BRIEF
REPORTS

Academic Half-Days: Facilitated Small Groups to Promote Interactive Learning

Heather Armson, MD, MCE; Keith Wycliffe-Jones, MBChB; Maria Palacios Mackay, DDS, MSc, PhD; Stefanie Roder, PhD

BACKGROUND AND OBJECTIVES: Medical educators have expressed interest in using less didactic and more interactive formats for academic half-days (AHDs) in postgraduate residency training. We assessed the feasibility and effectiveness of implementing a practice-based small-group learning (PBSGL) process as one part of AHDs.

METHODS: A mixed-methods approach was used. Over a two-year period, family medicine residents at the University of Calgary took part in PBSGL sessions during their AHDs, discussing clinical cases presented in evidence-based educational modules and reflecting on clinical experiences with the guidance of a trained peer facilitator. Data sources to explore experiences with the PBSGL process included an evaluation questionnaire, a practice reflection tool (PRT; documenting patient management plans) and individual interviews (n=19) with residents and faculty preceptors.

RESULTS: Of 148 residents, 139 (93%) agreed to participate. Participants were divided into groups of 14-16 members to discuss 12 different module topics. Participants indicated that ongoing small-group interactions were helpful in meeting learning needs and provided opportunities to share and learn from experiences of others in a safe environment. Group facilitation by residents was successful. Level of resident participation and time to preread modules were factors contributing to successful small-group interactions. Modules were rated as effective learning tools, and sample cases were perceived as representing typical cases encountered in practice. Although participants intended to apply their learning to practice, follow through was hindered by lack of relevant clinical cases.

CONCLUSIONS: Ongoing small-group learning facilitated by residents, coupled with evidence-based educational materials, was a feasible approach to AHDs.

(Fam Med. 2020;52(1):53-64.)
doi: 10.22454/FamMed.2020.947981

Postgraduate medical education is situated in clinical environments where residents may not always have adequate exposure to important learning topics. To address this gap, academic half-days (AHDs) have been developed. AHDs are regularly-scheduled educational events under faculty supervision outside clinical time.[1] Traditionally, AHDs have focused on didactic presentations, but recently there has been a push for more interactive formats incorporating best educational principles[2,3] (opportunities for case-based experiential and social learning, reflection on current approaches, exploration of clinical reasoning, development of self-directed learning approaches).

In 2010, the family medicine (FM) residency program at the University of Calgary made changes to its AHDs based on the educational literature.[4-6] To provide an active learning environment the program[7,8] "communities-of-learners" were developed by using the process and content of a well-established continuing medical education (CME) program—Practice-Based Small-Group Learning (PBSGL).[9] The PBSGL process is based on self-selected groups of physicians meeting monthly with a trained peer facilitator, discussing evidence-based modules on various clinical topics and using a practice reflection tool (PRT)[10] to document any planned practice changes resulting from each meeting.[9] The goal of PBSGL is to provide a safe learning environment for physicians to reflect on practice and identify gaps between current and best practice. Practice reflections are enhanced through small-group discussions by sharing practice experiences around clinical topics provided in evidence-based educational modules.

This study used a mixed-methods approach[11] to assess the feasibility and effectiveness of implementing

From the Department of Family Medicine, University of Calgary, Calgary, Alberta, Canada (Drs Armson, Wycliffe-Jones, and Mackay); Foundation for Medical Practice Education, McMaster University, Hamilton, Ontario, Canada (Drs Armson and Roder); and Universidad San Sabastián, Chile (Dr Mackay).

PBSGL during AHDs, investigate mediators to this learning approach, and determine the impact on intentions related to lifelong learning.

Methods

Figure 1 provides an overview of the study recruitment, preparation, protocol, and data collection.

Study Recruitment and Preparation

PBSGL[9] was introduced to the University of Calgary FM residency program and studied between 2010 and 2012. Study information and invitations were provided verbally during an AHD and sent via e-mail to all residents (n=148) and faculty (n=23). Initially the study focused on training resident facilitators, creating data collection tools and piloting PBSGL sessions (Figure 1).

Study Protocol and Data Collection

The residency program coordinator assigned residents to groups of 14-16 participants (combined first- and second-year residents) who stayed together over 1-2 years. Participants discussed module topics (Table 1) selected by the academic director during 90-minute PBSGL sessions facilitated by a resident facilitator, and supported by faculty. PBSGL sessions occurred once per month during AHDs.

Practice reflection tools were used to document planned practice changes in the form of commitment-to-change statements (CTCs).[10,12] Three months after each learning session, groups reviewed CTCs and documented success with implementation in practice (Figure 1). Changes were made to the PRTs (since residents did not perceive themselves as being in practice, the language on the PRTs was changed to "managing my patients").

Evaluation questionnaires used to rate the PBSGL sessions consisted of Likert-type questions/statements (Table 2). Participants found completing a separate questionnaire time consuming, so we added selected evaluation questions to the PRTs.

Interviews explored the PBSGL experience. All residents, facilitators, and faculty were invited via e-mail to be interviewed by telephone. Interviews were recorded verbatim for transcription and analyzed using QSR NVivo 9.

Data Analysis

Data from the questionnaires and PRTs were tabulated using Microsoft Excel 2007 for frequency counts and ratio calculations. Independent samples *t* tests assessed for significant differences ($P \leq .05$) between first- and second-year residents using IBM SPSS Windows Version 24.0.

We coded PRT statements according to a taxonomy of clinical questions,[13] and used a thematic analysis approach[14] to identify themes and create a framework to code interview statements. Coding discrepancies were discussed until consensus was achieved. Ethics approval was granted by the University of Calgary's Conjoint Health Research Ethics Board, Calgary, Alberta, Canada: REB E-23666.

Results

Out of 148 residents, 139 (94%) consented to participate (Figure 1). On average, there were nine participants per group. The breakdown of the number of first- and second-year residents who discussed the module topics is shown in Table 1.

Evaluation of Learning Sessions

More participants rated facilitators, modules, and group interactions as effective and indicated intentions to apply learning to practice; no significant differences were observed between first- and second-year residents' evaluations (Table 2). Fewer residents rated completion of the PRT as helpful.

Practice Reflections and Implementation

Table 3 shows the number of PRTs submitted, percent of documented CTCs, and change made for each module topic. Most participants planned to make changes to patient care. There were no statistically significant differences between the percentage of first- and second-year residents making CTCs. Significantly more first-year residents reported making changes compared to second-year residents; $t(16)=2.893$, $P=.01$, $d=1.38$; mean difference 17.3 (95% CI, 4.6–30.0). Reported changes made were related to diagnosis (eg, ordering tests) and/or management (eg, taking more time to counsel patients) depending on the clinical topic studied (Table 3).

Interviews

Thirteen residents, three facilitators, and three faculty were interviewed. The thematic framework created to analyze the transcripts had four broad coding categories: (1) small-group learning process, (2) practice implementation, (3) learning; and (4) feedback for the program. Data saturation[15] was reached with 14 interviews. Table 4 provides the framework with themes/subthemes and representative interview statements.

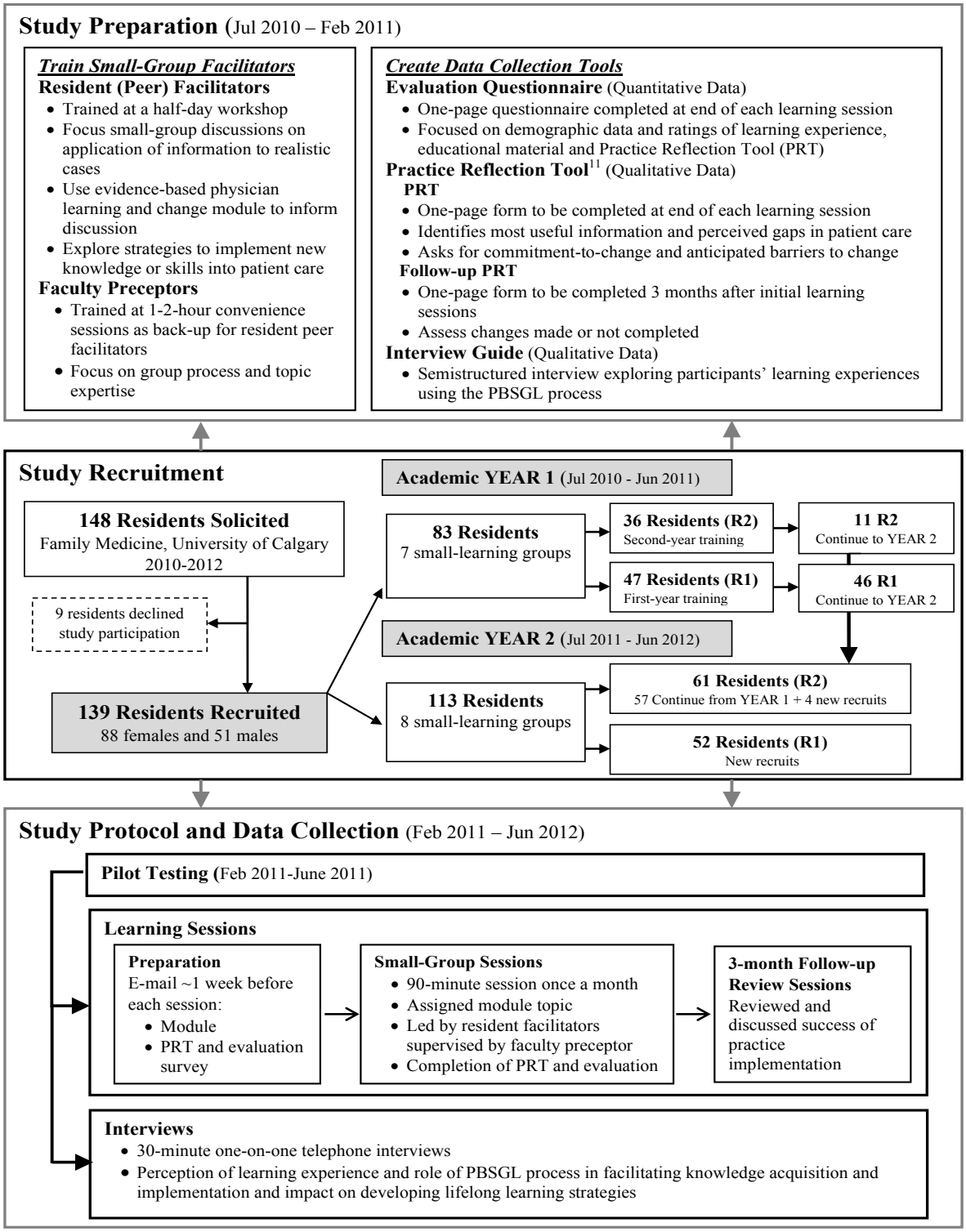
Discussion

Using the PBSGL process during AHDs was found to be a feasible and effective teaching and learning strategy for the University of Calgary family practice residency program.

Developing a community of learners provided an engaging and supportive learning environment. Chen et al[7] identified sharing experiences and exploring differences in clinical approaches as factors that increase residents' engagement in their own learning. Group interactions met participants' learning needs and improved self-assessment.

Residents' desire to have input into the choice of modules/discussion topics echoes previous studies.[16,17] Considering that modules were developed for established physicians, they were still found to be relevant to the residents' clinical context. Small-group discussions of patient cases provided opportunities for

Figure 1: Overview of Study Preparation, Recruitment, Protocol and Data Collection



This study explored the implementation and effectiveness of a practice-based small group learning (PBSGL) process into academic half-days (AHDs) for a family medicine residency program at the University of Calgary, Calgary, Alberta, Canada, from 2011 through 2012. First- (R1) and second- (R2) year residents were recruited over 2 academic years. Study preparation involved training facilitators for small-group learning sessions and creating data collection tools (evaluation survey, practice reflection tool, and interview guide), which were pilot tested during the first academic year. As part of the study protocol, residents were asked to participate in PBSGL sessions during their AHDs, discuss clinical cases presented in educational modules, and complete a practice reflection tool (PRT) and an evaluation. Individual interviews were conducted to explore experiences with the PBSGL process.

Table 1: Module Topics Discussed by R1s and R2s (n=139) During Ongoing Small-Group Sessions

Module Topics	Date of Learning Sessions[a]	No. of Group Sessions	No. of R1s	No. of R2s[b]	Total No. of Participants
Year 1 (Pilot)					
Injuries in the active adult	Feb 24, 2011	7	41	23	64
Hypothyroidism	Apr 21, 2011	7	31	14	45
Venous ulcers	Jun 16, 2011	7	34	15	49
Year 2					
Rheumatoid arthritis	Jul 14, 2011	8	53	31	84
Dizziness	Aug 11, 2011	7	51	33	84
Cognitive behavioral therapy	Oct 06, 2011	8	42	33	75
Peripheral neuropathy	Nov 03, 2011	7	30	19	49
Celiac disease	Dec 01, 2011	8	49	30	79
Chronic kidney disease	Jan 26, 2012	8	50	40	90
Well-baby care: enhancing the 18-month visit	Feb 23, 2012	7	49	33	82
Attention deficit hyperactivity disorder in children and adolescents	Apr 19, 2012	8	52	25	77
New immigrants and refugees: screening and health care	Jun 14, 2012	8	42	20	62

Abbreviations: No., number, R1, first-year residents; R2, second-year residents.

[a] Study participant would discuss one module topic during a 90-minute small-group learning session as part of the Academic Half Day, Family Medicine Residency Program, University of Calgary, Alberta, Canada. Participants attended a maximum of 12 small-group sessions during their academic year.

[b] Fewer R2s on an ongoing basis, as they had 2 months of mandatory rural rotation in second year and therefore were unable to participate.

Table 2: Number of Residents Giving Favorable Ratings for Statements Related to Components of the Small-Group Learning Sessions

Module Topic	Resident Year	Statements					
		How Effective Do You Feel the Facilitator Was?[a]	The Module Was the Most Effective Learning Tool.[b]	The Group Interaction Was the Most Effective Learning Tool/Helpful in Meeting Learning Needs.[b]	I Intend to Apply the Learning to My Practice.[b]	I Found it Helpful to Complete a Practice Reflection Tool.[b]	I Would Highly Rate This Learning Approach.[b]
Year 1 (Pilot)							
Injuries in the active adult	R1	36/39 (92%%)	20/38 (53%)	24/39 (62%)	27/39 (69%)	13/39 (33%)	26/39 (67%)
	R2	19/21 (90%)	7/22 (32%)	12/22 (55%)	11/22 (50%)	8/22 (36%)	11/22 (50%)
Hyperthyroidism	R1	31/31 (100%)	25/31 (81%)	25/31 (81%)	29/30 (97%)	16/31 (52%)	26/29 (90%)
	R2	12/13 (92%)	11/14 (79%)	12/14 (86%)	13/14 (93%)	11/14 (79%)	13/14 (93%)
Venous ulcers	R1	31/34 (91%)	28/34 (82%)	28/34 (82%)	32/34 (94%)	15/34 (44%)	32/34 (90%)
	R2	12/13 (92%)	9/14 (64%)	11/15 (73%)	10/13 (77%)	9/15 (60%)	12/15 (90%)
Percent mean (SD%) of residents giving favorable ratings	R1	94±5	72±16	75±11	87±15	43±10	82±13
	R2	92±1	58±24	71±16	73±22	58±22	78±24
P values		0.36	0.46	0.76	0.43	0.32	0.78

(continued on next page)

Table 2, Continued

Module Topic	Resident Year	Statements					
		How Effective Do You Feel the Facilitator Was?[a]	The Module Was the Most Effective Learning Tool.[b]	The Group Interaction Was the Most Effective Learning Tool/Helpful in Meeting Learning Needs.[b]	I Intend to Apply the Learning to My Practice.[b]	I Found it Helpful to Complete a Practice Reflection Tool.[b]	I Would Highly Rate This Learning Approach.[b]
Year 2							
Rheumatoid arthritis	R1	NA	37/49 (76%)	36/49 (74%)	NA	7/26 (27%)	36/49 (74%)
	R2	NA	25/28 (90%)	23/28 (82%)	NA	5/12 (42%)	25/29 (86%)
Dizziness	R1	NA	37/51 (73%)	34/51 (67%)	NA	5/22 (23%)	36/51 (71%)
	R2	NA	21/30 (70%)	24/30 (80%)	NA	1/8 (13%)	22/30 (73%)
Cognitive behavioral therapy	R1	NA	18/38 (47%)	26/38 (68%)	NA	4/24 (17%)	23/38 (61%)
	R2	NA	12/31 (39%)	18/31 (58%)	NA	3/10 (30%)	16/32 (50%)
Peripheral neuropathy	R1	NA	15/25 (60%)	19/25 (76%)	NA	2/11 (18%)	18/25 (72%)
	R2	NA	6/15 (40%)	10/15 (67%)	NA	1/5 (20%)	9/15 (60%)
Celiac disease	R1	NA	35/42 (83%)	34/42 (81%)	NA	8/29 (28%)	36/43 (84%)
	R2	NA	21/26 (81%)	21/26 (81%)	NA	2/12 (28%)	22/26 (85%)
Chronic kidney disease	R1	NA	28/42 (67%)	28/42 (67%)	NA	6/26 (23%)	30/42 (71%)
	R2	NA	19/33 (58%)	17/33 (52%)	NA	3/11 (27%)	20/33 (60%)
Well-baby care: enhancing the 18-month visit	R1	NA	26/40 (65%)	29/40 (73%)	NA	7/23 (30%)	26/41 (63%)
	R2	NA	19/33 (58%)	20/25 (80%)	NA	2/6 (33%)	21/26 (81%)
ADHD in children and adolescents	R1	NA	27/44 (61%)	26/44 (59%)	NA	No data	27/44 (61%)
	R2	NA	9/18 (50%)	10/18 (56%)	NA	No data	10/18 (56%)
New immigrants and refugees: screening and health care	R1	NA	20/35 (57%)	24/35 (69%)	NA	No data	24/35 (69%)
	R2	NA	11/14 (79%)	11/14 (79%)	NA	No data	12/14 (86%)
Percent mean (SD) of residents giving favorable ratings	R1	NA	65±11	70±6	NA	24±5	70±7
	R2	NA	63±18	71±12	NA	28±9	71±14
P values			0.71	0.98		0.35	0.82

Abbreviations: ADHD, attention deficit hyperactivity disorder; R1, first-year resident; R2, second-year resident; SD, standard deviation.

Components of the ongoing small-group sessions included: module, group interaction, practice reflection and facilitator. Shown are the number of residents providing favourable ratings of the small-group learning approach and their intentions to apply learning to practice for each module topic. During year 1 (pilot), evaluation questions were given as a stand-alone questionnaire. During year 2 some evaluation questions were eliminated (NA) and the remaining evaluation questions were placed at bottom of the practice reflection tool.

[a] Statement rating the effectiveness of the facilitator on a 4-point Likert scale (ineffective to very effective). Numbers shown in table represent number of participants who rated the facilitators as effective and very effective (numerator) out of the total participants who completed the evaluation (denominator).

[b] Statements were rated on a 6-point Likert scale (strongly disagree to strongly agree). Numbers shown in table represent number of participants who agreed and strongly agreed with the statements (numerator) out of the total participants who completed the evaluation of the learning session (denominator).

Table 3: PRT Information Collected From R1 and R2 Residents After Small-Group Discussion

Module Topics Studied in PBSG Groups During AHDs	Resident Year	PRT		Follow-up PRT	Clinical Themes of Self-reported Change Made (% of total PRTs)			Sample Statements From PRTs and Follow-up PRTs
		n	CTCs %	Change Made %	Screening	Diagnosis	Management	
Year 1 (Pilot)								
Injuries in the active adult	R1	41	76	32	0	20	12	Change: "started using Ober's test"
	R2	28	82	31	0	0	31	Change: "did advice for ankle support x longer time to avoid reinjury"
Hypothyroidism	R1	31	42	16	3	3	10	Change: "more time explain how to use meds properly"
	R2	14	50	0	0	0	0	Confirmed: "Tx based on Sx + TSH"
Venous ulcers	R1	34	79	No data	NA	NA	NA	CTC: "order ABI's for ulcers before compression stockings"
	R2	15	67	No data	NA	NA	NA	CTC: "referral for ABI"
Year 2								
Rheumatoid arthritis	R1	53	98	32	0	23	9	Change: "more investigations"
	R2	31	100	19	6	13	0	No change: "have not seen any RA patients"
Dizziness	R1	51	98	45	0	41	4	Change: "Taking more in-depth history to identify etiology of dizziness"
	R2	33	100	24	0	21	3	Change: "use Epley manoeuvre more"
Cognitive behavioral therapy	R1	42	100	52	0	0	52	Change: "take more time counselling & initiating CBT"
	R2	33	97	27	0	0	27	Change: "more confident in approaching patients"
Peripheral neuropathy	R1	30	97	43	6	20	17	Change: "broadened differential – through physical exam"
	R2	19	90	11	0	11	0	Change: "increased DDx/history taking"
Celiac disease	R1	49	100	57	12	41	4	Change: "more aware, more testing"
	R2	30	100	37	7	30	0	Change: "increased awareness, and testing for celiac"
Chronic kidney disease	R1	50	94	56	2	38	16	Change: "more urinalysis"
	R2	40	100	28	0	23	5	Change: "checking GFR more frequently"
Well-baby care: enhancing the 18-month visit	R1	49	100	33	29	4	0	Change: "using new screening tools"
	R2	33	100	33	15	6	12	Change: "offered on-line resources to parents"

(continued on next page)

Table 3, Continued

Module Topics Studied in PBSG Groups During AHDs	Resident Year	PRT		Follow-up PRT	Clinical Themes of Self-reported Change Made (% of total PRTs)			Sample Statements From PRTs and Follow-up PRTs
		n	CTCs %	Change Made %	Screening	Diagnosis	Management	
ADHD in children and adolescents	R1	51	98	No data	NA	NA	NA	CTC: "be less likely to refer to peds for diagnosis of uncomplicated ADHD"
	R2	25	80	No data	NA	NA	NA	CTC: 'Try all possible behavioural managements before starting medications"
New immigrants and refugees: screening and health care	R1	42	95	No data	NA	NA	NA	CTC: "screening refugees/ immigrants re: immunization"
	R2	20	95	No data	NA	NA	NA	CTC: "ask about where people were born and what screening they have had"
Mean (SD)	R1		90 (17)a	41 (14)**	6 (10)	19 (18)	14 (15)	
	R2		88 (16)a	23 (12)**	3 (5)	12 (11)	9 (12)	
P values			0.84	0.01	0.48	0.31	0.45	

Abbreviations: ABI, ankle-brachial pressure index; ADHD, attention deficit hyperactivity disorder; AHDs, academic half days; CBT, cognitive behavioral therapy; CTCs, commitment-to-change statements; DDx, differential diagnosis; GFR, glomerular filtration rate; NA, not applicable; PRT, practice reflection tool; R1, first-year residents; R2, second-year residents; RA, rheumatoid arthritis; SD, standard deviation; Sx, screening; TSH, thyroid stimulating hormone; Tx, treatment.

Percentages reflect total number of PRTs submitted for each module (n value) which had statements related to "I will change my management of patients the following way:" (CTC), and "What change(s) did I make in the way I manage patients?" (change made).

No data: These modules were completed near the end of the academic year, leaving no time to do a 3-month follow-up review.

[a] No statistically significant difference between R1 and R2 for number of PRTs with commitment-to-change (CTC); independent samples *t* test, $t(22)=0.205$, $P=.84$, $d=0.12$

**Statistically significant differences between R1 and R2 for number of follow-up PRTs with statements for "made change"; independent samples *t* test, $t(16)=2.893$, $P=.01$ (assuming equal variance), $d=1.38$. Mean difference was 17.3 (95% confidence interval [CI], 4.6-30.0).

clinical reasoning, practice reflection, and knowledge application.[18] Time to preread modules contributed to successful small-group discussions.

Although facilitators were effective, the peer facilitators' limited clinical experience hindered discussion around changes in practice. Faculty were meant to fill this gap; however, faculty were resistant to extra training for the PBSGL process. Batalden et al[3] identified faculty development as a core principle for developing excellent AHD experiences. To ensure good dynamics within the small-group setting, many facilitation strategies[19-21] were discussed during training.

Studies on the use of CTCs in residency are limited.[22-24] Using CTCs in this study presented some challenges: residents did not frame their clinical experiences in terms of their practice. They saw themselves as starting to establish clinical approaches for patient management. Even when language was changed, perception of PRT usefulness was questionable. Limited patient encounters minimized opportunities to apply new knowledge. Despite this, most participants planned to apply their learning, and some reported changes to practice. Reviewing planned changes was identified as beneficial to consolidate learning. Although the documented CTCs were similar, first-year residents had more "made changes" statements than second-year residents. This may have been because first-year residents are less experienced than second-year residents, who have already established some practice approaches.

Residents identified the PBSGL experience as one they would seek after residency, and approximately 30% are currently using PBSGL for CME. Rial and Scallan found PBSGL helps newly graduated practitioners shift "their learning needs away from their postgraduate exams and towards 'real world' practice and

establishing a peer group to provide support for the early years in practice."[25] PBSGL appeared to promote practice reflection in the context of small group interactive learning environments, exposing them to a positive lifelong learning environment.

This study is limited by its setting in a single residency program at one university and the focus on one aspect of AHDs. The use of a specific programmatic approach (PBSGL) could be an additional limitation, although the components (consistent small groups; case-based learning materials; facilitated discussions; practice reflections) are relevant and should be tested in other residency programs. The University of Calgary Residency Program continues to use PBSGL during their AHDs.

Table 4: Thematic Framework With Themes and Subthemes Including Corresponding Representative Samples of Interview Statements Regarding the Feasibility and Effectiveness of PBSGL for a Residency Program

Small-Group Learning Process		
Community of Learners	**Benefits**	
	Share experiences	"I think it was … helpful to share experiences with the group and hear other learners what they had learned from their preceptors or through their clinical experience because there's only so much time that we have in residency to gain all the experience and might just not encounter a lot of situations" -Int#11-R1
	Explore differences	"Just different approaches that you wouldn't think of yourself, like different questions that you haven't thought of yourself about an issue and so because everyone has a different approach to things so I really like getting that diversity of knowledge" -Int#16-R1
	Safe learning environment	"I think that it's a non-intimidating kind of environment where you all feel you're at the same level and any inexperience or knowledge gaps is kind of accepted among your peers. Whereas if I was in a group full of practicing physicians with years of experience I'd feel uncomfortable sharing my knowledge gaps." -Int#1-Peer facilitator
	Continuity	"I didn't feel like there was any sort of judgment or anything that was happening, I thought it was a very open group and I think having the opportunity to be with the same group of people for the 2 years was very, very helpful. I think it created a nice dynamic once you got to know people." -Int#10-R2
	More engagement active learning	"[I] felt much more engaged just because of the nature of the learning and felt much more responsible because it is a smaller group and so there was an expectation of participation as well. So I felt like it was overall more active learning" -Int#3-R1
	Challenges	
	Level of participation	"helped me see where my level of knowledge is but it's very difficult when you have people that are very quiet … whether we all had knowledge gaps in same area" -Int#19-peer facilitator
	Lack of communication re identity of peer facilitator	"it was hit and miss whether we actually had a peer facilitator every week … sometimes they weren't there and we didn't know that the designated people weren't going to be there so no one else was prepared to step in for them." -Int#11-R1
	Lack of preparation prereading modules	"The only thing would be getting those modules a little bit earlier… because we're supposed to read a good chunk of it before and you know sometimes, you were reading it that morning while having breakfast" -Int#4-R1

(continued on next page)

Table 4: Continued

Evidence-based Educational Modules	**Choice of Topics**	
	Chosen by academic director based on perceived gaps in academic program	"there was no formal way to do a needs assessment prior to the choosing of the modules however those modules were chosen based on the 99 key topics that were put out by the CFPC or competency documents that were being developed through this year 2011/2012 because our program is changing so drastically so I had the benefit of seeing those documents and saying ok well you know these modules would be relevant." -Int#6-faculty
	Residents would like input into module topics	"I think residents should have more of a say in terms of what modules we should be doing because there was some which are: why are we doing this module?" -Int#19- peer facilitator
	Format	
	Perceived as useful in promoting active learning	"The nice thing about the format is that it allows them to not just sit and read passively but they have to actually actively think about how they would solve the problem and I like that there's a lot of discussion that goes on … and it might open up a lot of ideas that weren't mentioned in the module." -Int#12-faculty
	Depth of material appropriate	"I found that I took different things away probably in my first year versus my second year… and I would imagine that even now and or even 5 years from now I would think there would be lots for me to take away from those modules."-Int#10-R2
Facilitation	**Role of Residency Facilitator**	
	Focused discussion on enhancing practice integration	"… for our group, lots of times we would go back and ask if anyone had any examples beforehand and then we could always relate it back to practice into what you actually see in the clinic which was nice." -Int#7-R1
	Training and effectiveness of resident facilitators	"I felt often that the peer facilitators were not necessarily very prepared. At the beginning of the year they would be and there were some that would really try to get all of the members to contribute and would try to address questions specifically to people who were being quiet. So, I saw the difference between the ones who were quite prepared but towards the end of the year that really trickled off." -Int#12-faculty
	Role of Faculty Facilitator	
	Faculty fills gap produced by limited clinical experience of residents–seen as experts	"I felt I provided the real-world context for the cases… how it goes in clinical practice to help supplement where they felt they were lacking and just sheer man hours in family medicine practice… it's key to still have a faculty member present because the residents only have a few months' worth of experience under their belt." -Int#6-faculty
	Interference with group function and inhibiting discussion	"this time around my faculty facilitator seems to have … been very vocal and has been very controlling which makes my job difficult as a facilitator " -Int#19-peer facilitator "You know in part I was kind of wondering to myself if the faculty weren't there may be some residents would have participated more, I'm not sure and maybe been more honest about some of, like, being more comfortable to ask questions if they didn't know." -Int#21-R2

(continued on next page)

Table 4: Continued

Practice Reflection	**PRT**	
	Facilitate discussion	"Sometimes it was a little tedious to fill, like sometimes you didn't kind of have everything, you didn't have something to fill in each of the questions but I think it actually did facilitate discussion anyway." -Int#15-R2
	Unable to make changes	"I don't know how helpful they were. mostly because a lot of the topics we touched on the volume wasn't necessarily there to put that into action right away." -Int#12-faculty
	3-Month Follow-up	
	Unable to follow through on planned changes	"Wouldn't say that I felt like I walked away from the module and did what I vowed to practice to change and I guess the biggest barrier in residency, at least in our program, would be the exposure. So, a lot of the topics are family medicine and we're often off-service and don't get exposed to whatever we talked to in that 3-month time." -Int#1-peer facilitator
	Help with further discussions and thoughts around module topic	"I don't think it's the form, it's just the fact that you know in the 3 months they may not have even been in family practice … I ask them then do you think there is any value in doing these 3-month reflections and they said yes because, revisiting it, even though I haven't seen it, still you know triggers that memory of what we covered 3 months ago and get to revisit it" -Int#6-faculty
Pracitice Implementation		
Challenges	**Lack of Exposure to Clinical Cases**	
	"the small group discussions were very helpful … we had these great discussions and we came up with these really nice ways to or new ways to approach a particular type of patient but then you know depending on what our experience was over the next couple of weeks or couple months we may or may not encounter those patients. I'd have to say probably on maybe 90% of the discussions we had, I didn't have a chance to incorporate much of those things because there wasn't opportunities to encounter those patients." -Int#10-R2	
	Disparity Between Best Practice and Preceptor Practice	
	"The biggest issue outside of not actually seeing the clinical cases in their clinics was the disparity between the practice of their primary preceptors and sort of best evidence . particularly for the younger newer residents because they never felt comfortable asserting… Whereas the R2's felt a little more confident in asserting 'you know actually we just reviewed the evidence. This is what it shows we should do." -Int#6-faculty	
Learning		
Self-assessment	**Benchmarking**	
	"…it gives them the opportunity to come together in a small environment to interact with other residents who were both in their level and not in their level and kind of assess—oh you've seen a lot of this, I haven't seen a lot of this—and compare notes in terms of that. So, I think it is quite helpful." -Int#13-faculty	
Life-long Learning	**Experience**	
	"I've worked in a few clinics where there are actual family doctors and family physicians who review the modules maybe once a month or twice a month and I really like that and I maybe in the future try to incorporate that into my learning process." -Int#14-R1	
	Effect of Group Dynamics	
	"I never kind of thought about lifelong learning -I thought ok yeah, you know, when I'm done I'll read a couple of articles here and there but now this is kind of like oh I quite like this small group discussion and it's definitely going to change the way that I'm gonna learn because I find that the small group discussions are a lot more, you tend to learn more and you tend to pick up and retain more information compared to just reading an article. So, it's definitely going to change the way I kind of learn in the future… As long as the group dynamics will work well like they did today, then I think it's a great form of learning." -Int#19-peer facilitator	

(continued on next page)

Table 4: Continued

Feedback for the Program	
Suggestions for Improvement	**Identifying Peer Facilitators**
	"I think the only thing I could say is having a really explicit peer facilitator … maybe having some kind of schedule as to who's going to facilitate on which days. And maybe actually along that line then telling the faculty person so the faculty person is aware of who's supposed to facilitate." -Int#12-faculty
	Orientation Session on Self-reflection
	"I think that if we're going to use this as a self-assessment tool and to help residents develop that skill set of self-reflection of practice, I think that needs to have a separate orientation session. I think sometimes we assume that self-reflection is an automatic thing and it's not a skill set that actually needs to be nurtured and developed. So that could definitely be something that could be added in the future as part of this program… since that's supposed to be the cornerstone of you know ongoing professional development in adult learning, self-reflection." -Int#6-faculty

Abbreviations: AHDs, academic half-days; Int, interviewee; R1, first-year residents; R2, second-year residents.

ACKNOWLEDGMENTS: The authors thank first- and second-year family medicine residents for participating in this study, and the faculty involved with the family medicine residency program at the University of Calgary for working with the authors to setup ongoing small-group learning sessions as part of the AHDs. They also thank Dr Jacqueline Wakefield and Catherine Leipciger for critical feedback on the manuscript.

This work was presented at the Canadian Conference on Medical Education (CCME) April 14, 2019 in Niagara Falls, Ontario, Canada.

FUNDING: The Department of Family Medicine, University of Calgary provided partial financial support of this project.

CORRESPONDING AUTHOR: Address correspondence to Dr Heather Armson, Department of Family Medicine, University of Calgary, 1433 5th Street NW, Calgary, Alberta, Canada. 403-860-6614. armson@ucalgary.ca.

References

1. Chalk C. The academic half-day in Canadian neurology residency programs. Can J Neurol Sci. 2004;31(4):511-513.
2. Taylor DC, Hamdy H. Adult learning theories: implications for learning and teaching in medical education: AMEE Guide No. 83. Med Teach. 2013;35(11):e1561-e1572.
3. Batalden MK, Warm EJ, Logio LS. Beyond a curricular design of convenience: replacing the noon conference with an academic half day in three internal medicine residency programs. Acad Med. 2013;88(5):644-651.
4. Kaufman DM. Applying educational theory in practice. BMJ. 2003;326(7382):213-216.
5. Edmunds S, Brown G. Effective small group learning: AMEE Guide No. 48. Med Teach. 2010;32(9):715-726.
6. Mann KV. Theoretical perspectives in medical education: past experience and future possibilities. Med Educ. 2011;45(1):60-68.
7. Chen LY, McDonald JA, Pratt DD, Wisener KM, Jarvis-Selinger S. Residents' views of the role of classroom-based learning in graduate medical education through the lens of academic half days. Acad Med. 2015;90(4):532-538.
8. Jung P, Kennedy M, Winder MJ. Protected block time for teaching and learning in a postgraduate family practice residency program. Can Fam Physician. 2012;58(6):e323-e329.
9. Armson H, Kinzie S, Hawes D, Roder S, Wakefield J, Elmslie T. Translating learning into practice: lessons from the practice-based small group learning program. Can Fam Physician. 2007;53(9):1477-1485.
10. Armson H, Elmslie T, Roder S, Wakefield J. Encouraging Reflection and Change in Clinical Practice: evolution of a Tool. J Contin Educ Health Prof. 2015;35(3):220-231.
11. Creswell J, Clark VLP. Designing and Conducting Mixed Methods Research. 2nd ed. Thousand Oaks, CA: SAGE Publications; 2011.
12. Armson H, Elmslie T, Roder S, Wakefield J. Is the Cognitive Complexity of Commitment-to-Change Statements Associated With Change in Clinical Practice? An Application of Bloom's Taxonomy. J Contin Educ Health Prof. 2015;35(3):166-175.
13. Ely JW, Osheroff JA, Gorman PN, et al. A taxonomy of generic clinical questions: classification study. BMJ. 2000;321(7258):429-432.
14. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77-101.
15. Walker JL. The use of saturation in qualitative research. Can J Cardiovasc Nurs. 2012;22(2):37-46.
16. Al Achkar M. Redesigning journal club in residency. Adv Med Educ Pract. 2016;7:317-320.
17. Klein D, Schipper S. Family medicine curriculum: improving the quality of academic sessions. Can Fam Physician. 2008;54(2):214-218.
18. Bethune C, Brown JB. Residents' use of case-based reflection exercises. Can Fam Physician. 2007;53(3):471-476, 470.
19. Azer SA. Challenges facing PBL tutors: 12 tips for successful group facilitation. Med Teach. 2005;27(8):676-681.
20. Berta W, Cranley L, Dearing JW, Dogherty EJ, Squires JE, Estabrooks CA. Why (we think) facilitation works: insights from organizational learning theory. Implement Sci. 2015;10(1):141-154.
21. Bylund CL, Brown RF, Lubrano di Ciccone B, Diamond C, Eddington J, Kissane DW. Assessing facilitator competence in a comprehensive communication skills training programme. Med Educ. 2009;43(4):342-349.
22. Trowbridge E, Hildebrand C, Vogelman B. Commitment to change in graduate medical education. Med Educ. 2009;43(5):493.
23. Ramani S, Mann K, Taylor D, Thampy H. Residents as teachers: Near peer learning in clinical work settings: AMEE Guide No. 106. Med Teach. 2016;38(7):642-655.
24. Mann K, Sargeant J, Hill T. Knowledge translation in interprofessional education: what difference does interprofessional education make to practice? Learn Health Soc Care. 2009;8(3):154-164.
25. Rial J, Scallan S. Practice-based small group learning (PBSGL) for CPD: a pilot with general practice trainees to support the transition to independent practice. Educ Prim Care. 2013;24(3):173-177.