COMMENTARY

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A tripartite approach can seek to optimize breast cancer management during a pandemic – Real-Time experience of a developing breast oncology unit in Singapore

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Professional societies have led the unenviable challenge of clarifying recommendations on management prioritization for breast cancer during this COVID-19 pandemic.[1-6] Triage recommendations estimate the risk of delay-related outcome compromise. Interventions span deferment, simplification, reorganization of treatment sequence,[7] to pure neo-adjuvant endocrine therapy in centers with substantial constraints.[8] However, treatment delay can still result in disease upstage, limit surgical options, intensify neo-adjuvant and adjuvant treatment, and decrease survival.[9] Singapore reported its first imported COVID-19 case on
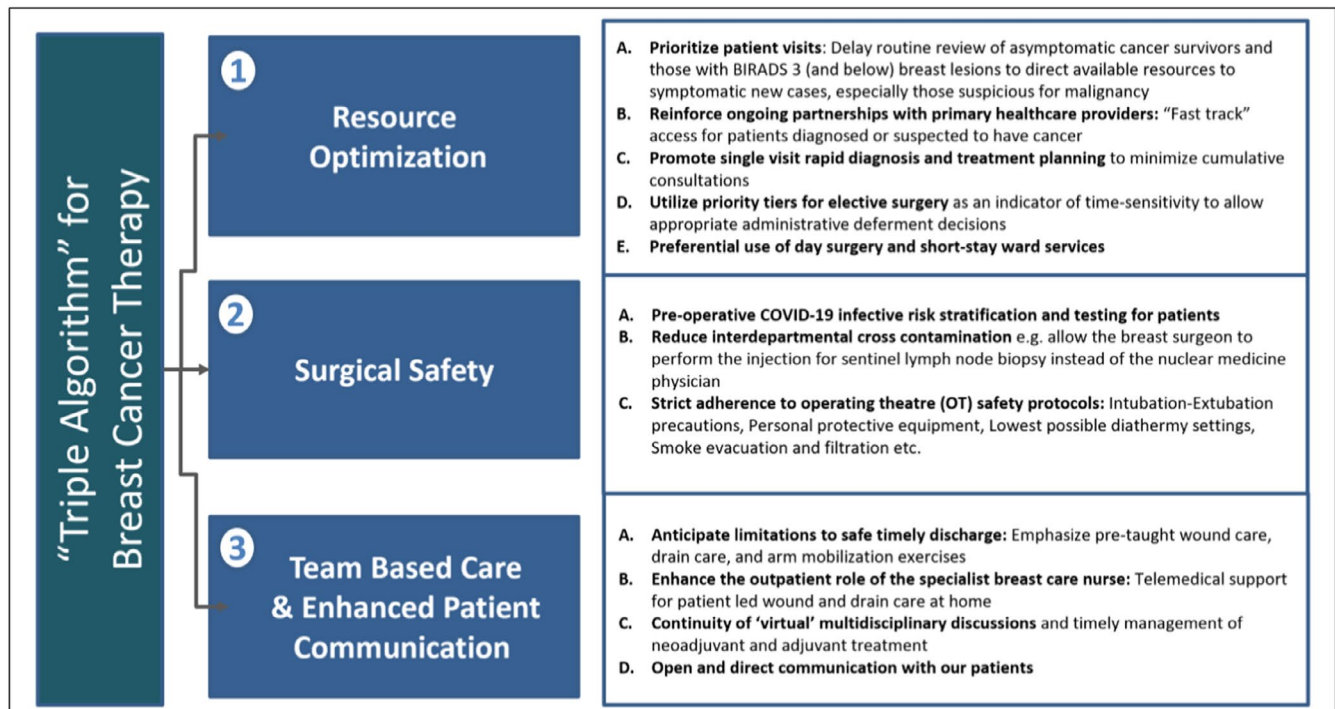

FIGURE 1 "Triple Algorithm" approach to pandemic breast cancer management [Color figure can be viewed at wileyonlinelibrary.com]
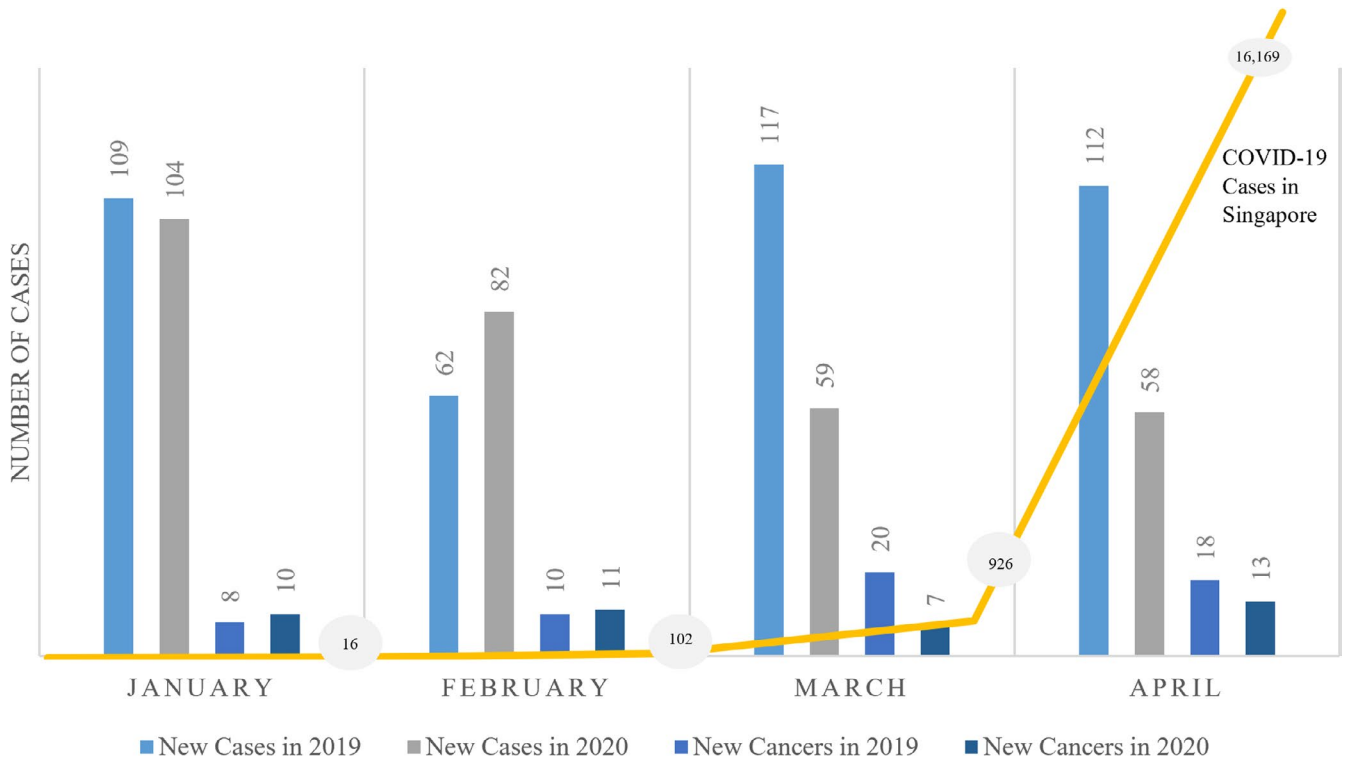
FIGURE 2 Patients seen at SKH breast centre [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 1 Patient and tumor characteristics

	2019 [n = 56 (%)]	2020 [n = 41 (%)]	P value
Age			.363
<30	0 (0%)	1 (2.4%)	
30-39	5 (8.9%)	2 (4.9%)	
40-49	9 (16.1%)	9 (22.0%)	
50-59	18 (32.1%)	6 (14.6%)	
60-70	15 (26.8%)	13 (31.7%)	
>70	9 (16.1%)	10 (24.4%)	
Comorbidities			.141
None	37 (66.1%)	21 (51.2%)	
Chronic	19 (33.9%)	20 (48.8%)	
Presentation			.196
Symptomatic	47 (83.9%)	38 (92.7%)	
Incidental/ Screen-detected	9 (16.1%)	3 (7.3%)	
Modality of incidental detection	n = 9	n = 3	.414
Examination	1 (11.1%)	0	
Mammography	4 (44.5%)	3 (100%)	
Ultrasonography	2 (22.2%)	0	
CT	2 (22.2%)	0	
Duration of Symptoms (wk)			.596

(Continues)

TABLE 1 (Continued)

	2019 [n = 56 (%)]	2020 [n = 41 (%)]	P value
<2	17	9	
2-4	12	10	
≥4	27	20	
Nonbreast	0	2	
T Stage			.026
Tis	1 (1.8%)	3 (7.3%)	
T1	18 (32.1%)	11 (26.8%	
T2	25 (44.6%)	17 (41.5%)	
T3	10 (17.9%)	2 (4.9%)	
T4	2 (3.6%)	8 (19.5%)	
N Stage			.124
N0	26 (46.4%)	23 (56.1%)	
N1	24 (42.9%)	10 (24.4%)	
N2	6 (10.7%)	6 (4.6%)	
N3	0 (0%)	2 (4.9%)	
M Stage			.562
M0	50 (89.3%)	35 (85.4%)	
M1	6 (10.7%)	6 (14.6%)	
TNM Stage			.649
0	1 (1.8%)	3 (7.3%)	
1	14 (25.0%)	10 (24.4%)	
2	24 (42.9%)	16 (39.0%)	
3	11 (19.6%)	6 (14.6%)	

TABLE 1 (Continued)

	2019 [n = 56 (%)]	2020 [n = 41 (%)]	P value
4	6 (10.7%)	6 (14.6%)	
Bloom-Richardson Grade			.840
G1	3 (5.4%)	2 (4.9%)	
G2	26 (46.4%)	21 (51.2%)	
G3	27 (48.2%)	16 (39.0%)	
NA	0 (0%)	1 (2.5%)[a]	
Estrogen Receptor			.748
ER-Positive	45 (80.4%)	34 (82.9%)	
ER-Negative	11 (19.6%)	7 (17.1%)	
Progesterone Receptor			.811
PR-Positive	36 (64.3%)	26 (63.4%)	
PR-Negative	20 (35.7%)	13 (31.7%)	
NA (DCIS)	0 (0%)	2 (4.9%)	
HER2 Status			.664
HER2-Positive	20 (35.7%)	12 (29.3%)	
HER2-Negative	35 (62.5%)	25 (61.0%)	
NA (DCIS)	1 (1.8%)	4 (9.8%)	
Biology			.551
Luminal A	32 (57.1%)	24 (58.5%)	
Luminal B	12 (21.4%)	9 (22.0%)	
Her2 Positive	8 (14.3%)	3 (7.3%)	
Basal Type	4 (7.1%)	5 (12.2%)	

Bold indicates values of significance.

[a]Core biopsy at another center, grade not reported, referred after NAST.

TABLE 2 Treatment

	2019 [n (1%)]	2020 [n (1%)]	P value
Initial Treatment Offered	n = 56	n = 41	**.040**
Surgery	44 (78.6%)[a]	23 (56.1%)[b]	
Neoadjuvant Systemic Therapy	6 (10.7%)	12 (29.3%)	
Palliation	6 (10.7%)	6 (14.6%)	
Duration from time of listing to upfront surgery (wk)	n = 44	n = 19	.909
<1	2 (4.5%)	0 (0%)	
1	25 (56.9%)	14 (73.7%)	
2	12 (27.3%)	5 (26.3%)	
3	3 (6.8%)	0 (0%)	
≥4	2 (4.5%)	0 (0%)	
Surgery	n = 47	n = 20	.244
Simple Mastectomy	27 (57.5%)	9 (45.0%)	
Skin-/Nipple-Sparing Mastectomy	4 (8.5%)	3 (15.0%)	
Breast Conserving Surgery	11 (23.4%)	5 (25.0%)	
Oncoplastic Surgery	5 (10.6%)	3 (15.0%)	
Reconstruction	n = 4	n = 3	.350
Implant-based	1	0	
Pedicled-TRAM	3	2	
DIEP	0	1	
Oncoplastic Breast Surgery	n = 5	n = 3	
Mastopexy/ Mammoplasty	4	2	.643
LIPCAP/AICAP Flap	1	1	

Bold indicates values of significance.

[a]1 underwent treatment at another center; 2 declined curative treatment.

[b]1 declined standard treatment; 2 returned to home country.

23rd January 2020. To confront the evolving situation, Sengkang General Hospital's (SKH) breast unit mobilized a "triple algorithm" approach (Figure 1), aimed at delivering optimal breast cancer management despite pandemic constraints.

Our retrospective cohort study compared women with breast carcinoma who presented during the peri-pandemic period versus similar months from 1st January to 30th April 2019. Patients were identified from our joint breast cancer prospective database. Ethical approval was obtained from Centralized Institutional Review Board Singhealth (Ref: 2019/2419). Summary statistics were calculated, outcomes compared using Pearson Chi-squared or Fisher Exact test for categorical variables and Mann-Whitney U for continuous variables. P values < .05 were considered statistically significant.

In 2020, 303 new patients attended, compared to 400 in 2019. We studied 97 breast carcinoma patients. There was a 24% decrease in new cases and a statistically insignificant 27% decrease in cancer diagnoses (P = .486; Figure 2). More had T4 disease (19.5% vs 3.6%; P = .026), otherwise patient characteristics, stage, and cancer biology were similar and reflective of the national registry's distribution [10] (Table 1). Fewer underwent upfront surgery

(56.1% vs 78.6%; P = .040), more commenced neo-adjuvant therapy (29.3% vs 10.7%; P = .040), possibly because of locally advanced disease. There was no significant difference in duration from operation listing to surgery. Peri-pandemic, 73.7% of patients had surgery within 1-week and the rest within 2, possibly related to resource ringfencing. There was no significant difference in surgery type, including subcutaneous mastectomy, reconstruction, and oncoplastic breast conserving surgery (Table 2). 68.3% felt none to slight concern that attendance can potentially result in COVID-19 exposure. A total of 90.3% presented at the earliest opportunity.

Our study's limitations include its small size and retrospective nature. The breast unit is within early phases of development, recently accepting patients since August 2018. In 2019, we were only

5-8 months old; the 2020 data reflects a slightly more established 1.5-year-old hospital with 2 full-time consultant breast surgeons. We cannot infer that the two groups are directly comparable nor results generalizable. We look forward to further study of potential rebound effect, and collaboration with other local and regional hospitals.

Breast cancer remains the most common cancer in Singapore.[10] Optimization and delivery of gold-standard management can minimize the postpandemic tsunami of backlog cases. Reflection guides our postpandemic responses and can streamline future approaches for emergency response preparedness. Guidelines should accommodate individualized considerations for patient, tumor, and systemic factors unique to the practicing environment. Collectively, we aim to create a safe environment for both staff and patients, deliver timely intervention for those in need while battling the pandemic for the greater good.

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