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The ripple effect of a Clinical Teaching Fellow program in an Australian paediatric hospital

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The ripple effect of a Clinical Teaching Fellow program in an Australian paediatric hospital

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Abstract:

Background/Aim

Bedside teaching performed by experienced clinicians is an expected component of medical student training. As clinicians often have high clinical demands and a lack of formal training in teaching methods, clinical teaching fellowships have been established. In clinical teaching fellowships, clinicians with an interest and expertise in medical education provide medical students with standardised teaching. Studies about the impact of clinical teaching fellowships have demonstrated benefits for both clinical teaching fellows (CTFs) and medical students. However, studies have not evaluated the impact of these fellowships on other clinicians or learning relationships within the institution. In this study, we aimed to address this gap, by gathering data on the perspectives of CTFs, medical students and hospital consultants.

Method

A mixed-method design was employed, utilising a combination of surveys for CTFs, medical students and hospital consultants, and semi-structured telephone interviews for CTFs. Quantitative and qualitative data was obtained.

Results

The combination of data from CTFs, medical students and consultants enabled a more comprehensive understanding of the impact of the CTF program within the institution. Although benefits were identified for CTFs and medical students, the consultant group noted that they were less involved in teaching medical students and that the CTFs were not well integrated into the ward team.

Conclusion

This research highlights the importance of considering not only direct outcomes of teaching and learning but broader influences on more implicit teaching opportunities and relationships within hospital teams.

KEYWORDS

Clinical teaching fellow program, clinical teaching fellows, consultants, medical students, institution, learning relationships.

What is already known on this topic

- Clinical teaching fellow (CTF) programs have been developed to provide medical students with structured standardised teaching, in addition to teaching that they receive from other sources.
- Evaluation of CTF programs have highlighted benefits for both medical students and CTFs.
- CTF programs are also thought to benefit medical schools and institutions by creating a community of educators and prioritising medical education research.

What this paper adds

- The introduction of a CTF program is likely to impact on other hospital groups and learning relationships within a hospital.
- CTF programs may disrupt established models of bedside teaching delivered by more senior clinicians.
- Institutions should consider how to integrate CTFs into clinical roles, in order to strengthen learning relationships.

Introduction

Teaching hospitals provide a key learning environment for the education of medical students.¹ In academic medical centres and other institutions, teaching occurs alongside patient care and service delivery.^{2, 3} This education model has traditionally been one of apprenticeship,⁴ relying on expert practitioners passing their knowledge to juniors.⁵ However, there is an increasing awareness of pedagogies and explicit teaching approaches that scaffold student learning, rather than relying on transmission of experience and expertise.⁶ Clinician educators are now expected to do more than allow for passive student learning. Instead, they are required to demonstrate educational expertise, without diminishing responsibilities of patient care and service delivery.⁶

One innovation addressing these education and service elements is the establishment of clinical teaching fellowships. Clinical teaching fellowships are teaching-specific appointments for clinicians, created by medical schools.⁷ A key feature of clinical teaching fellowships is that a clinician is afforded dedicated time to learn about and deliver education, without associated clinical responsibilities. The goals of clinical teaching fellow (CTF) programs are: to improve learners' educational experiences and outcomes;⁸ enhance participating clinicians' teaching skills; create a community of medical educators;⁹ and, prioritise medical education and medical education research within institutions.¹⁰

The Royal Children's Hospital is a large paediatric teaching hospital in Melbourne, Australia. University of Melbourne medical students in their third year of a four-year course, undertake an eight-week Child and Adolescent Health placement at the Royal Children's Hospital (week 1 comprises lectures, with weeks 2-8 being inpatient and outpatient clinical placements). In order to address concerns about a lack of standardisation in medical student teaching, a CTF program has been established at

the Royal Children's Hospital, where ten CTFs are employed for one year (at 3.5 hours per week). Clinicians applying for these positions are primarily advanced paediatric trainees and junior paediatricians, with a separate part-time clinical role. Some of the CTFs have prior teaching experience or are completing formal training in clinical education.

There is no formal curriculum for CTFs. However, the group meets fortnightly with one of the course coordinators to review course material, develop teaching strategies and discuss student issues. During these meetings, a variety of topics relevant to medical education are discussed, including group facilitation and feedback strategies. The CTFs are responsible for delivering two structured teaching sessions each week, including a bedside clinical skills tutorial and a classroom-based interactive tutorial about a common paediatric topic. Consultants work separately from the CTFs, supervising students as part of their daily clinical work. The independent nature of the CTF and consultant work, means that each group is not necessarily aware of the other group's teaching focus.

Comparing CTF programs at different institutions and evaluating their outcomes is challenging because they are developed in different contexts, and have a number of indirect rather than direct effects on student learning.⁹ Our CTF program is comparable to some evaluated programs in terms of duration, educational goals, and as the CTFs having co-existing clinical and research roles.⁹ Literature suggests that CTF programs positively impact medical students,⁸ medical school deans⁷ and CTFs themselves.^{7, 8, 10, 11} A feature of CTF programs that has received less attention is how they might alter the traditional structure of clinical teaching. We were interested in exploring broader relationship-based outcomes of our CTF program, as well as the program's effects on teaching and learning. In order to achieve this, we considered the impact of the CTF program on three aspects: the impact on stakeholder groups (medical students, CTFs

and hospital consultants); the relationship between the medical students, CTFs and consultants; and, the hospital itself through changes to medical education.

Methods

A mixed-methods evaluation of the CTF program was undertaken using a combination of surveys of the CTFs, hospital consultants and medical students, and semi-structured interviews with the CTFs. Surveys were designed for each of the three groups (CTFs, consultants and medical students) using the Theoretical Domain Framework (TDF). This framework was chosen because it considers 12 domains that can potentially influence the implementation of a practice (in our case, education practice) by health care professionals.¹² These domains represent broader impacts of changing an approach to teaching or practice and encourage awareness of the impacts of such a change.

Participants and Data Collection

Informed by the TDF, we collected data from 4 sources:

1. CTF surveys

All CTFs (employed at the time of the research and previously), who could be contacted via email, were invited to participate in the study. This included 10 CTFs employed at the time of the research, from the 2017 cohort, and 26 previously employed CTFs, from the 2015/2016 cohort. The survey questions explored their experience as a CTF, focusing on skills learned during the role, challenges encountered, and the impact of the role on their career (Appendix 1).

2. CTF interviews

Telephone interviews were subsequently done with 5 CTFs employed at the time of the research and 5 previously employed CTFs, to further explore their experiences and perspectives. The semi-structured interviews followed a series of question prompts (Appendix 2). The interviews were audio-taped and transcribed.

3. Consultant surveys

Purposive sampling was used to invite consultant participants from a list of 395 hospital consultants, provided by the Human Resources Department at the Royal Children's Hospital. An online survey was emailed to 110 consultants, with a follow-up hardcopy distribution of surveys, to improve the response rate. The survey questions explored consultants' awareness of the CTF program, as well as perceived advantages, disadvantages or unintentional consequences of the program (Appendix 3).

4. Medical student surveys

Fifty students who were completing their Child and Adolescent Health rotation at the Royal Children's Hospital between 26 March – 1 June 2018, were invited to participate in the study. Paper surveys were distributed at the end of the student rotation, in order to improve the response rate. The survey explored various aspects of the students' teaching/learning experience, including whether they had different experiences when being taught by a CTF compared to a ward consultant (Appendix 4).

Data Analysis

Study data from the CTF and consultant surveys was collected and managed using REDCap electronic data capture tools.¹³ Quantitative data from the Likert scales in the CTF surveys was analysed using descriptive statistics. Qualitative data from the CTF, consultant and medical student surveys, and CTF interviews, was analysed using

thematic analysis. As the open-ended CTF survey questions and the detailed CTF interviews explored similar concepts, with the interviews aiming to elicit more detail, the data obtained from the surveys and interviews was analysed together. Systematic text condensation, as described by Malterud, was utilised.¹⁴ This involved initially reading through each transcript in full, to obtain initial impressions. Preliminary units of meaning were categorised into codes and these were discussed and compared between two study authors. Further independent synthesis of the codes was conducted identifying core themes. Although our small sample size precluded data saturation, review of the data clearly identified common and recurring themes.

Approval for the study was obtained from the Royal Children's Hospital Human Research Ethics Committee (HREC 37327A).

Results

Surveys were sent to 36 CTFs, 26 previous CTFs and 10 current CTFs. Nineteen CTFs returned completed surveys, 13 (68.4%) previous CTFs and 6 (31.6%) current CTFs.

Ten CTF interviews were done, 5 with previous CTFs and 5 with current CTFs.

Surveys were sent to 110 hospital consultants. Thirty-eight (34.5%) consultants returned completed surveys.

Fifty medical student surveys were distributed during four group learning sessions. Forty-seven (94%) medical students returned completed surveys.

Figures 1 and 2 summarise the final participant numbers for the surveys and interviews respectively.

INSERT Figure 1 here

INSERT Figure 2 here

Quantitative data is presented in Appendix 5. This data suggests that most CTFs felt well-supported in the role, that the CTF experience improved their theoretical knowledge in medical education, and that they learned specific teaching skills. The CTFs also indicated that the position benefited a number of facets of their clinical work.

Qualitative data is presented in Figure 3. The themes indicate that the program has a number of benefits for CTFs, medical students and the institution. Additionally, they highlight that the effects of the program extend beyond expected benefits for CTFs and medical students, to encompass other groups in the hospital and learning relationships between them. Quotations are included in the text, with additional quotations included in Appendix 6.

INSERT Figure 3 here

THEME 1: The benefits of the CTF program

All three groups identified that the CTF program has specific learning benefits, although they expressed these benefits differently. The main benefits discussed were benefits to the medical students; to CTFs and to the institution.

Benefits to medical students

The CTFs and consultants both recognised that when CTFs teach medical students, they have the advantage of dedicated teaching time, without associated clinical responsibilities.

Consultant comment: “CTF focus on students, clinicians focus on patients”.

CTF comment: “my experience in medical school (was) that the student teaching was adhoc and wasn’t a priority because it was always considered by the clinicians at the hospital, to be an extra thing that they did, essentially voluntarily, and wasn’t part of their job.”

All three groups thought that the CTFs had a better knowledge of the medical students’ curriculum and the expected level of the students.

Medical student comment: “CTFs were more aware of what we needed to know as students...ward consultants tended to either pitch at a level too low or high”.

Another benefit that was perceived by all groups was that the CTFs were generally closer to the learning stage of the students and were more likely to provide students with emotional support.

Many of the medical students also indicated that having a *regular* tutor enabled them to form a relationship with the tutor and provided continuity to teaching.

Medical student comment: “[Regular tutors enable the] form(ation of) positive relationships which makes asking questions easier.”

Benefits to CTFs

The CTFs also perceived a number of benefits of the program for themselves. The benefit that was most commonly discussed was the opportunity to gain theoretical knowledge in teaching and improve practical teaching skills.

Many of the CTFs also recognised that the teaching role improved their own clinical skills, particularly their communication skills, but also their skills in leadership and mentoring.

CTF comment: “that being a doctor you need to explain things to people often.... clearly, they’re a different audience but using that teaching skill, (you’re) making sure someone fully understands something.”

Benefits to the Institution

The CTFs believed that the CTF program was likely to benefit the institution by improving education within the institution. Many CTFs indicated that the role had motivated them to have ongoing involvement with clinical education during their career; some CTFs were motivated to attain formal medical education qualifications or participate in medical education research.

Several of the CTFs recognised that a named role helped to shift their identity toward clinician-educator and that if they took on the role of educator, they were more likely to perform better in the role.

CTF comment: “I think part of why it’s beneficial is that when you actually have a job description and a role and a title, it does help you feel like you’re developing

along the track to becoming more like a clinician-educator, rather than just a clinician.”

Many of the consultants felt that the CTF program would have a positive impact on education within the institution, through the introduction of up-to-date educational methods and by ensuring standardised teaching for students.

THEME 2: A need to integrate CTFs into the clinical service

The second main theme to emerge, predominantly from consultants, concerned how the CTF role was separate from the ward team. This separation was thought to be associated with disruption in the teaching relationship between consultants and medical students: some consultants stated that the introduction of CTFs was associated with reduced student exposure to consultants as teachers, and some felt that consultants may feel less responsibility to teach. In addition, some consultants discussed not being involved in the supervision of trainees (CTFs) involved in teaching.

Consultant comment: “[the CTF program is...] good but needs to be better integrated into the current service”.

Another consultant’s comment: (CTFs are) “not part of the day-to-day activities of teaching teams.”

THEME 3: The value of experience and seniority for clinical teaching and learning

Related to this observation that the CTF program disrupted usual teaching relationships, was the idea that consultants provide qualitatively different teaching to CTFs. Consultant teaching was recognised to be valuable and grounded in clinical experience.

Interestingly, this theme emerged from both the CTF and consultant data but was not a strong theme in medical student data.

Discussion

Traditional models of medical student teaching, where students rely on consultant bedside teaching, could lead to gaps in students' knowledge. Moreover, medical education is an additional responsibility for consultants, who already have a number of clinical, administrative and research duties, and frequently lack formal training in medical education. CTF programs have been introduced to improve learners' educational experiences⁸ and clinicians' teaching skills.¹⁵

The premise of our research was that teaching hospitals are complex organisations and the introduction of a new group or teaching structure, is likely to impact on other groups and learning relationships within the hospital.¹⁶ We gathered data from multiple perspectives in order to understand broader effects of the CTF program within our institution. Consistent with previous findings,^{7, 8, 10, 11} each of the three groups that were evaluated, agreed that the CTF program offers a number of benefits. However, other emergent themes were the recognition of the value of teaching delivered by experienced clinicians, and the importance of integrating CTFs into the clinical service. These themes show a ripple effect of our CTF program, with effects extending beyond expected benefits for CTFs and medical students, to encompass other groups in the hospital (consultants), and learning relationships between consultants, CTFs and medical students.

To ensure that this ripple effect is positive, our research highlights the importance of providing consultants with information about CTF learning objectives/teaching topics; and integrating CTFs into the consultant-led clinical service. As medical student education is dependent on teaching delivered by consultants in the clinical setting and more standardised teaching delivered by CTFs, both teaching approaches should be explicitly acknowledged to ensure that consultants and medical students are aware of

the teaching and learning expected from each group. In our organisation, logistics make it difficult for integration of the CTFs into the clinical service due to different funding sources for different roles and as students need to rotate through different clinical services.

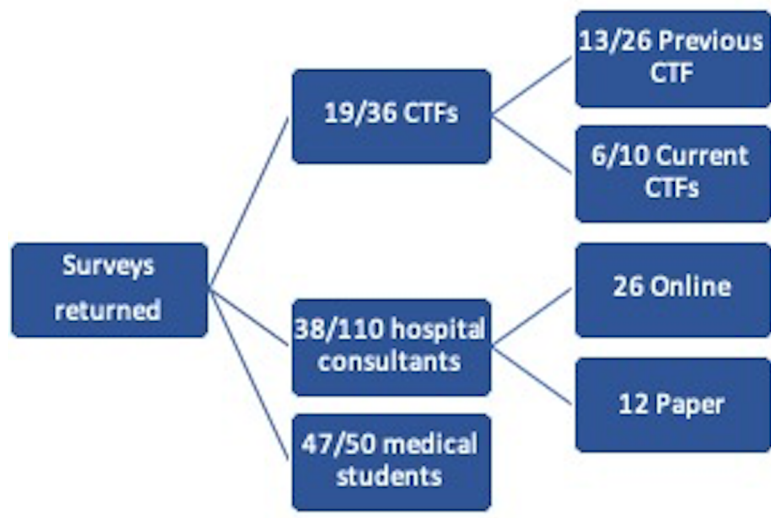
Conclusion

Our research affirmed that the Royal Children's Hospital CTF program offers a number of benefits. However, a *ripple* effect was observed that has not previously been described in the literature - an effect on consultant teaching and consultant relationships with CTFs and medical students. These findings have informed the need to educate consultants regarding teaching topics covered by CTFs, and explicitly acknowledge the value that each educator group brings to clinical teaching. The findings also highlight the merits of informal and opportunistic clinical teaching versus formalised clinical educator roles.

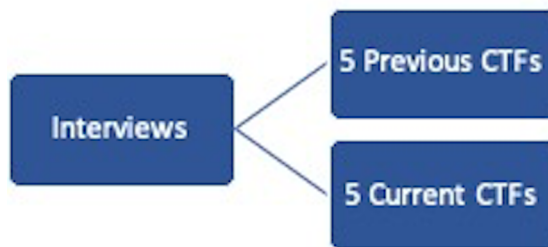
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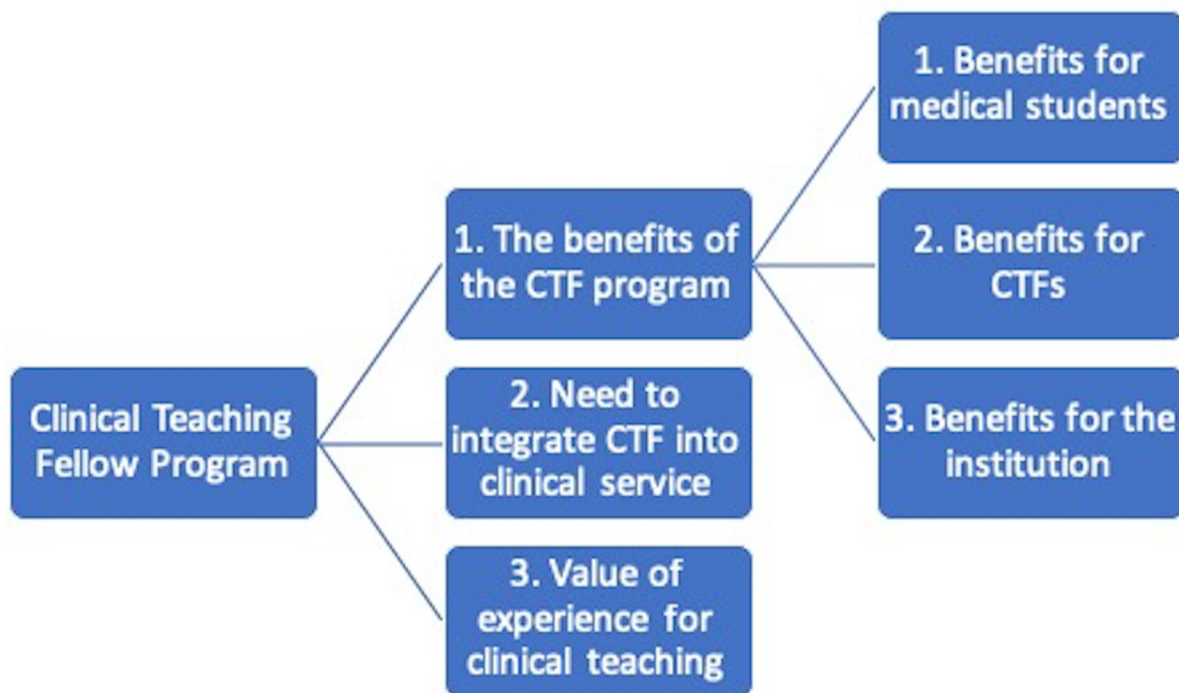
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