

REPUBLIC OF THE MARSHALL ISLANDS

Republic of the Marshall Islands Cancer Registry (part of the Pacific Regional Central Cancer Registry);
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Data Making a Difference: Using Cancer Registry Data and Processes to Improve Breast Cancer Screening Services in the Republic of the Marshall Islands

NATIONAL PROGRAM OF CANCER REGISTRIES SUCCESS STORY

SUMMARY: The Republic of the Marshall Islands (RMI) is an archipelago independent nation that is affiliated with the United States through the Compact of Free Association. Since 2007, the RMI has been part of the Pacific Regional Central Cancer Registry (PRCCR), which is administered by the University of Hawaii John A. Burns School of Medicine (UH). The RMI has been a low-middle income country, as defined by the World Bank and therefore has lacked sufficient human, equipment and other resources needed for effective cancer screening. The RMI Cancer Registry has been providing accurate cancer data on more than 95% of the population who are able to receive some aspect of their care in one of two major hospitals in the country. The registry information has been used to inform the development of resource-appropriate RMI National Standards of Practice for Breast, Cervical and Colorectal cancer in 2010. In 2012, the cervical cancer screening guidelines were revised based on updated registry data and in 2018, the breast cancer screening guidelines were revised for target ages and screening intervals.

The cancer registrar and data played an instrumental role in the recent revision of the breast cancer screening guidelines as well as the clinical process development needed to start more organized breast cancer screening services. Since the RMI cancer registry has developed routinized processes to receive relevant data from all units within the Ministry of Health and currently houses all data related to cervical cancer screening, these same relationships and processes will be utilized to track the breast cancer screening and outcomes. In the month of October 2018, 52 screening mammograms were performed. This one-month total surpasses the 38 mammograms done in all of 2007.

CHALLENGE: Breast Cancer is the second most common female cancer in the Republic of the Marshall Islands (RMI)¹. Due to the remote geography and limited resources, the number of breast cancer cases may be under-reported, as reflected by a low incidence rate of 27.9 per 100,000 women compared to the U.S. incidence rate of 124.7. The average age of diagnosis is 47 years old, with almost half of breast cancers diagnosed in women ranging from age 18-49. The oldest woman was diagnosed at age 58. In the United States, the median age of diagnosis of female breast cancer is 62². Numerous historical challenges have impacted the RMI's ability to provide breast cancer screening to large numbers of females. The limited resources have resulted in the following reality for breast cancer diagnosis: Only 26% were diagnosed at Stage 1, 61% were diagnosed at Stage 3 or 4. Only 71% of women were alive within 5 years of diagnosis.

The (RMI) consists of approximately 1,225 remote islands grouped in 29 atolls and five major islands, which form two parallel groups, the "Ratak (sunrise) chain and the "Ralik (sunset) chain, spread across 750,000 square miles of the Pacific Ocean, with a total combined land area of about 71 square miles. To give perspective on the size of the nation, imagine a land area the size of Rhode Island spread out over an area the size of the portion of the United States east of the Mississippi River. (Figure 1.)

The RMI has historically been a Low-Middle Income Country as defined by the World Bank, with severe resource shortages across the entire health services sector. In 2013, the total expenditure on health per capita was \$374³ which covers all preventive and curative health services. In 2015, the expenditures increased to \$651 which pales in comparison to the 2016 U.S. Per Capita health expenditure of \$10,348⁴. The RMI National Comprehensive Cancer Control Program began efforts to educate women about breast cancer risk and screening in 2003; however, breast cancer screening with mammography was non-existent prior to 2004 and was sporadic from 2004-2012 due to either no trained personnel to run the machine and/or no replacement parts or biomedical technician to repair the machine. As a baseline, in 2007 only 38 mammograms were performed in Majuro⁵. From 2012-2017, breast cancer screening was opportunistic with little coordination among the various components of the Ministry of Health. In 2018, the RMI hired a radiologist. Procurement and supply processes have improved. However, utilization of mammography services remained quite low despite the RMI National Comprehensive Cancer Control program's continued outreach and messaging to the women's groups and churches throughout the country.

SOLUTION: The Secretary of Health requested that physician leaders meet with the Comprehensive Cancer Control and Registry Program to address the issue of low utilization of mammography services. The cancer registry presented the updated 2007-2015 breast cancer data to a team of physician and administrative leaders in both Majuro Hospital and Ebeye Hospital and the overall Ministry of Health. The physician leadership team comprised a working group that included the new radiologist, the lead surgeons, obstetricians-gynecologists, the primary care leaders, hospital chief of staff and medical director of the Ebeye Community Health Center. At the request of the Minister and Secretary of Health, Dr. Buenconsejo-Lum and Palafox from UH provided additional guidance to the leadership team and health ministry officials. Based on the new information and the current U.S. Preventive Services Task Force recommendations, the working group decided to update the RMI National Standards of Practice to their current level of resources. They also drafted new forms and a more comprehensive process that includes a tracking and quality assurance component.

RESULTS: Based on the early age at diagnosis (average age 47), with 25% of cases being diagnosed from age 18-39, the leadership team proposed the following recommendations for screening in average-risk women. The RMI does have ultrasound capacity on-island which is important given the expected high false-positive rate of mammography in younger women with dense breasts. They also have the in-country capacity for biopsy and a laboratory that can do the initial specimen processing and staining. The RMI has recently established rudimentary telepathology services, such that the reports will come back in 2-3 days once the biopsy specimen reaches Honolulu, where the additional ER, PR and HER-2 studies are performed. Surgeons are able to provide simple or modified radical mastectomy in-country. Sentinel lymph node biopsy is not routinely available. Radiation or chemotherapy would need to be done off-island.

Proposed Breast Cancer Screening Guidelines:

Average Risk Women

- 35-39 yo: Start Mammogram screening if given an opportunity OR with risk factors
- 40-75 yo: Start Biennial screening mammogram
- 20-39 yo: Advocate self-breast examination

High Risk Factors: Start biennial screening at age 35

1. Family History of breast, ovarian, prostate or pancreatic cancer
2. Previous history of Atypical hyperplasia (lobular/ductal) and lobular carcinoma in situ
3. Early menarche (<12 yo)
4. Late Menopause (>55 yo)
5. Nulliparity
6. Prolonged interval between menarche and 1st pregnancy
7. Menopausal hormonal treatment with estrogen and progesterone

8. Not breastfeeding
9. High body mass index
10. Smoking
11. Alcohol consumption
12. Dense breast on mammogram
13. Previous exposure to chest radiation

*High risk women will follow the same protocol and might require further test or evaluation, like genetic studies which would need to be done off-island as resources allow

The leadership team also developed standard forms that will be used in both Majuro and Ebeye hospitals and they are developing a simple database to track breast cancer screening results and follow-up. Since the RMI Cancer Registrar has the best access to all data sources and has established good reporting relationships with all hospital departments and with Ebeye Hospitals, the breast cancer screening will reside in the cancer registry, alongside the existing cervical cancer screening database. In the month of October 2018, 52 screening mammograms were performed.

SUSTAINING SUCCESS: The Proposed Breast Cancer Screening Guideline will be circulated and communicated to Minister of Health & Human Services, Secretary of Health & Human Services, Senior Leadership Team, Reproductive Health, Health Promotions, Non-Communicable Disease (NCD), Cancer Coalition and stakeholders for a better understanding, coordination and implementation. Clinic processes are being changed in the primary care and antenatal clinics to routinize the offering of mammography in accordance with the new guidelines. To pilot test the new processes, the Ministry of Health will be encouraging first-degree relatives of women with breast cancer to come in for screening.

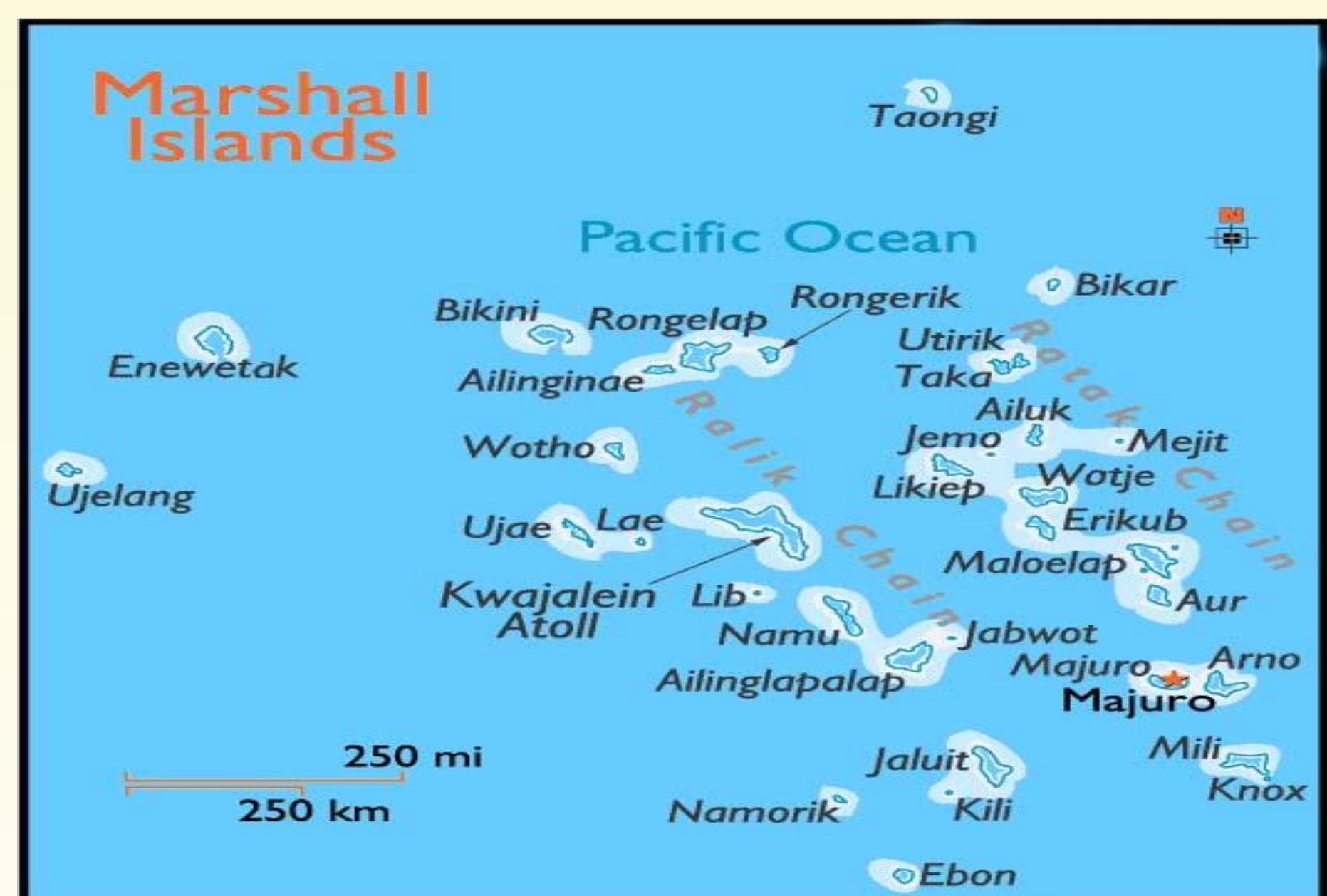
During the upcoming Breast Cancer Awareness Month, as well as with the annual Women's Health week (Mother's Day each year), the Ministry of Health, Cancer Program, NCD and Cancer Coalitions will focus on recruiting more women for screening. Many women leaders from the remote outer islands that do not have most medical services come to Majuro each May for a week-long conference, so particular energy will be placed into getting screening done for those outer island women.

These efforts should help the RMI National Comprehensive Cancer Control program to attain their objective of increasing the number of women aged 40 or older who have had a screening mammogram within the past two years. In just one month, they have already surpassed the number of mammograms performed in all of 2007.

REFERENCES

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Figure 1. Map of the Republic of the Marshall Islands (from the RMI National Comprehensive Cancer Control Plan, 2007-2012)



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NATIONAL PROGRAM OF CANCER REGISTRIES



Centers for Disease Control and Prevention
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