

A Comparison of Provider Delays In Newly Diagnosed Breast Cancer Patients At Two Public Hospitals In South Africa

Thegesha Naidoo*, Modise Zacharia Koto, Branny Mthelebofu, Matlou Mabitsela

Department(s) and institution(s): Department of General Surgery Faculty
of Health Sciences (School of Medicine), Sefako Makgatho Health Sciences University, Pretoria, 0204, South Africa

*Corresponding author: thegesh@yahoo.com

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Abstract Background: Breast cancer remains the main cause of cancer-related deaths in Africa, despite having a lower incidence rate compared to the western world. This poor survival rate can be attributed to numerous factors such as poverty and poor infrastructure, to name a few. South Africa, having such a diverse population, tends to face many difficulties in healthcare with regard to patient- and provider-related delays. Patient delays are complex and therefore difficult to quantify. **Aims:** To compare the provider delays experienced by newly diagnosed breast cancer patients treated in two public hospitals in South Africa. **Settings and Design:** A multicentre retrospective file review of newly diagnosed breast cancer cases at Doctor George Mukhari Academic Hospital (DGMH) located in the Tshwane Metro Municipality and Robert Mangaliso Sobukwe Hospital (RMSH) located in the Sol Plaatje Local Municipality, Kimberley, from January 2016 to December 2017. **Methods and Materials:** Data extraction included the age of the patient, date of first consultation, date and number of biopsies taken, date of histological confirmation, types of imaging requested with dates of request/released reports, type of definitive management with dates of booking/commencement of treatment. A standardised data collection method was applied. Statistical analysis used: SAS (SAS Institute Inc, Carey, NC, USA), Release 9.4 or higher, running under Microsoft Windows for a personal computer. **Results:** A total of 69 patients were included in the study (64 from DGMH, 5 from RMSH). The mean number of days of delay was greater in RMSH versus DGMH with regard to the interval between first consultation and first biopsy (83;30); DGMH versus RMSH with regard to the interval between first consultation and histological confirmation (122;113); DGMH versus RMSH with regard to the interval between first consultation and delivery of mammogram reports (54;6); DGMH versus RMSH with regard to the interval between first consultation and surgical intervention (374;191); DGMH versus RMSH with regard to the interval between first consultation and commencement of neo-adjuvant chemotherapy (233;144); DGMH versus RMSH with regards to the interval between request and date of released report of mammograms (52;1). Of the 64 patients from DGMH, 7 required repeat biopsies (10.9%). Surgical procedures were performed on 42 of the 64 patients at DGMH, ranging from modified radical mastectomies n=33 (78.6%), simple mastectomies n=6 (14.3%), and toilet mastectomies n=3 (7.1%). Of the 5 patients from RMSH, 5 were offered modified radical mastectomies n=5 (100%). **Conclusions:** The study shows that significant provider delays occur in the two public hospitals mentioned in the study and are exceedingly long when compared to international recommendations of a total time delay of 6 weeks. The study found that certain provider delays, namely biopsy taking/histological confirmation, imaging, definitive surgical intervention, and access to oncological services are significant areas of delay in both hospitals. The researcher recommends creating formal guidelines in both public hospitals with regard to the workup of patients so as to decrease the aforementioned provider delays and ultimately improve breast cancer care for patients at these institutions.

Keywords: breast cancer, provider delays; histology, neo-adjuvant chemotherapy, radical mastectomy, oncology

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1. Introduction

Despite significant advances in healthcare, breast cancer still remains a death sentence to many women in

Africa, even though the continent boasts a lower incidence rate, but the mortality rate of women diagnosed with breast cancer is still exceedingly high due to poor survival rates [1,2]. Espina et al study, 2017 revealed that in Africa, particularly South Africa, breast cancer is unique in that

the diversity of its population lends itself to major difficulties with regards to healthcare, especially in terms of delays in presentation, diagnosis and treatment [3]. It is these delays either patient or provider delays mentioned above that have led to a more advanced stage of disease at first presentation and ultimately an increased morbidity/mortality [3]. The only hope of improving patient survival rates for those patients in South Africa who have been diagnosed with breast cancer is through analyzing the healthcare delays they experience in order to significantly shorten them. Patient delays are complex and require input from not only healthcare professionals, but the general public at large in understanding the impact it may have in their own health if it prolonged without proper care.

Hospital specific provider delays on the other hand, provide an excellent starting point at which we can improve breast cancer care, and ultimately boost patient survival rates. Thus, this study aims to evaluate the rate and characterise provider delays experienced by newly diagnosed breast cancer patients treated in two public hospitals in South Africa. This research clearly confirms the importance of quantifying the time interval between first consultation, definitive diagnosis (histological confirmation) and definitive treatment for newly diagnosed breast cancer patients and ultimately identification of the most significant types of provider delays in these hospitals in South Africa.

2. Objectives

The main aim of the study was to compare provider delays experienced by newly diagnosed breast cancer patients treated in two public hospitals in South Africa.

The objectives of the study were:

- To determine the time interval between the first consultations, definitive diagnosis and definitive treatment for newly diagnosed breast cancer patients; and
- To identify and compare significant provider delays in two public hospitals in South Africa

3. Methods

Study Design and Setting

This was a descriptive study of all newly diagnosed breast cancer cases conducted at two public hospitals (Robert Mangaliso Sobukwe hospital and Dr George Mukhari Academic Hospital) in South Africa, described as follows:

Study population and sample size

Newly diagnosed breast cancer patients on histology taken at one of two South African public hospitals (DGMAH/RMSH), to definitive management (surgery/chemotherapy/ hormonal treatment) during the period 01 January 2016 to 31 December 2017. Newly diagnosed breast cancer patients were recruited based on (i) First consultation at the breast clinic (at either DGMAH or RMSH), and (ii) histological confirmation from tissue biopsies taken.

Estimated sample size prior to data collection

This was a retrospective study and all qualifying cases identified over the data collection period were included in

the study. It was estimated, from patient registers at the Surgical Outpatient Departments, that approximately 200 patient files would be reviewed (DGMAH +/-150 and RMSH +/-50) and this was verified by the researcher. With an assumed dropout rate of 20% due to exclusion criteria it was estimated that a sample of approximately 130 cases may be included in the sample.

Sample size post data collection

At DGMAH, out of a potential 200 files, 111 files were retrieved, 89 files were not found, 47 were excluded, and 64 files were included for analysis. The 47 files were excluded as follows:

- 3 files were excluded as patients were transferred to other hospitals for continued management;
- 4 files were excluded as biopsies were taken at referral centres;
- 33 files were excluded as their first visit to the breast clinic fell either before 2016 or after 2017;
- 4 files were excluded due to incomplete records;
- 3 files were excluded due to diagnostic uncertainty.

At RMSH, out of a potential 50 files, only 12 files were retrieved, 38 files were not found, 7 files were excluded, and 5 files were included for analysis. The 7 files excluded were as follows:

- 5 files were excluded due to incomplete records;
- 1 file was excluded as patient was transferred to another hospital;
- 1 file excluded as patient demised during workup.

Inclusion Criteria

Newly diagnosed breast cancer patients were included in the study based on:

- The date of their first consultation at the breast clinic
- Histological confirmation from tissue biopsies.

Exclusion Criteria

- Histology: Patients were excluded if they presented with a confirmed diagnosis of breast cancer from tissue biopsies done at healthcare centres other than DGMAH or RMSH.
- Date of first consultation: Patients were excluded if their date of first consultation at the breast clinics in DGMAH/RMSH was before 1st January 2016 or after the 31st December 2017.
- Diagnostic uncertainty: These patients formed a minority of the cases seen. The extended time period for extensive workup and diagnosis of these patients was not representative of the average time required for workup, diagnosis, and definitive treatment of other patients being treated.
- Transfers: Patients were excluded if they were transferred to other hospitals for continued workup.
- Death: Patients were excluded if they were demised prior to definitive management.
- Incomplete Records: Patients were excluded if their records were incomplete as this made extrapolation of a diagnostic timeline very difficult and would have resulted in erroneous time lapses in treatment.
- Previously diagnosed breast cancer: Patients previously diagnosed with breast cancer were excluded as they were already part of the system and were familiar with the process. Therefore, this was not regarded as an accurate timeline with regard to workup and definitive treatment.

Table 1. Time Intervals FROM First Consultation

Days from first consultation to:	Hospital	n	Mean ($\pm$ SD)	Median	Min / Max
First biopsy	DGMAH	63	30 ($\pm$ 46.0)	8	0 / 270
	RMSH	5	83 ($\pm$ 96.3)	53	0 / 224
p value			0.294		
Histological confirmation	DGMAH	64	122 ($\pm$ 130.8)	95	0 / 821
	RMSH	5	113 ($\pm$ 147.1)	59	2 / 354
p value			0.884		
MMG report	DGMAH	64	54 ($\pm$ 86.3)	39	0 / 510
	RMSH	5	6 ($\pm$ 6.3)	6	0 / 15
p value			<0.001*		
AUS report	DGMAH	54	96 ($\pm$ 69.0)	83	0 / 317
	RMSH	-	-	-	-
p value			n/a		
Bone scan report	DGMAH	63	131 ($\pm$ 119.1)	96	5 / 752
	RMSH	-	-	-	-
p value			n/a		
MUGA report	DGMAH	62	134 ($\pm$ 122.0)	110	18 / 771
	RMSH	-	-	-	-
p value			n/a		
Surgery	DGMAH	42	374 ($\pm$ 172.8)	356	102 / 823
	RMSH	4	191 ($\pm$ 159.4)	180	33 / 371
p value			0.048*		
Chemo	DGMAH	57	233 ($\pm$ 205.6)	143	52 / 926
	RMSH	5	144 ($\pm$ 148.7)	95	40 / 406
p value			0.351		

* Statistically significant difference between DGMAH and RMSH mean values

Data collection

Patients records were identified and reviewed for inclusion in the two public hospitals. At RMSH, Patients were identified retrospectively by the researcher from an admission register which was updated on a daily basis by the consultant on call. A list of relevant file numbers was compiled and handed to the clerk at records. All files retrieved were then reviewed for the required data. Data collection was fully completed after approximately 8 weeks. At DGMAH, Patients fitting the inclusion criteria for the study were identified by the researcher from registers at the breast clinic. The researcher enlisted three fourth year medical students at Sefako Makgatho Health Sciences University to assist with the collection of data from the files identified by the researcher (permission for medical students to assist with collection was obtained from the Medical Manager of DGMAH). All data collection was done in the presence of the researcher. Files were reviewed and scoured for all the relevant information. All data collected was reviewed and rechecked by the researcher prior to being included in the study. Data collection was fully completed after approximately 6 weeks. In both hospitals, data was collected retrospectively using the attached data collection sheet (Appendix A). In both hospitals theatre registers were also reviewed in order to ascertain delays in surgery due to theatre delays/constraints, theatre short staffing, no water/electricity in theatre, no theatre gown packs, type of procedure booked (diagnostic/ therapeutic procedure), and delays due to operative risk. The oncological records were also reviewed in order to ascertain delays in treatment with regards to oncological booking dates, and date of commencement for oncological treatment.

4. Results

The analyses of the time intervals from the first consultation are summarized in [Table 1](#). The mean number of days of delay was greater in RMSH compared to DGMAH in respect of the First biopsy, but not significantly so. As RMSH is a non-academic hospital and comprises of very junior doctors, it is fathomable that the interval between the first consult and the first biopsy was greater than that of DGMAH which is an academic hospital comprising of more senior staff. Delays in biopsy taking could be attributed to many factors: uncertainty on the part of the junior doctor with regards to their clinical acumen, junior doctors not knowing how to take biopsies etc.

The mean number of days of delay was significantly greater in DGMAH compared to RMSH in respect of delivery of the MMG report ($p < 0.001$) and of Surgery ($p < 0.001$). DGMAH is an academic hospital which tends to the needs of a large number of patients. RMSH being a non-academic institute does not cater to the same number of patients, and also has the option to transfer difficult cases to Universitas Hospital in Bloemfontein which is an academic institute. It is therefore understandable that due to the excessive patient load and severe understaffing etc at DGMAH, the delay between the first consult and the delivery of the MMG report, and that of surgery was greater in DGMAH as compared to RMSH.

The mean number of days of delay was greater in DGMAH compared to RMSH in respect of Histological confirmation and commencement of Chemo, but not significantly so. The patient load in DGMAH is excessive, with the pathology department receiving many specimens

for histopathological review on a daily basis. Therefore, it is understandable that the delay in histological confirmation is greater at DGMAH as compared to RMSH. Delays in histological confirmation may have a “knock on” effect and therefore it is also fathomable that the commencement of Chemo/Radio/Hormonal treatment would ultimately be delayed in DGMAH.

No RMSH data were available in respect of delivery of the AUS, Bone scan and MUGA reports. RMSH, being a non-academic institute, does not see as many sick patients as DGMAH as most of these patients would be transferred to Universitas Hospital in Bloemfontein. Therefore, AUS, Bone scan and MUGA bookings would not be as frequently ordered in RMSH as they would be at DGMAH.

The 50% of the time delays were greater than the median values as reported in Table 1. With the exception of the MMG report, the maximum time delays (days) were all alarmingly large.

The analyses of the time intervals between imaging modalities requested and the reports are summarized in Table 2. The mean numbers of days from dates that imaging modalities were requested, and delivery of the reports are graphically displayed in the following figure.

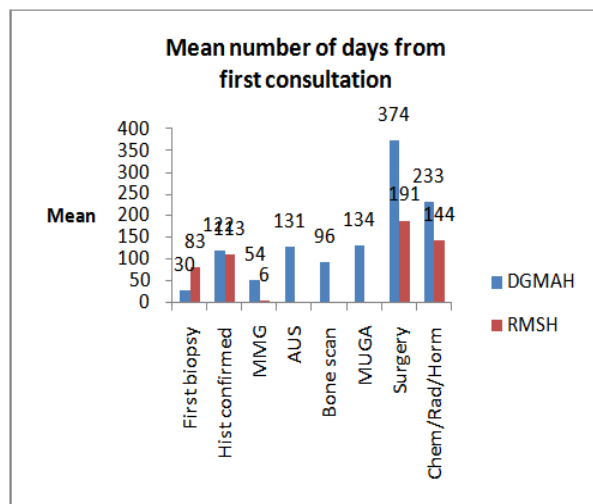


Figure 1. Mean of number of days from first consult

Table 2. Time Intervals Between Imaging Requested and the Reports

Days from test request to report	Hospital	n	Mean ($\pm$ SD)	Median	Min/ Max
MMG	DGMAH	64	52 ($\pm$ 86.6)	38	0 / 510
	RMSH	5	1 ($\pm$ 2.6)	0	0 / 6
p value			<0.001*		
AUS	DGMAH	64	48 ($\pm$ 52.4)	38	0 / 257
	RMSH	5	1 ($\pm$ 1.8)	0	0 / 4
p value			<0.001*		
Bone scan	DGMAH	63	74 ($\pm$ 76.0)	50	5 / 425
	RMSH	-	-	-	-
p value			n/a		
MUGA	DGMAH	62	57 ($\pm$ 60.1)	38	0 / 388
	RMSH	-	-	-	-
p value			n/a		

* Statistically significant difference between DGMAH and RMSH mean values

The mean number of days of delay in delivering of the reports were significantly greater in DGMAH compared to RMSH in respect of MMG ($p < 0.001$) and AUS ($p < 0.001$). As mentioned previously, due to the excessive number of patients requiring imaging at DGMAH as opposed to RMSH, it is understandable that reports on these tests would take longer to be released at DGMAH.

No RMSH data were available in respect of delivery of the Bone scan and MUGA reports. As mentioned previously, RMSH, being a non-academic institute, did not see as many sick patients as DGMAH as most of these patients were transferred to Universitas Hospital in Bloemfontein. Therefore, Bone scan and MUGA bookings were not frequently ordered in RMSH. Therefore, the 50% of the time delays were greater than the median values as reported in Table 2.

Seven (10.9%) of the 64 patients from DGMAH received second biopsies.

5. Discussion and Conclusions

Biopsy taking: (the interval between the 1st consultation and the taking of the biopsy) was shown in our study to be longer in RMSH as compared to DGMAH. On average there was a delay of 83 days between the 1st consultations and biopsies being taken at RMSH versus a delay of 30 days at DGMAH. As mentioned previously, RMSH is a non-academic hospital with the Department of General Surgery comprising of interns, community service medical officers, medical officers and consultants. As the interns make up the bulk of the work force, they generally man the clinics while the more senior staff cover elective/emergency theatres, ward rounds etc. Interns, having minimal clinical experience, in most cases tend to make clinical assessments, however would still require a senior to review the patient and thereafter may even require assistance from a senior with regards to taking of the biopsy itself. Interns are still in training and many are not clinically competent or confident with taking of adequate biopsies (let alone making decisions as to what type of biopsy the patient may require). van Wyk and van Rooyen [4] conducted a study in which interns were able to comment on their perceived competence in certain core skills.

With regards to excision of “lumps and bumps” and breast tumour biopsies, only 51% of interns regarded themselves as being competent with these procedures. The senior staff available to assist these interns with biopsies are either community service medical officers or medical officers and they themselves may not always be proficient with regards to biopsy taking (or may want to discuss the case with a consultant first). DGMAH, being an Academic hospital, does have a dedicated breast surgeon on site, multiple general surgical consultants, multiple registrars, as well as interns therefore majority of the biopsies are being done by the registrars themselves. If interns are involved in biopsy taking there are, at all times supervised by a registrar, or being taught by one. This is extremely important in terms of confidence building of interns with regards to biopsy taking [4]. Therefore, the results of our study tend to suggest that the time interval between 1st consultations and biopsy taking are longer in

non-academic institutes (RMSH) as opposed to academic ones (DGMAH).

Repeat Biopsies: Seven (10.9%) of the 64 patients from DGMAH received second biopsies. Out of the 5 patients at RMSH, there were no repeat biopsies. This suggests that there are more repeat biopsies being done at DGMAH as opposed to RMSH, and this may be in keeping with the fact that DGMAH is a teaching hospital and many interns are allowed to take biopsies (supervised), however these biopsies, at times, may be insufficient and will therefore be required to be repeated. This is the natural order of events in a teaching hospital. In RMSH, despite there being no repeat biopsies being shown in our study, the interval between 1st consultation and the date of first biopsy is longer than that at DGMAH. This may be due to the fact that junior staff (interns) must await the assistance of seniors in order for biopsies to be taken, and because senior staff are required to be running the wards, theatre etc, they tend not to have as much time to teach let alone supervise biopsy taking. Therefore, despite there being a lower number of repeat biopsies that may be occurring at RMSH, the time it takes for the biopsy to be done is actually longer.

Histological confirmation: (the interval between the 1st consultation and noting down of definitive malignant breast tissue histology) was shown to be longer in DGMAH as compared to RMSH. On average there was a delay of 122 days (17.4 weeks) at DGMAH versus 113 days (16.1 weeks) at RMSH. Despite RMSH having a “shorter” time delay both hospitals have delays that are in fact extremely long. With regards to RMSH, this delay could be attributed to numerous factors which tend to plague non-academic institutes. One such factor has been mentioned above i.e. the fact that the department of general surgery consists mainly of junior staff (interns) whose lack of experience may be the root of delays in patient management in general. Junior staff require guidance with regards to every aspect of clinical care as they are inexperienced and therefore require input from senior medical officers/consultants each step of the way. In order for interns to improve, and ideally go on to become confident with regards to certain core procedures, supervision by a senior is of vital importance [4,5] This leads to a “knock on” effect ultimately increasing the length of the “provider delays”. With regards to DGMAH, the interval of 17,4 weeks between 1st consultation and histological confirmation is extremely long, especially when compared to other academic hospitals [6]. This can be traced back to sheer patient load. The breast clinic at DGMAH is extremely understaffed and overbooked. Not only are there many new patients being seen at the breast clinic on weekly basis, there are also a multitude of returning patients who are still being worked up clinically, or even worse, who are awaiting surgical interventions. In an article published by The Citizen on the 21st October 2019 approximately 6000 patients in the Gauteng Province were still awaiting surgical procedures, 4000 of whom were at DGMAH [7]. Therefore, the results obtained from our study are suggestive of prolonged delays in histological confirmation of breast biopsies, in both academic and non-academic hospitals with factors responsible for said delays differing somewhat in each institute.

Time interval between the first consultation and the released report of the imaging ordered: (keeping in mind that these are patients with potential breast cancers) were shown in our study to be longer in general in DGMAH as compared to RMSH.

- Mammograms: with regards to mammograms the mean interval between the first consultation and date of released report was 54 days in DGMAH versus 6 days in RMSH.
- Abdominal ultrasounds (AUS): the mean interval between the first consultation and date of released report was 131 days in DGMAH and was N/A at RMSH.
- Bone Scan: the mean interval between the first consultation and date of released report with regards to bone scans were 96 days in DGMAH and N/A at RMSH.
- MUGA Scan: the mean interval between the first consultation and date of released report with regards to MUGA scans were 134 days in DGMAH and N/A at RMSH.

Time interval between the date the imaging modality was ordered and the date the report was released: were shown in our study to be longer in general in DGMAH as compared to RMSH.

- Mammograms: with regards to mammograms the mean interval between the date ordered and the date of released report was 52 days in DGMAH versus 1 day in RMSH.
- Abdominal ultrasounds (AUS): the mean interval between the date ordered and the date of released report was 48 days in DGMAH versus 1 day in RMSH.
- Bone Scan: the mean interval between the date ordered and the date of released report was 74 days in DGMAH and was N/A in RMSH.
- MUGA Scan: the mean interval between the date ordered and the date of released report was 57 days in DGMAH and was N/A in RMSH.

From the above results one can deduce that the provider delays faced by patients with regards to imaging is generally longer at DGMAH as compared to RMSH. This can be attributed to a number of factors. It can be noted that at DGMAH a larger number of imaging modalities were ordered (MMG, AUS, B/S, MUGA) as compared to RMSH. This may be due to the fact that DGMAH tends to see a larger number of patients, many of which are very ill therefore requiring more workup (more imaging for example) while RMSH has the option to refer such patients to an academic institute (Universitas Hospital, Bloemfontein). (Our study does support the suggestion that DGMAH receives sicker patients versus RMSH in that the number of Toilet mastectomies seen at DGMAH was higher, and these operations are usually reserved for extremely ill, palliative patients – Table 2). Hulvat et al deduced in their study that the time to treatment of operable breast cancer has actually increased and that multimodal breast imaging was likely to be associated with this increase [8]. From our study it is also suggested that multimodal imaging does in fact increase the time to treatment of breast cancer (longer provider delays), however in DGMAH this cannot be avoided as many patients are extremely ill and require a full metastatic workup, as opposed to RMSH where such patients could be referred to an academic centre for further specialized

care. Academic hospitals are, in fact, so inundated with patients awaiting imaging that they are not able to keep up with such a heavy workload. Patients, despite being at risk of having cancer, are therefore given booking dates far into the future, further delaying their definitive diagnosis, and ultimately, their definitive management. On the 8th November 2018, the IOL released an article citing delays in the province of KZN of up to six months with regards to initial mammogram bookings [9]. This, thereafter, causes a “knock on” effect with regards to further workup, leading to exceedingly long delays prior to definitive management.

6. Conclusion

In South Africa, due to the difference in the socio-economics of the population being treated at any particular institute, calculating any type of delay (be it patient or provider delays) is extremely difficult. Provider delays themselves are broken down into many categories and can therefore be extremely difficult to calculate, especially in areas of South Africa where understaffing and excessive patient load are big problems. Buccimazza et al [6] looked into provider delays (system delays) categorizing them into imaging, histological diagnosis, staging, MDT clinic meetings, treatment. They then calculated the “total delay” by adding on patient delays. According to this study, “system delays” in KZN South Africa were 10 weeks as opposed to the international benchmark of 6 weeks. If one looks closely at the data they provided, specifically with regards to histology (i.e time from biopsy to histology result), the longest interval was 4 weeks (Tygerberg Hospital), the shortest being less than 1 week (Groote Schuur Hospital). More importantly, three institutes, namely CHBAH, Grey’s, Addington/IALCH all had biopsies taken on the 1st clinic visit, with histological confirmation within 3 weeks. 3 weeks is basically half of the international benchmark for all provider delays, not just histological diagnosis. However, in our study both public hospitals showed delays of well over 6 weeks with regards to histological confirmation (DGMAH: 17.4 weeks on average and RMSH: 16.1 weeks on average). Our study finding suggest that, with regards to histological confirmation (i.e time interval between 1st consult and histological confirmation), both DGMAH (academic institute) and RMSH (non-academic institute) had exceedingly long time delays therefore, making it a significant provider delay.

Whether or not provider delays (or any delays in general) effect overall survival in breast cancer patients is still a controversial topic, however, logically, shorter delays would naturally be associated with better overall care for newly diagnosed breast cancer patients (not only when looking at disease progression, but also with the general well-being of the patient i.e anxiety/worry due to prolonged waiting periods, financial strife due to multiple trips to/from hospital etc). Brazda et al [10] found that in community hospitals (similar to non-academic institutes in SA), the time interval from diagnosis to treatment was longer as compared to university hospitals (similar to academic institutes in SA).

When looking at our study, the opposite was suggested. Time to definitive treatment was suggested to be longer at

DGMAH as opposed to RMSH. According to Buccimazza et al [6] the longest delay with regards to commencement of Chemotherapy was 4 weeks (Helen Josphe Hospital) as compared to DGMAH and RMSH (33 and 20 weeks on average respectively). With regards to radiotherapy, both DGMAH and RMSH do not provide RT on site therefore time delays were hard to quantify as patients were booked at different hospitals for such treatment. This entails multiple trips to/from hospital, with records of RT being kept at the providing institute. Our study findings suggest that, despite RMSH (non-academic centre) having a shorter interval between 1st consultation and definitive treatment, as compared to DGMAH, both institutes have exceedingly long-time intervals when compared, not only to institutes abroad, but to some within SA itself!

Provider delays can be broken down into many different categories, each having their own contribution to “system delays” as a whole. However, there are certain provider delays that may be deemed more significant and require special attention. From our study it may be suggested that provider delays, with regards to Imaging, Histology and definitive treatment at both DGMAH and RMSH are most significant.

Hulvat et al [8] concluded in their study that the time to treatment of operable breast cancer has, over the last decade, increased, and that multimodal breast imaging was likely to be associated with this increase. From our study one can see that, not only were more imaging modalities made use of at DGMAH as opposed to RMSH, the time interval between said imaging request and report were longer in DGMAH vs RMSH. Ultimately this most likely did play a role in longer time intervals at DGMAH (to definitive management) as compared to RMSH. While this does fit in with what Hulvat et al [8] suggested, one must also look at it in the south African context. Buccimazza et al [6] showed that out of 8 hospitals, 4 provided mammograms on the day of the 1st clinic visit, as opposed to DGMAH (7.7 weeks on average). Our study findings suggest that, in DGMAH, imaging was a significant provider delay.

As mentioned previously, Buccimazza et al [6] noted in their study that the longest delay with regards to histological confirmation of breast cancer, in 8 public hospitals in SA, was 4 weeks. In another study done by Buccimazza [6], pathology delays (i.e delays in histological confirmation of breast cancer) in a public hospital in KZN (SA) was, at most, 12,4 weeks. Our study suggested an average interval of 17,4 weeks (DGMAH) and 16,1 weeks (RMSH). While the delay at DGMAH was longer than at RMSH, both time intervals are alarmingly long and therefore suggesting that histological confirmation of breast cancer is a significant provider delay in both hospitals.

On the 21/10/19, the citizen released an article regarding the number of patients awaiting surgery in hospitals in Gauteng, SA [7]. Out of the 6000 patients awaiting surgery, more than 4000 were registered at DGMAH. Buccimazza et al [6] found that the total delay between the 1st consult and definitive treatment (surgical or oncological) was between 2-19 weeks. Our study showed that, on average, the interval for definitive surgery was 14,5-117,5 weeks (DGMAH) and 4,7-53 weeks at RMSH. With regards to definitive chemotherapy treatment, 7,4-132 weeks on average at DGMAH and 5,7-58 weeks (RMSH).

Recommendations

As evidenced by our study, no guidelines currently exist in South Africa with regards to acceptable provider delays (in terms of what they are and how long they should be). All institutes across the country should address this by coming together in order to create national guidelines which each province in the country could strive to achieve.

Each province should have at least one large Breast Care Unit/Referral Centre, with multiple satellite breast centres. This would ease the burden off of many academic institutes that are struggling to cope with the sheer number of patients being referred to them on a daily basis (over and above their own inpatients).

Theatre availability is an issue at many institutes around the country. Therefore “stable” patients tend to be sidelined while what are regarded as emergency cases are prioritized. At DGMAH the breast unit is only afforded 1 theatre list a week (in the dental theatre) and 1 list every week at a peripheral hospital (where only one or two healthy patients can be operated on as the anesthetists are medical officers).

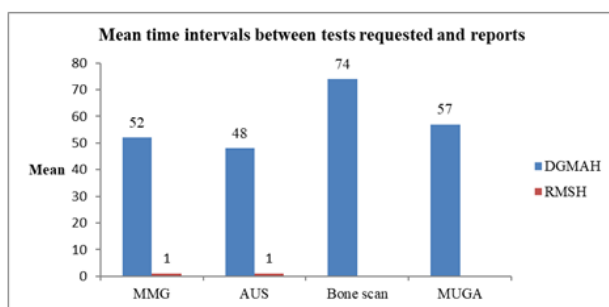


Figure 2. Mean time intervals between tests requested and reports

Goddard et al [11] discussed the controversy regarding radiologists running breast clinics. While this may sound absurd, it would make sense to have radiologists present at breast clinics (especially in areas where no multidisciplinary teams exist).

Each breast centre should have a dedicated MDT consisting of breast/plastic surgeons, pathologists, radiologists, OT/physiotherapists, dieticians etc. This level of care should be standard not only at private institutions, but at public ones as well.

The above-mentioned recommendations require input not only from clinicians, but also from government officials, voluntary breast cancer associations etc in order to streamline breast cancer care nationwide.

The mean numbers of days of delay are graphically displayed in the above figure.

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“Aim high, shoot straight, think, think, think, concentrate, concentrate, concentrate”.

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