COST-EFFECTIVENESS OF BREAST CANCER SCREENING IN SINGAPORE

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THIS STUDY FOUND THAT SCREENING ALL WOMEN AT AGE 40 OR 45 IS COST-EFFECTIVE IN SINGAPORE

Background

- **The incidence of female breast cancer has risen steeply in Singapore: 24.6/100k (1976-80) → 65.3/100k (2011-15)**
- Singapore's current national mammography screening program
  - Invites women between ages 50-69 to biennial screening
  - Recommends annual screening for ages 40-49 upon consultation with their physicians
- Limited research is available on the cost-effectiveness of breast cancer screening programs in Asian countries.

Methods

- We used national data from Singapore in the MIcrosimulation SCreening ANalysis-Fatal diameter (MISCAN-Fadia) model to simulate **302 screening scenarios for 10 million women** born between 1910-1969.
- **Screening scenarios** varied by starting and ending age, screening interval and attendance.
- **Outcome measures**:
  - Life-years gained (LYG)
  - Breast cancer deaths averted
  - False positives and overdiagnosis
  - Quality-Adjusted-Life-Years (QALYs)
  - Costs (in 2002 Singapore dollars; S$)
  - Incremental cost-effectiveness ratios (ICERs).

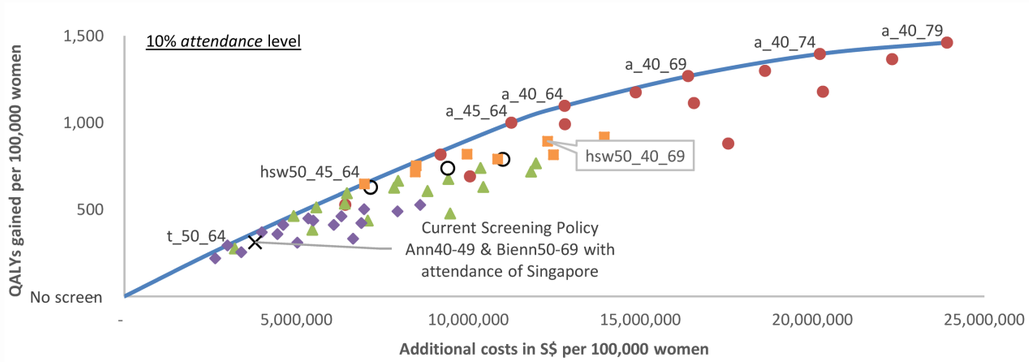
Results

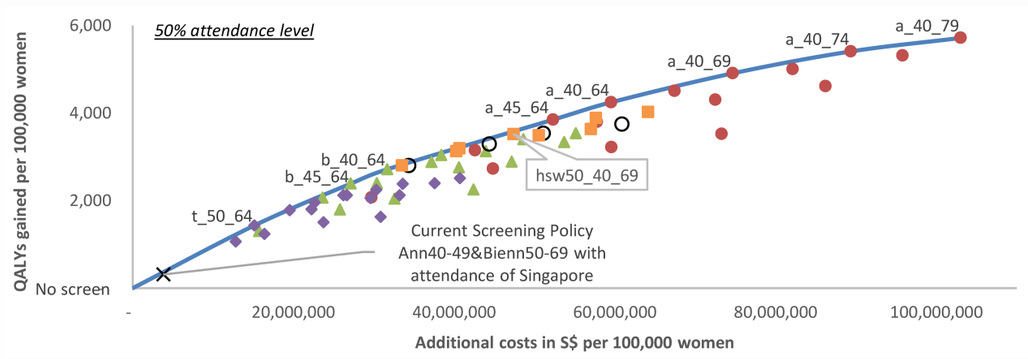
- **Singapore's current screening program** at observed attendance levels **yielded 1,054 LYG and averted 57 breast-cancer deaths.**
- At attendance rates ≥50%, the current program was near the efficiency frontier.
- **Most scenarios on the efficiency frontier started screening at age 40.**
- The ICERs of the scenarios on the efficiency frontiers ranged between S$10,186-S$56,306/QALY, which is considered cost-effective at a willingness-to-pay threshold of S$70,000/QALY gained.

Conclusion & Discussion

- Singapore's current screening program lies near the efficiency frontier and **starting screening at age 40 or 45 is cost-effective.**
- Furthermore, enhancing screening attendance rates would increase benefits while maintaining cost-effectiveness.

Special thanks to the study sponsors





Regardless of attendance level, the majority of screening scenarios on the cost-efficiency frontiers **start at ages 40 and 45.**

- Annual screen
- Biennial screen
- Triennial screen
- Hybridsw45
- Hybridsw50
- Efficiency frontier
- Current Screening Policy Ann40-49 & Bienn50-69 with attendance of Singapore

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