

Breast Cancer Screening Rates of Uninsured Patients at South Main Clinic pre/post direct UCCP Referrals

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I. Introduction

Previous studies have indicated that under or uninsured women, such as many patients at South Main Clinic are more likely to be diagnosed with breast cancer at later stages₁ negatively impacting their quality of life and survival₂. To improve mammogram screening rates in the uninsured and underinsured

population of South Salt Lake, the Utah Cancer Control Program has partnered with South Main Clinic to provide life-saving cancer screenings through a direct referral process. This area was considered a high-priority due to extremely low rates of cancer screening, high uninsured rates, and high rates of poverty₃.



II. Methods

This was a retrospective study using data gathered between November 2018- January 2021. Inclusion/exclusion criteria are outlined in figure 1. Data was gathered from Epic and included gender, age, insurance status, mammogram order date, and mammogram completion date if applicable. The outcome of interest was mammogram completion status (complete, incomplete, unknown). Mammogram completion rates were measured by calculating

the percentage of completed mammograms for each group. Chi-square tests of independence were used to determine the impact of:
 1) insurance status
 2) direct referral implementation
 3) COVID-19 pandemic
 Significance was set at 95% (p<0.05) All data was compiled and analyzed in excel. Figures were created in excel and Adobe Illustrator/Photoshop.

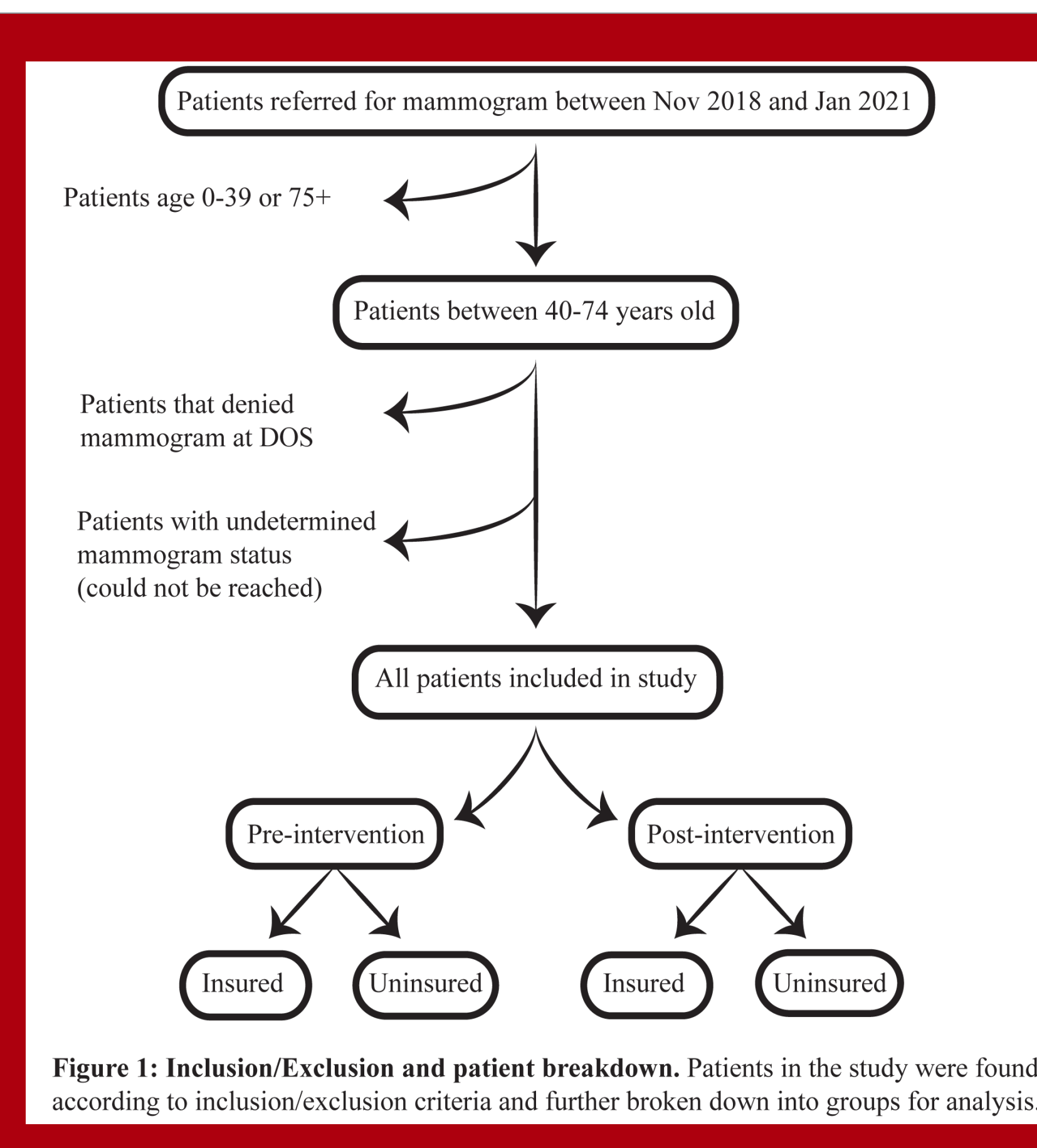


Figure 1: Inclusion/Exclusion and patient breakdown. Patients in the study were found according to inclusion/exclusion criteria and further broken down into groups for analysis.

Insurance status	Timeframe	Mammo completed	Completion rate
Insured	Pre-direct referral	11/11	100%
	Post-direct referral	18/29	68%
Uninsured	Pre-direct referral	35/40	88%
	Post-direct referral	31/39	79%

Table 1: Mammogram counts and completion rates. Fraction of mammograms completed and completion rate, broken up into demographics.

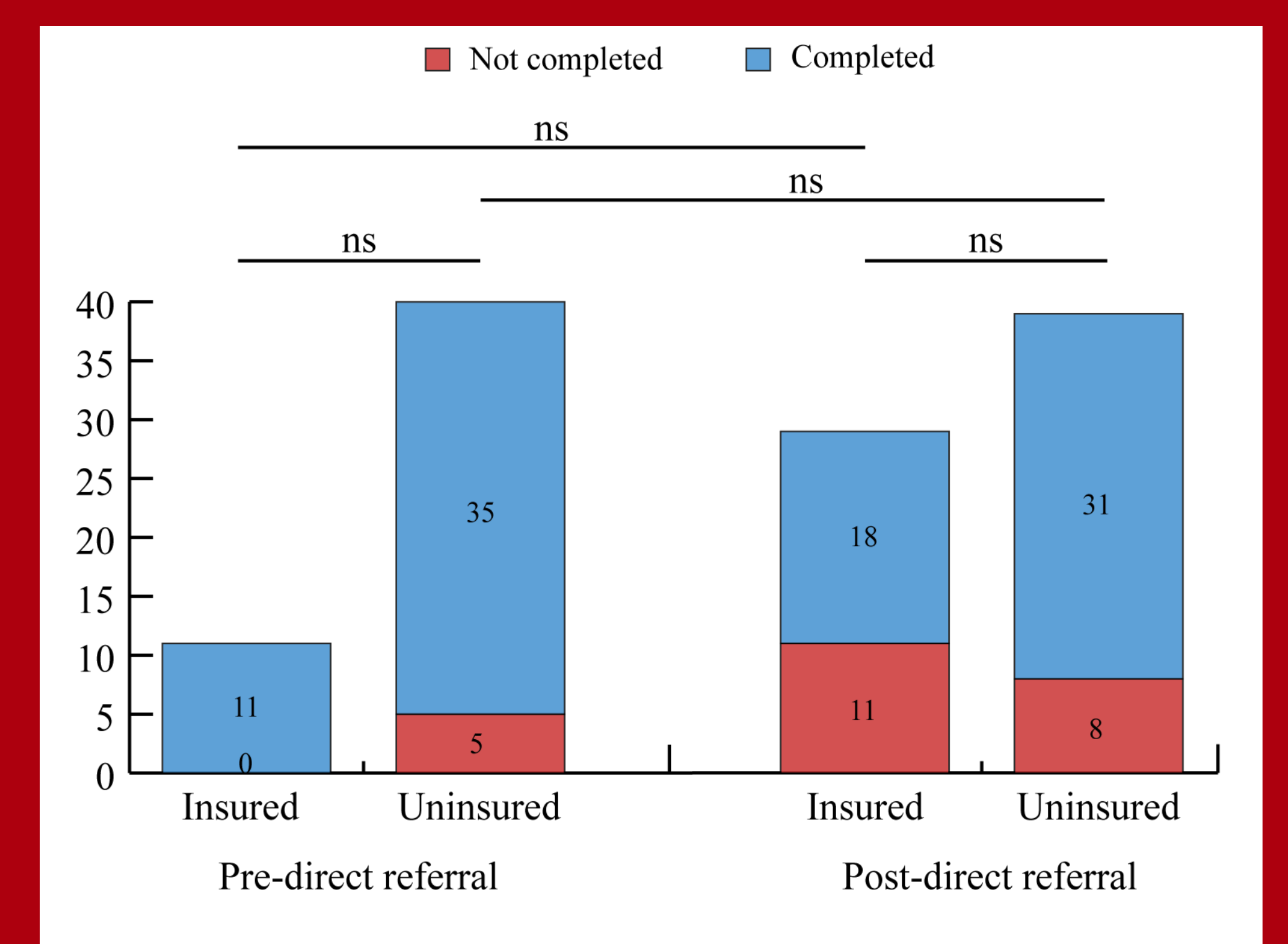


Figure 2: Mammogram counts. The total mammograms completed and not completed for those who met inclusion criteria, broken up into groups. ns= not significant.

III. Results

Completion rates ranged from 68% - 100% (table 1). There was no statistically significant change in mammogram completion rate as a function of either direct referral implementation or insurance status. There was also no statistically significant difference in mammogram completion rates between insured patients before and after direct referral (COVID-19 control). These results are summarized in table 2 and figure 2.

Variable tested	Comparison groups	P value
Insurance status- baseline	Insured pre & Uninsured pre	0.70
Insurance status- after intervention	Insured post & Uninsured post	0.40
COVID-19 pandemic control	Insured pre & Insured post	0.21
Direct referral intervention	Uninsured pre & Uninsured post	0.70

Table 2: P values from Chi-square hypothesis testing. Hypothesis testing as described in methods section. Significance was set as 95% (p< 0.05).

IV. Discussion/Conclusions

It was discovered that the Covid-19 pandemic did not influence mammogram screening rates at South Main Clinic, which although surprising, made the data easier to interpret. Since there was no difference between insured and uninsured patients and their mammogram screening completion, both populations should be further investigated to assess and understand potential differences outside of the implementation of direct referrals as examined in this research.

- that did not respond to the outreach team when contact was attempted.
- Limited knowledge concerning the details of provider approach in the referral process.
- Individual patient barriers.
- Patients that refused mammogram screening services before referral were not included in this study.

Limitations to the study include:
 1. Unobtained data of mammogram completion status of 70 patients

Further investigation is warranted to assess these limitations and other potential barriers influencing the mammogram screening completion of the insured and uninsured populations at South Main Clinic.

References:
 1. Jerome-D'Emilia B, Suplee PD, Robles-Rodriguez E, D'Emilia W. The Impact of Delays in Low-Income Women's Breast Cancer Experiences. *Cancer Nurs*. 2021;44(1):E43-E52. doi:10.1097/NCC.0000000000000878
 2. Jerome-D'Emilia B, Kushary D, Burrell SA, Suplee PD, Hansen K. Breast Cancer Stage at Diagnosis in a New Jersey Cancer Education and Early Detection Site. *Am J Clin Oncol*. 2018;41(11):1043-1048. doi:10.1097/JCO.0000000000000425
 3. Center for Health Data and Informatics, Utah Department of Health. Health Indicator Report of Health Insurance Coverage. Utah Department of Health. <https://his.health.utah.gov/bisph-view/indicator/view/hthins.SA.html>

