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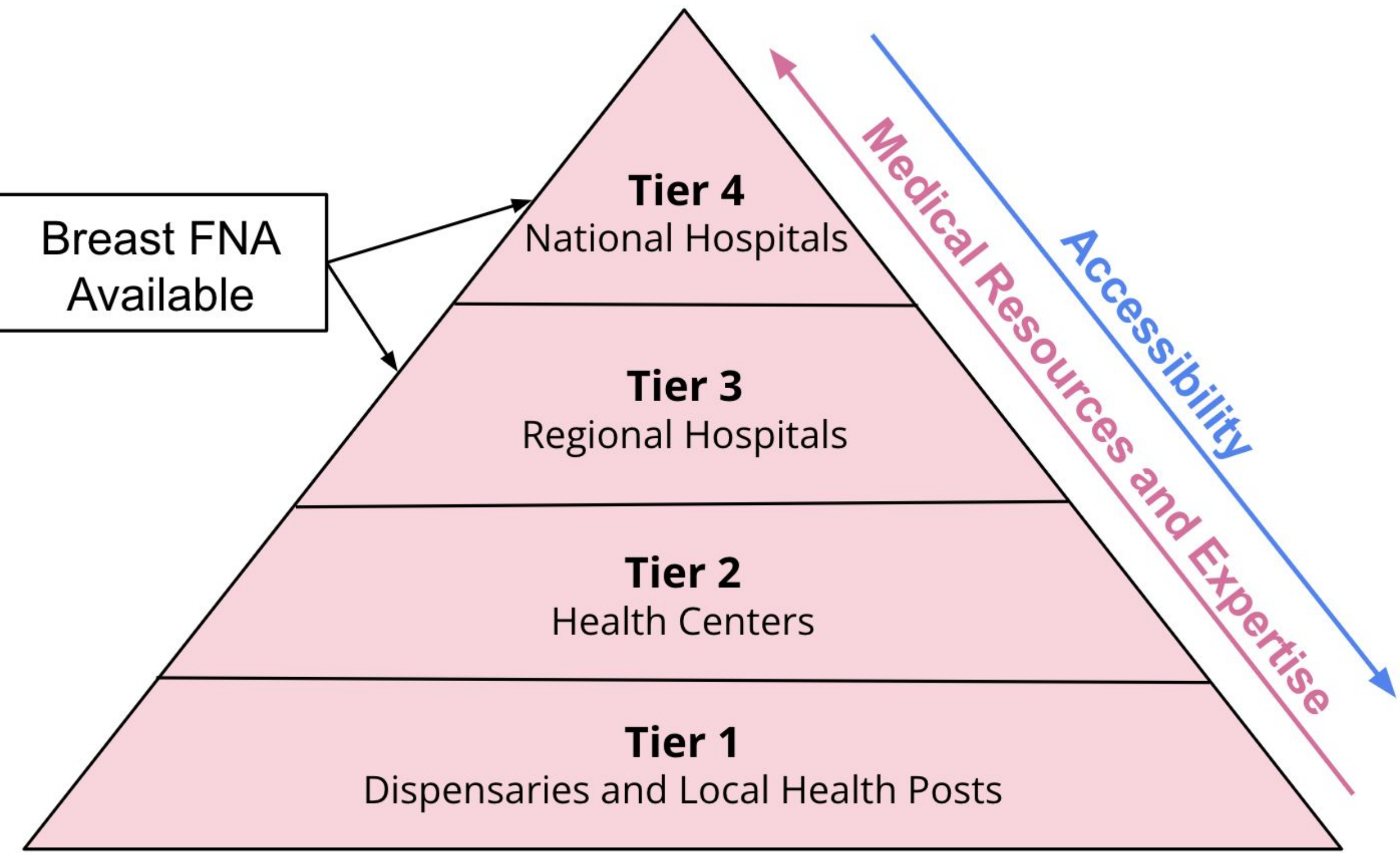
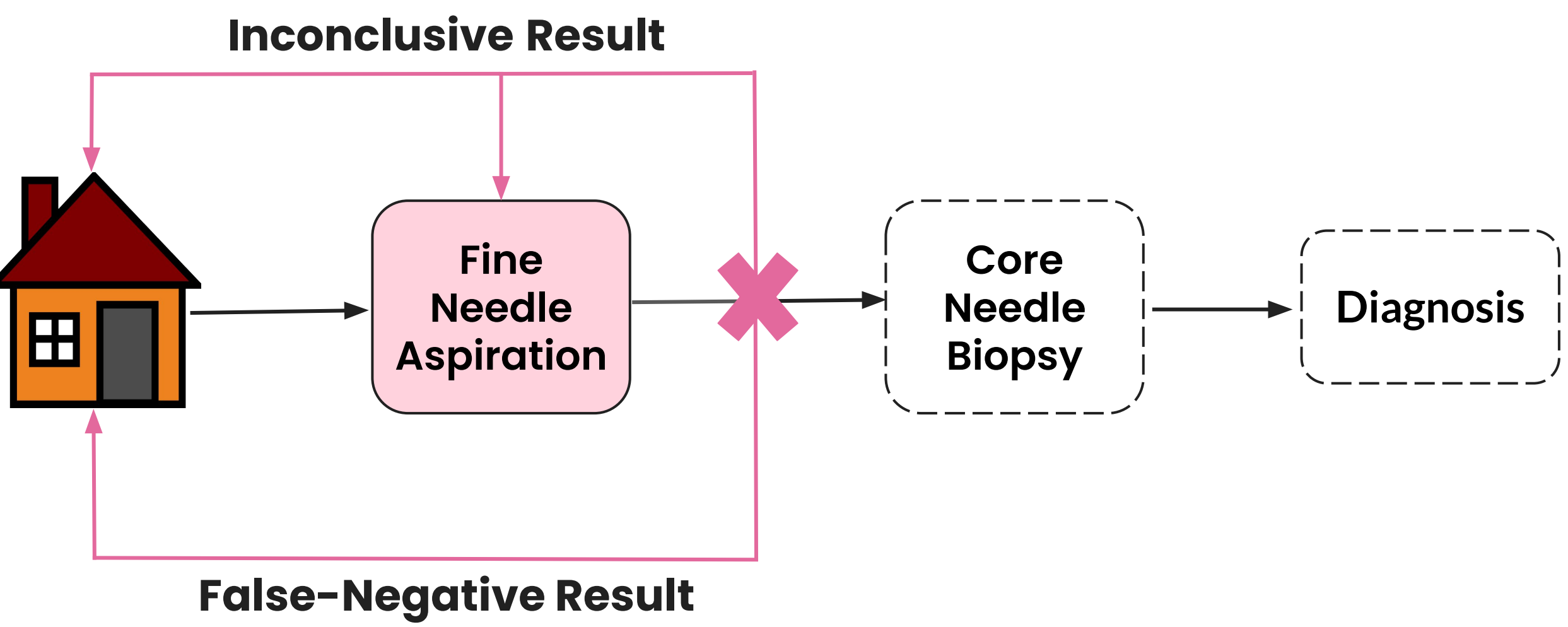
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Introduction and Background

 **231,000 women** in Sub-Saharan Africa (SSA) are **at risk** of developing breast cancer annually

 In SSA, **1 in 2** women with breast cancer **will die** of their condition, largely due to **late diagnosis**

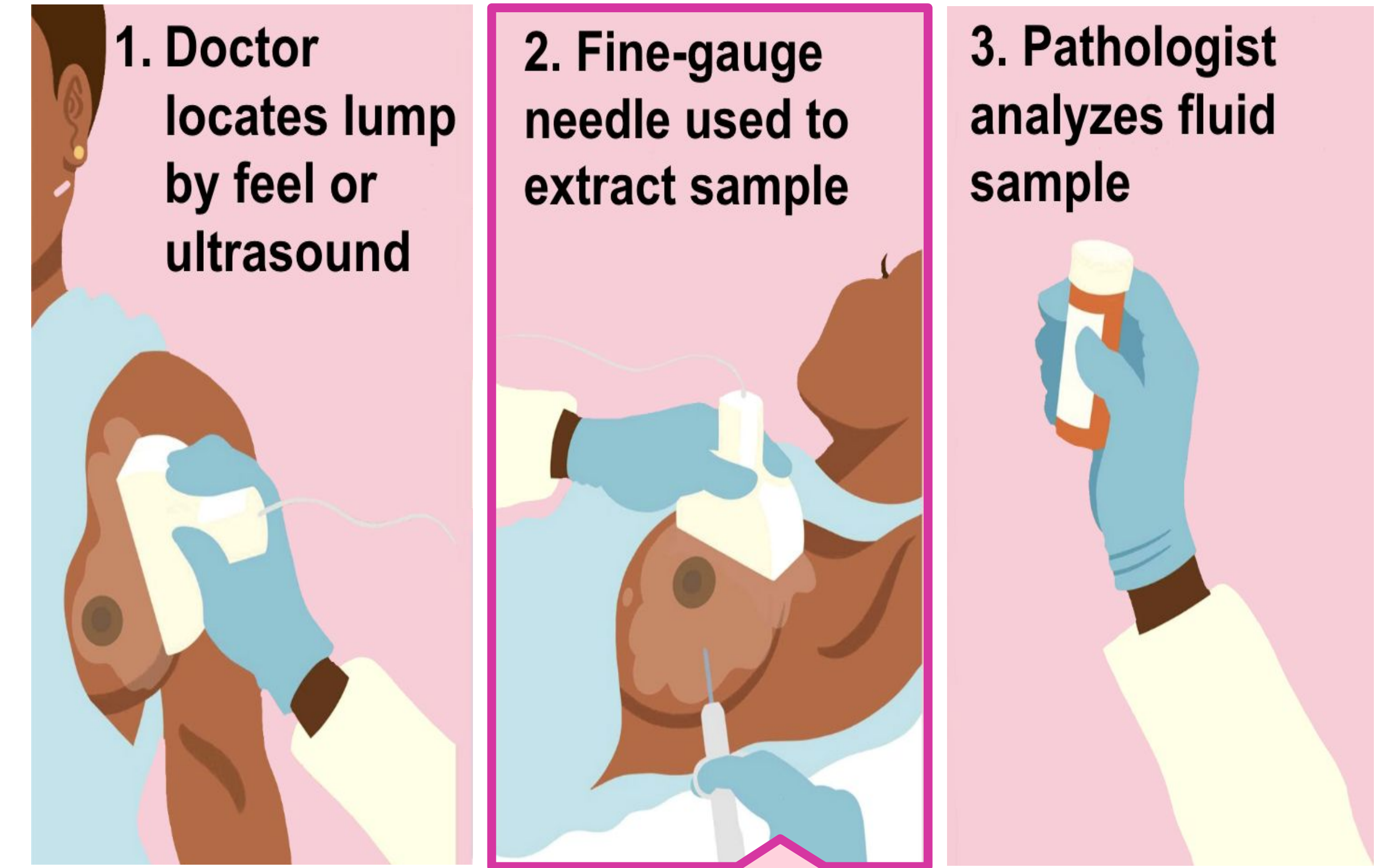


False-Negative Rate of FNA for cancers

4.8–38.5%

Inconclusive Rate of FNA for cancers

20–62.6%



Difficult to collect enough cells that enable an accurate diagnosis

Key Objectives

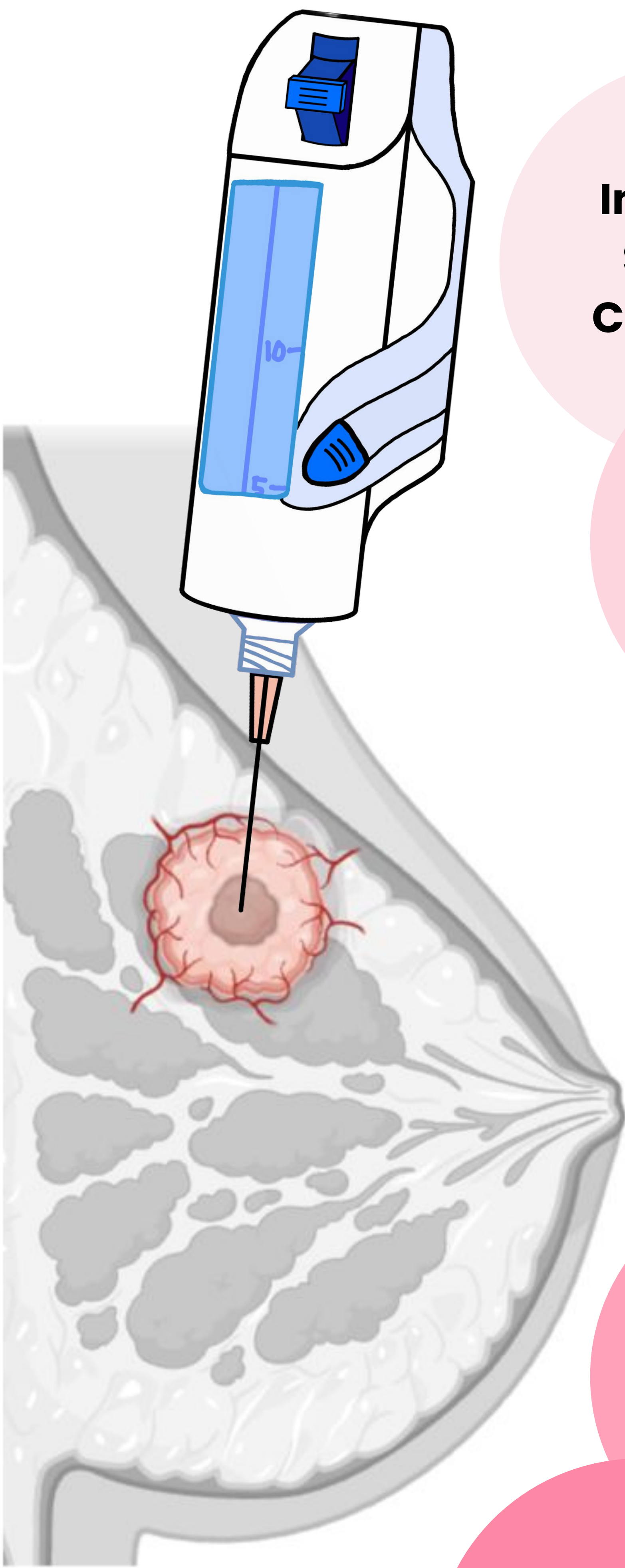
Goal 1: Improve the cellularity of FNA samples to enable representative diagnostic samples*

Goal 2: Simplify the procedure to expand accessibility at Tier 2 Healthcare centers

Goal 3: Expand the use of FNA to accurately diagnose various cancers and infectious diseases

*Representative diagnostic samples = Containing cells representative of the target lesion microenvironment that accurately reflect the health condition of the patient.

Our Solution



Increases Sample Cellularity

Cost Effective

Reusable

User Friendly

Minimally Invasive

Deskilling Potential

Problem Impact

Up to 11.3 months of treatment delay

Tumor size doubles every six months for invasive breast cancer

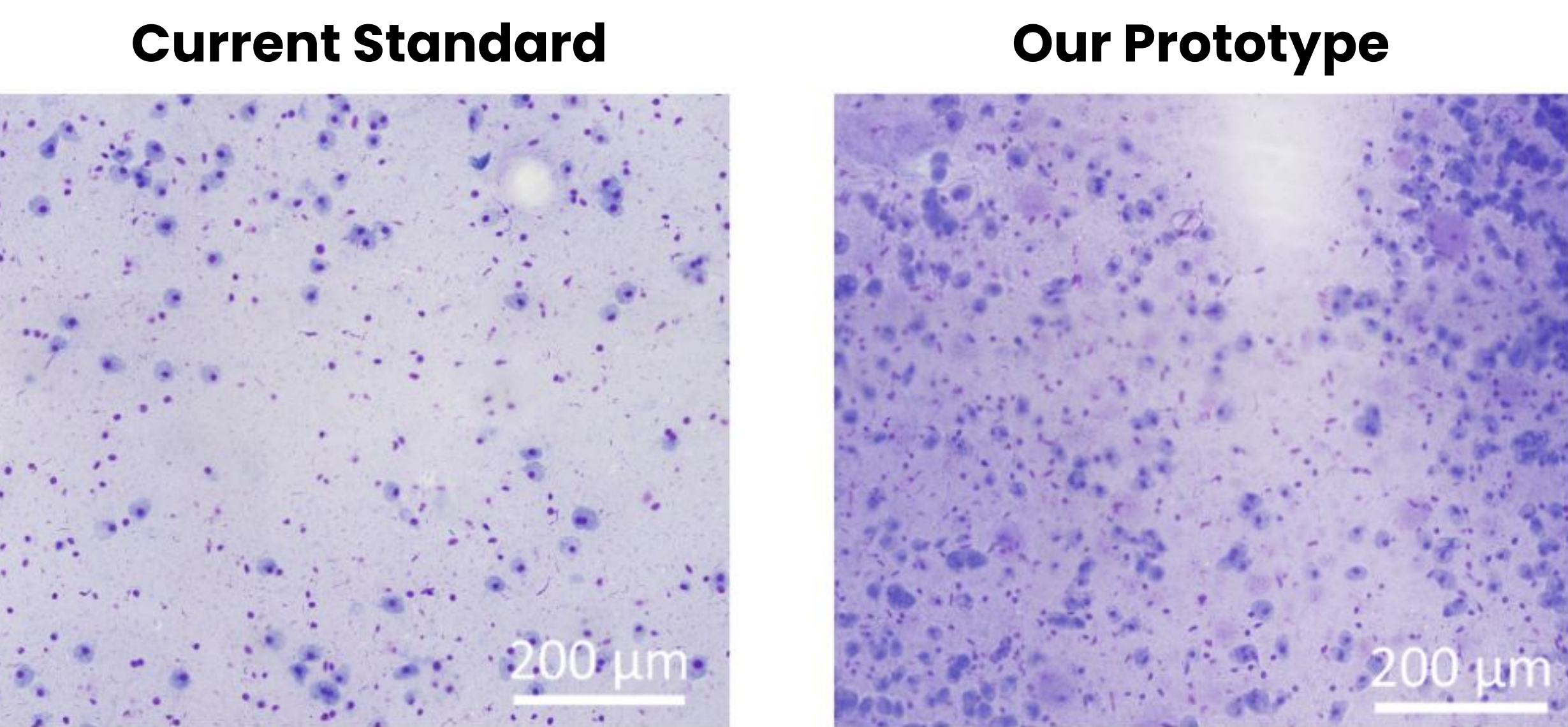
26% increased risk of death every 60 days of delayed treatment

>170 million people in SSA live 2+ hours from the nearest Tier 3/Tier 4 hospital

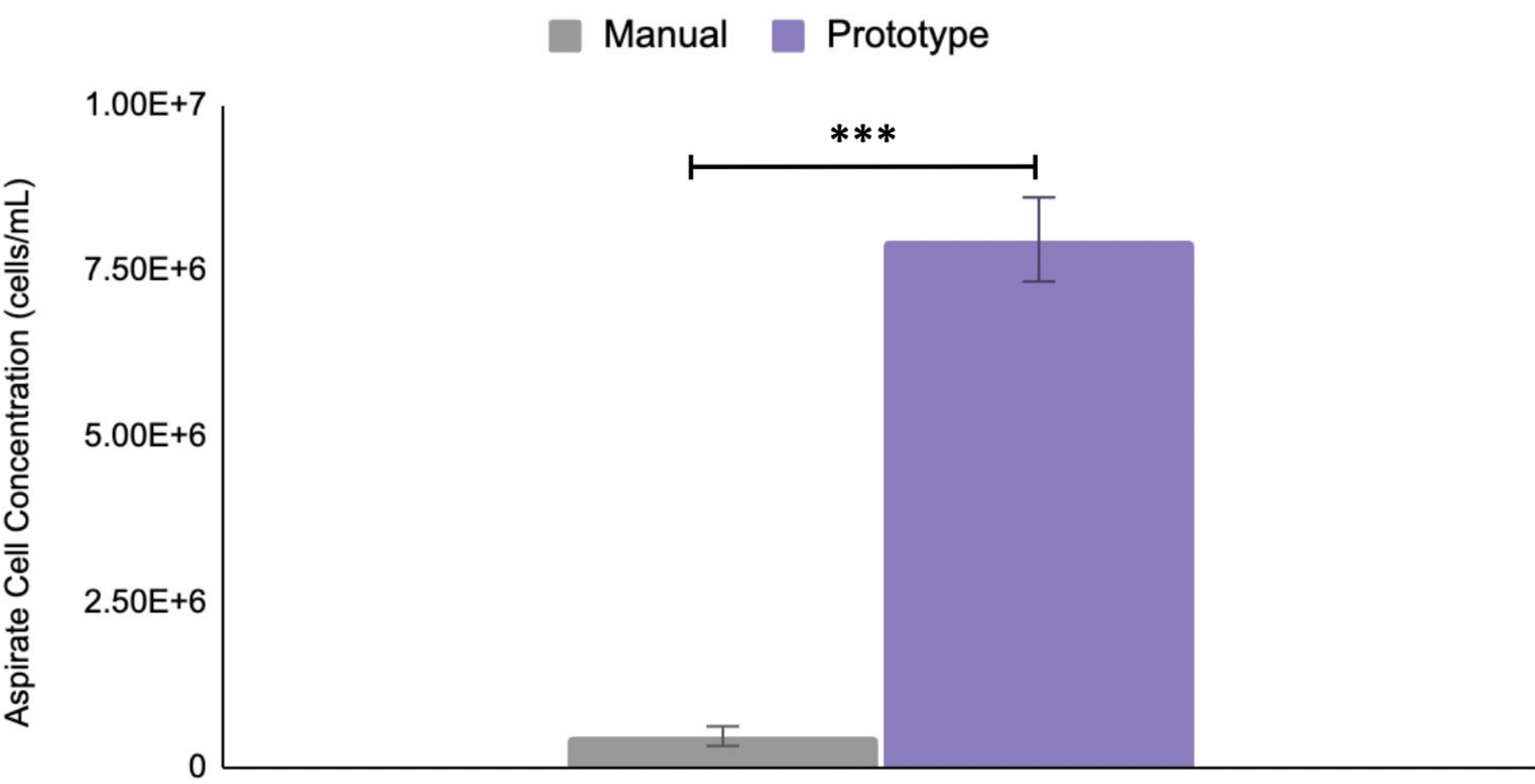
Methods

- Preliminary testing of multiple agitational motions on a goat liver model identified that a combination of linear and rotational motion is the most effective mode of agitation for increasing sample cellularity.
- Validation testing of combined linear-rotational motion showed higher sample cellularity with prototype compared to manual FNA.
- Cell quantification was performed using ImageJ Cell Counter (Fiji, v2.9.0).

Results



Comparison of Aspirate Cell Concentration between Manual and Device-Assisted FNA (n=10)



Acknowledgements

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