

# ADDRESSING INEQUITIES IN BREAST CANCER GENETIC TESTING, COUNSELLING, AND MANAGEMENT IN NIGERIA



OBAFEMI AWOLOWO UNIVERSITY

**UHN** Princess Margaret Cancer Centre



**Action**

Addressing global inequities in breast cancer genetic testing, counselling, and management among breast cancer patients in Nigeria

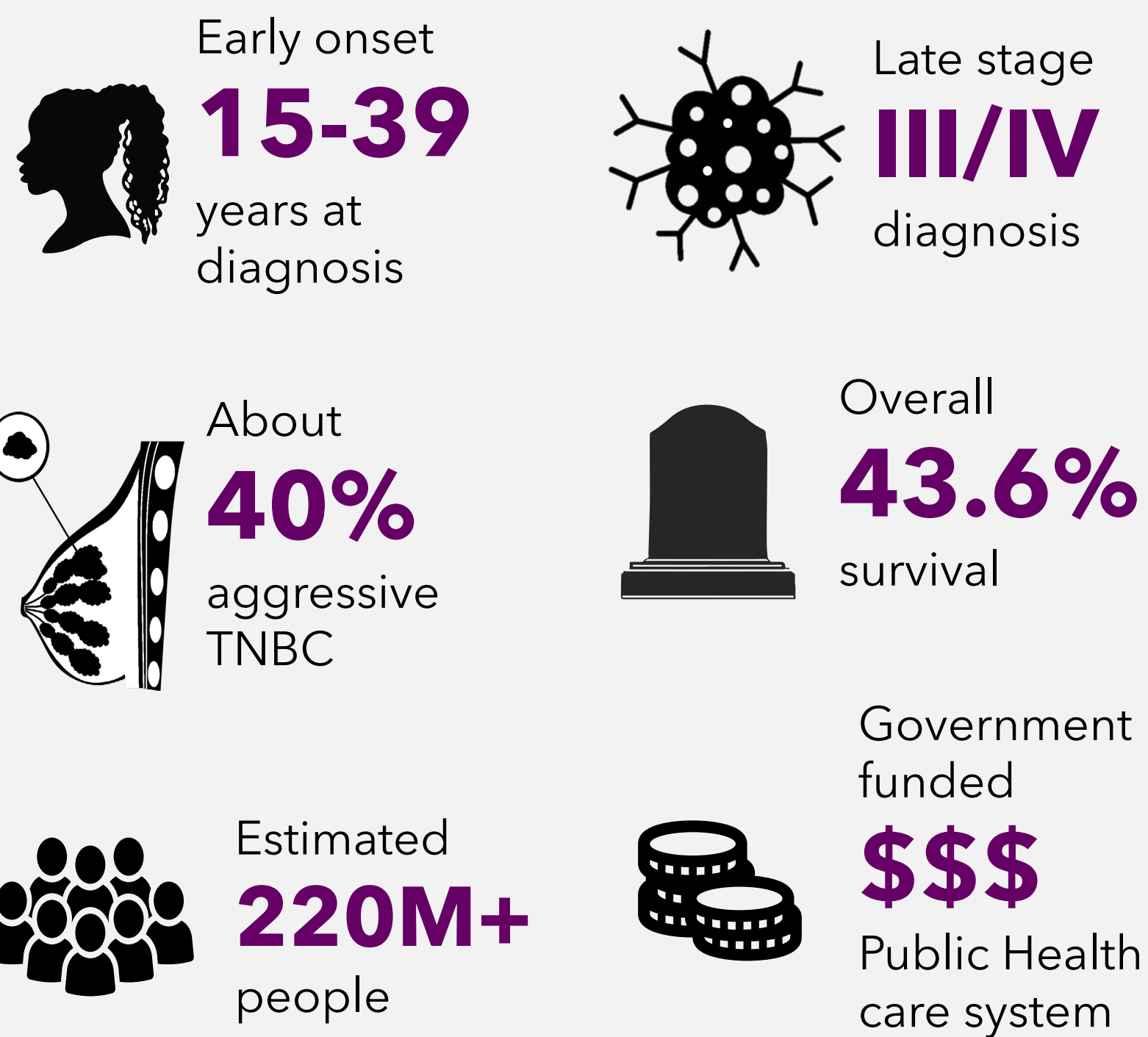
**Authors:** Funmilola Olanike Wuraola<sup>1</sup>, Jenine Ramrathan<sup>2</sup>, Nneka Sunday-Nweke<sup>3</sup>, Olayide Sulaiman Agodirin<sup>4</sup>, Olusegun Isaac Alatise<sup>1</sup>, Matthew Castelo<sup>5</sup>, Andrea Covelli<sup>6</sup>, Anna Dare<sup>5</sup>, Sharif Folorunso<sup>1</sup>, Michelle Jacobson<sup>7</sup>, Saheed Lawal<sup>4</sup>, Ogechukwu Nwafor<sup>3</sup>, Olalekan Olasehinde<sup>1</sup>, Janet Papadakos<sup>8</sup>, Larissa Peck<sup>9</sup>, Emma Reel<sup>2</sup>, Danielle Rodin<sup>10</sup>, Emily Thain<sup>9</sup>, and Tulin D. Cil<sup>2, 5</sup>

**Affiliation:** <sup>1</sup> Department of Surgery, Obafemi Awolowo University Teaching Hospital Complex, Ile Ife, Nigeria; <sup>2</sup> Department of Surgery, Princess Margaret Cancer Centre, Toronto, Canada; <sup>3</sup> Department of Surgery, Federal Teaching Hospital Abakaliki, Abakaliki, Nigeria; <sup>4</sup> Department of Surgery, University of Ilorin, Ilorin, Nigeria; <sup>5</sup> Department of Surgery, University of Toronto, Toronto, Canada; <sup>6</sup> Department of Surgery, Mount Sinai Hospital, Toronto, Canada; <sup>7</sup> Department of Obstetrics and Gynaecology, Women's College Hospital, Toronto, Canada; <sup>8</sup> Cancer Education Program, Princess Margaret Cancer Centre, Toronto, Canada; <sup>9</sup> Department of Genetics, Princess Margaret Cancer Centre, Toronto, Canada; <sup>10</sup> Global Cancer Program, Princess Margaret Cancer Centre, Toronto, Canada

## Challenges of treating Breast cancer in Nigeria

**Background:** Access to genetic testing and counselling remains limited in Nigeria due to insufficient infrastructure, referral systems, and lack of trained genetic counsellors.

- *BRCA1/2* pathogenic variants are the most common heritable risk factors for breast cancer, yet its prevalence and impact in Nigeria are not well characterized.
- Previously reported *BRCA1/2* carrier rates were as high as 11.1% in Ibadan, Nigeria
- **While genetic testing and counseling are routinely available in high-income countries to guide cancer risk assessment and management, access in Nigeria remains extremely limited**

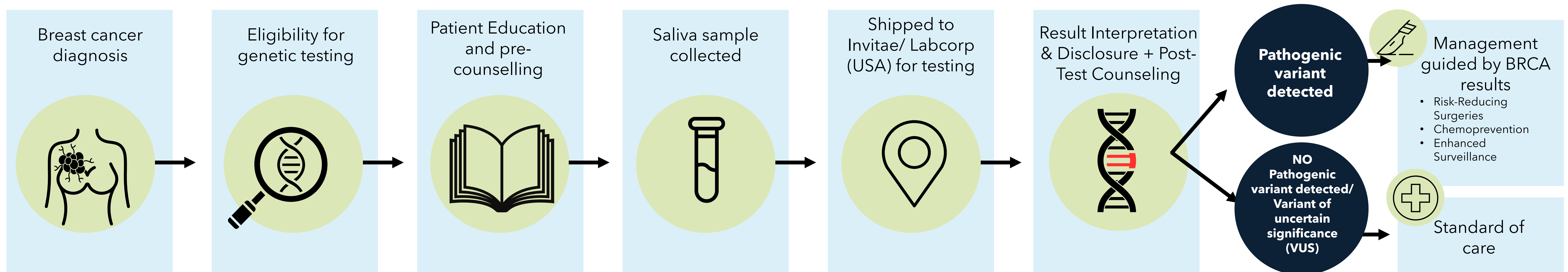


## Aim

To assess the feasibility of *BRCA1/2* genetic testing for Nigerian patients with breast cancer



## Methods



## Results

### Feasibility

**Cohort Demographics:**  
Median age 43 yrs  
(98 women, 2 men)

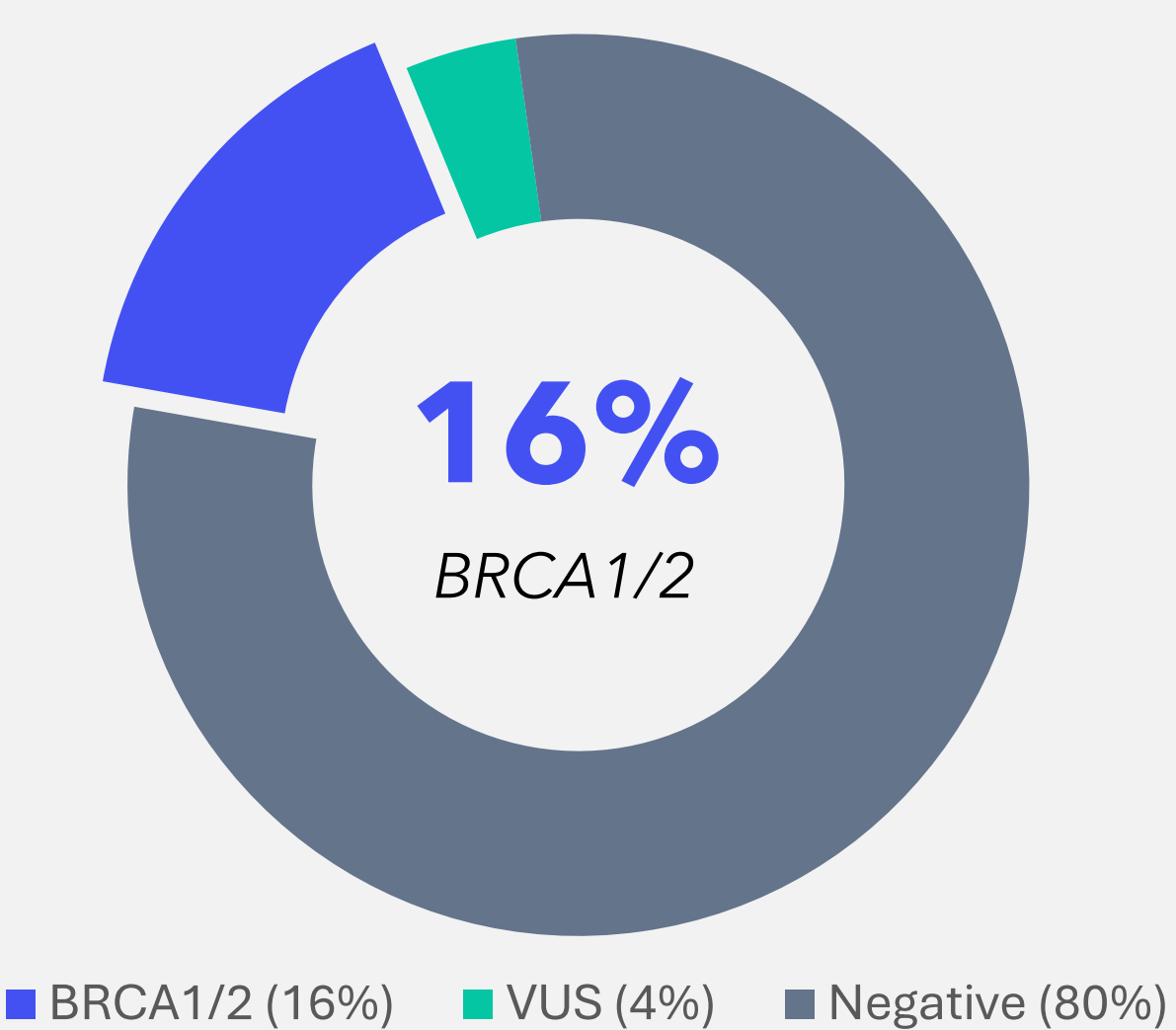
**90%** enrollment rate  
112 patients approached → 100 completed saliva-based *BRCA1/2* testing

**Turnaround Time:** Average 23 days from collection to result

**15%** samples initially failed due to low DNA concentration  
Most successfully resolved through re-testing

**Strong follow-through rate** across multiple sites

### Genetic Test Results



### Clinicopathological features

	<i>BRCA1/2</i>	vs	Non-Carriers
Stage III/IV Disease	88%	vs	82%
Triple-Negative BC	46%	vs	38%
Metastatic Disease	44%	vs	26%

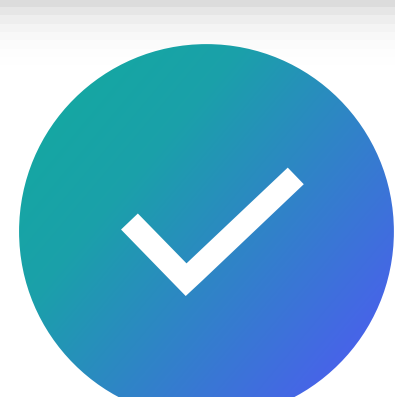
p = ns

### Surgical Management

	<i>BRCA1/2</i>	vs	Non-Carriers
Breast conserving surgery	0%	vs	0%
Bilateral Mastectomy	25% (4/16)	vs	0%
Unilateral Mastectomy	25% (4/16)	vs	44% (37/84)
Prophylactic Bilateral Oophorectomy	31% (5/16)	vs	0%

p < 0.001

First study of its kind in Nigeria, offering genetic testing and yielding real-time results used in clinical decision making



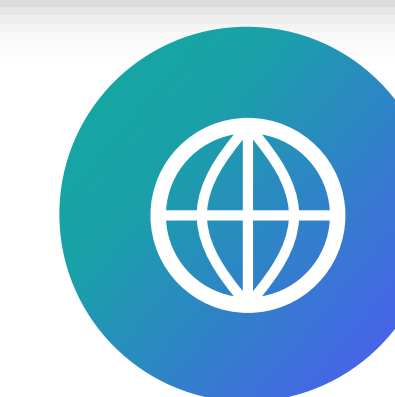
**Feasible**

Hereditary genetic testing is achievable in the Nigerian healthcare context



**Actionable**

Results directly influence surgical decision-making and patient outcomes



**Global Impact**

Blueprint for scaling genetic testing across resource-limited settings

