

## Guidelines for early detection of breast cancer in Brazil. III – Challenges for implementation

Diretrizes para detecção precoce do câncer de mama no Brasil. III – Desafios à implementação

Directrices para la detección precoz del cáncer de mama en Brasil. III – Desafíos a la implementación

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### Abstract

*The objective of the current article is to present the main challenges for the implementation of the new recommendations for early detection of breast cancer in Brazil, and to reflect on the barriers and the strategies to overcome them. The implementation of evidence-based guidelines is a global challenge, and traditional strategies based only on disseminating their recommendations have proven insufficient for changing prevailing clinical practice. A major challenge for adherence to the new guidelines for early detection of breast cancer in Brazil is the current pattern in the use of mammographic screening in the country, which very often includes young women and a short interval between tests. Such practice, harmful to the population's health, is reinforced by the logic of defensive medicine and the dissemination of erroneous information that overestimates the benefits of screening and underestimates or even omits its harms. In addition, there is a lack of policies and measures focused on early diagnosis of symptomatic cases. To overcome these barriers, changes in the regulation of care, financing, and implementation of shared decision-making in primary care are essential. Audit and feedback, academic detailing, and the incorporation of decision aids are some of the strategies that can facilitate implementation of the new recommendations.*

*Breast Neoplasms; Early Detection of Cancer; Mass Screening; Mammography; Health Plan Implementation*

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## Introduction

In Brazil, the debate on breast cancer control in the last 15 years (whether from the perspective of academia, administrators, healthcare providers, or media coverage) has focused on mammographic screening. This central position of mammography has accumulated gradually through the legitimacy of the technical and scientific discourse and the ease in implementation of mass screening in the country <sup>1</sup>.

The current challenge is the implementation of new recommendations by the Brazilian Ministry of Health for the early detection of breast cancer in the country <sup>2</sup>, elaborated on the basis of a new methodological approach that expands the view of early detection beyond screening to include strategies for early diagnosis of cases with suspicious signs and symptoms <sup>1</sup>. The implementation of evidence-based guidelines is a global challenge, and strategies that only use dissemination of the guidelines' recommendations have proven insufficient to generate changes in prevailing clinical practice <sup>3</sup>. The widespread notion of health as access to more medical technologies <sup>4</sup> adds to the difficulties by health professionals and the general population in assimilating the proposed new methods and practices and the dependence on structural and administrative conditions in the health system for healthcare to actually occur.

The aim of this article is to present the main challenges to implementation of the new recommendations for early detection of breast cancer in Brazil from the authors' perspective, as well as to reflect on the barriers that can impact the implementation of the guidelines and the strategies to overcome those barriers.

## Challenges and barriers to implementation of the new guidelines

In 2014, according to data from the Brazilian Ambulatory System of the Unified National Health System (SIA-SUS), only 46 services in the entire country reported having performed all the necessary procedures for diagnostic confirmation in women with suspicious lesions or alterations <sup>5</sup>. The difficulty in supplying all the procedures in a single service can have a direct impact on the strategy of early diagnosis, by generating a demand for unnecessary intermediate medical consultations. In Brazil, from 2010 to 2011, 40% of breast cancer cases reached oncology referral hospitals without a definitive diagnosis, which indicates insufficient structuring of secondary care <sup>5</sup>.

This disorganization of diagnostic investigation is aggravated by the increasing demand associated with mammographic screening. In the 2013 edition of the *Brazilian National Health Survey* (PNS), the proportion of women in the target population 50 to 69 years of age that reported having had a mammogram in the two years prior to the survey was 60%, varying across regions of the country <sup>6</sup>. The highest coverage rates were in the South and Southeast (68 and 65%, respectively), and the lowest was in the North (39%), with intermediate coverage in the Central (56%) and Northeast (48%). These data indicate a 6% overall increase in the country compared to another national survey conducted 5 years before <sup>6</sup>. Another recent national study estimated lower coverage rates in the target population, based on data from the SIA-SUS database <sup>7</sup>. Still, the coverage in this study may have been underestimated, given the provision of mammographic screening in private clinics <sup>8</sup>. Notwithstanding this discussion on the true magnitude of screening, there has been an undeniably important increase in screening coverage in the country in the last decade <sup>9</sup>.

Still, while there has been an increase in coverage due to government incentives, there has also been evident non-adherence to the Brazilian Ministry of Health guidelines on target population and periodicity of mammographic screening, as recommended in the national consensus document in 2004, that is, biennial screening in the 50–69 year age bracket <sup>10</sup>. According to data from the Breast Cancer Information System (SISMAMA) of the SUS, approximately half of screening mammograms are performed outside the 50 to 69 year target population, the majority in women under 50 years <sup>11</sup>, despite national guidelines that have existed for more than 10 years recommending the target age bracket <sup>10</sup>. Based on national data in the SIA-SUS in 2010, screening coverage in women 40–49 years of age was similar to that of the target population (50 to 69 years) <sup>7</sup>. A recent study analyzing data from the PNS also showed that the percentage of women with a medical prescription for mammographic

screening in Brazil in the 40 to 49-year bracket did not differ from the 50-69-year bracket, either in the public healthcare system (SUS) or in the private system <sup>12</sup>.

As for screening intervals, in the public healthcare system (SUS) there is a heavy predominance of short intervals between screening tests, i.e., 45% with annual intervals or shorter, and 32% with intervals between one and two years <sup>11</sup>. According to a recent hospital-based study in southern Brazil, annual mammographic screening was more common in women 50 years or older than in women from 40 to 49 years <sup>13</sup>. The same study showed that users of the public system (SUS) were more likely to undergo annual screening when compared to those with private health plans (62% versus 48%) <sup>13</sup>.

There are various complex determinants of this pattern in the use of mammographic screening in Brazil, which act as barriers to the paradigm shift in the new guidelines <sup>2</sup>. One of the pillars in the development of mammographic screening's global hegemony as a health intervention, among physicians, administrators, the media, and the general population, was the dissemination of the simplistic, commonsensical strong idea of "the sooner breast cancer is detected, the better". The hypothesis that emerged in the mid-20th century was that breast cancer metastasis was determined by the tumor's size, which in turn was a proxy for the tumor's age <sup>14</sup>. According to this hypothesis, the smaller the tumor when detected, the higher the odds of avoiding radical surgeries, the lower the odds of metastasis, and the longer the survival <sup>15</sup>. This theory is still globally hegemonic in the media, organized civil society, and even among health professionals, ignoring decades of research demonstrating the heterogeneity of breast cancer and the existence of other prognostic factors – in addition to tumor size – capable of determining its biological behavior, in addition to such phenomena as overdiagnosis and overtreatment. The motto "Catch it as soon as possible, before it's too late", – repeated exhaustively by advocates of mammographic screening –, not only overestimates the importance of screening but can also discourage symptomatic women from seeking care, due to their disbelief in their prognosis, when in reality the greatest progress in the last three decades was precisely in the improvement of treatment results for locally advanced breast cancer due to strides in adjuvant therapy <sup>16</sup>. The belief that only detection by screening results in a favorable prognosis is further reflected in the shaping of healthcare, where early diagnostic strategies are relegated to a secondary role.

The opportunistic nature of breast cancer screening in Brazil is another factor that probably hinders adherence to the national guidelines. In this kind of organization of screening, there is no active message to the target population, as in organized screening programs. Thus, both the screening interval and the initial and final age for screening are heavily dependent on individual decisions by users and health professionals. In opportunistic screening, the approach to screening is done by health professionals on the occasion of a consultation for any other reason, and in such cases the professionals have ample freedom to choose the screening method, age bracket, and screening interval. In Brazil, unlike countries with population screening, a screening mammogram has to be prescribed by a health professional. In the SUS, this professional can be either a physician or a nurse. In practice, since there is a tradition for Brazilian women to routinely consult a gynecologist starting at puberty and especially during their childbearing years, this specialist plays a key role in the definition of screening methods, age at first exam, and screening interval, especially for younger women.

Breast surgeons also play an important role in opportunistic screening, since they can prescribe screening on the occasion of a patient visit for some other breast complaint unrelated to breast cancer and act as opinion leaders vis-à-vis the media and other physicians. The influence of radiologists in screening intervals, although indirect, may occur through imaging reports suggesting the continuity of annual screening even in the absence of alterations. Although nurses are potential prescribers of mammographic screening in the SUS, in a study conducted in primary care units in the municipality of Ribeirão Preto, São Paulo State, Brazil, 98% of nurses reported not prescribing screening mammograms, since there is a municipal protocol according to which it is the physician's exclusive responsibility, with nurses limited to educational activities on screening <sup>17</sup>. The same study suggests that in their educational activities, nurses' adherence to the Brazilian Ministry of Health guidelines is also low, since 45% recommended annual mammographic screening, 13% biennial, and only 5% recommended screening only after 50 years of age <sup>17</sup>.

One factor that certainly influences Brazilian health professionals to adopt the screening patterns discussed above is the existence of Brazilian and international clinical guidelines, generally based on expert consensus, that recommend starting screening before 50 years of age, and at annual intervals.

Some highly influential examples, predominantly from the United States, are the guidelines of the National Comprehensive Cancer Network<sup>18</sup> and the old versions of the guidelines of the American Cancer Society<sup>19</sup> and the American College of Obstetricians and Gynecologists<sup>20</sup>. The 2004 guidelines of the Brazilian Ministry of Health recommended screening with clinical breast examination starting at 40 years<sup>10</sup>, did not clearly explain the reason for not recommending mammographic screening before 50, and did not discuss the risks and possible benefits (or lack thereof), which could have indirectly encouraged the introduction of mammographic screening and left room for many to interpret the target population's recommendation as a mere prioritization of the age bracket<sup>21</sup>. Evidence shows that guidelines recommending routine mammographic screening in women 40 to 49 years suffer from quality problems and lack of rigor in the methods for their development<sup>22</sup>. Still, health professionals in general and the lay population lack the training to judge the validity of these guidelines or to identify potential biases and end up being influenced by recommendations that are most widely disseminated and legitimized by opinion leaders, for example. In relation to screening intervals, the wording in the 2004 Brazilian consensus is ambiguous, recommending a mammogram "at least once every two years"<sup>9</sup>, which leaves room for interpreting that any interval less than two years is recommended. This type of interpretation was further reinforced by previous government documents that encouraged annual screening from 50 to 69 years of age as ideal<sup>23</sup> and screening every two years as the maximum allowable interval<sup>8</sup>.

Another likely determinant of over-screening in Brazil is defensive medical practice. If a physician fails to recommend screening in a given age bracket or interval and the patient subsequently receives a diagnosis of breast cancer, the doctor can be sued for malpractice. Regardless of the likelihood that the cancer case is overdiagnosis, or that even with screening it would only have manifested as an interval case (that is, diagnosed not by screening, but during the interval between two mammograms), these possibilities would certainly not be considered by the woman. On the other hand, the harms associated with screening, except for false-negative results, generally do not result in legal action against physicians. The most common harm from screening – a false-positive result – has psychological impacts and leads to the risks involved in over-testing, including large numbers of unnecessary biopsies (approximately 90%)<sup>24</sup>, but is often interpreted by the patient as a feeling of safety and relief after a negative biopsy result. Individual patients also view overdiagnosis as a benefit, since it always results in the impression of cure, although in reality it would not have evolved clinically even in the absence of screening, diagnosis, and treatment. Thus, women that are victims of overdiagnosis and overtreatment see themselves as cancer survivors and often work in groups to promote and defend screening because they believe that "mammography saved their lives", generating the phenomenon called the "popularity paradox" of screening<sup>25</sup>. The induction of cancer by ionizing radiation – another possible harm of screening – would also not be attributed to the screening, given the long time elapsed between the exposure and the outcome, and the impossibility of determining causality in individual terms. Although the relationship between defensive medicine and mammographic screening in Brazil has not been sufficiently studied, a national study in 2004 indicated that about 90% of the physicians interviewed believed that screening mammography gave them legal protection<sup>26</sup>. Given this result, the study's authors recommended establishing awareness-raising campaigns to increase the perception of physicians' legal vulnerability and thus promote mammogram prescriptions<sup>26</sup>.

Health professionals' difficulty in adopting a practice based on the best scientific evidence in breast cancer screening has already been identified in other countries. A good example was a meeting of physicians from the United States and various European countries in the last decade<sup>24</sup>. At this meeting, the difficulty was expressed in various ways by participating physicians, including the following: "After a mammography, it's me, the physician, who is reassured. I fear not recommending a mammogram to a woman who may later come back with breast cancer and ask me 'Why didn't you do a mammogram?' So, I recommend that each of my patients be screened. Yet I believe mammography screening should not be recommended..." (p. 93). "The patient says to herself: 'Thank God they looked so carefully, and now everything is OK'. Invasive surgery with a benign result relieves the patient and makes her grateful to the physician" (p. 94). "...to talk with physician about false-positives often evokes anxiety and a defensive attitude on their part" (p. 94). "Informed consent – that's just a politically correct tale. If I were to start explaining to patients the benefits and harms of a potential treatment, they would hardly comprehend it. And if I were, in addition, to tell them what we do not know, they would get very nervous" (p. 17). "But how could I allow a patient to decide for herself?"

*How can one be a responsible physician and still allow the patient to make the decision?” (p. 18). “The physician (...) One has to do something; one cannot do nothing; the patient would be disappointed or even angry” (p. 19).*

Unfortunately, as illustrated above, there is a real conflict that is difficult for each individual physician-patient pair to overcome. The best thing for the patient’s health is for the risks of screening to be weighed, but for the professional’s peace of mind, reputation, and legal security it may be convenient to ignore such risks. To this day there is no provenly effective way to completely overcome this impasse. But a well-informed health professional who clearly understands and adequately communicates the numbers representing the likelihoods of benefits and harms of mammographic screening will be more likely to overcome this conflict and feel more comfortable in making a shared decision with the patient, even when the decision is not to submit her to mammographic screening. As commented by a participant in the meeting cited previously: *“Informed consent in not just prevented by the anxious patient who refuses to think. Many physicians do not understand the risks in the first place, and this may affect women’s emotions and anxieties”* <sup>24</sup> (p. 94).

In opportunistic screening, users themselves can also influence the definition of the age bracket and screening interval, since users can actively seek out medical appointments and request screening at their own initiative. The general population uses the mass media as their main source of information on health issues, and evidence suggests that mass campaigns can influence certain patterns in the use of health services <sup>27</sup>. Thus, erroneous messages on screening spread by the mass media potentially have the capacity to affect patterns in the use of opportunistic mammographic screening. Erroneous messages are very frequent, equating mammographic screening with breast cancer prevention – the so-called “preventive” mammogram – or expressing its efficacy in terms of increased survival time, overestimating its effectiveness and omitting its risks <sup>28</sup>. The information communicated to the population by governments also tends to overestimate the benefits of screening and underestimate its risks <sup>29</sup>. These concepts also persist in academic publications, and many physicians believe that the increased survival time in screening studies confirms the benefits of this practice <sup>15,30,31</sup>. In developing countries, it is common for the number and proportion of breast cancer cases in young women to be used to justify mammographic screening in women under 50 years <sup>32</sup>, when in fact these numbers are heavily dependent on the countries’ demographic profile and do not modify the balance between risks and benefits, showing that conceptual errors have a role in disseminating this type of practice. A population-based survey in women from four countries (USA, UK, Switzerland, and Italy) in the last decade showed that they greatly overestimated the benefits of mammographic screening <sup>33</sup>. In a cross-sectional study in family health units in Mato Grosso do Sul State, Brazil, not undergoing routine screening was mistakenly identified by users as one of the main risk factors for breast cancer <sup>34</sup>.

Annual screening, which is reinforced and legitimized by expert opinion, is also favored by annual campaigns like “Breast Cancer Awareness Month”. These campaigns further tend to influence the initiation of screening before the adequate age, since they generally target young women. Overestimation (by both the population and health professionals) of the risk of developing breast cancer and dying from the disease is another misconception <sup>35</sup> that can encourage overscreening.

In health policy-making, the form of payment for the procedure since 2009 can also be considered another factor leading to excessive mammographic screening, independently of the recommended interval and age bracket. Until then, mammograms were only reimbursed according to the financial cap for medium and high-complexity procedures. In 2009, a Brazilian Ministry of Health ruling included an exclusive procedure for screening mammography in the Table of Procedures of the SUS, which from that point on was funded by another type of financial transfer, the so-called Fund for Strategic Actions and Compensation (FAEC). At the time, since the Brazilian Ministry of Health’s recommendation of mammographic screening included high-risk women (annual mammogram starting at 35 years) <sup>10</sup>, for financing purposes there was no definition of either the target population or the periodicity, which encouraged women under 50 years and without a history of high risk to undergo annual mammographic screening starting at 35 years prescribed by a health professional. In 2013, as a strategy to direct the incentive for screening mammography to the recommended age bracket, a rule was included in the Table of Procedures of the SUS, according to which only mammograms in the 50 to 69-year age bracket would still be financed by the FAEC fund. The rule meant the end of the additional financial incentive for screening mammograms outside the target population. This change in financing apparently had the effect of increasing adherence to the national guidelines

in recent years, with a decrease among women under 49 years and an increase in the 50 to 69-year bracket (Figure 1).

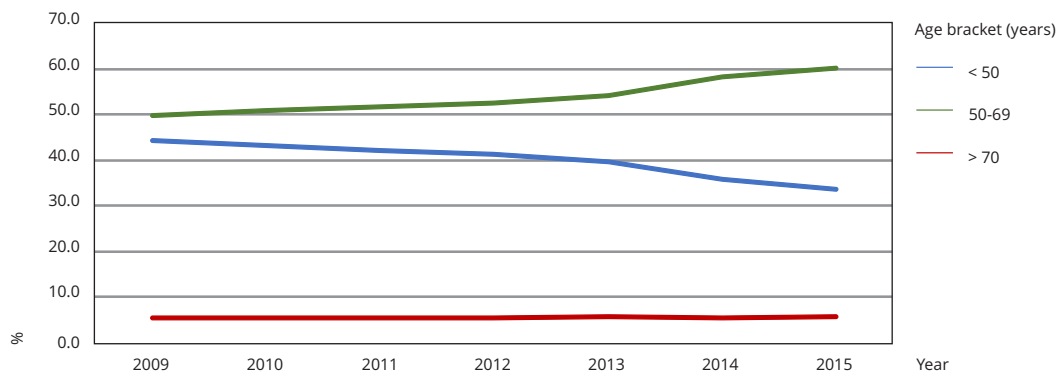
In addition to this change in financing, another factor that can increase adherence to the new guidelines is that the international scenario is favorable for the new Brazilian guidelines, with the recommendation of annual mammographic screening and screening of young women losing more and more strength, even in institutions that have traditionally defended these practices. An emblematic case is the American Cancer Society, which retreated from its traditional guidelines based on expert opinion and began to condition the recommendation of annual screening in women 40 to 44 years of age on the existence of a shared decision with the discussion of risks and benefits, in addition to now recommending a two-year screening interval for women over 50 years <sup>36</sup>.

Patterns in the use of other breast cancer screening methods in Brazil also pose a challenge to implementation of the new guidelines, since mammography became the only recommended method <sup>2</sup>. According to data from the 2008 *Brazilian National Household Sample Survey* (PNAD 2008) approximately 75% of Brazilian women 40 years or older had already undergone clinical breast examination at least once in life, 40% of whom in the last year <sup>37</sup>. These data show that screening with clinical breast examination in the country had reached an important degree of coverage, although lower than mammographic screening. The states of the North and Northeast showed the lowest screening coverage with clinical breast examination, that is, precisely the regions that also have the lowest access to mammographic screening. More recent local studies like Martins et al. <sup>38</sup> suggest the existence of higher coverage than in the PNAD survey, namely that 92% of women 40 years or older who attended primary care units in the city of Rio de Janeiro had undergone clinical breast examination in their last routine gynecological visit.

Teaching breast self-examination, although no longer recommended nationwide since the 2004 consensus, is still commonly found in educational materials distributed in Brazil. Moraes et al. <sup>17</sup> indicate that this practice is still widespread among nurses, since 70% of those interviewed orient users on breast self-examination techniques. In a recent hospital-based study in southern Brazil, 60% of 40 year old women that underwent annual mammographic screening also did screening with breast self-examination and/or clinical breast examination <sup>13</sup>. This result was expected, since the guidelines based on expert consensus that traditionally recommend screening with self-examination and clinical breast examination are generally the same that support annual mammographic screening starting at 40 years <sup>18,19</sup>.

## Figure 1

Percentage of screening mammograms by age bracket. Brazil, 2009 to 2015.



Source: Brazilian Ambulatory Information System of the Unified National Health System (SIA/SUS. <http://sia.datasus.gov.br/principal/index.php>, accessed on 03/Feb/2017).



We are not aware of Brazilian studies on the use of ultrasonography, magnetic resonance imaging, thermography, or breast tomosynthesis as screening methods in Brazil. Of all these imaging methods, the only one not incorporated into clinical practice is thermography, while breast ultrasonography is probably the most widely used as screening method. From 2014 to 2016, the number of breast ultrasound procedures in women 35 to 69 years of age in Brazil (according to data from SIA-SUS) was nearly three times greater than the number of diagnostic mammograms in the same period and age bracket. Although the method is widely used in the diagnostic workup of benign breast lesions, this discrepancy may suggest its dissemination as a screening method, whether alone or jointly with mammography. In a hospital-based study in Pernambuco State, half of the patients that underwent mammographic screening in the 40-49 year bracket also had breast ultrasound<sup>39</sup>. Although tomosynthesis has not been incorporated into the Table of Procedures of the SUS, it has the potential to catch on quickly as a popular screening method in Brazil, as occurred in the United States<sup>40</sup>, even before its risks are adequately assessed in the research setting.

### Strategies for implementation of the new guidelines

Even assuming that the Brazilian federal and state managers collaborate in disseminating the new guidelines and related educational materials, local health professionals and administrators should always assess whether these materials need to be adapted to the specific characteristics of their context, as well as the type of appropriate language for regional circumstances. This issue is essential for implementation of the breast awareness strategy<sup>1,2</sup>, which focuses on communication with the general population.

The principal strategies for implementation of priority referral of suspicious symptomatic cases<sup>1,2</sup> include facilitating access to primary care without scheduling an appointment – even outside of office hours – and the inclusion of a clinical protocol for referral in the systems for regulation of consultations at the secondary level. Ideally, these consultations should be scheduled in health units capable of assuming the entire breast cancer diagnostic workup, including histopathological confirmation along the lines of “one-stop clinics”, that is, with integration between clinical examination by medical specialists and the various imaging and pathology tests. All of this in order for the diagnosis of patients with clinical suspicion of breast cancer to be performed as quickly as possible and at the same service. In Brazil, in order to incentivize the supply of procedures for diagnostic investigation of suspected breast cancer cases, the Brazilian Ministry of Health issued a ruling in 2014 to accredit Referral Services in Breast Cancer Diagnosis, providing financial incentives for establishments with the physical and human resources to offer the necessary procedures for diagnostic investigation and confirmation, in timely fashion and with high case-resolving capacity for women with suspicious lesions. The structuring of this type of diagnostic unit needs to be included strategically in the respective healthcare networks.

As for mammographic screening, a central and innovative point in the new guidelines is the recommendation that the decision about whether to perform screening should be made jointly by the health professional and the patient<sup>2</sup>. The health professional’s recommendation is important, but it appears not to be sufficient to increase users’ adherence to the guidelines, and the quality of the face-to-face discussion with the health professional plays a key role in the decision-making process<sup>41</sup>. Therefore, there has to be a shift in the focus of the debate on which recommendation is the best way to back the patient’s decision, given the existing uncertainties in the “state of the art” and the balance between risks and benefits for each situation (with a minimum of age bracket, date of last screening, and life expectancy). This shared decision can be facilitated by educational materials such as those produced in conjunction with the new guidelines and which included inputs from patients<sup>42</sup>.

When communicating the benefits and harms of mammographic screening, it is strongly recommended to provide physicians and patients with numbers expressed in natural frequencies, comparing all-cause mortality in screened and unscreened women. This form of communication avoids the overestimation of screening’s effect caused by measurement biases in some clinical trials and by humans’ innate difficulty in correctly interpreting percentages and conditional probabilities<sup>24,30</sup>.

This form of communication is also more objective and impartial than the focus on dominant persuasion currently used in health communication <sup>30</sup>.

For example, in a study with English physicians, natural frequencies fostered a clear understanding by many professionals: 35% of those who received the information in a tree of natural frequencies correctly interpreted a positive result in a hypothetical diagnostic test, compared to 12% among physicians that received the information in the usual way, by reporting sensitivity and specificity <sup>43</sup>. A study with German physicians showed similar results, favoring presentation with natural frequencies <sup>44,45</sup>. It has been shown repeatedly that more physicians clearly understand the results of diagnostic tests and efficacy of interventions when they are reported as natural frequencies rather than conditional probabilities and percentages <sup>46,47</sup>.

An effective strategy for implementation of the shared decision-making process concerning screening in clinical practice is the use of “decision aids” <sup>48</sup>. The use of these instruments increases patients’ knowledge on the available options and possibly lay people’s accuracy in estimating the benefits and harms of their options, besides generating greater participation by them in the decision-making process <sup>48</sup>. These instruments should not mean bureaucratizing care, but rather should serve as an integral part of renewed clinical practice centered on relevant outcomes for patients, taking into account their values and preferences and the best available evidence <sup>49</sup>. The number of studies on decision-making in cancer screening has increased in recent years <sup>50</sup>. Still, it is important to note that the implementation of shared decision-making suffers real barriers and dilemmas, as shown previously in studies with physicians in Europe and the USA. In addition, in contexts of low schooling and incipient health literacy, as in a major portion of Brazil, the barriers to shared decision-making are probably even greater and require further study.

Another relevant question is how administrators would be capable of promoting the introduction of shared decision-making in clinical practice. This is a major challenge, considering that it is not common practice in Brazil in the health field in general. Health policy-makers should consider the implementation of shared decision-making as a whole in elective procedures, in which more than one approach is considered adequate, or “preference-sensitive decisions”, considered internationally as one of the pillars of good clinical practice and patient-centered care <sup>49</sup>. Shared decision-making is even more important in mammographic screening, an intervention in asymptomatic women with a borderline balance between risks and benefits even in the recommended age bracket and with the recommend interval <sup>2</sup>.

The recommendation was strongly against screening in women under 50 years or 75 years and older <sup>2</sup>, which would even back the suspension of public financing for screening in these age groups. Since this has not happened in practice in Brazil, it is essential that screening not be offered routinely in these cases, and in case of spontaneous demand by users, it is ethically imperative to ensure a comprehensive process of informed and shared decision-making. One strategy for implementation would be the inclusion of a medical appointment specifically for the shared decision as an outpatient procedure in the SUS Table of Procedures, or even the requirement of free and informed consent along the same lines as those used for elective surgical procedures. The same applies to screening intervals shorter than two years. This would guarantee at least the introduction of some type of clarification in the decision in situations where the risks of screening outweigh the possible benefits.

Despite the existence of guidelines, health professionals enjoy ample autonomy in their work and can decisively influence implementation of the various recommendations. As for recommendations that directly involve the health professional’s decision, like the protocol for referring suspicious cases, the target population, and screening intervals, some strategies may be effective, in addition to the shared decision-making process itself: opinion leaders; academic detailing; point-of-care reminders for health professionals; and audit and feedback <sup>51</sup>.

The use of local opinion leaders in presentations and training courses has the capacity to influence approaches, due to the leaders’ legitimacy in the eyes of their peers, but it requires identifying a professional with the proper profile while avoiding potential conflicts of interest. The strategy of academic details assumes hiring a specialized professional to conduct face-to-face dissemination of the guidelines with the health professionals in the workplace <sup>52</sup>. The use of reminders on the new guidelines should ideally occur at the precise moment in which the health professional orders the screening mammogram and assumes that the test is ordered in the computerized system directly by

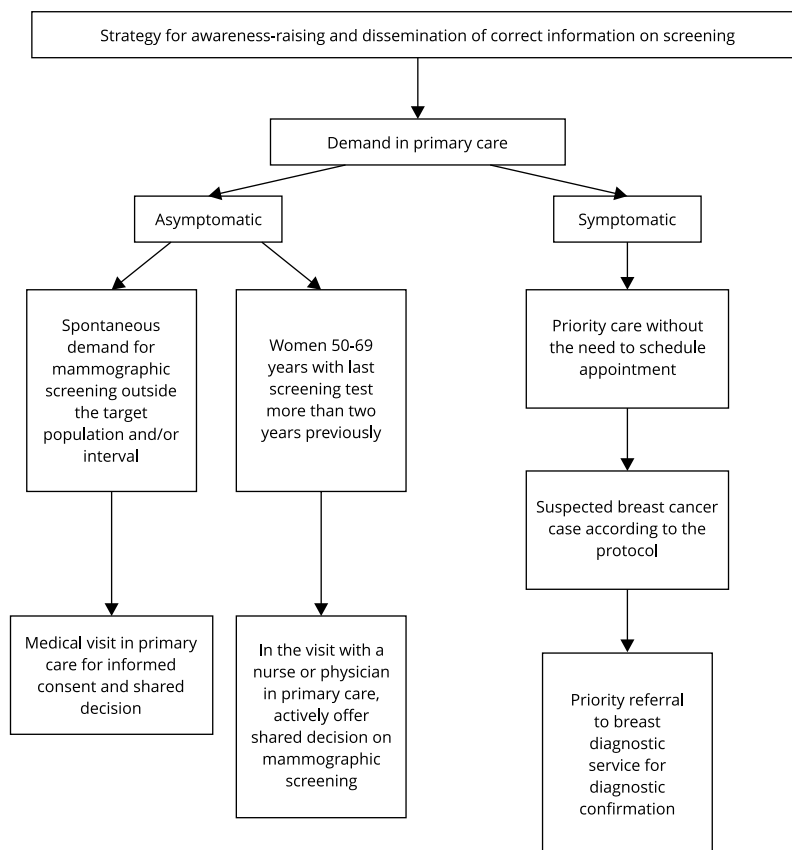


the attending physician or nurse. The audit and feedback process works with the synthesis of the services' performance according to the indicators for monitoring the guidelines' implementation and can include prizes (symbolic or otherwise) for health teams and services that succeed in obtaining the greatest adherence to the guidelines<sup>53</sup>.

The analysis of the actors involved directly in the guidelines is also important for the success of their implementation. In addition to family physicians and gynecologists, nurses are also potential prescribers of screening mammograms in the SUS. Traditionally, nurses have conducted educational activities aimed at increasing the uptake of mammographic screening, besides teaching breast self-examination and performing the clinical screening examination. Thus, the new guidelines have the potential to radically change the work done by nurses in the early detection of breast cancer. In their new role, primary care nurses can be fundamental actors in adherence to the guidelines for the target population and screening intervals and the promotion of shared decision-making, both through collective educational activities and individually with users. This new role by nurses assumes training in order for them to acquire the necessary knowledge to conduct these processes. One facilitator specifically in relation to nurses' work is that prescription of screening by nurses is only backed legally in Brazil when it is part of government programs. Figure 2 presents a proposed algorithm for implementation of the new recommendations in primary care.

**Figure 2**

Algorithm for implementation of the new guidelines in primary care.



Finally, it is necessary to have parallel monitoring and evaluation of the new guidelines' implementation by managers of the SUS at its various levels. Indicators of adherence to the new recommendations and of the screening's quality should be prioritized. Examples of such indicators are screening's positive predictive value and the proportion of screening performed within the recommended target population and periodicity<sup>10</sup>. The separation between indicators for screening and early diagnosis is also important, since various biases jeopardize the assessment of some screening outcomes<sup>1</sup>. For symptomatic cases, time until definitive diagnosis and staging at the time of diagnosis are interesting options for monitoring.

However, we should remember that the new guidelines for early detection of breast cancer in Brazil represent a contra-hegemonic view in the country. All the discussion here on barriers to their implementation and strategies to overcome those barriers only make sense for these guidelines or others aligned with their recommendations.

## Conclusions

The prevailing screening practices in Brazil today are not based on the best available evidence and probably bring more harms than benefits to the population, while central issues such as quality control in screening, adherence to the screening recommendations, shared decision-making, and prioritization of strategies for symptomatic cases remain in the realm of rhetoric or isolated initiatives.

Thus, implementation of the Brazilian Ministry of Health's new guidelines for early detection of breast cancer involves the need for changes in priorities in clinical practice and management in the SUS. Although the guidelines are based on high-quality evidence, their proposals are still contra-hegemonic in the international and national scenarios, both in the lay view and in the mass media, among health professionals, academia, and managers, in addition to being explicitly rejected by some professional societies and organized social movements. It is necessary to identify and assess all these barriers and their specificities in the local context in order to confront them with the best available strategies for implementation and monitor this process for possible adjustments to approaches. This will allow decreasing the burden of iatrogenic results caused by screening and ensuring more adequate practices for the real health needs of the Brazilian population.

## Contributors

A. Migowski undertook the literature review and conceived, wrote and revised the text. M. B. K. Dias, P. Nadanovsky, G. Azevedo e Silva, D. R. Sant'Ana and A. T. Stein collaborated in the writing and revision of the manuscript. All authors approved the final version to be published.

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## Resumo

O objetivo do presente artigo é apresentar os principais desafios à implementação das novas recomendações para a detecção precoce do câncer de mama no Brasil, bem como refletir sobre as barreiras e estratégias para a sua superação. A implementação de diretrizes baseadas em evidências é um desafio em todo o mundo, e estratégias tradicionais baseadas apenas na disseminação de seu texto são comprovadamente insuficientes para gerar mudanças na prática clínica vigente. Um grande desafio à adesão às novas diretrizes para a detecção precoce do câncer de mama no Brasil é o atual padrão de uso do rastreamento mamográfico no país, que acaba incluindo muito frequentemente mulheres jovens e intervalo curto entre os exames. Essa prática danosa à saúde da população é reforçada pela lógica da medicina defensiva e pela difusão de informações equivocadas, que superestimam os benefícios do rastreamento e subestimam ou mesmo omitem seus riscos. Além disso, há carência de políticas e ações voltadas para o diagnóstico precoce de casos sintomáticos. Para superar essas barreiras, mudanças relacionadas à regulação da assistência, financiamento e a implantação do processo de decisão compartilhada na atenção primária são essenciais. Auditoria-feedback, detalhamento acadêmico e incorporação de ferramentas de suporte à decisão são algumas das estratégias que podem facilitar o processo de implementação das novas recomendações.

Neoplasias de Mama; Detecção Precoce de Câncer; Programa de Rastreamento; Mamografia; Implementação de Plano de Saúde

## Resumen

El objetivo del presente artículo es presentar los principales desafíos para la implementación de las nuevas recomendaciones en la detección precoz del cáncer de mama en Brasil, así como reflexionar sobre las barreras y estrategias para su superación. La implementación de directrices, basadas en evidencias, es un desafío en todo el mundo, y las estrategias tradicionales basadas sólo en la propagación de las mismas son comprobadamente insuficientes para generar cambios en la práctica clínica vigente. Un gran desafío para la adhesión a las nuevas directrices para la detección precoz del cáncer de mama en Brasil es el actual patrón de uso del rastreo mamográfico en el país, que incluye a menudo a mujeres jóvenes e intervalo corto entre los exámenes. Esta práctica perjudicial para la salud de la población es reforzada por la lógica de la medicina defensiva y por la difusión de información equivocada, que sobrestiman los beneficios del rastreo y subestiman o incluso omiten sus riesgos. Asimismo, existe una carencia de políticas y acciones dirigidas al diagnóstico precoz de casos sintomáticos. Para superar estas barreras, son imprescindibles cambios relacionados con la regulación de la asistencia, financiación y la implantación del proceso de decisión compartida en la atención primaria. Algunas de las estrategias que pueden facilitar el proceso de implementación de las nuevas recomendaciones son: auditoría con retroalimentación, detalle académico e incorporación de herramientas de apoyo a la decisión son algunas de las estrategias que pueden facilitar el proceso de implementación de las nuevas recomendaciones.

Neoplasias de la Mama; Detección Precóz del Câncer; Tamizaje Masivo; Mamografía; Implementación de Plan de Salud

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