ISBN: 978-65-83849-24-3

Aurum EDITORA

CHAPTER 9

THE IMPACT OF LATE SCREENING FOR FEMALE NEOPLASMS IN PRIMARY HEALTH CARE (APS): ANALYSIS BASED ON THE MINISTRY OF HEALTH PROTOCOL

https://doi.org/10.63330/aurumpub.021-009

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ABSTRACT

Timely screening for female neoplasms is one of the essential pillars of Primary Health Care (APS), particularly in view of the high burden of morbidity and mortality associated with cervical cancer and breast cancer in Brazil. Despite the existence of consolidated guidelines issued by the Ministry of Health, which establish clear criteria for periodicity, risk groups, and clinical approach, a significant gap remains between formal recommendations and the reality of care delivery. Late screening often results in diagnoses at advanced stages, greater therapeutic complexity, high costs, and unfavorable outcomes, highlighting the need for continuous improvement in health prevention and surveillance strategies. Among the factors contributing to the late performance of examinations, structural barriers stand out, such as insufficient human resources, care demands that overload teams, weaknesses in scheduling appointments and tests, and technological limitations related to the registration and follow-up of users. Added to this are sociocultural aspects that directly influence the pursuit of care, including low risk perception, fear of diagnosis, misinformation, gender inequalities, and socioeconomic vulnerabilities that restrict ongoing and organized access to services. Inadequate coordination among different points of the network also undermines the diagnostic flow, prolonging the time between screening, case confirmation, and the start of treatment. From a clinical and epidemiological standpoint, the impact of late screening manifests in increased incidence of advanced cases, reduced cure rates, and a higher occurrence of physical and psychosocial sequelae. In APS, this scenario reinforces the importance of proactive team performance, strengthening health education actions, active outreach to women who are overdue, qualified listening, and effective integration with medium- and high-complexity services. The consistent

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adoption of Ministry of Health recommendations—especially regarding the periodicity of the cytopathological examination and the performance of mammography for the indicated age groups—proves crucial to reverse this picture. In summary, addressing the late screening of female neoplasms requires coordinated actions sensitive to territorial vulnerabilities and a continuous institutional commitment to comprehensive, resolutive, and equitable care.

Keywords: Primary Health Care; Cervical cancer; Breast cancer; Early diagnosis.

INTRODUCTION

Screening for female neoplasms, particularly breast cancer and cervical cancer, constitutes one of the structuring axes of Primary Health Care (APS), given its capacity to reduce morbidity and mortality and expand the effectiveness of care networks. Recent literature reinforces that early detection remains one of the most efficient strategies to improve prognoses, minimize higher-complexity interventions, and reduce care costs. Epidemiological studies, such as those presented by Bray et al. (2024) in the global report of the International Agency for Research on Cancer (IARC), demonstrate that countries with consistent population screening programs show a significant reduction in mortality from breast cancer and from precursor lesions of cervical cancer. These findings speak directly to the Brazilian context, where structural inequalities still limit the regularity and effectiveness of screening.

In the specific field of women's health, authors such as Mendes (2022) and Boffa and collaborators (2023) emphasize that delays in performing preventive examinations are associated with socioeconomic barriers, territorial fragilities, low health literacy, and failures in the longitudinal follow-up of users. APS, as the preferred gateway to the Unified Health System (SUS), plays a strategic role in articulating actions of prevention, health education, and continuous surveillance. Nevertheless, as highlighted by Silva and Tomasi (2023) in their analyses of APS performance in Brazil, a gap still exists between official guidelines and care practices, hindering the realization of timely, continuous, and equitable screening.

The Ministry of Health has been updating guidelines and protocols to strengthen early detection, including the periodicity of the cytopathological examination, the indication of mammography, and the systematization of follow-up for women who are overdue. However, implementation of these recommendations faces challenges related to the organization of work processes, availability of inputs, integration of surveillance with care, and the responsiveness of teams in vulnerable territories. Given this scenario, it becomes essential to critically analyze how late screening has impacted women's health and which structural aspects of APS contribute to this outcome. Thus, the general objective of this work is to assess the impact of late screening for female neoplasms in APS, taking as reference the guidelines recommended by the current Ministry of Health protocol.

METHODOLOGY

This study adopted a descriptive and analytical design, with a qualitative approach and documentary character, aiming to examine in depth the impact of late screening for female neoplasms in Primary Health Care (APS), in light of current Ministry of Health guidelines. Such an approach makes it possible to understand, beyond normative recommendations, the structural, organizational, and sociocultural factors that influence the effectiveness of screening.

Types of Data Collection:

Data collection was developed along two main lines:

1. **Institutional documentary collection:** This included guidelines, manuals, clinical protocols, technical notes, ordinances, and official reports produced by the Ministry of Health and the National Cancer Institute (INCA) between 2018 and 2024. This stage focused on examining criteria, guidance, and epidemiological foundations advocated for screening for breast cancer and cervical cancer.
2. **Scientific bibliographic collection:** This involved a systematized search in the SciELO, PubMed, Web of Science, and Scopus databases, using controlled descriptors and keywords related to the topic, such as "female neoplasms," "traceability," "early detection," "APS," and "public health policies." Priority was given to studies with robust methodology, systematic reviews, national epidemiological analyses, and publications discussing barriers and facilitators of screening in the SUS context.

All selected materials were organized in structured spreadsheets containing information on document type, year, objectives, main findings, and relevance to the thematic axis under analysis.

Inclusion Criteria:

Documents and studies that met the following criteria were included:

1. Publication between 2018 and 2024;
2. Direct approach to screening for breast cancer and/or cervical cancer;
3. Explicit relationship with APS or care processes in public health systems;
4. Full texts available in their entirety;
5. Studies conducted in Brazil or in countries with comparable organization of health systems.

Exclusion Criteria:

The following were excluded:

1. Opinion articles without empirical or documentary basis;
2. Studies focused exclusively on screening in high-complexity services;
3. Experimental research not related to the care or organizational context;
4. Outdated documents, prior to 2018;
5. Duplicate publications or those with low methodological consistency.

Analytical Procedures:

After collection, the material was submitted to thematic analysis according to Braun and Clarke, allowing identification of patterns, contradictions, and gaps between the national protocol and the daily practice of APS. Source triangulation and interpretive coherence were adopted to ensure robustness of the analysis.

This methodology made it possible to understand, in an integrated manner, how the Ministry of Health guidelines are operationalized and which factors contribute to late screening, supporting the discussions presented in the results.

RESULTS AND DISCUSSION

The integrated analysis of official documents and the scientific literature revealed consistent patterns that reinforce the relevance of timely screening for female neoplasms and highlight persistent structural weaknesses in Primary Health Care (APS). The results indicate that the distance between normative guidelines and care practice remains one of the main determinants of late screening in Brazil.

STRUCTURAL AND ORGANIZATIONAL BARRIERS

The findings show that weaknesses in the work process, scarcity of human resources, and the absence of consolidated information systems hinder active outreach, registration, and longitudinal follow-up of users. In many municipalities, the fragmented care flow prevents women who are overdue from being identified and reinserted into preventive care.

Table 1. Organizational barriers associated with late screening

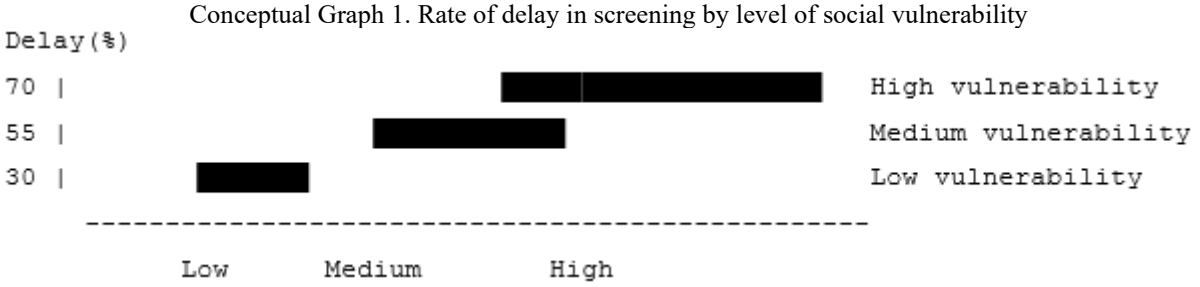
Category	Identified Evidence	Impacts on APS
Human Resources	Reduced teams; high turnover	Reduced supply of preventive appointments
Information Systems	Incomplete medical records; absence of alerts	Difficulty identifying women who are overdue
Care Processes	Lack of internal protocols; low integration with surveillance	Delays in follow-up and failures in return
Infrastructure	Limitations for cytopathological collection and scheduling of mammograms	Delays in access to diagnosis

The data reveal that these elements combine and amplify risks, reflecting an APS which, although guided by robust guidelines, faces operational limitations in fully carrying out screening.

SOCIAL AND TERRITORIAL INEQUALITIES

Socioeconomic inequalities remain critical determinants of access to preventive examinations. Territories with greater vulnerability consistently show lower coverage rates and a higher proportion of examinations outside the recommended periodicity.

Conceptual Graph 1. Rate of delay in screening by level of social vulnerability



This pattern reinforces that equity remains a central challenge, as the risk of late diagnosis is clearly increased among populations exposed to socioeconomic barriers, low education, domestic workload, and mobility difficulties.

CLINICAL IMPACTS OF LATE SCREENING

The review revealed that cervical cancer is most sensitive to delays in screening. In the analyzed studies, municipalities with low coverage of the cytopathological examination exhibited a higher proportion of lesions at advanced stages, requiring more invasive procedures and increasing the risk of avoidable mortality.

Table 2. Clinical consequences of late screening

Clinical Aspect	Cervical Cancer	Breast Cancer
Stage at Diagnosis	Higher proportion of CIN III and invasive cancer	Larger tumors and greater lymph node involvement
Necessary Interventions	Radical surgeries; radiotherapy	Extended surgery; chemo/neoadjuvant therapy
Prognosis	Higher risk of mortality	Reduced chances of cure
Impact on SUS	Increased costs	Longer hospital stays and prolonged therapies

These data confirm the central premise of national guidelines: APS is decisive for ensuring favorable outcomes, provided it can operationalize preventive actions systematically.

INTEGRATED DISCUSSION OF FINDINGS

Comparison between official documents and the literature shows that the problem is not the lack of recommendations but the difficulty of implementing them regularly and with quality. Where there are structured teams, efficient information systems, and integration between surveillance and care, better indicators of early detection are observed. However, in the most vulnerable regions, challenges persist that reinforce inequalities and perpetuate late screening.

Thus, the results indicate that addressing the problem requires structuring strategies: expanding teams, ongoing qualification, strengthening information systems, investing in active surveillance, and regionalized integration of the care network.

CONCLUSION

The findings of this study show that late screening for female neoplasms remains a significant challenge for Primary Health Care (APS), despite the existence of solid and updated protocols established by the Ministry of Health. The integrated analysis of institutional documents and recent literature demonstrated that the main weaknesses are not concentrated in technical recommendations but in the capacity to execute these guidelines in daily service routines.

Organizational barriers, insufficient human resources, weak information systems, and fragmentation of care processes directly compromise the regular performance of cytopathology and mammography, increasing the risk of diagnoses at advanced stages. In parallel, territorial and socioeconomic inequalities reinforce a persistent pattern of inequity, in which women living in more vulnerable areas show lower adherence to preventive examinations and a higher proportion of late cases.

From the clinical standpoint, late screening is associated with more invasive interventions, higher morbidity and mortality rates, and increased care costs, negatively impacting both users and the public health system. Conversely, the results also show that when the guidelines are applied systematically and in an articulated manner, APS can achieve significant performance in early detection, reducing risks and ensuring better quality of life for women.

Thus, it is concluded that overcoming late screening requires continuous investment in team structuring, strengthening of health surveillance processes, expanded qualified use of information systems, effective integration among levels of care, and territorially sensitive strategies tailored to local inequalities. Strengthening APS, aligned with Ministry of Health recommendations, constitutes the most consistent path to expand equity, optimize clinical outcomes, and consolidate a more resolutive, welcoming, and efficient preventive care model.

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