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GPs as medical educators

An Australian train-the-trainer program

Background

General practitioners undertake ongoing education in many areas. A train-the-trainer (TTT) approach may be an option for facilitation of continuing professional development (CPD) activities.

Methods

With the aim of training GPs to facilitate peer CPD activities, Monash University's Department of General Practice undertook a national TTT program on men's sexual and reproductive health. Over a 3 year period, 40 'GP trainers' were trained to facilitate education sessions on the topics of androgen deficiency, erectile dysfunction, prostate cancer and male infertility for 568 GPs from 33 Australian divisions of general practice.

Results

Evaluation of this program showed that GP trainers were a valuable resource for conducting training programs for GPs, being experienced role models who could provide relevant and practical training to their colleagues.

Discussion

While resource intensive, the TTT model provided an effective means of improving GP knowledge and clinical practice on men's sexual and reproductive health.

■ **General practitioners, because they come from the same clinical background as the learners and thus provide a valuable opportunity for role modelling, are ideal trainers for a postgraduate training program for GPs. Their knowledge and experience as clinicians must be supplemented by education for their role as trainer.¹**

In 2001 the Australian government established Andrology Australia (AA) to enhance awareness of male reproductive issues via professional and community education.² Monash University's Department of General Practice, with AA support, undertook a 3 year education program designed to raise the standard of primary health care in the fields of male sexual and reproductive health – with GP education about conditions such as prostate disease, androgen deficiency and erectile dysfunction.

In developing the program, focus groups were conducted with 27 metropolitan and rural GPs from four Victorian divisions of general practice to explore what content and process they wanted for the program.³ General practitioners indicated a preference for education presented or facilitated by GPs rather than specialists, and for short workshops utilising case based rather than lecture based learning, with provision of take home materials to reinforce learning.

A train-the-trainer (TTT) program was developed to train GPs as facilitators of peer continuing professional development (CPD) activities. This approach is potentially resource intensive in terms of identifying and training the trainers and then providing ongoing trainer support.⁴ We evaluated our implementation of the TTT model in GP education to determine whether the desired outcomes were achieved, because it is only by evaluating that development and improvement can occur.⁵

Our TTT program was piloted with 10 Victorian GPs, who attended a 1 day training course. Training in education delivery and small group teaching (teaching process) was provided by academic GPs. Presentations from Monash University specialists in the five areas of male reproductive health, ie. erectile dysfunction, prostate disease, androgen deficiency, testicular cancer, and male infertility, provided teaching content. Training was conducted using PowerPoint presentations, case studies, and group

discussions. Printed summaries of the presentations, an audio CD of the specialists being interviewed by an academic GP, and up to five seminal articles on the topics were provided to GPs to reinforce their learning.

These GP trainers then facilitated similar training sessions for GPs within their own divisions of general practice. The pilot program proved successful and national implementation of the TTT program commenced in 2002. This article reviews and evaluates the national rollout of the GP TTT program.

Methods

Training

A TTT workshop trained 40 GPs and two specialists from each Australian state and territory. Those trained then facilitated local GP education sessions. Sessions were often co-facilitated by specialists, to provide additional content expertise.

From 2002–2004, 568 GPs from 33 divisions of general practice attended education sessions facilitated by GP trainers. Sessions were typically presented in two, 2 hour evening blocks in consecutive weeks. Trainers received case studies, readings, and a CD with PowerPoint presentations by the specialists on androgen deficiency, erectile dysfunction, prostate cancer and male infertility. The least prevalent condition, testicular cancer, was omitted to limit the length of training. A training video of this material was developed in 2003 to provide greater flexibility in the session conduct.

While the educational content remained relatively consistent, several formats were used to present the sessions. These included:

- facilitation by GP trainers of presentations made by local specialists (urologists and endocrinologists)
- presentation by GP trainers using the PowerPoint slides provided by Monash University
- screening the training video, with presentations by the Monash University specialists. This was facilitated by the GP trainer and after each presentation the audience could question the specialists via telephone linkup
- a combination of the above three formats.

The flexibility in the delivery of teaching content accommodated different resources and requirements, as recommended by the focus group study.³ A GP trainer was present at each session with varied roles; some acted only as facilitators, others presented topics. The evaluation distinguishes between sessions presented by the GP trainers and sessions facilitated, with results only reported on GP trainers who functioned as presenters at the sessions.

This education program was accredited by The Royal Australian College of General Practitioners for quality assurance and continuing professional development (QA&CPD) points. General practitioners received two points per hour for session attendance, or 55 points in total if they completed the associated prostate clinical audit.

Evaluation

The TTT program was evaluated using two sources of information. Participating GPs were offered a clinical audit, examining the

effect of the educational intervention on their practice regarding assessing patients for prostate disease. This audit examined GP rates of testing for prostate disease before, as well as approximately 6 months after, attendance at the education session. One hundred and eighteen GPs participated in the first stage of the clinical audit, however only 67 GPs completed the full audit cycle.

General practitioners provided written feedback at the end of each topic presentation using a four point Likert scale about the education sessions quality and the meeting of specified learning objectives. They were able to indicate the desired learning, insights obtained, anticipated impact on clinical practice, requirement for further education, sources of further information, and any other comments on the session.

Results

Prostate disease clinical audit

Participating GPs reported on 2929 patients in the first audit cycle and 1624 in the second audit cycle (*Figure 1*).

Performing digital rectal examination (DRE) to evaluate men presenting with lower urinary tract symptoms (LUTS) increased from 39% in audit 1 (pre-education) to 46% in audit 2 (posteducation). Measuring PSA levels increased from 55% at audit 1 to 60% by audit 2. While these changes in DRE and PSA are moderately small, they suggest that GPs were making improvements to their prostate disease assessment following completion of the educational intervention.

At the time of audit 1, GPs were referring 16% of their patients to specialists for further assessment and management of prostate disease – and in 67% of these instances, patients ultimately received specialist intervention for prostate disease. At audit 2, referrals to specialists for prostate conditions fell from 16 to 13%, with the percentage of those referred requiring intervention by the specialist increasing from 67 to 69%. While numbers again are small, it may be that the GPs felt more confident in managing such patients after undertaking this training and consequently were more likely to refer only those patients who required specialist intervention.

GP evaluations

The response rate for completion and return of evaluation sheets ranged from 45–100% across sessions. Data was collated; and quantitative and qualitative components analysed separately. Quantitative data analysis enabled a comparison of GP ratings of session objectives and quality across each of the topics and presentation formats. Quantitative data from each 2003 session and a sample of the 2004 sessions were included in the evaluation and analysed using SPSS v.11.

Meeting session objectives

General practitioners provided ratings on a Likert scale of 1 (not at all) to 4 (significant extent), indicating the degree to which the education session allowed them to meet specified learning objectives.

The session objectives were rated highly, with most averaging between 3 and 4. Learning objectives that received the lowest rating

Table 1. GP ratings of the quality of the education sessions across presentation formats

Presentation format	N**	Mean	SD	Min	Max
GP trainer* and local specialist	33	3.72	0.38	3.00	4.00
Monash university specialist	35	3.63	0.46	2.33	4.00
Local specialist	313	3.52	0.53	2.00	4.00
Local specialist and video	71	3.50	0.51	2.00	4.00
Video and phone linkup	18	3.36	0.55	2.50	4.00
GP trainer* and video	66	3.32	0.57	2.00	4.00
GP trainer*, local specialist and video	11	3.25	0.65	2.25	4.00
GP trainer*, video and telephone link	19	3.18	0.83	1.00	4.00
GP trainer*	35	3.08	0.52	2.00	4.00
Video	49	3.02	0.69	1.00	4.00
Total	650	3.43	0.57	1.00	4.00

* GP trainer refers to those who were actively involved in presenting topics rather than facilitating sessions
 ** Calculations based on GP ratings of each topic presented

included 'issues about androgen abuse' and 'presenting symptoms of prostate cancer'. A one way ANOVA indicated that there was no significant difference between the average learning objective ratings for the four topics, $F(3648)=0.339$, $p=0.797$.

To examine the effectiveness of specific presentation formats in meeting the session objectives, GP ratings were averaged and compared across formats. A one way ANOVA indicated a significant difference in GP ratings across presentation formats, $F(9642)=3.11$, $p=0.001$. Topics for which only the video was used received the lowest rating. Topics presented by the Monash University specialists on average received the highest ratings. The interpretation of these results is limited by the unequal number of GPs who participated in and rated each presentation format, as well as the wide variation among individual GP trainers in terms of their experience in public speaking, personality and teaching style.

Quality of sessions

Participants rated on a scale of 1 (poor) to 4 (excellent) for components of session quality: the overall learning experience, the teaching medium, the presentation style, and (where relevant) the video presentation. *Table 1* shows a broad range of responses. On average session components were rated highly, with all scoring above 3.

Participants' ratings of quality were compared across the session presentation styles. A one way ANOVA indicated that there was a significant difference in the overall quality ratings across the presentation formats, $F(9640)=8.03$, $p=0.000$. Sessions using only the video presentations received the lowest ratings. Topics conducted by a GP trainer and local specialist received the highest quality rating, followed by topics conducted by the Monash University specialists, and by local specialists (with and without video presentations). Interpretation of this result is again limited by the unequal number of GPs experiencing each presentation format.

Key findings from participants' written feedback

A large amount of qualitative feedback was obtained from sessions. Complete evaluation was undertaken on a sample of feedback sheets from 33% of the divisions who held sessions in 2003. Selected sessions were representative of all presentation mediums. Saturation point was reached in analysis of the 2003 data, eliminating the need to analyse data from 2004 sessions. Some participants provided detailed responses and feedback; others provided little or no textual feedback. *Table 2* provides a summary of the most important information from these responses.

Discussion

Evaluation of the national TTT program suggests that it achieved the project's primary objectives – to increase GP knowledge about men's sexual and reproductive health and improve clinical practice.

Prostate audit data suggested that following completion of education on prostate cancer testing and treatment, participants increased their conduct of DREs and PSAs with at risk patients. It may be inferred that these GPs became more proactive with regard to testing for prostate disease as a consequence of the education sessions. They were more likely to perform PSA tests than DRE for men presenting with LUTS.

Evaluative ratings indicated that overall, the learning objectives for the program were successfully met. However the presentation formats did impact on the degree to which objectives were met. While sessions presented by specialists and GP trainers were rated highly, sessions presented only via video or GP trainer received lower ratings of both quality and meeting of learning objectives. The greater standard deviations for the lower scoring methods may be an indication of the quality of individual trainers – reflecting the difference in teaching experience between the five Monash specialists (all experienced university teachers) and the GP trainers (who, although enthusiastic

Table 2. Summary of participants' written feedback

Session topic	Most commonly listed learning needs	Most frequently reported impact on clinical practice
Androgen deficiency	How to investigate and treat a man with androgen deficiency?	<ul style="list-style-type: none"> • More comfortable and confident in discussing and advising men with this condition (20%) • Also, better understanding and knowledge of androgen deficiency, its investigation and treatment
Male infertility	How to manage male infertility, and what can cause it?	<ul style="list-style-type: none"> • Increased confidence in discussing, counselling and managing men with male infertility (33%) • Also, better equipped to investigate and make appropriate referrals
Erectile dysfunction (ED)	How to assess and manage men with ED?	<ul style="list-style-type: none"> • Increased confidence in treating men with ED (28%) • Also, feeling more comfortable discussing ED with patients
Prostate cancer	How to identify asymptomatic men with prostate cancer?	<ul style="list-style-type: none"> • Increased confidence in discussing prostate health, screening and the current therapies available for prostate cancer • Also, improve current policy of 'screening' for prostate cancer
Subsequent learning needs	<ul style="list-style-type: none"> • Penile injection techniques for ED • Side effects of ED therapy • Various methods of treating advanced prostate cancer • Skill in performing digital rectal examination • Androgen abuse • Androgen implants • How to arrange semen analysis 	

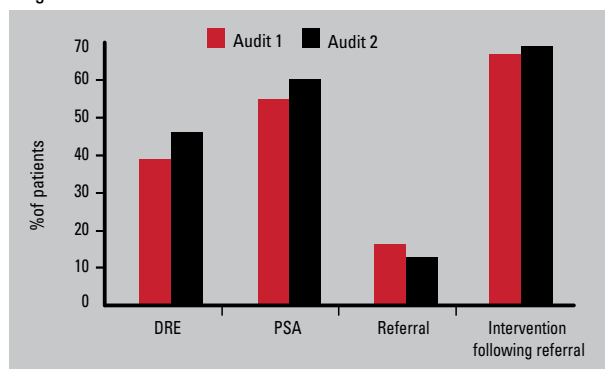
and committed, were mostly relative novices to teaching). Qualitative feedback on sessions indicated that the content provided was 'on the mark'. All presentations were rated between 3.02 and 3.72, which shows that the educational sessions were all rated well. It would be useful to obtain GP trainers' views about the program and possible improvement; this may provide useful information for future education using GPs trainers.

Topics nominated as priority learning areas were covered in each session. Qualitative feedback on anticipated impact of education suggested that GPs would feel more confident to discuss and manage such conditions with their patients.

A limitation to this program is the resource intensive nature of training and supporting GPs to act as trainers, as well as coordination of sessions for GP trainers to facilitate. This program originally aimed to educate 1000 GPs nationally. Overall, 568 GPs were provided with education, in addition to 50 GP trainers. This discrepancy primarily reflects the time and cost required for implementing the TTT model via face-to-face education sessions with GPs. While the program demonstrated benefits for participating GPs, it may be that less resource intensive strategies would enable broader dissemination of education to GPs. Alternatives include computer based education modules developed and/or reviewed by GP trainers, which contain audio-visual presentations by these trainers. Such resources may be more readily accessible to GPs in rural and remote locations.

A valuable feature of this program was the development of educational resources. These resources can be developed for further educational media and forms for delivery. An example was the

Figure 1. Results from audit 1 and audit 2



compilation of materials for a workshop for indigenous GPs organised by Monash University's Department of General Practice in 2004, which reflected the knowledge and experience gained from implementation of the TTT program over the preceding 3 years. Resources developed for this program are being utilised for medical education in the United Arab Emirates, Fiji and Sri Lanka.

Based on the conduct and evaluation of the program, recommendations were submitted to AA. These included: development of interactive and multimedia resources based on the content of this program for medical students, further development of current resources for use by health practitioners working with indigenous populations, and extension of the educational content to include a stronger focus on the psychosocial aspects of men's sexual and reproductive health.

Our study suggests the GPs improved their knowledge and clinical practice after the educational intervention. What component of this improvement was due to the content of the intervention, and what to the process of the TTT model, cannot be established due to the lack of a comparator delivery method.

We have shown the intervention utilising the TTT model may be an effective way of improving the knowledge and clinical practice of the GPs for whom it was designed.

Implications for general practice

- GPs, being experienced role models who can provide relevant and practical evidence based education to their colleagues, are a valuable resource for conducting training programs for GPs.
- GP feedback suggests that the TTT model, while resource intensive, is an effective means of improving GP knowledge and clinical practice on men's sexual and reproductive health.

Conflict of interest: none declared.

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