

UNIFIED BREAST CANCER SCREENING GUIDELINES for Northern Nevada

**Nevada Cancer Control Summit
September 16, 2019**

Karin L. Klove, M.D., F.A.C.S.
Clinical Professor of Surgery
UNR School of Medicine

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Objectives

- ◉ Define Breast Cancer Screening
- ◉ Examine breast cancer trends, statistics, and death rates, and impact of screenings
- ◉ Discuss benefits and risks of screening
- ◉ Discuss American Society of Breast Surgeons Screening Guidelines
- ◉ NCC Collaborative efforts



Screening

- "Checking for disease when there are no symptoms." --NCI

Screening

- “The presumptive identification of unrecognized disease in an apparently healthy, asymptomatic population, by means of tests, examinations or other procedures that can be applied rapidly and easily to the target population.” --WHO

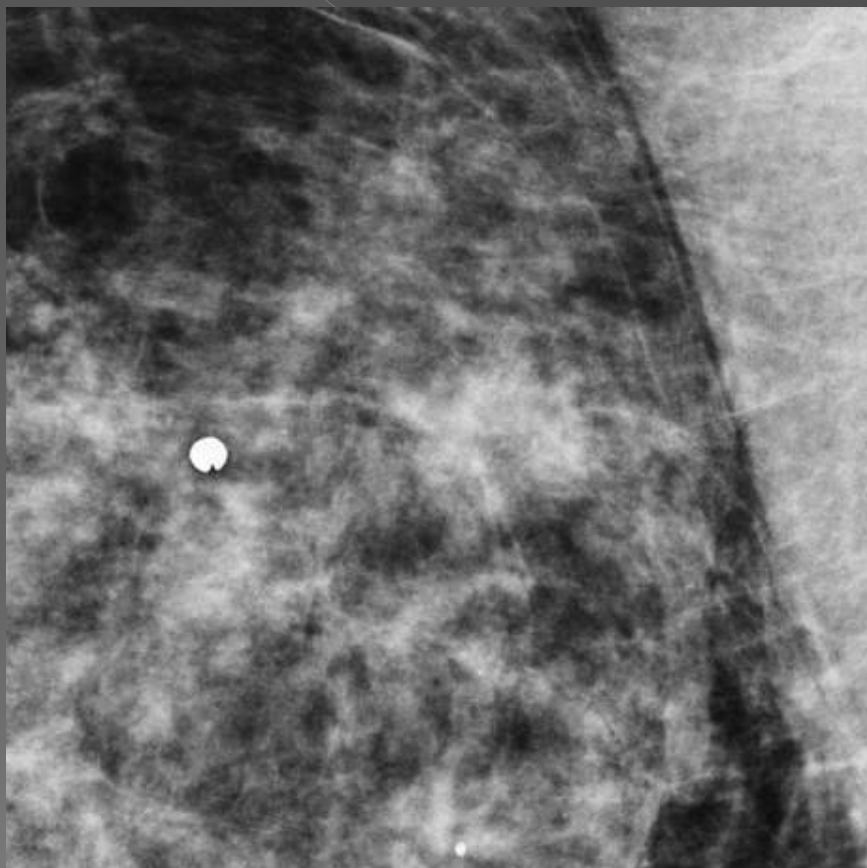
- Systematic follow-up of abnormal
- Participation of >70% target population
- Necessary infrastructure for treatment of findings
- Robust monitoring/framework to ensure quality care

Goal of Screening is Early Detection & Saving Lives

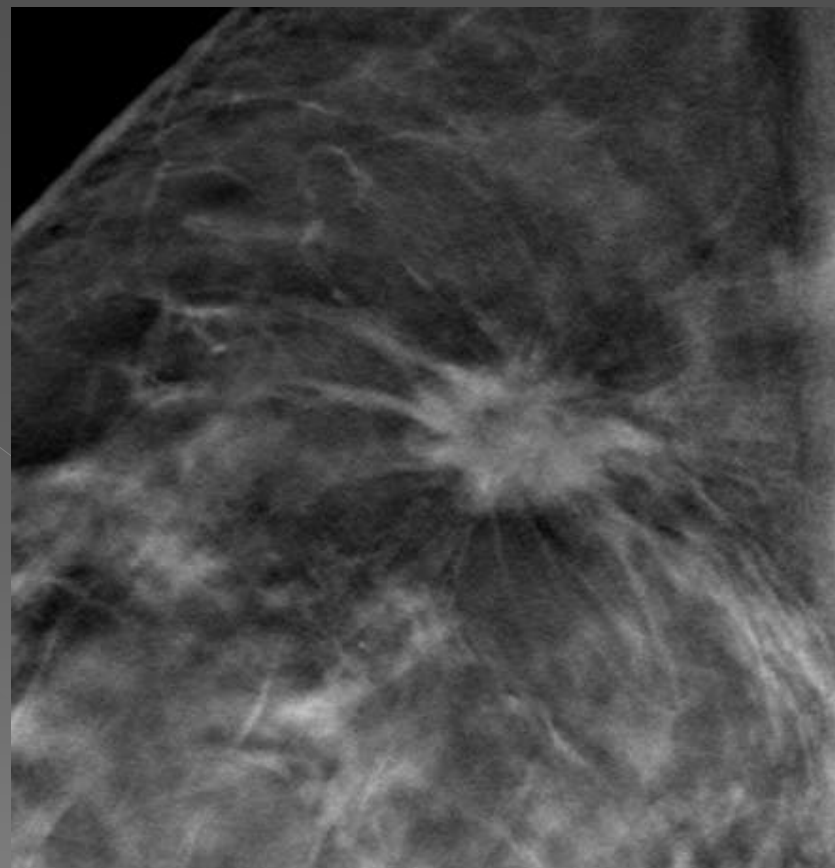
- ◉ Survival improvement
- ◉ Staging should be lower
- ◉ Less extensive treatment
- ◉ Screening does not prevent cancer

Components of Breast Cancer Screening

- ◉ Breast Self-awareness
- ◉ Clinical Breast Examination
- ◉ Screening Mammography
 - > 2D
 - > 3D, tomosynthesis
- ◉ Supplemental imaging
 - > Whole Breast Ultrasound
 - > Magnetic Resonance Imaging (MRI)
- ◉ Periodic Risk Assessment



2D



3D

Breast Cancer Screening Risks

- False positive tests
 - Additional imaging
 - Additional costs, including absence from work
 - Anxiety secondary to call back and biopsy – personal and subjective
 - Possible complications of benign biopsy
 - Pain
 - Hematoma
 - Healing concerns, scarring
 - (Peace of mind)
- False negative tests
 - False reassurance
 - Possible delay in diagnosis
- Pain/discomfort from the exam

Screening

- "Checking for disease when there are *no symptoms*." --NCI

Asymptomatic?

◉ Average Risk

- › No breast lumps or thickening
- › No nipple or skin changes
- › No abnormal nipple discharge
- › No adenopathy

◉ Higher Risk

- › Dense breast tissue
- › Personal or Familial Hx Breast Cancer
- › Genetic Mutation
- › Prior Thoracic Radiation

Which guideline??

BREAST CANCER SCREENING RECOMMENDATIONS 2019

Asymptomatic Women

Subset	American Society of Breast Surgeons (ASBrS)	American College of Radiology (ACR)	American Cancer Society (ACS)	National Comprehensive Cancer Network (NCCN)	US Preventive Services Task Force (USPSTF)	American College of Obstetricians and Gynecologists (ACOG)
	May 2019	Feb 2018	Oct 2017	May 2019	Aug 2019	Sept 2017
20-40	No imaging, if average risk; begin formal risk assessment @25	No imaging, average risk; formal risk assessment by 30	No imaging, average risk	CBE, q1-3yr; Breast Awareness	No imaging, if average risk	Offer CBE q1-3yr; average risk
40-44	Annual, periodic update risk assessment	Annual	Shared decision	CBE q1 yr, Annual mammo	Shared decision	Offer CBE q1yr; offer imaging w/ counseling q1yr
45-50	Annual, periodic update risk assessment	Annual	Annual	CBE q1 yr, Annual mammo	Shared decision	Offer CBE q1yr; offer imaging q yr
51-55	Annual, periodic update risk assessment	Annual	Annual	CBE q1 yr, Annual mammo	Biennial, 50	Offer CBE q1yr; Annual or biennial mammo
56-75	Annual, periodic update risk assessment	Annual	1-2 yrs	CBE q1 yr, Annual mammo	Biennial	Offer CBE q1yr; Annual or biennial mammo
>75	Annual, until age expectancy <10yrs	Shared decision, Annual	1-2 yrs, until age expectancy <10 yrs	CBE q1 yr, Annual mammo	Insufficient evidence	Offer CBE q1yr; Shared decision mammo
High risk 15%	Annual, consider supplemental imaging, alternating 6 months apart	Annual, consider supplemental imaging, 6mos	Annual; Consider MRI	Annual, consider MRI	Shared decision	Not addressed
High risk 20+%	Add Annual MRI rec, begin age 35; alternating 6 months	Annual, with MRI, alternating 6 mos	Add Annual MRI, @age 30	Add Annual MRI	Shared decision	Not addressed
Comments	3D mammography is preferred modality; MRI is favored supplemental imaging modality; If prior breast cancer: annual mammo; add MRI for CA patients if dense breasts or <50 at diagnosis. If genetic risk or prior chest irradiation: begin MRI at 25 and mammo at 30. If risk >20%: annual mammo and access to MRI option	ACR considers proven screening benefits to greatly outweigh the risk for overdiagnosis; Add MRI if dense breasts & cancer, or personal breast cancer <50. Consider MRI for personal history atypia or cancer	Breast awareness is recommended. SBE & CBE are not evidence-based; Insufficient evidence re: dense breasts and pt with prolif. disease or prior breast cancer. High risk includes BRCA1/2, prior chest XRT, genetic syndromes (Li-Fraumeni, Cowden, Bannayan-Riley-Ruvalcaba)	Breast awareness all pts; Consider risk reduction strategies for high risk pts; consider 3D mammo	Insufficient evidence re: 3D mammo & dense breasts; excludes pts w/signs, symptoms, BCA, LCIS, DCIS, known genetic mutation, prior chest XRT; Risk assess ONLY if personal BCA, Fam Hx, BRCA1/2	Self breast awareness is recommended at all ages, with reporting of change to physician. Age>75 decision-making depends on health status and estimated longevity

Nevada Collaboration: Unifying Screening Guidelines



Nevada Cancer Coalition

- ◉ Coalition: A group of people/groups who have joined together for a common purpose
- ◉ Non-profit organization; Founded in 2002
- ◉ Beliefs
 - › The Power of Collaboration & Partnership
 - › The Integrity of Science & Research
 - › The Essential right for Quality in Every Life
- ◉ 6 Goals
 - › #6 Improve coordination & collaboration between cancer control efforts

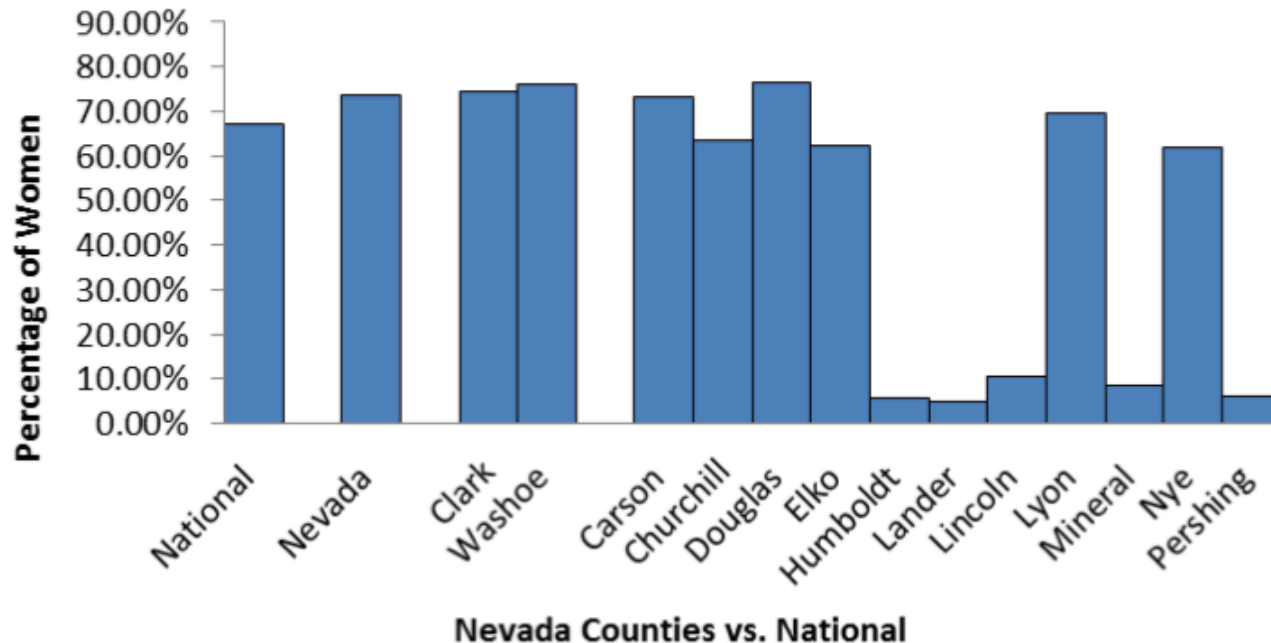
NCC Collaborative study on NV Breast Cancer Screening, 2014

Improving Mammography Screening in the State of Nevada: Barriers and Solutions

Charlotte J. Drumm, MPH(c)
MPH Professional Paper
School of Community Health Sciences
University of Nevada, Reno

Discrepancy among NV counties in screening rates

Figure 5. Mammography Screening Rates, 2012



Nevada State Health Division, 2013

Conclusions about Barriers

- Rural Nevada: Greatest barrier is a “lack of education and knowledge”
 - Improve understanding of the benefits of screening and early detection
 - Improve knowledge of frequency of screening
 - Improve understanding of the safety of screening

NCC Independent Research Study, 2016

NEVADA BREAST CANCER SCREENING ASSESSMENT REPORT

Developing a better understanding of provider approaches and practices specific to breast cancer screening and early detection.

June 2016

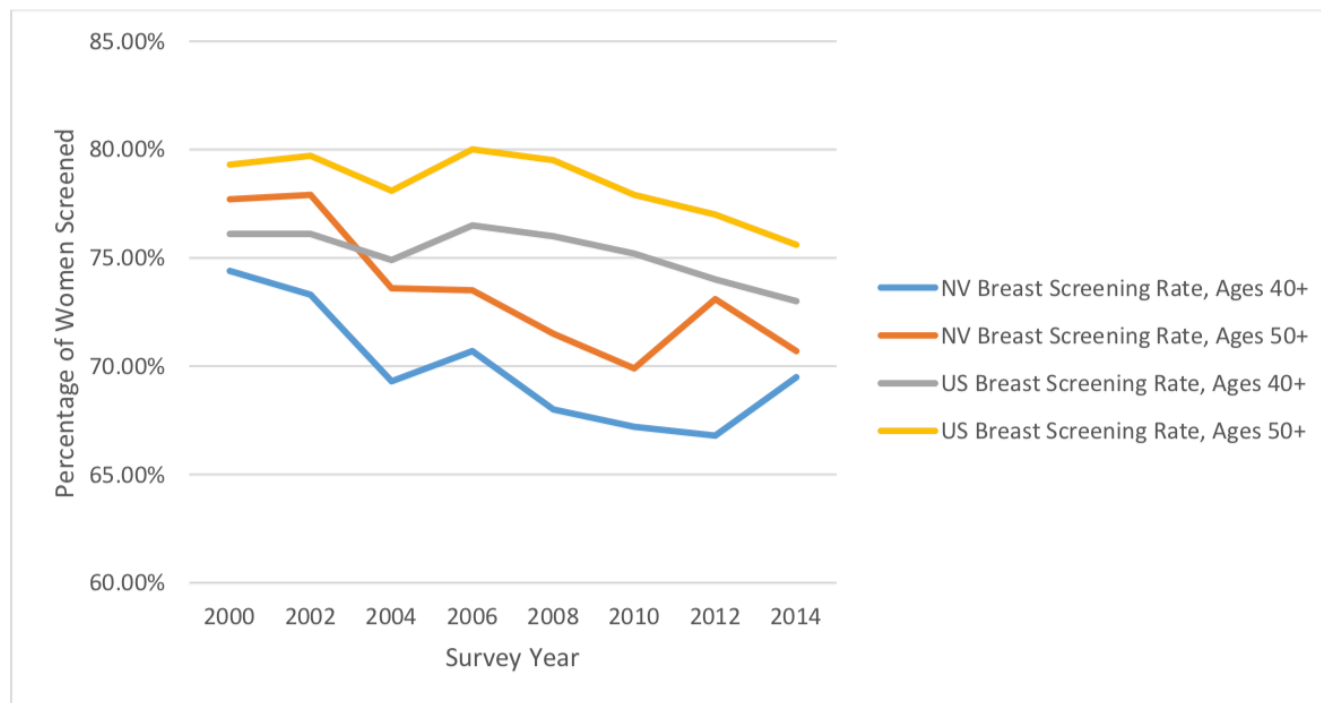


NV Breast Cancer Screening Report 2016

- ◉ Contacted NV primary practitioners who order mammography with inquiries:
 - › Initial age for screening
 - › Interval of screening
 - › Comfort level discussing imaging tools
 - › Confidence discussing screening topics
 - Risk assessment
 - Dense breast tissue
 - Genetic counseling and BRCA mutation

NV and USA screening rates 2000-2014

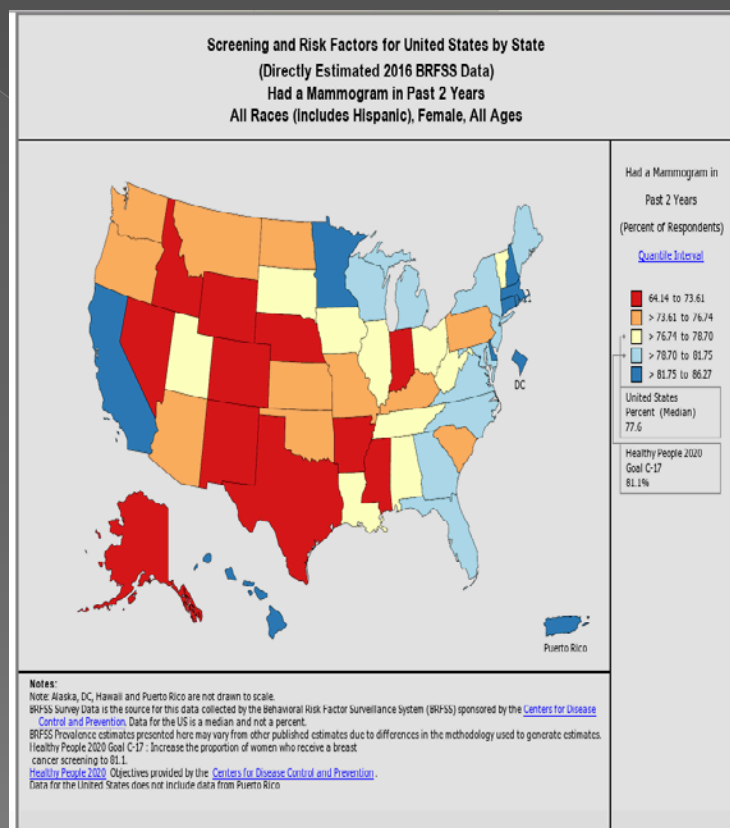
Figure 2: Women Who Have Had a Mammogram Within the Past Two Years, 2000 - 2014, Nevada vs. United States



Data Source: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online]. 2016. Rates are at 95 percent confidence interval for percent.

NIH State Cancer Profiles

Mammography within 2 years



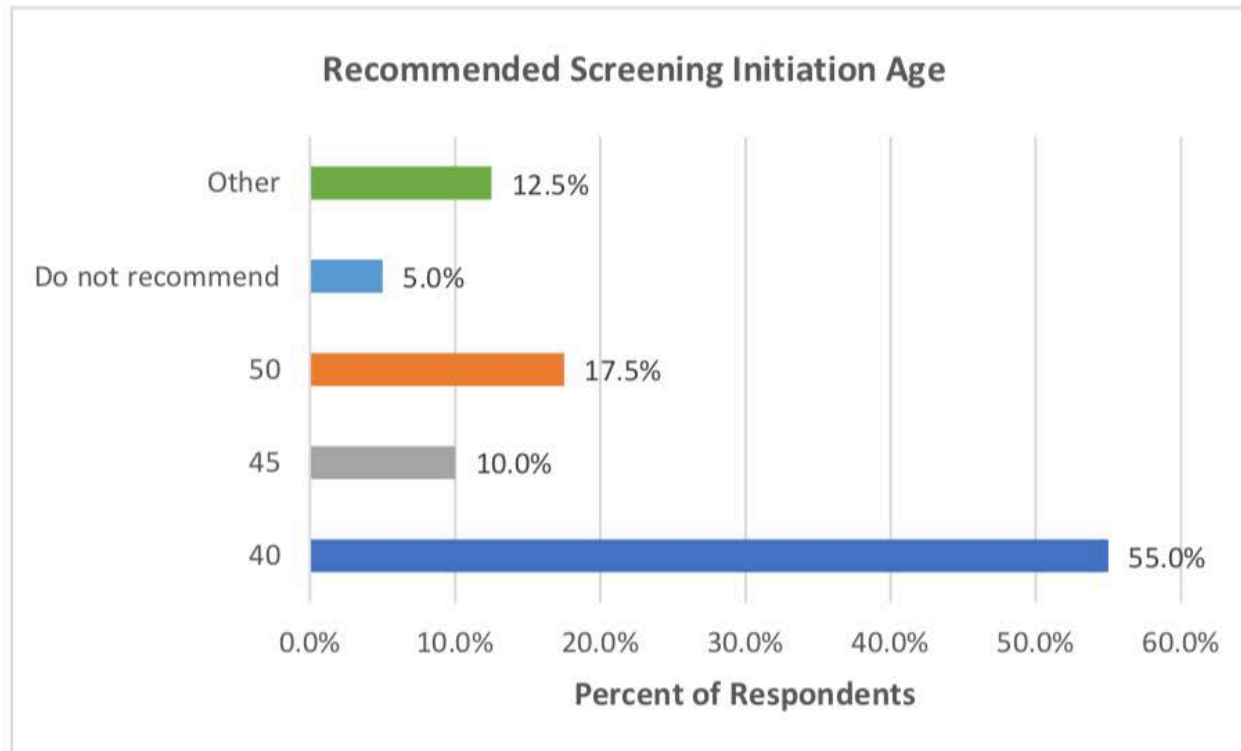
Age 40+ : 67%

Age 50+ : 73% (USA median: 77%)

<https://statecancerprofiles.cancer.gov/risk/index.php?topic=women&risk=v06&race=00&datatype=0&type=risk&sortVariableName=default&sortOrder=default#results>

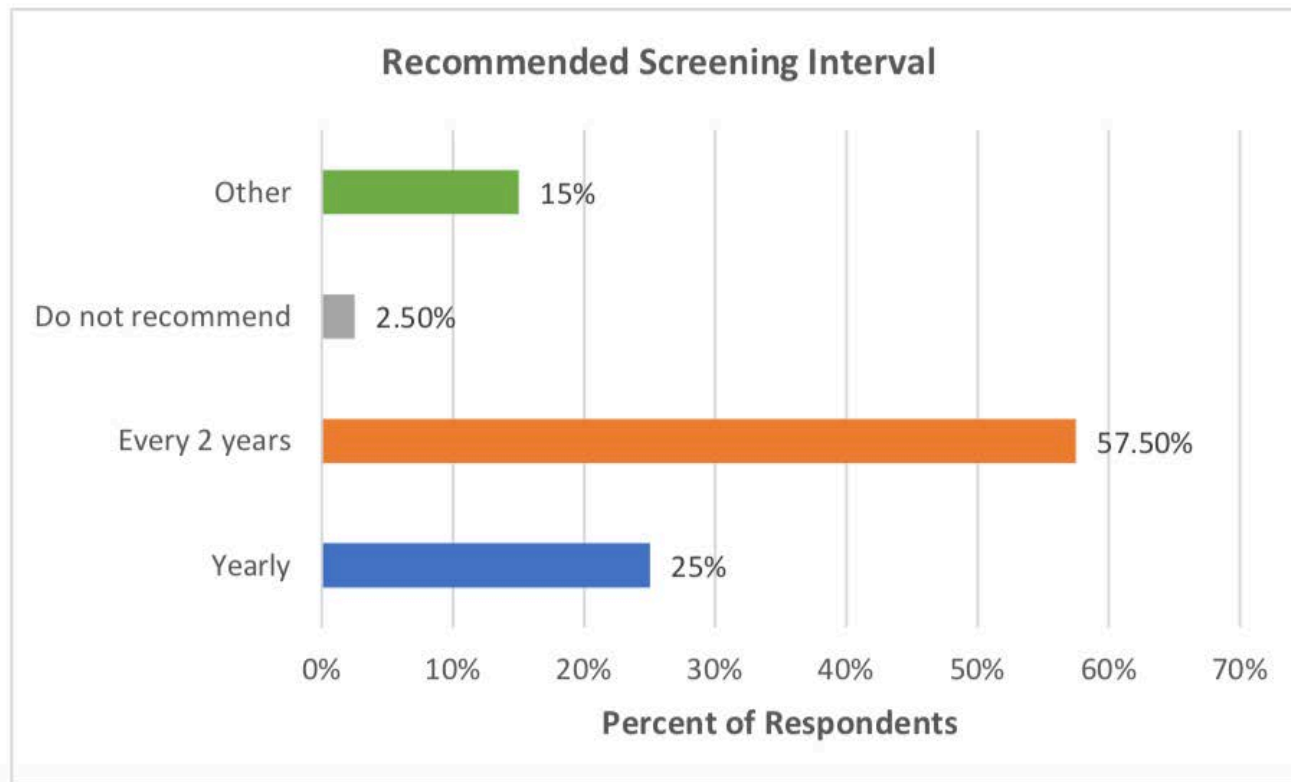
Nevada Practitioners: Age recommendations to begin screening

Figure 5: At what age do you recommend average risk patients begin screening for breast cancer via mammography?



Establish Understanding of Current Practices in NV

Figure 6: At what interval do you recommend average risk patients screen for breast cancer via mammography?



Nevada Breast Cancer Statistics 2019

- ◉ Estimated 2190 new diagnoses of female breast cancer this year (2019)
- ◉ Mortality approx 400 (2019)
- ◉ Screening mammography rate 67%
 - National average 72.4%

Northern Nevada Breast Cancer Collaborative

- A group of healthcare providers, radiologists, breast surgeons, and breast cancer advocates
 - Voluntary effort
 - Working together to implement consistent recommendations and strategies
 - Project ECHO – Dr. Eric Kraemer
- Goals of the Collaborative
 - To improve regional breast cancer screening rates
 - To decrease late-stage breast cancer diagnosis
 - To improve time from diagnosis to treatment

Why unify the guidelines for practitioners and patients?

What evidence exists to embrace a set of guidelines?

Constantly changing!!

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Position Statement on Screening Mammography

ASBrS Breast Cancer Screening Guidelines Recommendations

1. Women age >25 should undergo formal risk assessment for breast cancer
2. Women with an average risk of breast cancer should initiate yearly screening mammography at age 40
3. Women with a higher-than-average risk of breast cancer should undergo yearly screening mammography and be offered yearly supplemental imaging; this screening should be initiated at a risk-based age
4. Screening mammography should cease when life expectancy is <10 years

Table 1 – Summary of ASBrS Recommendations for Breast Cancer Screening*

Women with average risk	<ul style="list-style-type: none">• Women with non-dense breasts (A and B density)[^]	Annual mammography (3D preferred modality) starting at age 40, no need for supplemental imaging
	<ul style="list-style-type: none">• Women with increased breast density (C and D density)[^]	Annual mammography (3D preferred modality), starting at age 40, and consider supplemental imaging
Women with higher-than-average risk	<ul style="list-style-type: none">• Hereditary susceptibility from pathogenic mutation carrier status• Prior chest wall radiation age 10-30	Annual MRI starting at age 25 Annual mammography (3D preferred modality) starting at age 30
	<ul style="list-style-type: none">• Predicted lifetime risk >20% by any model• Strong family history	Annual mammography (3D preferred modality) and access to supplemental imaging (MRI preferred modality) starting at age 35 when recommended by their physician
Women with prior history of breast cancer age ≥50 with non-dense breasts[#]		Annual mammography (3D preferred modality)
Women with prior history of breast cancer at age <50, or with dense breasts[#]		Annual mammography (3D preferred modality) and access to annual supplemental imaging (MRI preferred modality) when recommended by their physician

*All women to undergo risk assessment at age 25-30 and updated at appropriate intervals

[^]Class A or 1 density = fatty; Class B or 2 density = scattered fibroglandular density; Class C or 3 density = heterogeneously dense; Class D or 4 density = extremely dense

[#]Women with prior breast cancer who did not undergo bilateral mastectomy

ASBrS: 4 Basic Guidelines



- Official Statement -

Position Statement on Screening Mammography

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Unified Screening Recommendations

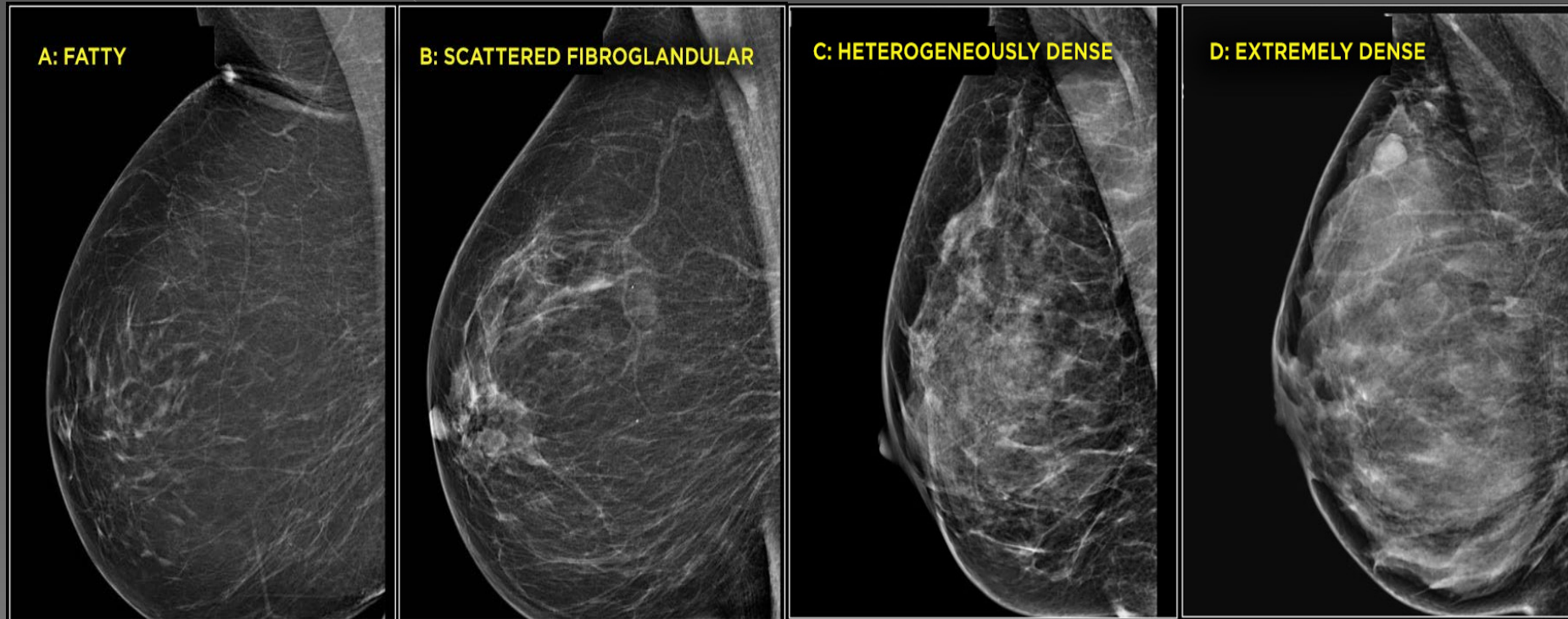


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- ◉ Screening mammography should cease when life expectancy is <10 years

Screening: Risk Stratified

Women with average risk	<ul style="list-style-type: none"> Women with non-dense breasts (A and B density)^ 	Annual mammography (3D preferred modality) starting at age 40, no need for supplemental imaging
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Breast Density Categories



10%

40%

40%

10%

Screening: Risk Stratified

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	<ul style="list-style-type: none">• Predicted lifetime risk >20% by any model• Strong family history	Annual mammography (3D preferred modality) and access to supplemental imaging (MRI preferred modality) starting at age 35 when recommended by their physician

Screening: After a Breast Cancer Diagnosis

Women with prior history of breast cancer age ≥ 50 with non-dense breasts#	Annual mammography (3D preferred modality)
Women with prior history of breast cancer at age < 50, or with dense breasts#	Annual mammography (3D preferred modality) and access to annual supplemental imaging (MRI preferred modality) when recommended by their physician

NCCN Genetic Assessment



National
Comprehensive
Cancer
Network®

NCCN Guidelines Version 3.2019

Breast and/or Ovarian Cancer Genetic Assessment

[NCCN Guidelines Index](#)
[Table of Contents](#)
[Discussion](#)

CRITERIA FOR FURTHER GENETIC RISK EVALUATION^a

- An individual at any age with a known pathogenic/likely pathogenic variant in a cancer susceptibility gene within the family, including such variants found on research testing^b
- An individual at any age with a known pathogenic/likely pathogenic variant in a cancer susceptibility gene found on tumor testing ([See BR/OV-A.3 of 3](#))
- An individual diagnosed at any age with any of the following:
 - ▶ Ovarian cancer^c
 - ▶ Pancreatic cancer
 - ▶ Metastatic prostate cancer^d
 - ▶ Breast cancer or high-grade (Gleason score ≥7) prostate cancer and of Ashkenazi Jewish ancestry
- An individual with a breast cancer diagnosis meeting any of the following:
 - ▶ Breast cancer diagnosed age ≤50 y
 - ▶ Triple-negative (ER-, PR-, HER2-) breast cancer diagnosed age ≤60 y
 - ▶ Two breast cancer primaries^e
 - ▶ Breast cancer at any age, and
 - ◊ ≥1 close blood relative^f with:
 - breast cancer age ≤50 y; or
 - invasive ovarian cancer^c; or
 - male breast cancer; or
 - pancreatic cancer; or
 - high-grade (Gleason score ≥7) or metastatic prostate cancer^d
 - ◊ ≥2 close blood relatives^f with breast cancer at any age
- An individual who does not meet the above criteria but has a first- or second-degree relative with any of the following:^g
 - ▶ Breast cancer ≤45 y
 - ▶ Ovarian cancer^c
 - ▶ Male breast cancer
 - ▶ Pancreatic cancer
 - ▶ Metastatic prostate cancer^d
 - ▶ ≥2 breast cancer primaries in a single individual
 - ▶ ≥2 individuals with breast cancer primaries on the same side of family with at least one diagnosed ≤50 y
- An individual with a personal and/or family history on the same side of the family of three or more of the following (especially if diagnosed age ≤50 y; can include multiple primary cancers in same individual):^g
 - ▶ breast cancer, sarcoma, adrenocortical carcinoma, brain tumor, leukemia ([see LIFR-1](#)),
 - ▶ colon cancer, endometrial cancer, thyroid cancer, kidney cancer, dermatologic manifestations,^h macrocephaly, or hamartomatous polyps of gastrointestinal (GI) tract ([see COWD-1](#)),
 - ▶ lobular breast cancer, diffuse gastric cancer (see CDH1 guidelines, [GENE-2](#)),
 - ▶ breast cancer, gastrointestinal cancer or hamartomatous polyps, ovarian sex cord tumors, pancreatic cancer, testicular sertoli cell tumors, or childhood skin pigmentation (see STK11 guidelines, [GENE-4](#))

Consider referral to cancer genetics professionalⁱ

→ [See Assessment \(BR/OV-2\)](#)

^aThe criteria for further risk evaluation and genetic testing are not identical. For the purposes of these guidelines, invasive and ductal carcinoma in situ breast cancers should be included. The maternal and paternal sides of the family should be considered independently for familial patterns of cancer.

^bIrrespective of degree of relatedness.

^cIncludes fallopian tube and primary peritoneal cancers. BRCA-related ovarian cancers are associated with epithelial, non-mucinous histology. Lynch syndrome can be associated with both non-mucinous and mucinous epithelial tumors. Be attentive for clinical evidence of Lynch syndrome ([see NCCN Guidelines for Genetic/Familial High-Risk Assessment: Colorectal](#)). Specific types of non-epithelial ovarian cancers and tumors can also be associated with other rare syndromes. Examples include an association between sex-cord tumors with annular tubules and Peutz-Jeghers syndrome or Sertoli-Leydig tumors and DICER1-related disorders.

^dMetastatic prostate cancer is biopsy-proven and/or with radiographic evidence and includes distant metastasis and regional bed or nodes. It is not a biochemical recurrence.

^eTwo breast cancer primaries includes bilateral (contralateral) disease or two or more clearly separate ipsilateral primary tumors diagnosed either synchronously or asynchronously.

^fClose blood relatives include first-, second-, and third-degree relatives. ([See BR/OV-B](#)).

^gWhen possible, genetic testing should be performed first on an affected family member.

^hFor dermatologic manifestations, [see COWD-1](#).

ⁱFor further details regarding the nuances of genetic counseling and testing, [see BR/OV-A](#).

Note: All recommendations are category 2A unless otherwise indicated.

Clinical Trials: NCCN believes that the best management of any patient with cancer is in a clinical trial. Participation in clinical trials is especially encouraged.

NCCN Genetic Assessment

- ◉ Known/likely pathogenic variant within family
- ◉ Already diagnosed with cancer of ovary, pancreas, met. prostate, breast, high-grade prostate
- ◉ Ashkenazi Jewish ancestry
- ◉ Breast cancer ≤ 50 y/o
- ◉ Triple Neg Breast cancer ≤ 60 y/o
- ◉ Two breast cancer primaries

NCCN Genetic Assessment

● Breast cancer any age AND:

- ≥ 1 close blood relative with
 - Breast Cancer ≤ 50
 - Invasive ovarian cancer
 - Male breast cancer
 - Pancreatic cancer
 - High-grade or metastatic prostate cancer
- ≥ 2 close blood relatives with breast cancer any age

NCCN Genetic Assessment

- ◉ An individual with 1st- or 2nd-degree relative with any of the following:
 - › Breast cancer ≤ 45 y/o
 - › Ovarian cancer
 - › Male breast cancer
 - › Pancreatic cancer
 - › Metastatic pancreatic cancer
 - › ≥ 2 breast cancers in single individual
 - › ≥ 2 relatives (same side of family) with breast CA and one diagnosed ≤ 50

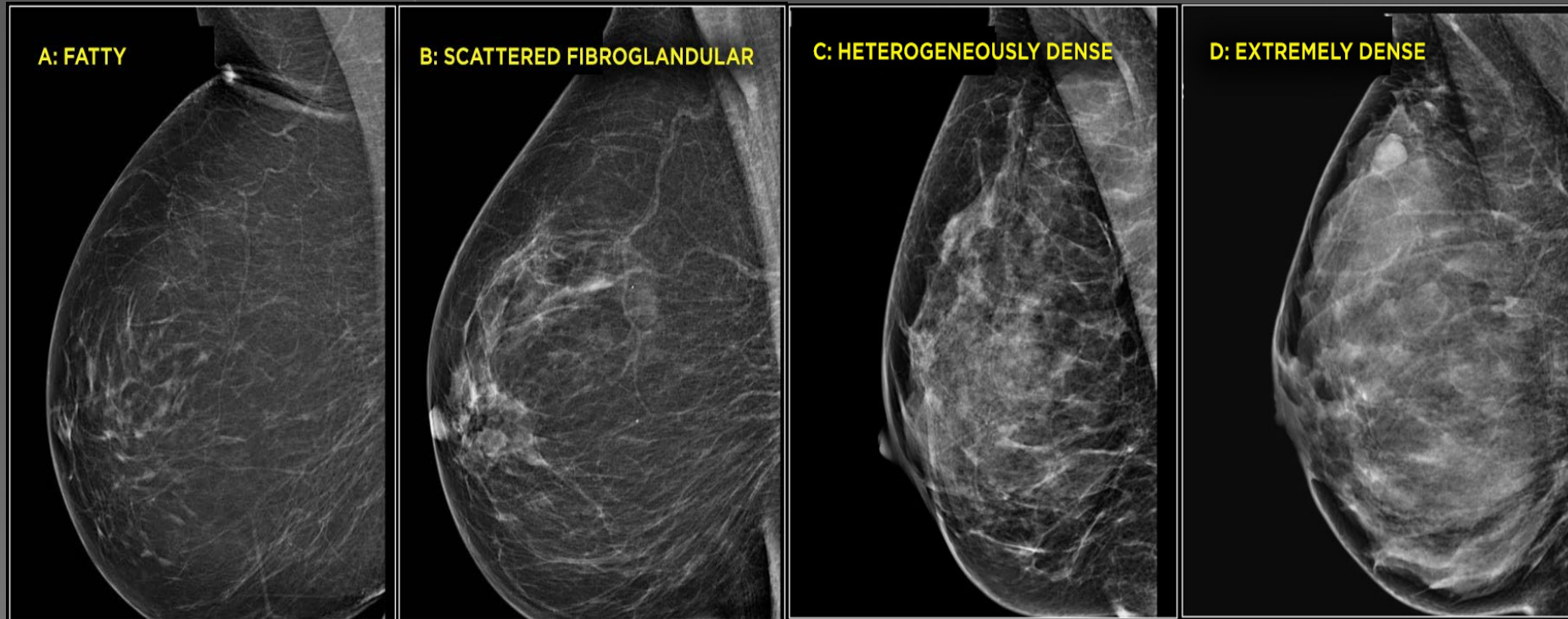
NCCN Genetic Assessment

- ◉ Personal or family history (same side) of 3 or more of the following:
 - Breast cancer, sarcoma, adrenocortical carcinoma, brain tumor, leukemia
 - Colon cancer, endometrial cancer, thyroid cancer, kidney cancer, dermatologic manifestations, macrocephaly, hamartomatous polyps of GI tract
 - Lobular breast CA, diffuse gastric cancer
 - Breast cancer, GI Cancer, Hamartomatous polyps, ovarian sex chord tumors, childhood skin pigmentation (STK11)

Risk Assessment: Tyrer-Cuzick Model

- Risk model assumes presence of a hereditary gene, other than BRCA1/2
- Considers breast density in risk model
- Was developed by scientists at the Wolfson Institute of Preventive Medicine, Queen Mary University of London

Breast Density Categories



10%

40%

40%

10%

Tyrer-Cuzick Risk Assessment: 10-year & lifetime risk

- Current age
- Age of menarche
- Height & weight
- Breast Density
- Age of 1st childbirth
- Age of menopause
- Hormone Therapy
- Prior Breast Biopsy
- Ovarian Cancer
- 1* relatives with ovarian/breast CA
- Ashkenazi descent

Risk Assessment & Genetic Counseling

- Detailed assessment including medical, psychosocial, and family history
- Determination of risk of cancer and/or indication for genetic testing, based upon evidence
- Education/counseling about hereditary risks
- Genetic testing options, when appropriate
- Establishment of a cancer risk management plan
- Discussion of follow-up plans, referrals, etc.

Risk Assessment & Genetic Counseling

- Psychosocial assessment:
 - › Motivations for seeking cancer risk assessment
 - › Beliefs about the causes of cancer
 - › Experiences with cancer and the related feelings, perceptions, concerns, fears
 - › The influence of perceptions and experiences on screening practices
 - › Cultural, religious, and socioeconomic background
 - › General psychological history
 - › Coping mechanisms
 - › Support systems

Gratitude

Acknowledgment: Many Groups in Collaboration

● Physicians

- › Radiologists
- › Breast Surgeons
- › Pathologists
- › Geneticists/Perinatologists
- › Medical Oncologists
- › Radiation Oncologists
- › OB/GYN surgeons
- › Primary Care physicians

Breast Centers in Nevada with NAPBC Accreditation

- ◉ Saint Mary's Regional Medical Center
- ◉ Renown Regional Medical Center
- ◉ Sunrise Hospital and Medical Center

Cancer Centers in Nevada with CoC Accreditation

- ◉ Carson Tahoe Health
- ◉ Renown Regional Medical Center
- ◉ Saint Mary's Regional Medical Center
- ◉ Sunrise Hospital and Medical Center
- ◉ University Medical Center

Other Regional CoC Accredited Cancer Centers

- Tahoe Forest Cancer Center, Truckee
- Sierra Nevada Memorial Hospital, Grass Valley
- Sutter Auburn Faith Hospital, Auburn
- Rideout Memorial Hospital, Marysville
- Marshall Medical Center, Placerville

Nevada Cancer Registrars Association

- ◉ Cancer registrars (CTR) are vital to our knowledge of cancer control
 - › Abstract records
 - › Monitor tumor boards for updated information
 - › Conduct long-term follow-up of patients
 - › Provide essential data to assist with
 - monitoring patient status
 - research trials
 - prevention and screening
 - national and regional statistics & trends

Nevada Central Cancer Registry

- ◉ Collects and compiles data across the state
 - › Hospital and physician reporting
 - › Death certificates
 - › Pathology Lab reports
 - › Eliminates duplications
- ◉ Reports to National Organizations
 - › Centers for Disease Control & Prevention (CDC)
 - › National Program of Cancer Registries (NPCR)
 - › North American Association of Central Cancer Registries (NAACCR)

Nevada Health Centers Mammovan, serving all of the women throughout Nevada



<https://www.nevadahealthcenters.org/mammography/>

<https://www.nevadahealthcenters.org/mammography/mammovan/>

Mammovan



Alexis DeJoria Racing
Aliante Casino + Hotel + Spa
Barrick
Breast Cancer Research and Support Fund
Breast Cancer Assistance Fund
CVS Health
Dermod Properties Foundation
Engelstad Family Foundation
Enterprise Holdings Foundation
E.L. Cord Foundation
Kalitta Motorsports
Friends Fight Together
GreaterGood.org
Live Rude Girls
National Breast Cancer Foundation, Inc.

Nevada State Health Division
Patron Spirits Company
Prevent Cancer Foundation
Robert Z. Hawkins Foundation
Smith's Food and Drug Stores
Susan G. Komen for the Cure – Northern and Southern
Affiliates
Terry Lee Wells Foundation
The Safeway Foundation
Thelma & Thomas Hart Foundation
Toyota Motor Sales, USA
Wal-Mart Foundation's State Giving Program
W. H. & M. Wattis Harris Foundation
William N. Pennington Foundation

Nevada Women's Health Connection

- ◉ Services for Nevada residents
 - Uninsured or under-insured
 - Ages 21-64
 - Cervical and Breast Cancer screening
 - Annual clinical breast exam, 40+
 - Annual screening mammography, 40+
 - Diagnostic services after an abnormal finding
 - Referral for treatment
 - Access to Healthcare affiliated

Paint Nevada Pink

Wednesday, October 2, 2019

Reno Arch

6pm-7pm

PAINT NEVADA PINK

WE ARE UNIFIED IN THE FIGHT AGAINST BREAST CANCER.
WEAR YOUR PINK AND JOIN US AS WE LIGHT THE RENO
ARCH PINK...



WED
OCT. 2ND

6PM - 7PM
THE RENO ARCH
155 N. VIRGINIA ST.
RENO NV 89501

Join us to celebrate breast cancer awareness month
and the northern Nevada healthcare partnership
dedicated to early detection of breast cancer for all
women!

[View Event on Facebook](#)

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BY:



Thank you!

Questions?



Patient Centered Collaboration

- ◉ Improve patient care
- ◉ Evidence-based
- ◉ Current
- ◉ Clearly interpretable
- ◉ Benefits the patients
- ◉ Objectively verifiable

Breast Cancer Deaths Avoided per 10,000 Women Screened by repeat mammography over 10 years (RCTs)

Age range	n/10,000 (95%CI)
40-49	3 (0-9)
50-59	8 (2-17)
60-69	21 (11-32)
70-74	13 (0-32)