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# Mapping of Breast Cancer Care Delivery Process Across Health Care Institutions in Singapore

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**BACKGROUND & PURPOSE** Breast cancer is the most common female cancer in Singapore. It accounts for 28% of Singaporean female cancer cases and this incidence has almost tripled over the last 25 years. In Singapore, there is a decentralized model of care for breast cancer patients, with almost all hospitals offering breast cancer care services. Even though the clinical management of breast cancer is fairly similar across different health care institutions in Singapore, bill sizes can differ by as much as \$835 for lumpectomy. There has also not been any detailed study of the care processes across different institutions. This study aims to provide a descriptive overview of the operations and care processes of different health care institutions and provide health care providers with insights on the different strategies adopted, thus facilitating the sharing of best practices in breast cancer treatment within Singapore.

**METHODS** Information was obtained through interviews with healthcare professionals who described the care processes as well as through first-hand observations of the respective care facilities. One tertiary hospital, one women specialist hospital, a regional hospital and a specialist cancer centre were included in this study.

## RESULTS

**Infrastructure** : Dedicated breast centers were available in the specialist hospital and regional hospital. The breast centers provided a one-stop service for the patients as they incorporate imaging services, diagnosis, treatment and follow-up services in the same facility. In contrast, specialist outpatient clinics in the tertiary hospital and specialist cancer centre are not sited with radiology facilities but are still within walking distance.

	Dedicated Breast Centers	Mammography machines within clinic premises	Equipments for Fine Needle Aspiration within clinic premises
Tertiary Hospital			●
Women Specialist Hospital	●	●	●
Regional Hospital	●	●	●
Specialist Cancer Centre			●

**Initial Assessment Process:** The various health care institutions differed in the way they operate when caring for breast cancer patients. At the regional hospital, trained nurses are given the authority to assess the need for imaging services, which enable the patient to undergo consultation, and imaging on the first visit. However, prior authorization from a doctor is needed before appointments for imaging services are made in the other institutions. At the specialist hospital, imaging slots are pre-allocated for patients from the breast clinic such that patients can have their imaging done on the same visit.

	Specialist Nurses authorized to arrange for imaging	Dedicated imaging slots for breast clinic patients during clinic sessions	Triple Assessment done during single clinic visit
Tertiary Hospital			
Women Specialist Hospital		●	●
Regional Hospital	●		●
Specialist Cancer Centre			● *if appointment slots are available

**Treatment:** Patients typically experienced a one to two weeks wait between diagnosis and first treatment modality. Almost all of the patients underwent surgery as the first-line of treatment. However, the institutions differ in terms of whether metastatic work-up is carried out before or after surgery. All the institutions offer breast reconstruction surgery. However, only one institution offered dedicated operating theatre slots for breast reconstructions, thus reducing waiting time and minimizing need to coordinate surgery timings between breast and plastic surgeons.

	Metastatic work-up before/after surgery	Dedicated OT slots for breast reconstruction surgery	Time from diagnosis to first definitive treatment
Tertiary Hospital	After		~1 week
Women Specialist Hospital	Before	●	~1 week
Regional Hospital	-		~1 week
Specialist Cancer Centre	-		~1 week

**CONCLUSION** This study has provided a preliminary overview of how operations differ in the care of breast cancer patients across health care institutions in Singapore. The authors recognize that operational efficiency is affected by availability of manpower, equipments and other resources. However, it is envisaged that sharing of practices and operational innovations will facilitate quality improvement initiatives in the care of breast cancer patients.

**ACKNOWLEDGEMENTS** Our sincere thanks to all Doctors and Nurses who took the time to share their experiences and observations, and for allowing the research team to access the various clinical areas.

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