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## Positive Predictive Value Assessment of Malignancy in BI-RADS 4B and 4C Breast Lesions in Indian Scenario: A Tertiary Center Study

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### Abstract

Breast Imaging Reporting and Data System (BI-RADS) is a standardized method of reporting breast pathology identified in breast imaging which is classified into seven categories (0-6) of which category 4 covers a wide range of likelihood of malignancy in between from 2-95% likelihood of malignancy. To improve clinical audits, category 4 is sub-categorized into 4A, 4B, and 4C categories. The positive predictive value for malignancies of BI-RADS 4B and 4C lesions in correlation with pathological diagnosis. This was a retrospective study conducted from June to May 2021 in the Integrated Breast Care Centre (IBCC) in AIIMS, Rishikesh, India. A total of 77 patients were classified as BI-RADS 4B and 4C lesions, 33 were classified as BI-RADS 4B, and 4C as BI-RADS 4C sub-categories.

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**Keywords:** BI-RADS; PPV; Breast; Carcinoma; Biopsy; Pathological techniques

### Introduction

Breast disorders are the most commonly diagnosed diseases in females in the present era, especially in India. Hence the evaluation and diagnosis of breast-related problems have progressed significantly over the past 15-20 years due to recent advances in imaging technology and Pathological techniques as well as increased interdisciplinary management of breast problems. "Breast cancer is the most common cancer identified in the Indian women accounting for about 27.7% of all the cancers in Indian women according to Globocan 2018"[1]. Breast Imaging Reporting and Data System (BI-RADS) is a standardized method of reporting breast pathology identified in Breast Imaging (Mammography, Ultrasound, and MRI) which is classified into seven categories, from category 0-6 [2]. In this classification, BI-RADS category 4 is reserved for imaging findings that do not have the classic features of malignancy but are sufficient enough to justify a biopsy to rule out malignancy. BI-RADS category 3 represents a less than 2% likelihood of malignancy, while category 5 represents a 95% or more likelihood of malignancy therefore, category 4 covers a wide range of likelihood of malignancy in between from 2-95% likelihood of malignancy [3]. To improve clinical audits, inter-communication with surgeons, pathologists, and Image-directed research, many facilities subdivide category 4 into BI-RADS 4A, 4B and 4C especially with 4B and 4C lesions having moderate to high (10-95%) suspicion for malignancy. There are limited studies in the research literature evaluating the positive predictive values and pathological results of 4A, 4B and 4C subcategories [4,5].

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### **Objectives**

this study aims to correlate Radiological diagnosis with the Pathological diagnosis of BI-RADS 4B and 4C lesions to assess the positive predictive value for malignancies of BI-RADS 4B and 4C lesions in correlation with pathological diagnosis.

### **Materials and Methods**

This was a retrospective observational study conducted from September 2018 to August 2019 for 12 months in the Integrated Breast Care Centre (IBCC) established exclusively for patients related to breast diseases at AIIMS, Rishikesh in September 2018 in collaboration with other departments like Breast Imaging, Onco-Pathology and Radiation Oncology.

In these 12 months out of a total of 2567 patients, 77 patients were classified as BI-RADS 4B and 4C lesions by Radiologists based on imaging findings of which 33 were classified as BI-RADS 4B and 4C as BI-RADS 4C sub-categories.

Patients who presented to Breast clinic OPD with various complaints underwent triple assessment with a clinical examination followed by radiological assessment with imaging modalities like mammogram and ultrasonography. Based on ACR guidelines, ultrasonography was performed for patients <35 years, and a mammogram was performed in patients >35 years of age. Complimentary mammography or ultrasonography was done when needed. The imaging features were analyzed accordingly and classified 0 to 6.

Ultrasonogram was performed using high-frequency (4-12 MHz) linear probe of Esaote MyLab 9 eXP Diagnostic Ultrasound System, Model: MyLab Nine eXP scanner, and Mindray Z6. Mammography was performed using Hologic Selenia Dimensions, Hologic (USA).

Patients who were identified with breast lesions of BI-RADS category 4 and above on imaging underwent pathological assessment (FNAC and Trucut Biopsy with 14 Gauge needle) after informed consent. All the procedures were performed under image guidance by experienced radiologists. Pathology reports were issued by two senior pathologists with significant experience in breast pathology. Patients who had not given consent for procedures and lesions categorized 0, 1, 2, 3; 4A and 5 were excluded from our study.

The radiological diagnosis was analyzed in correlation with pathological diagnosis to establish the positive (PPV) for malignancy in BI-RADS 4B and 4C breast lesions.

### **Statistical analysis**

Our statistical analyses were performed using the SPSS software package version 26. All continuous and categorical variables were assessed for the values normal distribution. The descriptive data were given as means  $\pm$  SD. The Pearson chi-square test was used for the analytic assessment and the differences were considered to be statistically significant when the p-value was <0.05. Calculations were done by simple percentage and Positive Predictive Value (PPV) was calculated by the formula:

$PPV = \text{True positive} / \text{Total positive} \times 100.$

### **Summary of concordance analysis**

- Fleiss Kappa (Concordance between all 3 taken together)=0.544 (p<0.001)
  - Cohen's Kappa (For Pairwise Concordance):
  - FNAC with Biopsy: Kappa=0.867, p<0.001
  - Kappa value interpretation Landis and Koch (1977):
  - <0 : No agreement
  - 0-0.20 : Slight
  - 0.21-0.40 : Fair
-

- 0.41-0.60 : Moderate
- 0.61-0.80 : Substantial
- 0.81-1.0 : Perfect

## Results

Of all patients included in this study, the Mean±SD of age in patients with BI-RADS 4B lesions was  $42.97 \pm 13.99$  and 4C lesions were  $47.82 \pm 10.93$  respectively (4C>4B). Family or past surgical history related to malignancy was noted in 14 (42.4%) and 10 (22.7%) of patients with 4B and 4C lesions. The Mean±SD duration of complaints was around  $11.44 \pm 11.63$  months and  $7.72 \pm 11.39$  months in patients with BI-RADS 4B and 4C lesions respectively noting more duration of symptoms noted in patients with 4B lesions. On clinical examination, a lump in the breast was noted in 29 (87.9%) and 41 (93.2%) of patients with BI-RADS 4B and 4C lesions respectively. The Mean±SD size of the lump palpable in BI-RADS 4B and 4C lesions was  $3.36 \pm 1.43$  cm and  $9.17 \pm 14.00$  cm respectively. (Tables 1 and 2).

There was a significant difference between the various groups in terms of the distribution of Biopsy ( $X^2=18.827$ ,  $p<0.001$ ).

In the BI-RADS 4B group, 69.7% and 30.3% proved to be benign and malignant, respectively on biopsy. Similarly in the BI-RADS 4C group, 20.5% and 79.5% of the participants proved benign and malignant on biopsy respectively as in Table 3.

There was a near perfect agreement between the two methods, and this agreement was statistically significant (Cohen's Kappa=0.867,  $p<0.001$ ) as in Table 4.

### *The disagreements observed between the two methods were as follows*

2 (2.6%) cases classified as benign by biopsy, were classified as malignant by FNAC. 3 (3.9%) cases classified as malignant by biopsy were classified as benign by FNAC. In the cases which came as benign on biopsy however malignant on FNAC, a repeat biopsy was done using VABB, which also showed benign pathology, hence they were kept on short-term follow-up. The lesions which came malignant on core biopsy and benign on FNAC were treated like malignant lesions.

## DISCUSSION

The Breast Imaging-Reporting and Data System (BI-RADS) was developed in the year 1985 to standardize breast lesions reporting on imaging and follow-up [6]. Each abnormality in the breast is assessed systematically correlating with the patient's history and imaging findings finally into 6 BI-RADS categories. BI-RADS 4 category assigned to suspicious lesions, for which, there is a 2 to 95% likelihood of malignancy. A biopsy is routinely recommended in these cases. Therefore, in the ACR BI-RADS atlas, the suggestion now is to subdivide category 4 into three subgroups (4A, 4B and 4C) to better inform the referring surgeons and pathologists of the degree of concern. These subcategories also serve to accomplish a more informative internal audit, to improve radiological/pathological correlation, and image-directed research.

Out of all BI-RADS categorized lesions, category 4B is appropriate for lesions considered to have a moderate (10-50%) suspicion, and the 4C category has high (50-95%) suspicion of malignancy. These lesions are further subjected to biopsy for confirmation of the type of lesion which influences the treatment modality to the patient. Follow-up and correlation of pathological results are of the greatest importance in this subgroup because the range of lesion types may be fairly evenly distributed between benign and malignant, which in turn change the fate of these patients.

According to ACR guidelines, positive predictive values for BI-RADS 4 lesions are 2-95% for malignancy, of which 10-50% PPV for BI-RADS 4B lesions and 50-95% PPV for BI-RADS 4C lesions [7]. In a study of 186 BI-RADS 4 lesions, where 73 (39%) of them were histologically proven for malignancy, the appearance of subcategories 4A, 4B and 4C were 19.5%, 41.5%, and 74.3%, respectively [8]. In another study, 2,430 patients with BI-RADS 4 lesions who were subjected to biopsy, found a prevalence of 18.6% of cancer. The PPV for cancer was 7.6% for BI-RADS 4A lesions, 37.8% for 4B and 81.9% for 4C lesions.

These findings were found to be comparable with our findings [9]. In a study, they found positive predictive values for malignancy in the categories as follows: BI-RADS 2: 0%, 3: 2%, 4: 30%, 5: 97%[10]. In our study, we observed Positive Predictive Values (PPV) similar to other studies. 30.3% of the participants in the group BI-RADS 4B had biopsy malignant and 79.5% of the participants in the group BI-RADS 4C had biopsy malignant as in (Figures 1 and 2). This was per the recommended ACR guidelines.

It was found that other diagnoses excluding malignancy in BI-RADS 4B lesions were 7(30.4%) phyllodes tumor, 9(27.2%) fibro adenoma, 1(4.34%) fibrocystic disease, 1(4.34%) fibro adenomas, 2(6.06%) granulomatous mastitis and 3(9.09%) inflammatory conditions. Similarly, 3(6.81%) cases were found to be phyllodes tumor, 2(4.54%) fibrocystic disease, 2(4.54%) granulomatous mastitis, and 2(4.54%) inflammatory conditions observed in BI-RADS 4C breast lesions. These conditions can mimic malignancy on imaging which will lead to false positivity diagnosis on imaging.

Discordant benign are those lesions that have imaging features highly suspicious for malignancy but results in benign pathology on core biopsy as in Figure 3. The reported percentages of imaging-pathology discordant lesions among breast CNB in the literature range from 2 to 19.2% [11-15]. Benign lesions with spiculated findings (granular cell tumor, sclerosing adenosis, postsurgical scar, fat necrosis, mastitis, diabetic mastopathy, and sarcoidosis) can mimic malignancy on imaging [16-17]. However, approximately 4 to 30.9% of discordant lesions after USG guided biopsy are confirmed as cancer by subsequent surgical excision as in Figure 4 [14,15].

If there is concern regarding a discordant benign core biopsy, the radiologist needs to discuss with the interpreting pathologist and communicate about the discrepancy in both diagnoses. Based on that discussion, the radiologist should communicate with the referring surgeon, patient, and discuss the need for a repeat biopsy. In addition to surgical biopsy, USG guided VABB is a valuable alternative to surgical biopsy for these discordant lesions and the reported upgrade rate ranges from 4.6% to 22.7% in various studies [18-20]. Therefore, both surgical biopsy and USG guided VABB can be recommended for repeated biopsies of discordant benign lesions at USG guided biopsy, and the best biopsy method for that particular type of lesion should be chosen based on interdepartmental discussions between the radiologist, pathologist, surgeon, and finally with the patient. In our study, we had done similar inter-departmental discussions and alternative procedures like VABB and surgical excisional biopsy were performed based on the feasibility and necessity of these lesions (Figures 5 and 6).

## **Conclusion**

The Positive Predictive Value (PPV) for BI-RADS 4B and 4C lesions, found in our study were according to the current ACR guidelines. Hence, sub categorizing these lesions into BI-RADS 4B and 4C was justified in our study. The cause of discordant benignity in our study were various lesions that can mimic malignancy on imaging, such as phyllodes tumor, fibro adenoma, fibrocystic disease, fibroadenomas, granulomatous mastitis, and inflammatory conditions. Hence, the existence of such lesions mimicking malignancy justifies the need of classifying suspicious lesions into BI-RADS 4B and 4C and not into the BI-RADS 3 or 5 categories on imaging.

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**Table 1:** Pathology details of benign lesions.

S.No	Total (77)	4B (33)	4C (44)
	Benign	23 (69.7%)	9 (20.5%)
1	Phyllodes tumor	7 (30.4%)	3 (6.81%)
2	Fibro adenoma	9 (27.2%)	0
3	Fibrocystic disease	1 (4.34%)	2 (4.54%)
4	Granulomatous mastitis	2 (6.06%)	2 (4.54%)
5	Inflammatory conditions	3 (9.09%)	2 (4.54%)
6	Fibro adenomas	1 (4.34%)	0

**Table 2:** Pathology details of malignant lesions.

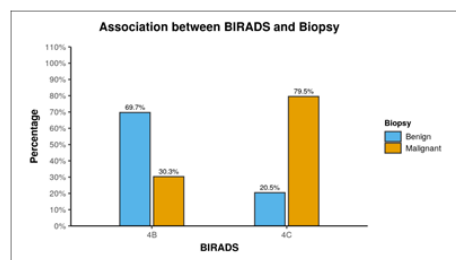
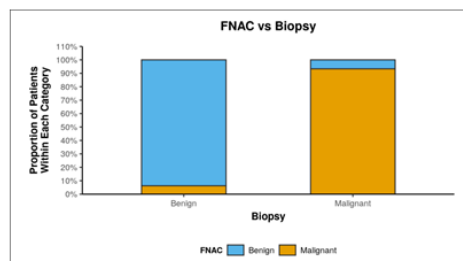
S.No	Total (77)	4B lesion (33)	4C lesion (44)
	Malignant	10 (30.3%)	35 (79.5%)
1	Invasive ductal carcinoma	8 (80%)	28 (80%)
(A)	DCIS	0	1 (3.57%)
(B)	Grade 1	1 (12.5%)	2 (7.14%)
(C)	Grade 2	1 (12.5%)	12 (42.8%)
(D)	Grade 3	6 (75%)	13 (46.4%)
2	Invasive carcinoma (NST)	1 (10%)	0
3	Papillary carcinoma	1 (10%)	4 (11.4%)
4	Malignant phyllodes	0	1 (2.85%)
5	Mucinous carcinoma	0	1 (2.85%)
6	Poorly differentiated carcinoma	0	1 (2.85%)

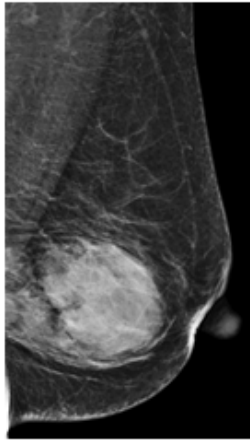
**Table 3:** Association between BI-RADS and biopsy (n = 77)

Biopsy	BIRADS			Chi-Squared Test	
	4B	4C	Total	X <sup>2</sup>	P-Value
Benign	23(69.7%)	9 (20.5%)	32 (41.6%)	18.827	<0.001
Malignant	10 (30.3%)	35 (79.5%)	45 (58.4%)		
Total	33 (100.0%)	44 (100.0%)	77 (100.0%)		

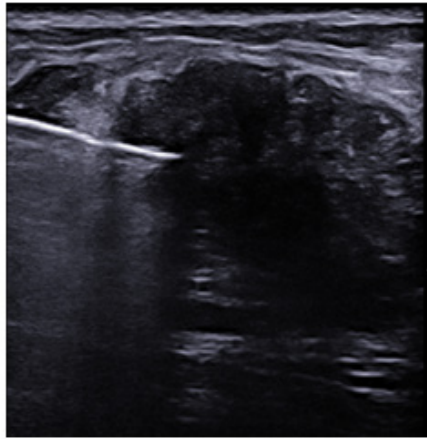
**Table 4:** Comparison of FNAC with biopsy (n = 77).

Biopsy		Biopsy			Cohen's Kappa	
		Benign	Malignant	Total	k	P-Value
FNAC	Benign	30(39.0%)	3 (3.9%)	33 (42.9%)	0.867	<0.001
	Malignant	2 (2.6%)	42(54.5%)	44 (57.1%)		
	Total	32(41.6%)	45(58.4%)	77(100.0%)		

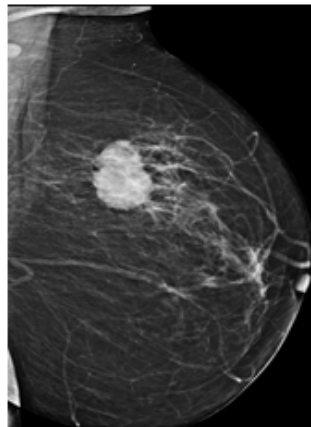
**Figure 1 :** Association between BI-RADS 4B and 4C lesions with biopsy.**Figure 2 :** Bar graph depicts the classification of cases by both the methods.



**Figure 3 :** Mammography and USG of BI-RADS 4B lesion (discordant benign).

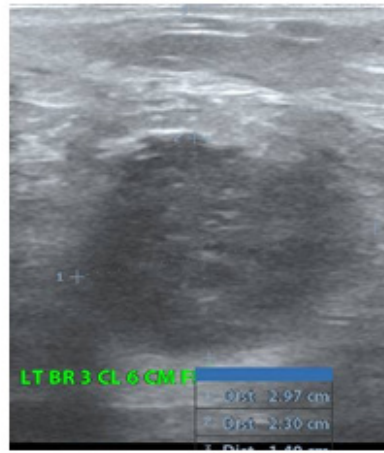


**Figure 4 :** Greyscale USG image shows a multi-lobulated, heterogeneously echogenic lesion.



**Figure 5 :** Mammography and USG of BI-RADS 4C lesion (concordant malignant).





**Figure 6 :** Mammography and USG of BI-RADS 4C lesion (concordant malignant).

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## **Reasons as Stated by the Women, for not Utilizing Institutional Facilities for Delivery, of Selected Rural Community West Bengal**

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### **Abstract**

Maternal health is always a matter of concern for health care professionals. Despite the various international efforts that have been initiated to improve maternal health, more than 500,000 women worldwide die each year as a result of complications arising from pregnancy and childbirth. Majority of those deaths occur in less developed regions particularly Africa and Asia [1]. Furthermore, every year, more than 20 million women become pregnant, and some 15% are likely to develop complications that will require skilled obstetric care to prevent the unacceptably high maternal morbidity and mortality. These numbers of deaths are widely depending upon the utilization of Health care Facility & its availability [2,3].

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**Keywords:** Psychosocial; Health care; Immunization; Blood investigations; Women health.

### **Introduction**

The developing countries as well as less developed countries can take count on the type of health services provided to the maternal health [4,5]. The choice of delivery locations in India are broadly be classified into three mutually exclusive categories [6]. A woman can deliver her baby at home or Institutions, with or without the presence of a birth attendant, who may be trained or untrained. Home delivery is usually the cheapest option, with or without the availability of skilled birth attendants & it is also a potential source of infection & complications [7,8]. An institutional delivery at private hospitals & Nursing homes, where availability of skilled professionals is also not assured contributes equally for maternal mortality & morbidity [9]. The availability of Public facilities to combat this situation is also not less though, the utilization of this services are not up to expected level due to certain reasons such as poverty, illiteracy, poor socio-economic status, traditional health beliefs etc. The present Study is directed to find out the reasons of utilization & Non utilization of health care system for maternal health so as to see the impact on maternal morbidity & mortality. A study to identify the reasons for utilization/non utilization of institutional facilities for delivery as expressed by the mothers of selected families in a rural community of West Bengal [10].

### **Objectives**

The objectives of this study are:

- To identify the proportion of institutional & home delivery taking place in the community.
  - To identify the reasons for home delivery/ institutional delivery as expressed by mothers of selected families.
  - To establish an association of institutional facility utilization for delivery with selected demographical factors.
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## Methodology

The present study methodology is plain descriptive survey with convenient sampling technique. A total 100 mothers who delivered in past one year selected as study subjects to obtain data through interview schedule (Structured Questionnaire). The conceptual framework is based on Rosentoch's & Becker & Maiman's Health Belief model.

### Major Findings

- Proportion of Institutional & Home delivery (Table 1)
- Commonly identified reasons for home/institutional delivery
  1. Kind of personnel available for Delivery (Traditional Dai 52%)
  2. Source of information for institutional facility for delivery (not received information 71%)
  3. Involvement of health worker in motivation (Motivated 21%)
  4. Distance of health care facility (More than 4 KM 80%)
  5. Expenditure of delivery (Reasonable 75%)
  6. Presence of significant illness (Absent 80%)
  7. Preference for delivery place (Institution 26%)
  8. Decision making power (In-laws 60%)
  9. Psychosocial belief (Present 60%)
- Institutional Facility utilization
- Registration at PHC (45%)
- Prophylactic Immunization of TT (60%)
- Iron & Folic acid Supplementation (85%)
- Antenatal Visits & Checkup (40%)
- Blood investigations (85%)
- Institutional Delivery (70%)
- Institutional Facility Utilization Pattern(Figure 1)

### Presence of association

The association between institutional facility utilization with selected demographic factors i.e. Education, Occupation & Income, for Home delivery shows significant association at the level of 0.01. The obtained  $\chi^2$  for Education is 10.48, Occupation is 13.76 & Income is 4.29 (2×2 contingency table with degree of freedom 1). There was no significant association in case of home delivery with the same respect. A finding of the present study indicates that Antenatal care allows for the management of pregnancy, detection and treatment of complications, and promotion of good health. However, women rarely perceive childbearing as problematic and therefore do not seek care. This affects the utilization of maternal health services in regions of the country where poverty and illiteracy are widespread. The level of utilization of antenatal care services was not the same across states. This is likely to be due to differences in availability and accessibility of care among the states.

### Conclusion

The following conclusions were drawn on the basis of findings. There is a lack of institutional facility utilization for delivery among the mothers of rural community. Basically lack of availability of health workers (33%), lack of motivation from health worker(21%), literacy level of the women (30% Primary level), Socioeconomic status of the family (50% BPL), decision making capacity of the mother

regarding choice of delivery (40%), all this factor affects the choice of Delivery place. Other causes include distance from health center (more than 4 KM for 80%), cost of delivery (reasonable for 75 %), reliable person for conducting delivery, psychosocial belief of the family. It is well understood that availability of health care services alone cannot influence the choice of delivery, continued education, motivation & making aware about the available health care facility for delivery are important aspects & to be taken into consideration.

### Recommendations

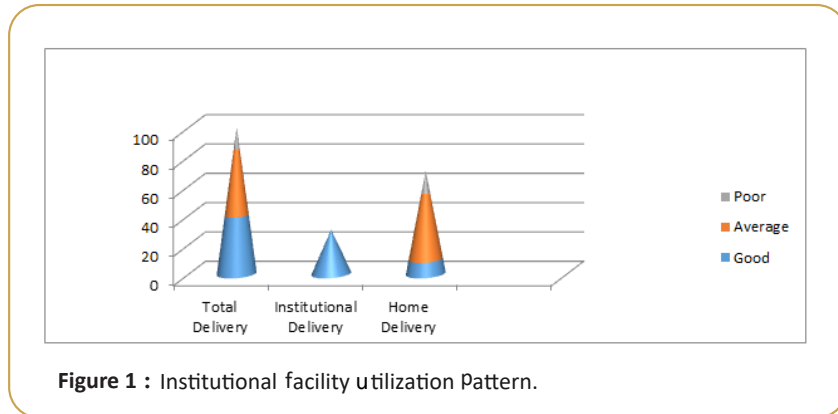
- The study can be replicated on a larger sample of rural mothers of different locality to make the findings more generalized.
- A comparative study can be done to identify the utilization pattern of institutional facility for delivery at home & in institution.
- A study can be done on the available health care infrastructure for a particular population.
- A co relational study can be done on knowledge of facility available for delivery with practice of delivery.

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**Table 1:** Proportion of institutional & home delivery

Sample Characteristics	Number
Sample Characteristics	Number
Population	26,999
Target delivery	734
Total delivery taken place (1st Jan. 09 to 31st Dec. 09)	572
Institutional Delivery	182
Home Delivery	390



**Figure 1 :** Institutional facility utilization Pattern.



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# Hepatocellular Carcinoma: Risk Factors and Management Strategies

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## Description

Hepatocellular carcinoma (HCC) is the sixth most frequent cancer in the world and the third main cause of cancer death. PVTT (portal vein tumor thrombosis) is a common side effect of HCC. Approximately. When 10–40% of patients have PVTT on a macroscopic level, HCC is identified for the first time. Patients with HCC are more difficult to treat. PVTT are diagnosed by an illness that is aggressive disease. Blocking the programmed cell death protein 1 (PD-1)/programmed death 1 ligand 1 (PD-L1) pathway with immunomodulatory drugs. The underlying explanation for these medicines' efficacy could be the selective expression of PD-L1 with dominant immune-suppressive actions in the tumors microenvironment (TME), which promotes a better tumors response-to-toxicity ratio .To boost anti-tumor immunity.

## Risk Factors and Management Strategies

Diagnosis is without pathologic confirmation, the diagnosis is confirmed. At 6-month intervals, radiologic tests such as ultrasonography, computed tomography, and magnetic resonance imaging are used, as well as serological indicators such as-fetoprotein. There is several therapeutic options available, but only orthotopic liver transplantation (OLT) or surgical excision is curative. Patients who require OLT can get it. The objective of HCC should be to reduce mortality and improve patient outcomes. Early detection of HCC has been shown to improve patient survival in studies. 50% Patients who are discovered early have more treatment options, which lead to better outcomes. In today's escalating health-care expenses, defining the target audience should be a top focus, as surveillance for the general public is expensive. HCC is the fifth most prevalent cancer in men (7.5%) and the ninth most common cancer in women (3.4%). HCC is the second and sixth most common cancer in men and women in Egypt. This gender disparity can be explained by two factors: biological and environmental factors. The level of oestrogen ho is a biological basis for the variance in HCC incidence in women. The association of family history of HCC to the HCC risk has been reported through heritable factors and modified by environmental factors. In Egypt, 21.4 percent of HCC patients had a history of the disease in their family (first and second degrees relatives). There are several screening guidelines available for high-risk individuals. Cirrhosis patients are among the people in this group. And/or infection with HBV/HCV (with or without cirrhosis). Methods of screening and surveillance intervals are discussed. The most significant distinctions between these standards although these principles had a significant impact on medical practice, however HCC mortality is high due to a lack of screening adherence.

## Conclusion

If hepatocellular carcinoma is detected early enough, it may be cured. Early detection and treatment of hepatocellular carcinoma should be familiar to medical workers in order to reduce mortality linked with this malignant tumour. Hepatic resection and transplantation remain the cornerstone curative therapies for patients with HCC. In patients with early-stage tumors and advanced liver disease, transplantation is clearly the treatment of choice with 5-year survival rates of roughly 70%. Liver

transplantation, however, is limited by organ shortage and the inherent risk of transplantation and immunosuppression. In patients without cirrhosis or cirrhotic with preserved liver function and absence of portal hypertension Milan criteria, resection remains the treatment of choice when feasible.).

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## Significance of COVID Vaccine

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### Description

The use of COVID-19 vaccines in children in order to propose that children be immunized against COVID-19. "The US Food and Drug Administration (FDA) have granted emergency use authorization to two mRNA-based COVID-19 vaccines produced by Pfizer/BioNTech and Moderna, which have demonstrated great efficacy in clinical studies against SARS-CoV-2 infection and COVID-19 sickness. The mRNA-based COVID-19 vaccines developed by Pfizer/BioNTech and Moderna, which have shown high efficacy against SARS-CoV-2 infection and COVID-19 disease in clinical trials. However, the ability to vaccinate a large part of the global population is limited by vaccine supply. Further Reading Cleveland Clinic Statement on Previous COVID-19 Infection Research Critical Review: COVID-19 vaccines can enhance protective immunity in previously infected people. Correlates of protection from SARS-CoV-2 infection.

### Significance of COVID Vaccine

Immunological memory to SARS-CoV-2 assessed for up to 8 months after infection. In order to ensure fair access to vaccines throughout the world, the COVID-19 vaccines Global Access (COVAX) initiative was launched. In many countries, especially those with low socioeconomic status, there is a serious shortage of vaccines. Thus, in order to get the maximum vaccine benefits, the most vulnerable population should be prioritized for the vaccination. Currently, most countries prioritize vaccination for healthcare and other frontline workers, elderly people, and people with comorbidities. To further narrow down the prioritization criteria, the scientists in the current study have evaluated the necessity of COVID-19 vaccines for individuals who were previously infected with SARS-CoV-2. The vaccine race early on with the Sputnik V COVID-19 vaccine (Gam-COVID-Vac). Sputnik V is a COVID-19 vaccine developed by the Gamaleya Research Institute of Epidemiology and Microbiology, and registered on August 11, 2020, by the Russian Ministry of Health as Gam-COVID-Vac. Sputnik V is an adenovirus viral vector vaccine. Gam-COVID-Vac was initially approved for distribution in Russia on the preliminary results of Phase I–II studies eventually published on September 4, 2020. The quick approval in early August of Gam-COVID-Vac was met with criticism in mass media. It precipitated discussions in the scientific community whether this decision was justified in the absence of robust scientific research confirming the vaccine's safety and efficacy. However, around 10% of infants experienced severe COVID-19 infection who required advanced medical treatments. In rare cases, even asymptomatic infection can result in Multisystem Inflammatory Syndrome in Children (MIS-C), which is a fatal inflammatory condition. COVID-19 positive young children and infants can also actively transmit SARS-CoV-2 to others. Thereby, it is extremely important to protect this group from infection. COVID-19 vaccination has duly started globally since early 2021. However, none of the approved vaccines or those currently under clinical trials has considered infants or young children. Therefore, in the current scenario, until efficient pediatric COVID-19 vaccines are authorized and/or herd immunity is achieved, the only way to protect this group is passive immunity. In this approach, antibodies (Abs) are provided to infants through breastfeeding by a COVID-19-vaccinated mother or milk donor. Since pregnant women were excluded from the clinical trials of all vaccines being used at present, mainly because there was not much understanding of the risk posed by COVID-19 in pregnancy. Today, there is known to be a significant though small risk of progressing to severe

COVID-19 if infected during pregnancy, especially after 28 weeks of gestation. Other studies have shown that risk factors for severe COVID-19 in the UK include being part of an ethnic minority. However, these women are less likely to agree to get the vaccine for their children previously been found to have a lower acceptance of pertussis and influenza vaccines during pregnancy.

### **Conclusion**

The eventual impact of these feelings on children born to these mothers may include not being willing to have them immunized either. To gain precise information about how women thought about COVID-19 vaccines, so as to help shape an appropriate corrective information campaign to remedy the effects of fake news about the dangers of the vaccines being proliferated today.



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# Characteristics of Breast Cancer Screening Among the Medical

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## Introduction

Breast cancer is a significant general well-being challenge around the world, as it is the main source of disease related deaths among ladies, especially in agricultural nations. About 2.1 million ladies were determined to have cancer disease in 2018, and 626,679 deaths were detailed. These addressed an expansion pace of 19% in the frequency and 17% in the death rates when contrasted with 2012. Additionally disturbing is the way that the number of ladies more youthful than 35 determined to have extreme high-grade bosom malignant growth has been expanding. The five-year middle endurance rate is 22%, and most patients pass on inside a year after finding.

## Characteristics of Breast Cancer

Cancer disease by and large has a good guess in created nations, somewhat because of location at ahead of schedule and asymptomatic stages, because of the foundation of screening practices and restorative advances. Devices like the broadly perceived Breast Cancer Risk Assessment Tool (BCRAT or Gail model) that were created and adjusted for the divergence in racial and ethnic gatherings in created nations, specifically in the United States, have been ending up being trying to adjust to agricultural nations including Cameroon, where data about the study of disease transmission and variety of prevailing danger variables of bosom disease in female populaces is regularly scant. Synthesis and now patients at the Breen Breast Health, UH uses the Selenia- Dimensions- 3D digital mammography system, manufactured by Hologic and recently approved by the FDA, combining advanced digital mammography and tom synthesis-generated images to provide a more detailed, highly focused picture of the breast. The technology gives radiologists the ability to identify and characterize individual breast structures and clearly see features which might be obscured in a traditional two-dimensional mammogram by overlapping normal breast anatomy that may mimic or mask a tumor. Dense tissue and overlapping tissue structures may lead to false positive or false negative results with standard mammography. Increasing awareness of the importance of primary cancer prevention is an enormous health-political issue for the future. The incidence of major cancer types, such as gastrointestinal and breast cancer in our ageing society, more active treatment and care, besides the projected losses in working capacity and the accompanying burdens of human suffering. Women with early breast cancer whose systemic treatment and 380 women whose treatment. The study also included 159 women whose guideline adherence. The women were diagnosed invasive breast cancer that had not spread to nearby lymph nodes. Women treated for node-negative breast cancer according to consensus recommendations for systemic therapy experience a significant improvement in survival at 7 years. Breast cancer is the second leading cause of cancer death in women, with 40,170 deaths in the United States. Lower mammography screening rates among minority and low income women contributes to the increased morbidity and mortality from breast cancer. According to the American Cancer Society, an estimated 5,320 new cases of breast cancer will be diagnosed and an estimated 780 women will die from breast cancer in Massachusetts. Medical Center (BMC) general internal medicine primary care practice female patients between the ages of 51-70. Patient navigation services consisted of phone calls and reminder letters to identify the barriers to care and aid in directly scheduling mammograms.

At the end of the nine-months, mammography adherence rates increased to 87 percent in those that received patient navigation with no change from the baseline adherence rates of the non-navigated group (76 percent).

### **Conclusion**

Patient navigation also increased adherence rates across all insurance and education groups. Breast cancer is the second leading cause of cancer death for women in world. Approximately 40,110 women died in U.S from the disease in 2004. Breast cancer is the leading cause of cancer death. women between the ages of 20 and 59, and the leading cause of cancer death for women worldwide.

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