

Alerta Rosa: Novel Alert and Navigation Breast Cancer Program in Nuevo Leon, Mexico, for Reducing Health System Interval Delays

TERESA MIRELES-AGUILAR,^{a,b,*} JAIME TAMEZ-SALAZAR,^{a,b,*} JOSE F. MUÑOZ-LOZANO,^b EDNA A. LOPEZ-MARTINEZ,^b
CRISTINA ROMERO,^a ALEJANDRA PLATAS,^{a,c,†} CYNTHIA VILLARREAL-GARZA^{a,b,c,†}

^aMILC, Medicos e Investigadores en la Lucha contra el Cancer de Mama, Ciudad de Mexico, Mexico; ^bBreast Cancer Center, Tecnológico de Monterrey, San Pedro Garza Garcia, Nuevo Leon, Mexico; ^cBreast Tumors and Research Department, Instituto Nacional de Cancerología, Ciudad de Mexico, Mexico

*Contributed equally

†Contributed equally

Disclosures of potential conflicts of interest may be found at the end of this article.

Key Words. Breast cancer • Delay • Time intervals • LMICs • Navigation

ABSTRACT

Background. In Mexico, the median time between breast cancer (BC) symptom detection and treatment initiation is approximately 7 months. *Alerta Rosa* is a program that was developed with the intent of breaking down medical care barriers and reduce delays.

Patients and Methods. Through several media campaigns, we reached out to patients with breast symptoms or abnormal imaging studies. Patients contacted our call center or Facebook page. A navigator recorded their main complaint and scheduled a medical consultation with a specialist. We prioritized patients according to clinical risk. Those diagnosed with BC were referred to their health affiliation unit for care.

Results. To date, 656 patients have contacted our program. Median age was 44 years (range, 7–82). Patients reported becoming aware of *Alerta Rosa* mainly by word of mouth

and TV. A total of 446 medical consultations were scheduled, and 309 patients attended their appointments. A biopsy procedure was solicited for 39 patients, and 22 were diagnosed with BC. Most patients had stage II (45%) or stage III (32%) disease. The median time from alert activation to treatment initiation was 33 days (range, 19–56) and from first medical evaluation to treatment initiation was 28 days (range, 16–48).

Conclusion. In low- or middle-income countries, where BC screening programs do not effectively reach the target population, it is crucial to focus efforts in identifying and prioritizing symptomatic patients or those with abnormal imaging studies to ultimately downstage BC. *Alerta Rosa* proved to be successful in reducing health system intervals and could be replicated and adapted for other limited resource settings. *The Oncologist* 2018;23:1–6

Implications for Practice: In countries such as Mexico, infrastructure and financial drawbacks limit the implementation of effective screening mammography programs. This article presents a novel and effective alternative to optimize resources and reduce health system intervals, so that patients in limited-resource settings can have access to prompt quality care. This strategy for early breast cancer detection focused efforts in prioritizing symptomatic women and those with abnormal breast imaging studies. This article presents novel information that will be useful for the development of effective early breast cancer detection with a focus on opportunistic rather than population-screening mammography in low-resource settings.

INTRODUCTION

Breast cancer (BC) represents a major public health issue worldwide, particularly in low- and middle-income countries (LMICs) where death rates remain significantly greater than in developed countries [1]. These high mortality rates have been perceived to be mainly caused by

diagnosis in advanced stages, long delays, and access barriers to medical care. Although delays occur across the entire cancer care continuum, the specific barriers that Mexican patients face have not been entirely identified.

Correspondence: Cynthia Villarreal-Garza, M.D., Ph.D., Av. Batallon de San Patricio 112, Real San Agustín, 66278 San Pedro Garza García, Nuevo León, Mexico. Telephone: 52-1-81-2030-7335; e-mail: cynthiavg@gmail.com Received April 11, 2018; accepted for publication May 18, 2018. <http://dx.doi.org/10.1634/theoncologist.2018-0226>

In Mexico, it has been reported that the median time between the patients' identification of breast abnormalities and the beginning of BC treatment is 7 months, with the longest delay occurring within the health care system interval, with a median of 5 months [2]. This might be explained by the fact that along the cancer journey, there are no warnings or alerts that prioritize patients in whom an abnormal finding has been identified either by self-detection or by any of the health care providers whom women encounter during the diagnostic workup. As a result, sick patients are not singled out and get lost among all the other women who undergo routine mammography screening or those with a nonurgent breast complaint, ultimately delaying BC diagnosis and contributing to advanced stage presentations. Notably, a study conducted in a main referral public hospital in Nuevo Leon that evaluated time intervals in mammography interpretation showed that median time from date of study to return of results to its primary care facility was 39 days, with only 10% of study requests containing some form of clinical information [3].

In the state of Nuevo Leon, BC is the main cause of cancer death among women older than 25 years, and mortality rates greatly surpass the national average (26 vs. 18 deaths per 10,000 women, respectively) [4]. Additionally, it is important to note that even though health care coverage is higher than the national average, up to 17% of the state's population still lacks health insurance [5]. Furthermore, it has been shown that both undeserved and financially secure patients often face access barriers to affordable and high-quality health care services [6]. One of the main issues is that patients often seek health care services themselves, as referral pathways are not well specified [6]. This problem is exacerbated when primary care physicians fail to identify early and late signs of BC, further delaying patients' access to the required oncologic care [6].

Alerta Rosa is a navigation program created by the MILC: Medicos e Investigadores en la Lucha contra el Cancer de Mama (Physicians and researchers in the fight against breast cancer), a nonprofit organization that seeks to improve the current outlook of BC in Mexico through actions that overcome the existing challenges in early diagnosis and treatment. This navigation program intends to break down medical care barriers to reduce delays and improve quality of care by identifying and prioritizing patients with abnormal breast findings or imaging studies and guiding women in Nuevo Leon, Mexico, through the whole process of BC diagnosis and treatment. This program targets women of all ages who encounter barriers to access primary medical services, irrespective of their health care system affiliation. Our hypothesis is that the prioritization of symptomatic patients will accelerate their medical assessment and will result in shorter health system intervals and earlier stages at diagnosis.

PATIENTS AND METHODS

This project was designed as a prospective cohort study. All patients who contacted the program were eligible to participate. We reached out to patients with symptoms suggestive of BC or abnormal imaging studies through several mass media campaigns (television, radio) and social

networking sites (Facebook, Twitter). Also, we partnered with several BC-dedicated nongovernmental organizations (NGOs) in the region to increase our program awareness and promote patient referral. Networking sessions were held with NGO members and volunteer radiology technicians to relay program logistics, BC symptom detection strategies, and indications for immediate alert activation.

Patients could contact us via our call center or Facebook page. Then a navigator recorded the patients' main complaint and contact information and scheduled a medical consultation. Patient navigation was conducted by a registered nurse with previous experience in the management and navigation of patients with BC, who had participated in the program "Creating a Navigation Pathway into the Ministry of Health's System in Monterrey," in which 1,632 patients received BC awareness education and those with suggestive symptoms were successfully navigated to BC diagnostic services [7].

To reduce time intervals, we stratified patients according to their clinical risk of BC, with high priority patients receiving a consultation at an earlier date. Patients with breast symptoms or abnormal mammography results were given preference for early evaluation (<1 week) over those seeking screening services. Patients were assessed at one of two clinical facilities staffed with breast surgeons and radiologists who specialized in breast imaging, who initiated the diagnostic workup. If BC was diagnosed, a cancer specialist from the patients' health care system affiliation unit was contacted, and patients were referred for prompt treatment initiation. A small fee was charged for consultations and imaging studies (between \$10 and \$20 U.S. dollars each), and patients with economic restrictions were offered financial aid by our participating NGOs.

Information from patients enrolled in the program from January 2017 to December 2017 was obtained and recorded in an internal database. Selection bias was eliminated by including all patients who contacted the program during that period. Data obtained from patients included sociodemographic characteristics such as age, city of residence, marital status, occupation, number of children, and health care system affiliation. Patients were asked about their main breast symptom and if they had received previous medical assessment and had imaging studies performed. Women were also asked how they heard about the program. We recorded if the alert was activated by the patient herself, a relative, a health care provider (physician, nurse, imaging technician), or a participating NGO. Number of activated alerts, medical appointments scheduled, medical assessments performed, and reasons why patients did not attend their consultations were registered.

Our team of breast surgeons documented if breast physical examination was normal or abnormal. Imaging studies performed in our center and external studies brought by patients were logged, and discrepancies between results were noted. Other variables recorded were number of solicited biopsies and biopsy results (if benign or malignant). Number of BCs diagnosed, cancer subtype, and clinical stage were also registered. Finally, the referral institution for treatment and initial management was documented.

Dates of alert activation, first medical consultation, imaging studies, biopsy procedure, biopsy results, first medical consultation in referral institution, and treatment initiation were recorded. Intervals were obtained according to these dates, and median, range, and standard deviation (SD) were calculated.

Descriptive statistics were used to analyze the patients' sociodemographic characteristics, information related to alert activation, studies performed, and clinical and pathological features. Measures of central tendency and dispersion were calculated to assess health system intervals and compare our results with previously published data. No patients were excluded from the data analysis.

Financial support for this project was provided by the Susan G. Komen Foundation. Furthermore, private and public health care facilities and health-related NGOs in the region—Fundación Tec Salud, Hospital Nogalar, Cruz Rosa, Unidas Contigo, Cruz Roja, DIF-Nuevo Leon, and Salud Digna—served as collaborators by supporting our media campaign and participating in patient identification and referral, as previously mentioned.

RESULTS

From January 2017 to December 2017, a total of 656 patients contacted our program. All were women, and their median age was 44 years (range, 7–82). Most of them were married (58%) and had three (27%), two (24%), or no children (18%). Regarding their occupation, half of them reported being housewives (51%). With respect to health insurance, 51% of patients had social security (insurance provided by an employer), 46% were undeserved patients with public or no insurance, and 3% were unknown.

Table 1. *Alerta Rosa* patients' breast cancer staging

Stage	Patients, n (%)	Symptomatic	Asymptomatic
Stage I	3 (14)	2	1
Stage II	10 (45)	9	1
Stage III	7 (32)	6	1
Stage IV	1 (5)	1	0
Unknown	1 (5)	1	0
Total	22	19	3

Patients reported becoming aware of *Alerta Rosa* mainly by word of mouth (40%), television (30%), Facebook (14%), and radio (8%). The alert was activated mostly by the patient herself (61%), breast imaging technicians (10%), relatives (8%), NGOs (7%), and physicians (3%). Months with greatest number of activated alerts were October (27%) and July (18%).

A total of 446 medical consultations were scheduled, and 309 (69%) patients did attend their appointments. The main reasons for not showing up were opting for another physician (16%) and personal limitations (16%), which included schedule conflicts, distance to health care facility, and economic barriers. Of the evaluated patients, 147 women (47%) had initially reported a palpable breast mass. Physical evaluation was normal in 52 (35%) and abnormal in 78 (53%) of these patients. Information was not available for 12% of patients.

A total of 55 patients brought external studies with them but required new imaging evaluation because of poor quality images. A discrepancy in results was noted in 23 reports (42%) compared with the external imaging study. The most common change was from a Breast Imaging Reporting and Data System (BI-RADS) classification of 2 to BI-RADS 3 (55%). Two patients that had a previous BI-RADS 2 or 3 result received a BI-RADS 4 when evaluated by our program. Overall, a BI-RADS 4 or 5 result was reported in 13% of patients.

A biopsy procedure was solicited for 39 patients, and 22 were diagnosed with BC. Most patients had stage II (45%) or stage III (32%) disease. BC staging is described in Table 1. Estrogen receptor positive, HER2 negative subtype (50%) was the most common, followed by triple negative (18%); estrogen receptor positive, HER2 positive (9%); and estrogen receptor negative, HER2 positive (9%) BC. Initial management was either surgery (59%) or neoadjuvant chemotherapy (41%).

The median time from alert activation to treatment initiation was 33 days (SD, 9.92; range, 19–56) and from first medical evaluation to treatment start, 28 days (SD, 7.92; range, 16–48). Intervals are reported in Figure 1.

A total of 108 patients (35%) had undergone previous medical assessment in other institutions. Of these patients, six were ultimately diagnosed with BC. Finally, five patients that had already been diagnosed with BC contacted our program for a second opinion.

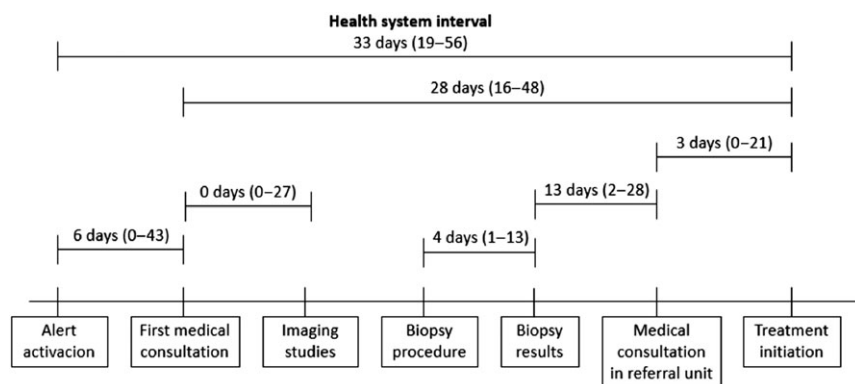


Figure 1. *Alerta Rosa* intervals.

DISCUSSION

As previously mentioned, in Mexico, studies have shown a total interval of 7 months between breast symptom identification and BC treatment initiation, with a median of 10 days corresponding to the patient interval and 5 months to the health care interval, 4 of which account for the diagnostic interval [2]. However, it is currently unknown where the longest delays occur within the BC diagnostic interval. This delay in diagnosis and treatment is multifactorial and can be attributed mainly to human, infrastructure, and financial limitations and lack of prioritization of symptomatic patients and those with abnormal imaging results [1].

The current health public policy has focused on increasing the available mammography equipment for screening purposes. However, 62% of a total of 1,473 devices in the Mexican public health system are analog equipment [8]. This strategy overlooks some disadvantages of analog devices, such as less-detailed images, inefficient workflow, and the long time to print and transport films.

Furthermore, there is a shortage of breast imaging radiologists in the country, with a total of 380 specialists as of 2017 [9,10], for a population of 15.5 million women at risk (aged 40–74 years) [11], which contrasts with a total of 7,360 interpreting physicians who read at least 2,000 mammograms per year in the U.S. [12], for a population of 68.32 million women at risk [13]. Additionally, there is inadequate BC training of primary care physicians, which, along with the factors previously mentioned, greatly affects the health care intervals and leads to delays and diagnostic errors [1]. In our program, we found a 42% discrepancy between external imaging studies and those performed in our centers. The most common change was from a BI-RADS 2 to BI-RADS 3 (55%). Furthermore, six of the patients ultimately diagnosed with BC by the *Alerta Rosa* team had already been evaluated by other physicians who did not recognize alarm signs suggestive of BC. As a possible strategy to face these challenges, centralization of high-quality standard equipment and trained radiologists in breast referral units could shorten time delays related to geographical barriers.

To test the above statement, we hypothesized that the prioritization of symptomatic patients would accelerate their medical assessment and result in shorter health system intervals and earlier stages at diagnosis. Results from the first year of implementation of *Alerta Rosa* are promising, as median time from alert activation to treatment initiation was 33 days, with an interval from first medical evaluation to treatment initiation of 28 days, significantly less than the previously reported health system interval median of 5 months (Fig. 1). Stages at diagnosis of *Alerta Rosa* patients partially differ from those reported in Mexico by the Instituto Nacional de Cancerología, a large referral oncologic hospital (stage II 45% vs. 36%, stage III 32% vs. 36%, and stage IV 5% vs. 13%, respectively) [14].

Overall, our program's success relied on the identification and prioritization of patients with abnormal breast symptoms that warranted an immediate evaluation. Another reason for *Alerta Rosa's* achievements was broadcasting a contact phone number, which provided the patients a simple and quick way of starting their navigation

process. This navigation allowed the patients to be promptly evaluated by breast specialists, eliminating the need for an initial consultation with a primary care physician in patients with breast symptoms. Additionally, because the clinical facility where consultations were scheduled had imaging capacity, 91% of our patients had their imaging studies done on the same day of their medical appointment, further reducing delays. Furthermore, contacting cancer specialists in the patients' health care affiliation unit facilitated and hastened treatment initiation in previously confirmed BC diagnoses. Finally, having a navigator prioritize and schedule the appointments guided the patients at every step of the way and aided the program logistics and patient follow-up. Overall, 7% of the 309 evaluated patients were diagnosed with BC.

Previous studies have evaluated other models of BC early detection in LMICs. Preliminary findings of a randomized controlled study from the Cairo Breast Screening trial demonstrated that screening based on breast self-examination combined with clinical evaluation resulted in downstaging of tumors in the intervention arm compared with the control arm [15]. A study from Kenya showed that conducting a multidisciplinary BC awareness and early diagnosis program in LMICs is feasible and can be a model for increasing BC awareness and early diagnosis in countries with limited resources [16], but that program differs from ours by the fact that it was targeted for the general population instead of only symptomatic patients, which resulted in a lower percentage of BC diagnoses (1%). Finally, a third report from Boston established that patient navigation significantly decreased the time to diagnosis among patients with a BC screening abnormality that was diagnosed after 60 days since detection (hazard ratio, 1.40; 95% confidence interval, 1.1–1.9), with no differences before that period [17].

One of the weaknesses of our program was that 137 patients (31%) did not attend their medical consultations. Up to 16% of these patients reported personal issues, which included schedule conflicts, distance to health care facility, and economic barriers, that prevented them from showing up to their appointments. These limitations were unique to each patient and were present even though the program operates in two centers that are geographically distant from one another and cover a large population area, emphasizing the need to further expand the program and increase the number of breast evaluation centers. Additionally, the medical consultations and imaging studies had a price, albeit small, that some very low-resource patients were not able to afford. Finally, each patient may have had specific circumstances outside our control.

Another limitation that we faced was the growing number of activated alerts and medical consultations in the months of July (120 alerts, 51 consultations) and October (179 alerts, 54 consultations), mainly because of a larger media exposure during those months. Although *Alerta Rosa* is not a screening program, after witnessing the media campaign, a considerable number of patients who desired screening contacted us and were given service. Subsequently, a total of three BCs (14%) were diagnosed in asymptomatic women. Previously, BC awareness interventions have been found to increase the uptake of breast

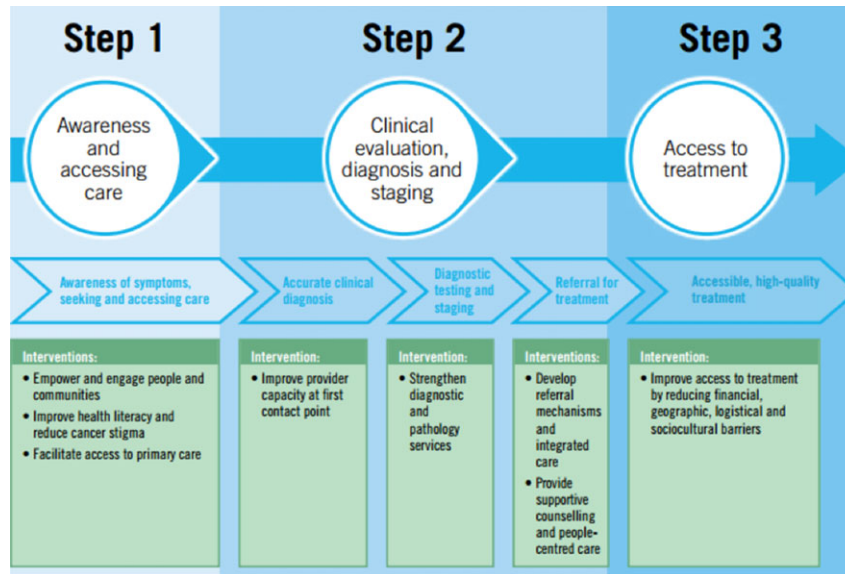


Figure 2. Essential elements of cancer early diagnosis. Reprinted with permission from the World Health Organization [20].

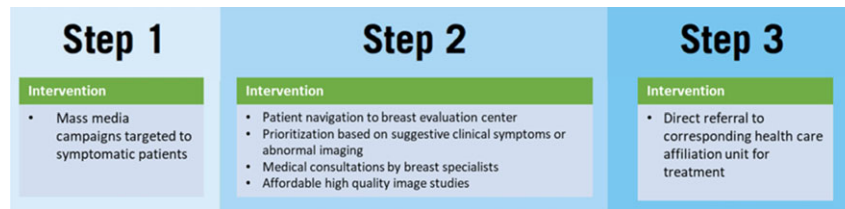


Figure 3. *Alerta Rosa* interventions to strengthen early diagnosis.

self-examination behaviors and increase the likelihood of BC screening attendance [18]. In our program, media exposure led not only to increased awareness but also to three BC diagnosis in asymptomatic patients, as in the Kenya study [16].

Based on the results obtained and limitations observed during the first year of this program, we have designed changes that will improve our navigation model. These rearrangements will be implemented and evaluated in the present year. Because 86% of the patients diagnosed with BC had symptoms, we believe in reinforcing the necessity to prioritize symptomatic women. However, as some breast symptoms have a higher sensitivity for BC detection, patients with a palpable breast mass, bloody nipple discharge, nipple/skin retraction, or BI-RADS 4 or 5 results will now be given maximum priority. Additionally, asymptomatic patients with an imaging result of BI-RADS 1 or 2 will be discharged by the breast radiologist and given follow-up for their next imaging study by our navigator. Finally, regarding project exposure, because patients reported having heard of *Alerta Rosa* mainly by word of mouth (40%) and television (30%), we will focus our resources in television media diffusion, as this form of mass media is almost universally present in Mexican homes and 96% of the population has at least one television [19].

Overall, in its first year of implementation, *Alerta Rosa* was a success, and much can be learned from the information obtained. Our results reaffirm the need to focus health system assets on diagnostic programs in limited-resource settings, such as ours, that target and prioritize

symptomatic women and align with the World Health Organization's key steps for achieving early diagnosis and treatment in countries with weak health systems or low resources (Figs. 2 and 3) [20]. Efforts need to be made to establish select diagnostic centers with the proper infrastructure, quality mammography equipment, and breast imaging specialists, as this offers a more effective way to evaluate women compared with widespread substandard quality screening mammography. Furthermore, patient navigation proved to be an effective way of organizing medical assessments and follow-up, thus maximizing patient adherence. Also, patients need to be encouraged to seek medical attention as soon as they have a breast symptom and to be guided in the diagnostic and treatment process.

Finally, maximization of available resources is key to achieve current program maintenance and determining feasibility of further expansion. To calculate cost per patient, we considered the main program expenses that were covered by the Susan G. Komen Foundation grant. During the first year of *Alerta Rosa's* implementation, cost per patient was \$183 USD. This amount included the navigator's salary, call center services, program coordinators' fees, two BC-specialized physicians' income, and the program's media campaign (images and jingle design and radio and social media spaces). We believe that the higher initial expense per patient was mainly due to the low patient volume in the first months since program implementation, along with the launching of the media campaign. Notably, in the current year, cost per patient has diminished by almost 50% and is currently \$97 USD. This lower cost has

been a result of a larger number of activated alerts and the establishment of alliances with local BC-specialized physicians who offer their services at a low cost to underserved patients, thus eliminating the need for the program to employ its own physicians. Furthermore, mass media services have offered to continue promoting the program with the already created material, at no additional cost.

We will continue to work towards developing strong and lasting partnerships and improving *Alerta Rosa's* role as a navigation program that effectively guides patients to affordable, timely, and quality imaging studies and medical care.

CONCLUSION

In LMICs such as Mexico, with human, infrastructure, and financial limitations, opportunistic screening should be implemented as a cost-effective strategy to enhance BC early diagnosis and downstaging, over population-based screening mammography. Prioritization and navigation of symptomatic patients and those with abnormal breast findings can improve referral and admission to tertiary-care services to facilitate prompt care. Additionally, centralization of high-quality standard equipment and trained radiologists in breast referral units can shorten time delays related to geographical barriers. Conclusively, *Alerta Rosa* proved to be successful in reducing health system intervals and could be replicated and adapted for other limited-resource settings.

REFERENCES

- Unger-Saldaña K. Challenges to the early diagnosis and treatment of breast cancer in developing countries. *World J Clin Oncol* 2014;5:465–477.
- Unger-Saldaña K, Miranda A, Zarco-Espinosa G et al. Health system delay and its effect on clinical stage of breast cancer: Multi-center study. *Cancer* 2015;121:2198–2206.
- Sanchez-Guillen E, Ramirez-Sanchez M, Lopez-Martinez EA et al. Mammography interpretation delays in a main public healthcare unit in Nuevo Leon, Mexico. Abstract e18677 presented at ASCO Annual Meeting; 2018; Chicago, IL.
- Centro Nacional de Equidad de Género y Salud Reproductiva, Mexico. Información Estadística Cáncer de Mama. <https://www.gob.mx/salud/7Ccnegrs/acciones-y-programas/informacion-estadistica-cancer-de-mama>. Published December 2, 2016. Accessed May 9, 2018.
- Instituto Nacional de Salud Pública, Mexico. Encuesta Nacional de Salud y Nutrición, Resultados por Entidad Federativa: Nuevo León, 2012. Cuernavaca, Morelos, Mexico: Instituto Nacional de Salud Pública; 2013. <https://ensanut.insp.mx/informes/NuevoLeon-OCT.pdf>.
- Unger-Saldaña K. Monterrey Health Systems Analysis: Preparedness for Breast Cancer Care and Patient Experiences. Dallas, TX: Susan G. Komen Foundation; 2013. [https://ww5.komen.org/uploadedFiles/Content/AboutUs/GlobalReach/CIMAB_Final%20Project%20Report_Monterrey_Health_System%20\(Final\).pdf](https://ww5.komen.org/uploadedFiles/Content/AboutUs/GlobalReach/CIMAB_Final%20Project%20Report_Monterrey_Health_System%20(Final).pdf). Accessed May 9, 2018.
- Mireles-Aguilar T, Tamez-Salazar JJ, Villarreal-Garza CM et al. Successful implementation of a novel breast cancer navigation program in Nuevo León, México. Abstract P3–10-05 presented at San Antonio Breast Cancer Symposium; 2016; San Antonio, TX.
- Secretaría de Salud, Mexico. Inventario Nacional de EMAT (Equipo Médico de Alta Tecnología). <http://www.cenetec.salud.gob.mx/contenidos/biomedica/mapa.html>. Published December 2016. Accessed February 15, 2018.
- Rojas R. En México sólo existen 380 radiólogos para atender a todas las pacientes con cáncer de mama: Fucam. *Saludario*, December 7, 2017.
- Cruz-Martínez A. La detección del cáncer de mama es tardía por falta de especialistas y equipos: INSP. *La Jornada*, October 1, 2015.
- Instituto Mexicano para la Competitividad. Encuesta Intercensal 2015 vía INEGI. http://imco.org.mx/desarrollo_urbano/encuesta-intercensal-2015-via-inegi/. Accessed February 20, 2018.
- Institute of Medicine and National Research Council. Ensuring an adequate workforce for breast cancer screening and diagnosis. In: Nass S, Ball J, eds. *Improving Breast Imaging Quality Standards*. Washington, D.C.: National Academies Press; 2005:117–163.
- United States Census Bureau. Annual estimates of the resident population for selected age groups by sex for the United States, states, counties, and Puerto Rico Commonwealth and municipalities: April 1, 2010 to July 1, 2014. https://factfinder.census.gov/faces/tables/services/jsf/pages/productview.xhtml?pid=PEP_2014_PEPAG_ESEX&prodType=table. Accessed March 20, 2018.
- Reynoso-Noverón N, Villarreal-Garza C, Soto-Perez-de-Celis E et al. Clinical and epidemiological profile of breast cancer in Mexico: Results of the Seguro Popular. *J Glob Oncol* 2017;3:757–764.
- Miller AB. Practical applications for clinical breast examination (CBE) and breast self-examination (BSE) in screening and early detection of breast cancer. *Breast Care (Basel)* 2008;3:17–20.
- Sayed S, Moloo Z, Ngugi A et al. Breast camps for awareness and early diagnosis of breast cancer in countries with limited resources: A multidisciplinary model from Kenya. *The Oncologist* 2016;21:1138–1148.
- Battaglia TA, Bak SM, Heeren T et al. Boston Patient Navigation Research Program: The impact of navigation on time to diagnostic resolution after abnormal cancer screening. *Cancer Epidemiol Biomarkers Prev* 2012;21:1645–1654.
- Anastasi N, Lusher J. The impact of breast cancer awareness interventions on breast screening uptake among women in the United Kingdom: A systematic review. *J Health Psychol* 2017 [Epub ahead of print].
- Instituto Federal de Telecomunicaciones. Encuesta Nacional de Consumo de Contenidos Audiovisuales 2016. <http://www.ift.org.mx/sites/default/files/contenidogeneral/comunicacion-y-medios/encca2016vf-compressedacc.pdf>. Accessed May 9, 2018.
- World Health Organization. *Guide to Cancer Early Diagnosis*. Geneva, Switzerland: World Health Organization; 2017.

ACKNOWLEDGMENTS

We thank Fundacion Xignux, Sisamex, Impuls, Televisa Monterrey, Dominio FM, Imagen Radio Monterrey, and Fundacion Multimédios for their support in promoting this program. Financial support was provided by the Susan G. Komen Foundation.

AUTHOR CONTRIBUTIONS

Conception/design: Teresa Mireles-Aguilar, Jaime Tamez-Salazar, Jose F. Muñoz-Lozano, Alejandra Platas, Cynthia Villarreal-Garza

Financial support: Teresa Mireles-Aguilar, Jaime Tamez-Salazar, Alejandra Platas, Cynthia Villarreal-Garza

Provision of study material or patients: Teresa Mireles-Aguilar, Jaime Tamez-Salazar

Collection and/or assembly of data: Teresa Mireles-Aguilar, Jaime Tamez-Salazar, Edna A. Lopez-Martinez, Cristina Romero

Data analysis and interpretation: Jose F. Muñoz-Lozano, Edna A. Lopez-Martinez, Alejandra Platas, Cynthia Villarreal-Garza

Manuscript writing: Jose F. Muñoz-Lozano, Edna A. Lopez-Martinez, Cynthia Villarreal-Garza

Final approval of manuscript: Teresa Mireles-Aguilar, Jaime Tamez-Salazar, Jose F. Muñoz-Lozano, Edna A. Lopez-Martinez, Cristina Romero, Alejandra Platas, Cynthia Villarreal-Garza

Other (software): Jose F. Muñoz-Lozano

DISCLOSURES

The authors indicated no financial relationships.