table 2).

An increase in the proportion of SIL diagnoses in relation to ASC from 2022 to 2023 was also observed, revealed by the increase in the ASC/SIL ratio from 1.52 to 2.21. While in 2022 only one laboratory presented a value above the recommended one, in 2023, with the implementation of measures aimed at improving the quality of the exams by UMEQ/Lacen-ES, this number rose to five laboratories (Table 2). A similar pattern was observed for AGUS/satisfactory. In 2022, there were six laboratories with values below the recommended, while in 2023, only three laboratories showed indicators outside the indicated parameters, a reduction of 50% (Table 2).

Finally, it is worth noting that one of the evaluated service providers did not show an improvement in the 2022 indexes compared to 2023, always presenting values well below the recommended by the Ministry of Health.

DISCUSSION

After the implementation of measures aimed at improving the quality of cytopathological examinations by UMEQ/Lacen-ES, the improvement of mean PI in ES was observed. The value found today is comparable to the indexes observed in Norway (4.9%), a country known to have one of the lowest incidence and mortality rates in the world[22]. In addition, the increase in the overall PI average reflects the improvement of the individual indexes presented by the service providers laboratories in the same period. The adequacy of six among the seven (85.7%)

laboratories in 2023, which had lower positivity indexes than the recommended values in 2022, reinforces the importance and effectiveness of a continuing education program of professionals in the prevention network to improve the quality standard of tests[23-27].

The PI improvement was accompanied by an increase in diagnosis in the categories HSIL and AGUS, an expected effect in cases in which there is improvement in the search, indicating better screening of precursor lesions of the disease, which, based on the observed indexes, were not previously identified. HSIL/satisfactory and AGUS/satisfactory results below those recommended may indicate the occurrence of false-negative results, which may delay clinical management and patient treatment[24]. In this sense, it should be noted that the mean HSIL/satisfactory index for the State reached only in 2023 the parameter established by the Ministry of Health (≥0.4)[17], further reinforcing the importance of monitoring carried out by UMEQ/Lacen-ES.

While, between 2018 and 2021, the mean HSIL/satisfactory index observed in Brazil was 0.3%[27], below the recommended value. Data regarding this index observed for the ES in 2023 (0.57%) are comparable to those observed in countries with very successful screening programs, such as Canada (0.6%) and the United States (0.5%)[22]. A study carried out in the State of Goiás, after the implementation of a continuing education program, also showed an adequacy of HSIL/satisfactory indexes to 0.9%, showing the importance of this process in improving quality in the screening of cancer precursor lesions[28]. This result, as found in the present work, demonstrates the importance of the program conducted by UMEQ.

Between the years 2018 and 2022, low positivity rates associated with high diagnostic values of ASC in ES were identified, suggesting a possible lack of precision in the

Table 2. Indicators of quality monitoring of laboratories providing cytopathological service for SUS in Espírito Santo between 2022 and 2023

Provider/ Period	Total satisf. tests	Total tests altered	Total satisf. tests	Total tests altered	PI 3-10%		ASC/Satisf <5%		ASC/Altered <60%		ASC/SIL ratio <3		HSIL/Satisf ≥0,4%		AGUS/Satisf 0.1-2.1%	
	2022		2023		2022	2023	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
1	2716	82	2746	164	3.02	5.97	1.03	2.40	34.15	40.24	0.53	0.89	1.44	1.97	0.04	0.84
2	4761	160	6135	449	3.36	7.32	2.65	5.17	78.75	70.60	4.50	3.14	0.11	0.77	0.08	0.44
3	4441	25	4320	9	0.56	0.21	0.00	0.05	0.00	22.22	0.00	0.29	0.02	0.05	0.00	0.00
4	16858	592	18070	851	3.51	4.71	1.84	2.94	52.36	62.40	1.37	2.04	0.52	0.49	0.24	0.22
5	32028	841	27135	860	2.63	3.17	1.37	1.61	52.08	50.70	2.43	1.81	0.25	0.33	0.72	0.72
6	17049	215	23470	786	1.26	3.35	0.82	1.88	65.12	56.11	2.09	3.37	0.16	0.41	0.02	0.96
7	1871	235	1913	161	12.56	8.42	6.79	4.39	54.04	52.17	1.40	1.31	2.99	2.35	0.43	0.26
8	4558	173	5445	259	3.80	4.76	1.67	2.28	43.93	47.88	1.77	3.18	0.61	0.50	1.29	1.78
9	608	31	602	16	5.10	2.66	2.96	1.66	58.06	62.50	1.64	1.67	0.33	0.17	0.16	0.00
10	37539	693	39315	1642	1.85	4.18	0.91	2.07	49.06	49.63	1.10	2.36	0.25	0.50	0.10	1.30
11	5977	437	6785	414	7.31	6.10	3.81	2.82	52.17	46.14	1.28	1.03	1.14	1.11	0.38	0.57
12	18564	167	23429	1201	0.90	5.13	0.38	2.57	41.92	50.04	0.73	1.33	0.29	0.86	0.01	0.73
13	23253	190	24595	1878	0.82	7.64	0.41	4.12	50.53	53.94	1.43	3.33	0.06	0.64	0.11	2.48
14	11247	569	11296	616	5.06	5.45	2.33	2.62	46.05	48.05	2.82	2.41	0.49	0.68	2.00	1.87
15	23059	297	26009	1001	1.29	3.85	0.67	2.14	52.19	55.64	1.26	3.26	0.16	0.38	0.06	1.14
Total	204529	4707	223084	10431	2.30	4.68	1.18	2.50	51.29	53.48	1.52	2.21	0.32	0.57	0.33	1.10

Source: *Sistema de Informação do Câncer* (Cancer Information System).

Captions: PI = positivity index; Satisf. = satisfactory – diagnostic-suitable tests; ASC = atypical squamous cells of undetermined significance; AGUS = atypical glandular cells of undetermined significance; SIL = squamous intraepithelial lesions; HSIL = high-grade lesion.

Note: Values in bold indicate inadequacy regarding Ministry of Health parameters.

diagnosis of cervical cancer precursor lesions[22], which corroborates the high mortality rates from the disease observed in this period[3,7]. However, it is worth noting that the representativeness of diagnoses of these atypia should be analyzed in conjunction with the positivity and HSIL representativeness indicators. This category comprises a case of cytological limitation with criteria bordering reactivity[8,17], in which high rates may be related to sample quality problems and/or diagnostic criteria[29], factor observed for the State, since the HSIL/satisfactory indicator during this period was below the recommended.

Therefore, despite the increased diagnosis of ASC observed from 2022 to 2023, it is possible to note that this value was accompanied by an increase in the overall diagnosis of HSIL and AGUS categories, indicating an increase in PI with effective improvement of lesion screening. Therefore, this improvement is directly related to the improvements implemented by UMEQ/Lacen-ES associated with the continuing education program carried out in 2023, corroborating data observed in other studies[23-25]. In parallel, the diagnosis of glandular atypia, which showed low values between 2018 and 2022, ranging from 0.17 to 0.33%, in 2023, stood out, reaching the mean diagnosis of 1.11% in the State of ES. Historically, Brazil has been presenting low diagnostic rates for the category, despite the high relationship of this type of lesion with the development of adenocarcinomas[13], a fact that reinforces the importance of programs similar to those performed by UMEQ.

Despite the reduction in the number of tests analyzed in ES during the COVID-19 pandemic, different from that observed for other regions of the country in the period[22,23], there was no impact on quality indicators, which remained similar to those observed in previous years. However, in other locations in Brazil, there was an increase in the diagnosis of lesions[29,30] and a considerable reduction in the performance of cancer screening and diagnosis procedures in SUS[31]. The possible causes for the observed increase in the diagnosis of injuries and reduction in performance include: only symptomatic women seeking tests, or women who needed follow-up due to prior altered tests[29], women diagnosed with precursor lesions may have delayed treatment until the end of the pandemic, overload in outpatient services, suspension of elective procedures and drop in diagnosis of these lesions, resulting from reduction in screening[31].

It is noteworthy that the high HSIL/satisfactory index (2.35%) observed in one of the evaluated laboratories

(laboratory 7), as well as its high positivity observed in 2022, is related to the fact that the institution is a reference at CC precursor lesions treatment in the State of ES, dealing with biased samples[17].

In addition, it is important to point out that, despite all efforts aimed at improving the quality promoted by UMEQ/Lacen-ES in 2023, two evaluated laboratories (3 and 9) still show PI values and other indicators outside the recommended standards. Provider 9 must be evaluated individually because it is a laboratory that provides cytological service to a specific small population of internal service of the State itself, which may influence the values obtained for the evaluated indexes.

On the other hand, provider 3 was one of the laboratories responsible for preventive CC tests in the regional ES health division with the highest mortality rate due to the disease in 2021[7], a factor that reinforces the values observed in this study, indicating the low quality of the tests provided. It is also important to note that this laboratory had low adherence to the initiatives proposed by UMEQ/Lacen-ES, with few participations in the meetings of continuing education and no return on the evaluation reports of quality screening. Given the unsatisfactory data observed and a team not responding to the actions of UMEQ/Lacen-ES, the suspension of the contract of provider 3 at the beginning of 2024 was justified, aiming to ensure the quality of the tests provided for the Region.

Finally, it should be noted that in addition to the measures implemented by UMEQ/Lacen-ES, such as providing detailed monthly reports on the quality monitoring of providers, continuing education materials containing guidance on the collection, fixation and staining of samples, materials for standardization of diagnostic criteria and case discussions and diagnostic criteria, other efforts are necessary and require a combination of multiple strategies, such as new vaccination approaches against the human papillomavirus (HPV), and the implementation of new technologies, such as molecular testing added to organizational change with organized screening programs[32].

CONCLUSION

The implementation of measures aimed at improving the quality of cytopathological examinations by UMEQ/Lacen-ES demonstrated a significant impact and corroborates the hypothesis that the improvement in the screening and detection of cytological alterations in the State of ES is directly related to the participation of laboratories and health professionals in the External Quality Monitoring and continuing education program.

The availability of evaluative reports and the promotion of clinical case discussions were essential elements to achieve the improvement of the indexes. Thus, the results presented here emphasize the importance of external quality monitoring in the supervision of performance indexes of service providers laboratories. In addition, it reinforces the importance of promoting and implementing strategies for continuous improvement of the quality of tests offered. However, this isolated effort is not enough to alter the efficacy and effectiveness of cervical cancer prevention programs, and investments are still needed to apply the treatment protocols and clinical follow-up of patients with cytological alterations and the insertion of new technologies that may complement cytology, in order to ensure agility, safety in diagnosis and promotion of adequate early treatment of patients.

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