

Breast cancer incidence in mobile screening vs. in-hospital screening programmes based on 6 313 607 mammograms in 2 387 756 women in Taiwan

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Background

Since 2010, Taiwan has conducted a population-based breast cancer screening programme that includes mobile units to improve the screening rate. This study aimed to compare the results of mobile breast cancer screening units with those of hospital-based units and estimate the preclinical detectable phase (PCDP) transition time for Taiwanese women with breast cancer.

Methods

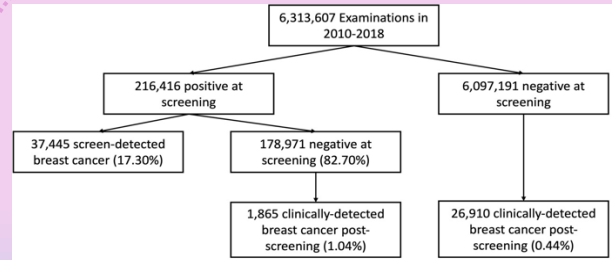


Figure 1. Flowchart of screening and number of diagnosed patients with breast cancer at and after screening

Results

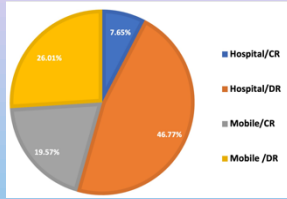


Figure 3. Proportions of mobile/hospital and CR/DR. CR: computed radiography, DR: digital radiography

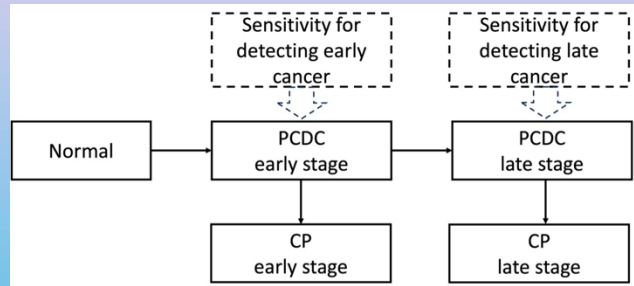


Figure 2. Five-state multistate model of breast cancer progression. PCDP: preclinical detectable phase, CP: clinical phase.

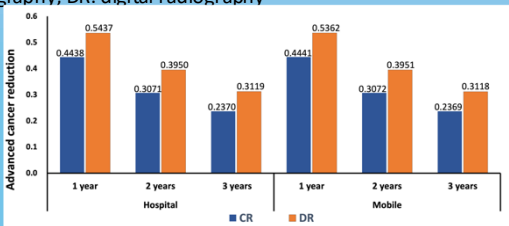


Figure 4. Risk reduction of late-stage cancer by an annual, biennial, and triennial screening by CR and DR

Parameter	Estimate	(95% CI)	
Normal→PCDP early-stage			
Hospital	0.0035	0.0035	0.0036
Mobile	0.0022	0.0022	0.0022
PCDP early-stage→PCDP late-stage	0.2950	0.2877	0.3025
PCDP early-stage→CP early-stage	0.1762	0.1713	0.1811
PCDP late-stage→CP late-stage	0.4157	0.4056	0.4258
Sensitivity for early-stage cancer			
CR	0.530	0.484	0.521
DR	0.669	0.653	0.684
Sensitivity for late-stage cancer			
CR	0.629	0.609	0.648
DR	0.797	0.782	0.811

Table 1. Estimated results of incidence and progression rate of breast cancer in five-state natural history

Conclusion

The incidence of breast cancer was greater among women visiting in-hospital screening than mobile screening, and the mammogram type was the primary factor affecting sensitivity for detecting asymptomatic breast cancer.

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