Insurance-based differences in diagnostic resolution among women screened at a mobile mammography unit compared to hospital-based screening

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Introduction

Health insurance status impacts access to mammography services and downstream diagnostic follow-up. Mobile Mammography units (MMU) are a valuable tool for improving access for under- and uninsured women.

Aim: To evaluate the impact of insurance status on diagnostic resolution in women receiving breast cancer screening in a MMU compared to hospital-based sites.

Methods and Materials

- Retrospective analysis of screening mammography examinations with BI-RADS 0 assessments performed during two-week periods in 2022 and 2023 at a MMU (n=97) and our hospital-based sites (n=236).
- Patients screened at the MMU received diagnostic follow-up at the hospital-based sites included in the study.
- Area of Deprivation Index (ADI), an index of socioeconomic status for communities, was calculated for each patient.
- Primary endpoint: time to diagnostic resolution.
- Statistical analyses were performed with chi-square, analysis of variance (ANOVA), and Kruskal-Wallis tests. Cox regression analysis was utilized to measure the effects between type of insurance and diagnostic resolution.

Sociodemographic Information

	Hospital-Based N = 236	Mobile N = 97	Overall N = 333	p-value
Race/Ethnicity				<0.001
Asian	15 (6.4%)	4 (4.1%)	19 (5.7%)	
Hispanic	12 (5.1%)	6 (6.2%)	18 (5.4%)	
NH Black	95 (40%)	66 (68%)	161 (48%)	
NH White	100 (42%)	6 (6.2%)	106 (32%)	
Other/Unknown	14 (5.9%)	15 (15%)	29 (8.7%)	
PCP Status				<0.001
No	23 (9.7%)	34 (35%)	57 (17%)	
Yes	213 (90%)	63 (65%)	276 (83%)	
ADI				<0.001
<=20	39 (17%)	3 (3.1%)	42 (13%)	
21-40	54 (23%)	1 (1.0%)	55 (17%)	
41-60	31 (13%)	10 (10%)	41 (12%)	
61-80	49 (21%)	15 (15%)	64 (19%)	
81+	63 (27%)	68 (70%)	131 (39%)	
Type of Insurance				<0.001
Private	142 (60%)	15 (15%)	157 (47%)	
Medicaid	32 (14%)	10 (10%)	42 (13%)	
Medicare	57 (24%)	3 (3.1%)	60 (18%)	
Self-Pay	5 (2.1%)	69 (71%)	74 (22%)	

Results

- Patients screened at the MMU compared to hospital-based sites identified as Non-Hispanic (NH) Black, unpartnered, reported no PCP and fell in the highest ADI category.
- MMU-screened patients were more likely to be uninsured compared to hospital-based screened patients.
- The MMU cohort had longer delays to diagnostic resolution compared to the hospital-based cohort.

Time to Diagnostic Resolution Based on Screening Site

	Hospital-Based N = 236[1]	Mobile N = 97[1]	Overall N = 333[1]	p-value[2]
Median Days from Screening to Diagnostic (IQR)	11 (7, 20)	28 (13, 43)	13 (7, 28)	<0.001
Median Days from Diagnostic to Biopsy (IQR)	12 (7, 18)	11 (6, 24)	12 (7, 19)	0.5
Median Days to Diagnostic Resolution (IQR)	14 (7, 29)	29 (16, 52)	17 (8, 34)	<0.001

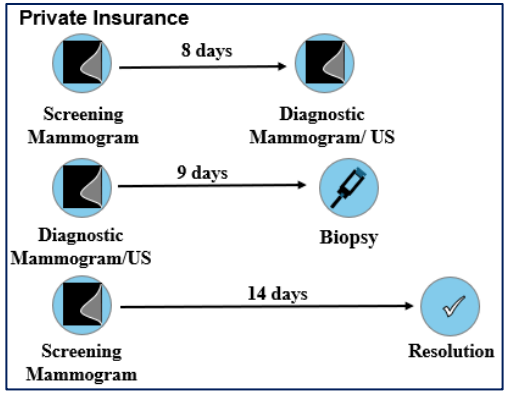
Results

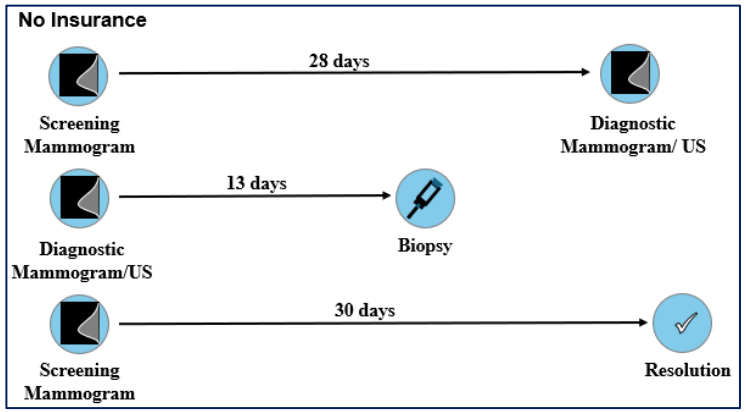
- Patients with no insurance (self-pay) had a lower rate of diagnostic resolution compared to patients with private insurance.
- Uninsured women had longer median time to diagnostic resolution compared to privately insured women.

Time to Diagnostic Resolution Based on Type of Insurance

	Medicaid N = 42[1]	Medicare N = 60[1]	Private N = 157[1]	Self-Pay N = 74[1]	Overall N = 333[1]	p-value[2]
Median Days from Screening to Diagnostic (IQR)	22 (9, 40)	13 (8, 22)	8 (7, 17)	28 (12, 43)	13 (7, 28)	<0.001
Median Days from Diagnostic to Biopsy (IQR)	12 (7, 18)	13 (9, 17)	9 (6, 20)	13 (7, 23)	12 (7, 19)	0.8
Median Days to Diagnostic Resolution (IQR)	24 (11, 48)	18 (8, 32)	14 (7, 27)	30 (16, 52)	17 (8, 34)	<0.001
Days to Diagnostic Resolution						<0.001
<=30	25 (60%)	45 (75%)	122 (78%)	28 (38%)	220 (66%)	
31-60	7 (17%)	10 (17%)	20 (13%)	16 (22%)	53 (16%)	
61+	8 (19%)	5 (8.3%)	9 (5.7%)	11 (15%)	33 (9.9%)	
No Follow Up	2 (4.8%)	0 (0%)	6 (3.8%)	19 (26%)	27 (8.1%)	

Results





Conclusions

- Women screened in a MMU were less likely to have health insurance and more likely to experience delayed and incomplete diagnostic work-up.
- Insurance status impacts timely diagnostic resolution irrespective of site of care.
- This study highlights the need for robust navigation services in patients screened using MMUs.

References:

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