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Evaluation of a structured clinical program and formal coursework in breast surgeon training in Australia and New Zealand

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ABSTRACT

Introduction: Breast surgeon training has been restructured since the inception of Breast Surgeons of Australia and New Zealand Inc. (BreastSurgANZ) in 2010. In 2016 a voluntary online course with a contemporary curriculum for breast surgery was initiated and taken up by the majority of post-fellowship trainees (PFTs). This article reports on PFT's perceptions of these major changes.
Methods: A 46-item online survey was sent to the 56 PFTs enrolled in 2015–2017. The survey canvassed PFT's views on aspects of the two-year training program, the Graduate Certificate in Breast Surgery (GCBS) and the role of BreastSurgANZ in training.
Results: 33/56 participants responded. The training program was rated positively with variation in satisfaction levels depending on operating experience and quality of training between clinical placements. The majority of respondents endorsed restricting numbers of training positions. GCBS students valued the clinical knowledge and structured format of the course. A range of diverse, often opposing, opinions were expressed on the appropriate role of BreastSurgANZ in training and accreditation.
Discussion: The dissonance caused by variability in training exposure and perceived mentor quality in different sites was the most important finding. The GCBS was well regarded by all students but time constraints and costs prevented some PFTs from undertaking the course. Standardisation of mandatory requirements for full BreastSurgANZ membership was identified as an issue for further consideration.
Conclusion: This evaluation illuminates the challenges of providing consistently high quality breast surgical training. Many of the issues raised are being addressed by BreastSurgANZ.

Introduction

A series of articles published in 2003 described the historical context of training breast surgeons in Australia [1–3]. Since then, breast surgery has emerged as a discrete area of specialisation with a distinct training pathway, rather than a simple technical addition to the armamentarium of the general surgeon. A 2011 survey of Australian surgical trainees demonstrated the rising popularity of breast oncoplastic surgery as a career choice and identified "breast reconstruction, 1–2 years of post-fellowship training and a structured breast curriculum" as the most important elements in preparing surgeons for a career in breast surgery [4]. These findings informed the development of the first organised training program for breast surgeons in Australia and New Zealand commencing in

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2010, led by the newly formed Breast Surgeons of Australia and New Zealand Inc. (BreastSurgANZ).

Since 2015 the compulsory program has comprised: two years of clinical training (in separate one-year positions centrally allocated in a transparent, highly competitive matching process); attendance at the one-day Oncoplastic Breast Surgery training courses (OBS1 and OBS2) (ensuring exposure to oncoplastic and reconstructive breast surgery); communications and ultrasound courses; and annual attendance at Post-Fellowship Trainee (PFT) meetings. There is no exit examination.

Over the last two decades there has been an unprecedented increase in the understanding of the complexity of breast cancer oncology and the surgical decision-making process. Examples include the integration and varied sequencing of the multidisciplinary management options and the recent rapid uptake of oncoplastic surgical procedures into the mainstream, as well as a greater understanding of the importance of quality of life and aesthetics after breast cancer surgical treatment.

In an attempt to standardise trainees' knowledge acquisition across training positions, an optional online degree program was developed and delivered mostly by members of BreastSurgANZ in collaboration with the Professional Medical Education unit of Sydney Medical School at the University of Sydney. The Graduate Certificate in Surgery (Breast Surgery) (GCBS) was launched in 2016 and was designed to complement clinical practice in the post-fellowship training program. It consists of four units of study taken over two years (that may also be credited towards a Master of Surgery). It is delivered online and teaching is applied and largely case-based. It represents the first example of an Australian university-based course to accompany a surgical training program and costs about $16,000. Each unit is taught over 13 weeks and requires up to 10 hours of study per week. Students are advised to undertake one unit of study per semester (and the degree needs to be completed in 3 years). The cost is tax deductible and payment can be deferred for most students through FEE-HELP, an Australian Government student loan scheme.

This survey aimed to evaluate PFTs' perceptions of the training currently offered by BreastSurgANZ and to assess the value of and attitude towards the GCBS.

Methods

A 46-item online survey was developed to assess the training experience of all trainees in BreastSurgANZ accredited PFT programs for 2015, 2016 and 2017. The sample included fellows who completed one of their training years abroad and a few from overseas who worked one year in Australia (56 PFTs in total). Participant consent was obtained online (IP addresses were not recorded to ensure anonymity). Median time to complete the survey was 20 min. Likert scales and free text comment boxes were used. A copy of the survey is available as Appendix 1.

Results

The survey response rate was 59% (33/56). Of those responding, 52% (17/33) completed or are currently enrolled in the GCBS. Professional characteristics of the respondents are provided in Table 1.

Evaluation of post-fellowship training

Twelve of the participants rated their post-fellowship training as better, or much better, than expected and 17 felt that it was the same as expected; four trainees regarded their training as worse than expected. Individual comments on the best and worst aspects of post-fellowship training are provided in Appendix 2, suggested improvements to post fellowship training are summarised in Appendix 3 and specific aspects of the PFT experience are shown in Table 2.

Several PFTs stated they valued the opportunity for peer interaction provided by the trainee days, which improved camaraderie, while another appreciated how participation in the GCBS program facilitated the development of professional networks and friendships. Nine respondents stated that they felt more connected to their GCBS peers compared with peers who were not enrolled in this course.

PFTs' comments outlined the variability between placements regarding adequacy of operating experience. One respondent commented that s/he would have liked more oncoplastic experience and did not feel 100% competent following training. Another

Table 1
Professional education/training of participants (n = 33).

Characteristic	Number (%)
Fellow of the Royal Australasian College of Surgeons or equivalent	33 (100)
Received some breast surgical training overseas	9 (27)
Hold other non-medical qualifications (e.g. Masters, PhD)	13 (39)
Completed the PFT Program	17 (52)
Enrolled in year 1 of PFT Program	4 (12)
Enrolled in year 2 of PFT Program	8 (24)
Completed year 1 PFT Program only[a]	2 (6)
Not stated	2 (6)

[a] One left to take up a rural position; the other did not provide a reason.

Table 2
PFT experiences (n = 33).

To what extent did you …	Very Much N (%)	Quite a Bit N (%)	A Little N (%)	Not at All N (%)
Share a good camaraderie with PFT peers?	8 (24)	4 (12)	18 (55)	3 (9)
Feel your supervisor supported your career development?	16 (48)	7 (21)	10 (30)	0
Feel you are a welcomed member of your team?	22 (67)	9 (27)	2 (6)	0
Feel that your operating experience was adequate?	12 (36)	17 (52)	4 (12)	0
Feel that your surgical supervision was adequate?	17 (52)	15 (45)	1 (3)	0
Feel that the theoretical teaching about breast disease was adequate?	7 (21)	16 (48)	8 (24)	2 (6)

noted that not all trainee positions include oncoplastic and reconstruction techniques in both years. Additional comments revealed there was little formal theoretical teaching about breast disease outside of the GCBS program.

Six trainees acknowledged being bullied in the workplace and five reported it. Two felt the response to the reporting was inappropriate, suggesting this was due to their short-term appointments.

Evaluation of the Graduate Certificate of Breast Surgery

Approximately half of the PFTs chose to enrol in the GCBS. Table 3 provides the reasons underlying that choice.

Of the 17 respondents who had completed the GCBS, or were currently enrolled in it, 13 stated that their supervisors were aware of the course. Nine respondents had supervisors or other consultant staff who lectured in the course. Responses to questions regarding the GCBS experience are provided in Table 4.

A summary of comments on the main advantages and disadvantages of the GCBS are collated in Appendix 4. The main perceived advantages of the course related to the acquisition of relevant clinical knowledge delivered in a structured format. Eight respondents nominated time constraints on top of their clinical load as the major disadvantage. Individual respondents also identified a high coursework load, difficulty in managing coursework with their on-call commitments; limited or no time available for research; and assignments that were not useful.

Of the 16 respondents not enrolled, 11 stated their supervisor and other consultant staff were aware of the course, 3 stated they were not aware, and 2 respondents were unsure; 6 respondents had supervisors or other consultant staff who lectured on the course and 3 were unsure.

Two respondents noted supervisors' lack of support for the course. One who was not enrolled commented that some supervisors saw the course "… as promoting the reputations of the course coordinators …. " The other, who was enrolled, stated that most of the supervisors and other consultant staff were "dismissive about it and believed that it was set up to generate income for USyd [University of Sydney]" S/he commented that their "increasing knowledge was often perceived as a threat to less informed supervisors." Table 5 provides responses from PFTs not enrolled in the Graduate Certificate about their attitudes to the course.

Opinions on the role of BreastSurgANZ

Membership criteria

Of the 33 respondents, 19 felt the membership criteria of BreastSurgANZ were appropriate, 8 thought they were not appropriate and 6 were unsure of the criteria. Free text responses on the appropriateness of the membership criteria were varied and often contradictory.

One respondent commented BreastSurgANZ "needs to recognise that there are alternatives to gaining the knowledge and standards necessary to be an excellent breast surgeon and to look at making a system of accreditation that reflects this." Another stated "as the society and training develops, the criteria need to be more rigorous and there needs to be more standardisation of oncoplastics and oncology training … perhaps the Grad Cert can help minimise disparity in knowledge." One respondent felt the criteria were "too restrictive, leaving quite a few low volume breast surgeons out" while another stated that there were too many BreastSurgANZ members who "do not offer the range of oncoplastic breast surgery techniques." One respondent commented on the

Table 3
PFTs' reasons for enrolling or not enrolling in the GCBS (n = 30).

Reason enrolled (n = 14)		Reason NOT enrolled (n = 16)	
To improve knowledge of breast conditions and breast surgery	10	Course information could be learnt through other mechanisms	10
To keep up to date and offer best practice to patients	4	Too expensive	8
To complement clinical work	1	Already enrolled in or completed a different master's degree	6
To improve their CV	1	Too busy	3
For self-improvement	1	Not aware of the course	1
To gain theoretical knowledge	1	Completed post-fellowship training before course started	1
Course may become mandatory in the future	1	Unnecessary	1

Table 4
Graduate Certificate of Breast Surgery experience (n = 17).

To what extent do you agree …	Strongly agree N (%)	Agree N (%)	Neither agree nor disagree N (%)	Disagree N (%)	Strongly disagree N (%)
The course is meeting my expectations	7 (41)	10 (59)	0	0	0
The course is too much work	0	4 (24)	6 (35)	7 (41)	0
The assessment tasks are appropriate	4 (24)	10 (59)	2 (12)	1 (6)	0
Given my time again, I would enrol in this course	7 (41)	10 (59)	0	0	0
I would recommend this course to new PFTs	8 (47)	9 (53)	0	0	0
I feel supported by the course teachers	5 (29)	10 (59)	2 (12)	0	0
BreastSurgANZ should make it compulsory to complete this or a similar course	4 (24)	2 (12)	9 (53)	2 (12)	0

Table 5
Views of those NOT enrolled in the Graduate Certificate of Breast Surgery (n = 16).

To what extent do you agree …	Strongly agree N (%)	Agree N (%)	Neither agree nor disagree N (%)	Disagree N (%)	Strongly disagree N (%)
In retrospect, I would have enrolled in the course if I had known more about it	0	1 (6)	7 (44)	2 (13)	6 (38)
From what I have heard about the course, I believe the content is contemporary and relevant	2 (13)	7 (44)	6 (38)	1 (6)	0
I think BreastSurgANZ should make it compulsory to complete this course	0	1 (6)	4 (25)	3 (19)	8 (50)

need for membership to be determined by best practice guidelines to overcome the "significant variations in practice." Another stated that "the policies change. Exceptions seem to be made for certain people."

Several comments related to the short timeframe for the introduction of stricter criteria. One respondent stated that the original criteria were not strict so that many existing members do not have the training expected of new members. Another respondent echoed this sentiment:

> The training has only been around for three years but suddenly at an arbitrary point in time you need two years of post-fellowship training to be a member when no one before has required that and almost all current members don't have that. This ostracises good surgeons who are better than some current members and perform better quality and more frequent surgery.

Another comment stated that the introduction of stricter criteria may have been premature: "I think it's unreasonable to not offer any membership if one hasn't fulfilled all two years of the current BreastSurgANZ criteria, given an oncoplastics year can't be guaranteed to all its trainees at present."

Table 6 provides respondents' views on specific BreastSurgANZ policies.

Two years of post-fellowship training to practise breast surgery

Free text responses largely supported the current PFT program duration. One respondent argued two years was appropriate providing all training units covered reconstruction techniques. Some respondents noted that substantial breast specialisation may limit future employment options, as surgeons practising in regional or remote areas may need more general surgical experience. One respondent highlighted the variability in what is required between practices in capital cities and those in less resourced areas, arguing that "two years of post-fellowship training is only appropriate when the training is of high quality and two years will enable the trainee to perform oncoplastic surgery independently …"

Two respondents stated that it was essential to standardise training criteria. The first commented that "It is disheartening to note that many of us go through a rigorous program to get accreditation as breast surgeons, but several regional centres have accepted surgeons with one year unaccredited training in breast units as breast surgeons." The second noted "I don't think people who have not obtained this training should be given accreditation, simply because accreditation will be otherwise meaningless."

Number of accredited positions

Many free text responses focused on the quality over quantity of positions. The comments highlighted the conflict between the need for more oncoplastic surgeons and the lack of high quality training centres. Variation in the quality of training between placements was a recurring theme, as was the lack of relevant consultant positions available at the end of training.

Oncoplastic breast surgery (OBS)

Free text comments noted that experience in these techniques need not be confined to Australian-based training. Three respondents felt that one year of OBS exposure would be adequate. Supplementary Table 1 identifies the types and number of *specific* procedures respondents considered necessary for accreditation. Free text responses to questions about how many assistant surgeon, and primary surgeon, cases should be required for accreditation varied widely and highlighted the number of variables involved. These include the range and complexity of cases; fellow's basic competency; as well as unit context, volume and requirements.

Finally, respondents were asked about their views on the membership of the multidisciplinary team (MDT) to which the training position is attached (see Supplementary Table 2). Again, responses varied, and reflected the range of available clinical expertise. One respondent commented that "At my centre we are lucky if we have enough medical staff show up. Never have a radiologist. Clinical researchers, plastic surgeons etc. would be a pipe dream."

Discussion

The range of responses in this evaluation reflects the difficulties of designing one program to support surgeons who are at different stages of their career, work in different clinical environments and have different career aims. Overall, most PFTs were satisfied with their training experience but several issues were highlighted as needing improvement, particularly the variability in training quality of the accredited positions and inadequate oncoplastic training. When oncoplastic and reconstructive training was available, it was described as the best feature of the program along with exposure to a high volume of breast problems.

The quality of supervision received was rated as both the best and worst attribute of the program, with some citing excellent mentoring while others described poor supervision and having to work with out-dated non-oncoplastic surgeons. Some trainees liked the autonomy and independence they gained during their fellowship, while others reported the lack of independence as the worst attribute. Respondents who had completed the two-year program also commented on the variation in relevant learning opportunities between their two placements. This issue was identified several years ago and led to the development of the GCBS.

Some surgeons preferred a focused level of breast subspecialisation, while others appreciated exposure to other general surgical sub-specialties and a few would have liked more opportunities for combined training or dual fellowships with plastic surgeons.

Two-thirds of responses also supported a reduction in the number of accredited positions (with the expectation that this will lead to a concomitant increase in quality). Members of the training board could oversee this change towards a smaller number of higher quality posts through review of current accredited positions and the introduction of stricter guidelines for reaccreditation of training centres. While further restriction of training positions to centres with an oncoplastic component and/or a high volume

Table 6
Views on BreastSurgANZ policies (n = 33).

To what extent do you agree …	Agree N (%)	Disagree N (%)	Not sure N (%)
BreastSurgANZ should continue to recommend 2 years of post-fellowship training to practise breast surgery	24 (73)	5 (15)	4 (12)
BreastSurgANZ should accredit fewer positions	22 (67)	11 (33)	0
All accredited positions should require OBS procedures	23 (70)	4 (12)	6 (18)

caseload will have to be balanced against the reality of increased competition for fewer but more highly desired positions, this policy would also help mitigate the apparent lack of consultant positions for graduates.

Review of international training programs reveals a paucity of breast oncoplastic training in the USA and Canada [5,6]. In contrast, from 2002 the UK Department of Health supported one-year training posts as a means of increasing patient access to oncoplastic procedures including breast reconstruction [7]. This strategy appears to have been successful. Even though there were only nine of these highly specialised fellowship positions available in 2018, including the Republic of Ireland [8], after 16 years there are now well-trained oncoplastic surgeons in most breast units. All breast-associated training positions in the UK are in high volume centres that offer training in many OBS procedures as a standard of care [7]. In the UK, on completion, trainees receive a certificate detailing the skills and competencies they have achieved [7]. Furthermore, the UK Joint Committee on Surgical Training specifies that applicants for the oncoplastic breast training program must have chosen Oncoplastic/Reconstructive Surgery alone as a career [9]. This more detailed specification of acceptable applicants makes it easier for a training program to meet the more tailored needs of the trainees. Applying that model in Australia and New Zealand is a long way off and likely only to be applicable to a minority of breast units.

Australia could learn from other facets of the UK training experience. Competency-based training and entrustable professional activities are well established training models in the UK and in other Australian professional colleges such as the Australasian College of Emergency Medicine. Adopting this model in Australia, where training is currently focused on duration and the number of procedures completed, is likely to be beneficial. In Australia, this model is now reflected in training of general surgeons with the introduction of direct observation of procedural skills (DOPS) and the recent inclusion of DOPS by some centres within the breast surgery PFT program. The expansion of competency-based training across the PFT program would have several advantages including: expediting independence of practice; standardising practise across training positions; and providing a suitable framework of practice in low volume centres.

The evaluation of the GCBS was positive as evidenced by the unanimous view that the course was meeting students' expectations, and that given their time again, they would choose to enrol in the course and would recommend the course to new PFTs. The provision of up-to-date and evidence-based structured learning that extended their knowledge was reported as the main advantage of completing the course.

The high cost and demands on time were the two major negatives associated with undertaking this course as part of the PFT program. Given the relatively low pay rates of many PFTs, the financial burden of the GCBS may be a deterrent to enrolment. One respondent argued against compulsory completion due to potential discrimination against those surgeons who cannot afford the course fees. A potential option is for BreastSurgANZ to provide a loan scheme or scholarships for PFTs under financial stress, especially for those who are willing to work in areas of need.

The course is in its third year, and an iterative review process is used in response to student and teacher evaluations to improve the quality, assessment and efficacy of the course. Given the University's requirements, there is no opportunity to reduce the time required to complete each unit of study. Consideration is being given to offering the coursework as a non-credentialed course which would allow more flexibility in the volume of learning and the pricing of the program.

The feedback on accreditation and training policies of BreastSurgANZ was positive but varied. Some respondents expressed concern about the sudden introduction of stricter membership criteria. In reality, the PFTs were informed that it was desirable but not mandatory several years before 2 years compulsory training was introduced.

Additional training incorporating oncoplastic techniques is urgently required in the PFT program. This will happen as supervisors and other surgeon mentors acquire oncoplastic skills. The majority of respondents supported the existing membership criteria including the two-year PFT program and the inclusion of oncoplastic breast surgery procedures as a prerequisite for BreastSurgANZ full membership. PFTs' responses consistently called for greater standardisation of membership criteria, and in response BreastSurgANZ has established a Membership Subcommittee that is developing explicit membership guidelines.

Limitations

The 59% response rate is not unusual for surveys of surgeons [2,4,10,11], but may result in selection bias. We are not able to compare the characteristics of respondents with non-respondents as we deliberately did not collect any identifying information.

Conclusion

This evaluation has provided important benchmarking information on the status of breast surgical training in Australia and New Zealand at a time of rapid change. It has highlighted problems with the current processes and the onus is on BreastSurgANZ to act on these findings. The evaluation illuminates the pros and cons of combining formal coursework (GCBS) with advanced surgical training and provides insights into how to improve the accessibility and utility of the coursework to PFTs. The aim is to repeat this evaluation regularly to assess the impact of the implemented changes on clinical practice and monitor the ongoing development of breast surgical training.

Ethics approval

Ethics approval for this project was granted by the Human Research Ethics Committee of St Vincent's Health Network Sydney (18/099).

Conflict of interest statement

AS and SW led the development of the GCBS. AS is the immediate Past President of BreastSurgANZ and SW is the Chairman, Post Fellowship Training, BreastSurgANZ. AK is the Director of Professional Medical Education and assisted in the development of the GCBS. KF has no conflict of interest to declare.

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Supplementary data

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