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Title:

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Date:

2020-11-01

Citation:

Goh, S. K., Dudi-Venkata, N. N., Zhou, B., Ng, D., Liu, D. S., Fong, J., Low, N., Lau, L., Mori, K., Sidhu, A., Stevens, S., Muralidharan, V., Drysdale, H., Chiu Kang, Y., Newton, P. & Tiang, T. (2020). Surgical Outpatient Study: characterizing the educational experience of outpatient clinics for surgical trainees. *ANZ Journal of Surgery*, 90 (11), pp.2166-2167. <https://doi.org/10.1111/ans.16269>.

Persistent Link:

<https://hdl.handle.net/11343/276553>

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Surgical Outpatient Study (SOS): Characterising the educational experience of outpatient clinics for surgical trainees

Running head: Surgical Outpatients Study (SOS study)

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This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: [10.1111/ans.16269](https://doi.org/10.1111/ans.16269)

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Funding/Support: None

Conflict of Interest: None

Manuscript Word count: 997

Attendance at outpatient clinics (OPCs) by surgical trainees is intended to be a training and educational activity while providing service provision essential to the delivery of surgical care.¹⁻³ Access to OPCs for surgical education and training (SET) is highly valued and an essential accreditation criterion for hospital training posts.^{4,5} However, the tenuous balance between service provision and SET remains poorly understood. Evidence supporting the educational value of OPCs in training is limited. Studies show that the educational experience of OPCs is unsatisfactory in terms of both the educational quality and the overall number of patients seen.¹⁻³

We conducted a prospective multi-centre pilot survey of general surgical trainees to explore and map their experiences in the outpatients' clinics. A novel mobile web-based survey was designed using Amazon Web Services (<https://www.surgicaleducationresearch.org>). The survey included eight questions focussing on the clinic demographics, activity and consultant support received by trainees. The approved study (HREC/17/AUSTIN/323) was conducted between November 2018 and August 2019 at two Victorian hospitals (Austin Health and Northern Health) through VERITAS (Victorian Collaboration for Education, Research, Innovation, Training and Audit by Surgical Trainees). All general surgical trainees (accredited and unaccredited registrars) attending consultant-led general surgery or sub-specialty general surgery OPCs during the study period were invited to participate in the study (N=24). The units to which the trainees in this study were attached generally conduct OPCs one to three times per week and trainees would be expected to attend all OPC sessions. Participation in the study was anonymous and voluntary.

Seventeen trainees completed 158 surveys with a median of 4 surveys per trainee (1-48 surveys). The median time for survey completion was two minutes (1-46mins). Participants included trainees at various levels of training: SET5 (n=5, 29%), SET4 (n=4, 23.5%), SET3 (n=3, 18%), SET2 (n=1, 6%) and non-SET (n=4, 23.5%). Of the 1350 patients seen by trainees, the majority were for

postoperative follow-up (n=568, 56%) followed by reviews (n=622, 27%) and new referrals (n=160, 17%). Trainees managed a median of eight patients (range 0-22) per clinic, including one 'new', four 'review' and three 'postoperative follow-up' patients.

A median of three consultants were present per OPC (range 0-6). Input from consultants was sought only in 21 patients (1.5%) for investigation, eight patients (0.6%) for diagnosis and 191 patients (14%) in overall management.

The mean perceived educational value of OPCs, scored from 0 (did not support training) to 100 (very much supported training) on a continuous scale depending upon individual trainees' perception of the degree to which attendance at the OPC supported their education and training, was rated 61 out of 100.

This value differed depending upon the trainee's level of their training and varied from 35-58% for SET3 trainees to 70-99% for SET5 trainees. This observation may be related to case mix with a greater proportion of patients seen by SET 5 trainees being new patients (31% compared with 0-13% for other training levels). An inverse relationship was identified (Spearman's coefficient, $r = -0.354591$, $p < 0.0001$) between the perceived educational value of OPCs and the number of patients seen per trainee per clinic episode. The perceived educational value increased in the positive direction with consultant's input (Spearman's coefficient, $r = 0.3202$, $p < 0.0001$).

The introduction of safe working hours, increased scrutiny of theatre time utilisation and rising fear of litigation is impacting on the opportunities for SET.⁶ To maintain the same standard of competency for completion of SET, training programs need to become more efficient or risk lengthening in duration. This requires trainees and educators to evaluate the educational benefit of the work that trainees perform. The characterisation of the OPC experience in this study represents a starting point to facilitate the optimisation of OPCs as an educational tool.

Several determinants of the educational benefit of OPCs have been described: appropriate distribution of workload, varied mix of patient encounters and availability of consultants for one-to-one teaching.⁷ We observed an inverse relationship between the number of patients seen and perceived educational value. Trainees seeing large numbers of patients may be time-pressured to focus on service provision and unable to extract the full educational value from the clinical encounter. Additionally, their patient mix may consist of less complex cases that offer less educational benefits. Utilising junior medical officers or nurse practitioners to better distribute work relevant to training level and learning needs would seem beneficial. Providing greater exposure to particular types of patients, such as new patients, is likely to enhance the educational experience of OPCs.

To our knowledge, this is the first study to explore the perceived educational value, level of supervision and trainee workload of general surgery OPCs. It is also the first study conducted by VERITAS, a Victorian-based surgical trainee-led research collaborative (<https://www.veritas.surgery>).

This is a small feasibility study conducted at two metropolitan hospitals with inherent limitations to consider. Firstly, the wide variation in survey completion rate may reflect the ability of trainees to complete the survey in time balanced against the pressures of clinical commitments. This study was not designed to interrogate these factors nor was its purpose to audit the function or performance of the OPCs. Secondly, while a reasonable proportion of invited trainees participated in the study (N = 17 of 24, 70.8%), there was a wide variation in the number of surveys completed by each participant (1-48) which may have skewed the data towards being more representative of the trainees who submitted high numbers of surveys. Lastly, as the study was only conducted in two large Victorian metropolitan hospitals it may not reflect the general experience in Australasia. However, current expansion of this study to metropolitan, regional and rural centres throughout Australia may provide further insights in the near future.

We have successfully piloted the use of a mobile web-based application for contemporaneous data gathering on trainee's experience of surgical OPCs. This early data suggests that trainees perceive the educational experience of OPCs to be far less than optimal, while being negatively impacted by the degree of clinical workload and positively impacted by consultant involvement.

Disclosure

The authors have no conflicts of interest to declare

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