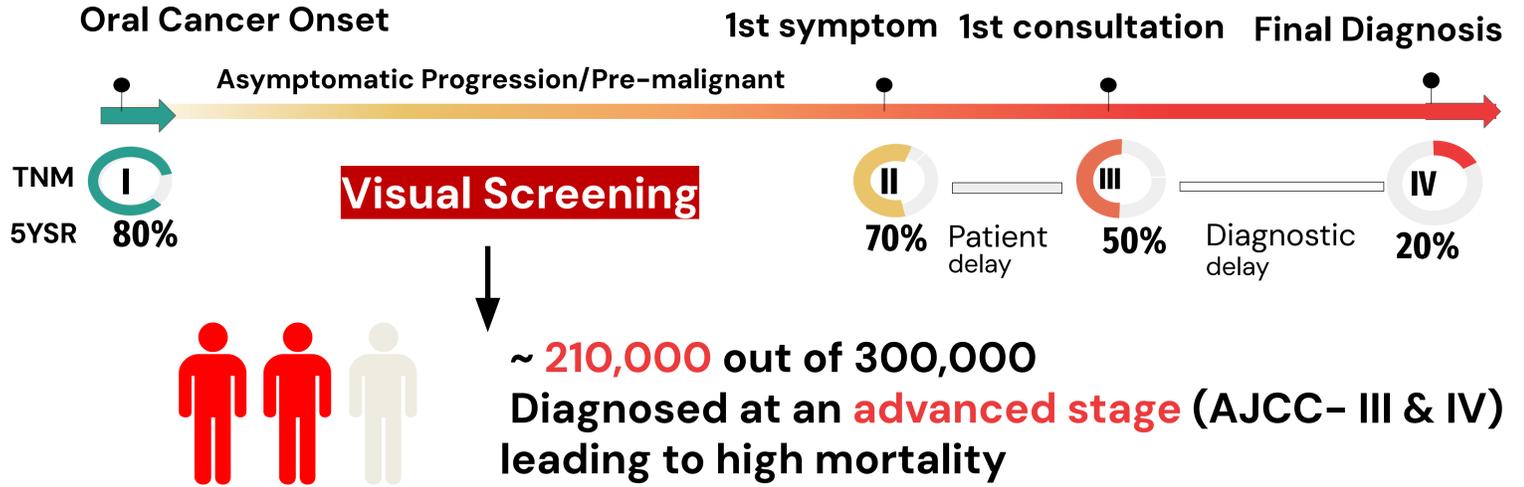


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Problem Statement

- Oral cancer (OSCC) is a major global health problem, with about **400,000 new cases** and **130,000 deaths** every year.
- In India, the situation is even worse, as about **70%** of the cases are diagnosed in the **advanced stages** (American Joint Committee on Cancer, Stage III-IV), leaving them with a dismal **five-year survival rate of about ~ 20%**.
- However, the current diagnostic approach is either Oral Visual Examination (OVE), a **labour-intensive subjective method with high intra-operator & interoperator error**.
- With **Positive Predictive Value (PPV) for screening of just 30%** or invasive biopsies which are expensive, time-consuming, dependent on specialized equipment and personnel leading to **delayed & under-diagnosis**



Proposed Solution

- To address this crucial yet **unmet need** of a screening tool, our team at BRIC-THSTI, DBT, GoI, along with our collaborators i.e. IIT Madras, PGI Chandigarh, CCHRC etc
- We are developing a **novel rapid Point-of-Care (POC)** salivary lateral flow Immunosorbent assay (LFIA) screening test that is semi-quantitative and readily field deployable.
- Our test is modelled after WHO recommended **ASSURED** criteria, enabling **affordable and accessible** screening of oral cancer in resource-limited settings saving millions of lives by being :
 - Instant < 5 mins
 - Non - Invasive
 - Painless
 - Highly sensitive & specific - 90*
 - No Instruments & training required
 - User friendly & Portable

* Illustration of Proposed Solution

- As per the NPCDCS operational guidelines **all men & women above 30 yrs** of age and those consuming **carcinogenic substances** like tobacco (smoking or any other forms) & alcohol irrespective of age should be **screened for oral cancer**.
- The OVE is to be performed by **ASHA workers** at a sub centre which is then referred to PHC, CHC and Tertiary hospital for histopathological examination.
- As per epidemiological data the population to be screened i.e. men & women aged above 30 yrs (37%) is almost **55 Crores** along with **26.7 Crores** of tobacco (GATS 2016-17) and **18.6 Crores** alcohol consumers (Girish et al).
- Placing the entire weight of screening programs, by asking them to manually screen each & every one indicated, over the already overburdened shoulders of ASHA workers not only **compromises the quality & effectiveness** of the screening programs but affects their well-being adversely

Acknowledgements - All images belong to their respective owners, used only for educational purposes

Innovation - How can we make a difference ?



- Current Screening :**
1. Visual & Not Field-Deployable
 2. Subjective ~ 50 - 67 % Accurate
 3. Laborious
 4. Manual Errors
 5. Training required



- Onco-ALERT :**
1. Rapid & Field-Deployable
 2. Semi-Quantitative ~ 90% Proposed Accuracy
 3. User Friendly
 4. Manual Error-Free
 5. No Training Required.



Incremental cost effectiveness ratio per life year saved (LYS) just by **visual screening (50% accuracy) & our projected CE INDIA**

Asking our ASHAs, already under-equipped & overburdened,

To manually screen almost 1/2 of our population, is unsustainable,

compromising not only the quality of our screening programs but well-being of ASHAs