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# Program Directors' and Trainees' Attitudes towards the Introduction of Multi-Source Feedback as Part of Surgical Residents' Formative Assessment Process at the University of Calgary: a Qualitative Study

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## Abstract

**Introduction:** Canadian medical education regulators have expressed the need for multifaceted evaluations. Multisource Feedback (MSF) has been proposed to improve assessment of non-technical domains as these assessments are challenging. This study aimed to assess the attitudes of residency program directors and residents at the University of Calgary regarding implementation of MSF.

**Methods:** Semi-structured individual and focused group interviews were used to collect data.

Six program directors from surgical disciplines at U of C were individually interviewed, and a focus group interview was conducted with 7 surgical residents. These interviews were transcribed and analysed for recurring themes using a template. These themes were grouped on the template and further analysed.

**Results:** Several themes were identified. These were: identified need for MSF, organizational ability to apply MSF, benefits associated with MSF, barriers to MSF, and suggestions on implementation.

Participants agreed that MSF was necessary to improve evaluations and might address assessment shortcomings. They noted that the infrastructure and willingness to implement MSF is currently in place. MSF would allow improved resident insight into their performance and earlier detection of issues.

Barriers were difficulty of communicating negative feedback and lack of infrastructure for remediation. A suggestion for implementation was proper preparation of all participants prior to MSF introduction.

**Conclusion:** Study participants agree that MSF may improve evaluation at the U of C. They felt that the programs were ready to accept and participate in MSF. Concerns remain regarding remediation of negative behaviours. This may be applied to other institutions wishing to implement MSF.

**Keywords: Multisource feedback; Evaluation; Implementation**

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## Introduction

Multisource Feedback (MSF) is a currently formative method of assessment which incorporates observations from multiple assessors to provide insights into a trainee's performance [1]. This is in contrast to traditional assessment methods which rely on multiple direct observations of the trainee's performance by a single, (or small number) of primary evaluators [2]. The MSF process is known in the corporate world as the '360-degree review', and has been demonstrated to be reliable and valid in that sphere [3]. This type of assessment is also in use for medical and surgical residents and staff physicians in the UK. For example, the UK General Medical Council has been incorporating MSF from patients and colleagues as part of their ongoing maintenance of certification programs since 2012 [4]. There is some evidence to suggest that this feedback has improved communications skills of participating physicians [5]. This type of feedback is currently being implemented at the University of Calgary, for example in the Physician Achievement Review program administered to staff physicians by the College of Physicians and Surgeons of Alberta, which uses patient and

colleague reviews to provide physicians with formative feedback on their performance in several domains.

MSF may be a valuable assessment method because it allows surgical residents to have their cognitive and behavioural skills evaluated from a variety of perspectives, when they typically are assessed only by a single preceptor [5]. MSF may also assist with evaluating areas of performance which are traditionally poorly assessed, such as communication and collaboration with other members of the healthcare team [6]. The implementation of novel residency formats such as Competency-Based Medical Education will also require new methods of assessment as the goals of the assessments themselves change.

The implementation of MSF may be challenging in an institution such as U of C. There may be barriers with respect to the readiness of trainees and faculty to accept a new assessment framework and the feedback it provides. Some challenges include the conveyance of negative feedback to the learner, as well as the willingness of the learner to accept this feedback. There are logistical issues concerning the infrastructure necessary to implement MSF, including the organizational infrastructure to implement the gathering of feedback as well as development of assessment methods and training of assessors in these methods, as suggested by Lockyer et al. [1]. In addition, an appropriate mechanism to monitor the effectiveness of the feedback in achieving behavioural change needs to be defined.

Our study aimed to define the attitudes of program directors and residents toward the implementation of MSF at the U of C, and what barriers to its implementation they would identify.

## Methods

This study is a qualitative design based on interviews and thematic analysis. The theoretical basis of the study is grounded in constructivism. This philosophy states that learning is constructed on the basis of previous knowledge, experiences, and social interactions. Similarly constructivist research implies that the researcher is a producer and facilitator of the research and constructs conclusions based on the experiences and knowledge of the subjects [7]. Situated learning, which is a theory of social learning based in constructivism, is very important to the understanding of surgical education, as identified by Svensson et al. [8] in 2009. Because the MSF tool is used within the social context of learning in surgery and because of the largely social criticism of work-based assessment in other settings, we chose to approach our study from the perspective of situated learning.

One-on-one interviews were conducted with six current or past program directors of surgical programs at the U of C. Purposeful sampling was used to select participants for this study to identify and recruit participants who would bring insight and depth to understand the issues surrounding MSF. These participants were current or past program directors of four of the five surgical programs at the U of C, with experience levels ranging from 2-12 years. These interviews were semi-structured, with a list of pre-set questions asked (Appendix A), and further questions asked based on the answers received.

A focus group interview was conducted with seven surgical residents of varying levels of training representing three of the five surgical programs at U of C. The structure of the interview was similar to the program director interviews, with pre-set questions being allowed to guide further queries. All interviews were audio recorded and transcribed verbatim. Sampling was continued and questions were asked until data saturation was achieved, meaning that no new themes arose from the conversations either with the program directors or the residents. The resident focus group was scheduled after the program director interviews, and the research team felt that further focus groups were not necessary as no major differences in recurring themes were noted between residents and program directors.

The transcribed interviews were then subjected to a template analysis. The transcripts were reviewed, and themes and subthemes which were recurring in the interviews were identified and assigned numerical codes. A priori themes were used in the initial analysis (Appendix B), and new themes that arose were added to this original set. Any statement made during the interviews which did not fit a previous theme or subtheme was assigned its own theme. This was originally done on two transcripts and repeated several times to refine an initial template that could be applied to the remaining transcripts. When this was done, the coded themes were separated and grouped, which allowed further thematic analysis. The final template and thematic groupings which resulted from this process were reviewed by two reviewers who were different than the researcher creating the initial groupings. These reviewers had input at all stages of template development and application.

Institutional review board approval was obtained for this study at both Oxford and U of C. The research itself was conducted at U of C. All interviews and themes developed were anonymized, and all subjects participated willingly with the option of discontinuing participation at any time.

## Results

Our template analysis identified five basic themes, with several subthemes within each. These were:

1. Need for application of MSF
2. Ability of the organization to apply MSF
3. Benefits associated with MSF
4. Barriers and drawbacks related to MSF implementation
5. Suggestions on implementation

### Necessity for the introduction of MSF as a new and updated evaluation technique

All participants stated that MSF was likely to help with RCPSC accreditation of their programs. Specifically, they felt that MSF was likely to be highly regarded as improving the assessment of residents, and thus would improve the program's likelihood of complying with evolving accreditation standards.

There was also a perceived deficiency in the assessment of non-Medical Expert domains of the CanMEDS framework. Several reasons for this were given; limited staff-resident interaction, limited staff training or interest in assessing non-knowledge based attributes, and poor structuring of the evaluations themselves.

…most faculties really are quite dismal at filling out evaluations for those particular items (CanMEDS roles). Obviously challenging domains to truly evaluate, unless you spend a tremendous time with the individual.

-PD1

Participants also noted the need for multiple assessors. They

stated that residents spend much of their time around non-physician professionals, and that their interactions with these team members may differ than those with their supervisors.

Participants also felt that MSF would help prepare residents for practice by improving their ability to work within multidisciplinary teams, and understand their own role in these teams in a more complete way.

### Organizational readiness for the introduction of a system of MSF

All interviewees agreed that the technical infrastructure to apply MSF currently exists at the U of C. Subjects felt that the existing electronic evaluation infrastructure could be easily modified to support MSF.

There was agreement between residents that they and their colleagues were ready for MSF-style evaluations. Program directors were enthusiastic about adopting MSF and believed that faculty would be happy to participate if their workload did not increase.

…we have some tools that are developed…it is all computerized in the one 45 system, so that can be emailed…that (MSF) is really in this kind of domain quite easy to implement…I think the infrastructure is there…

-PD1

…I think our resident group has just sort of grown up in this generation that values that kind of feedback (MSF), so we are ready.

-R4

### Benefits associated with MSF implementation

Program directors and residents agreed that residents have limited insight into non-clinical areas of practice. MSF was identified as a way that greater insight into residents' performance in non-clinical areas could be gained by residents and evaluators.

…at present, I think they (residents) have very little insight in terms of how they are doing in relation to coworkers…other allied health professionals.

-PD2

MSF was seen by subjects as a means of improving feedback, and to compensate for limited staff-resident interaction time. Broadening the pool of evaluators would also increase the amount of time which the resident is observed for, and thus improve the feedback generated in evaluations.

The study participants further noted that MSF might help to identify poor performers by documenting deficiencies which might be overlooked or not observed at all.

All of a sudden those little deficiencies together become a big red flag…we have had people who have gotten late in their residency with passing ITERs…who clearly struggled before it showed up in their ITERs.

-PD4

Having multiple observations of a resident documented might allow a more complete picture of any deficiency to emerge and be dealt with early. This would compensate for leniency or lack of desire to provide negative feedback from a single assessor.

### Barriers and drawbacks related to MSF implementation

Interviewees felt that there could be problems with communicating negative feedback to residents.

Lack of infrastructure and plan to help remediate negative behaviours was perceived as a significant issue. Program directors particularly felt that few resources exist to guide exactly how to remediate negative communications and collaborations behaviours. This might diminish the utility of MSF feedback.

…this is really a challenging thing to communicate to people that are having problems; because usually the people who are having problems do not have the insight…they often have difficulty understanding how this is possible that people are having a problem with how they are interacting.

-PD1

It was felt that preparedness to accept MSF could also be a barrier to implementation. Subjects felt that training of evaluators and a simple form would be critical to its acceptance. In addition, program directors were concerned regarding the possibility that MSF would increase evaluators' workloads, which would decrease their desire to participate fully in the system.

Program directors also raised concerns that the evaluations would not provide durable or meaningful behaviour changes. Furthermore, they were concerned that feedback would be compromised by residents' personal popularity. Personal popularity might have the effect of compromising the objectivity of the assessors toward the resident, while at the same time reducing the impact of negative feedback on the resident.

Unless it is very carefully worded (MSF), it can just turn into a popularity contest because you can vote the most popular resident. Well, why are they popular? Well, they can't maybe operate, but they are very personable and extroverted and make friends easily and so all the nurses really like them.

-PD2

### Suggestions for MSF implementation

Anonymity of evaluators was seen as key to providing accurate feedback and reducing conflict relating to negative feedback. Involvement of nursing, physician, and resident colleagues in the evaluation process was desired.

A recurring suggestion for MSF implementation was that MSF should be applied equally to all physician team members. They felt that this would encourage solidarity in application of MSF, and reduce the feeling of being targeted.

I do not think that anybody should be immune to this [MSF] and so what that means is that we should be having transparent evaluations of our teaching preceptors as well as the residents.

-R3

They felt that providing clear direction regarding the goals and purpose of MSF for all evaluators, including non-0physicians, is critical to ensure quality and appropriateness of feedback.

...it all depends on who is giving the feedback but if you have trained the people to know how to fill out the evaluations and to know what is the most helpful to hear back about, then you really get some

useful information to provide back to the resident at the end of the day.

-PD1

## Discussion

The Royal College of Physicians and Surgeons of Canada have in recent years begun to investigate new, diverse and effective methods of resident evaluation. During our interviews, the program directors in particular indicated that they understand this and are well aware of the existence of MSF. They recognized the challenges of the current evaluation system and recognized the potential of MSF to solve some of these.

The evaluation system (ITERs) as currently applied has the tendency to overemphasize clinical knowledge and technical skill over other domains of practice. This tendency may compromise the accuracy and validity of the evaluation.

Our analysis revealed several factors potentially contributing to this phenomenon. Resident attitudes toward non-Medical Expert practice domains seemed to reflect their supervisors' lack of interest in evaluating them. The residents were convinced that they were evaluated only on knowledge and technical skill, and noted that there were no failing grades given for "softer" skill deficiencies.

Supervisors are additionally unable to spend enough time with residents to get an accurate idea of their capabilities. This is becoming a more significant problem as work hour restrictions increase. The residents and staff agreed that this diminishes their ability to provide meaningful feedback regarding non-Medical Expert competencies.

Norcini wrote in 2003 that 'global judgments are often influenced by the evaluator's general impression of a person being assessed rather than his or her skill in a particular area' [2]. This observation highlights another area of deficiency noted by participants, namely that the resident may modify their behaviour in the presence of the evaluator, and so the evaluator is not getting an accurate impression of their performance. The interviews were clear that assessors get very little training in evaluating non-Medical Expert skills to overcome this problem. This highlights the importance of adequate education and preparation prior to the application of MSF in the organization.

Given the current deficiencies in the system, all study participants were enthusiastic and optimistic about the possibility of using MSF at U of C. They feel that the process would provide richer and more accurate feedback due to its use of multiple direct observations of behaviour. This may help identify residents needing help at an earlier stage. Naidoo et al. [9] in 2016 performed a multivariate analysis of UK general practice residents' scores on MSF and other parameters 6 months into training and at the end of training. They found that, at both time points, MSF scores were significantly predictive of both final clinical skills and knowledge-based examination performance, but also of the likelihood of the subject requiring extra training. These associations were robust across all domains of MSF, including professionalism and communication ratings. These results, and particularly the fact that the early MSF scores were predictive of performance, lend further credence to the interviewees' thoughts that MSF may help identify problems at an early stage of training.

All participants stressed the need for education and proper preparation of evaluators for MSF, including a thorough explanation of the methods, objectives, and purpose of the evaluation. It is well substantiated in the literature that proper preparation is key to successful implementation of an evaluation system [5].

Anonymity of assessors is identified as key to avoiding the tendency of assessors to be lenient, as well as to avoid interpersonal conflict arising from negative evaluations. Other studies have highlighted evaluators' reluctance to include negative observations in feedback [10].

The current idea of the 'hallway conversation' typifies the deficiencies of the current evaluation system. These conversations need to be formalized and documented to provide usable feedback to the person being evaluated. MSF might help identify issues and allow them to be rectified before they become greater problems. 'Knowing how you are perceived in your daily routine help trainees and physicians alike to meet patient's needs, reassess their level of competence and readjust their behaviors' [11]. Formative feedback can identify gaps in performance, can help novices or struggling residents improve their process of learning, and help correct negative findings [12].

Our analysis revealed that the U of C Department of Surgery is ready, both in terms of infrastructure and of organizational culture, to accept the implementation of MSF. There are challenges relating to planning for the communication of negative feedback which will need to be mitigated. This can likely be done through creation of policies to remediate negative behaviours. We feel that this study contributes to the consensus surrounding MSF as a valuable tool for assessing the performance of medical and surgical trainees. Given the context of this study at a large teaching centre, we do feel that the experiences of trainees and program directors and their attitudes towards MSF are likely similar to those of their colleagues at other institutions. Therefore, the challenges and incentives to implementation of MSF at this institution may also be found at other institutions wishing to implement MSF in their training programs. We feel that this study may help other institutions identify and avoid these challenges by creating comprehensive plans to address them during the preparation phase of implementation.

## Conclusion

1. There are noteworthy deficiencies in our current assessment method of non-medical expert CanMEDS competencies.

2. There is a need within surgical training programs for other tools to better assess CanMEDS competencies.

3. MSF is perceived to be a valuable tool to address deficiencies in assessment of non-Medical Expert competencies, and may address deficiencies in the current system of evaluation of surgical residents.

4. Education of all participants and preparedness to deal with negative findings is considered key features for a successful implementation of MSF.

5. Program directors and residents have a positive attitude towards potential implementation of MSF, although all participants identified areas of concern which would need to be addressed for successful implementation.

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