

Utilizing Community Procedure Clinics to Enhance Resident Procedural Education

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Abstract

Introduction: Procedure training in family medicine residency is important for future full-spectrum practice. Some residency programs have cited difficulty providing adequate procedure education. Residency collaboration with nonfaculty attending physicians working at community nonresidency clinics may help programs increase resident exposure to procedures. We assessed the feasibility of such an educational model by establishing recurring procedure clinics in a nonresidency family medicine site supervised by nonfaculty physicians.

Methods: Twice monthly, half-day procedure clinics were conducted at a community site, where family medicine residents were supervised by nonfaculty community family physicians. After participation, we surveyed residents about their perceptions of the clinics. Using retrospective chart review, we determined quantity and type of procedures performed.

Results: Fifteen residents participated in 21 procedure clinics, featuring 18 procedure types and 268 procedures. Skin lesion excision, nail removal, punch and shave procedures, joint injection, newborn circumcision, and implantable contraception management were most consistently performed. Residents rated clinics highly and were satisfied with procedure number and variety, opportunity to learn new procedures and techniques, and feedback received. Over 80% of residents noted experiences in procedures that were less commonly encountered in their residency.

Conclusion: Procedure clinics at a nonresidency site hosted by nonfaculty attending physicians provided additional training in a variety of primary care procedures. The clinics were favorable to residents and may help programs address training gaps.

Introduction

Procedural acquisition is important for family medicine training and is valued by residents and faculty.¹⁻⁴ Procedure performance is associated with improved job satisfaction and increased reimbursement.⁵⁻⁷ Conversely, inadequate procedure training predicts lack of future procedure performance and may affect the ability of residency graduates to meet the needs of patients and health systems.⁸⁻¹¹ Some family medicine residencies have cited difficulty meeting procedural training needs within their clinics due to a number of factors including low procedure volumes, lack of qualified faculty preceptors, or difficulty scheduling procedures into resident clinics.¹¹⁻¹⁶ Dedicated procedure clinics have been used to address deficiencies and

have been associated with increased procedural exposure, increased attainment of procedural comfort among residents, and high resident satisfaction.¹⁴⁻¹⁶ In an effort to expand upon limitations in procedure availability within one residency, the program piloted a procedure clinic based in a community site that was supervised by residency faculty. Although successful at increasing resident procedure exposure, they also noted potential difficulty in maintaining faculty funding for this clinic.¹⁴

An alternative solution could involve resident teaching by community primary care physicians in nonresidency procedure clinics. This model could potentially increase resident procedure exposure while not adding additional strain on faculty resources. We sought to assess the feasibility of community procedure clinics hosted by nonfaculty family medicine attending physicians. We hypothesized that such clinics would increase resident procedural numbers and would be viewed favorably by participating residents.

Methods

Twice monthly, half-day procedure clinics were established at a nonresidency family medicine office, in collaboration with a local residency. Two nonfaculty attending physicians with a broad scope of procedural practice volunteered to participate. Each attending physician supervised one resident per clinic. Patients were referred to the clinics internally at the community site.

Following each clinic, the participating resident was invited to complete a postparticipation survey assessing perceptions of the clinic experience. Narrative comments from postparticipation surveys were compiled and separately evaluated by each author for major and recurring themes. These themes were reconciled among the authors to determine most common recurring themes.¹⁷

We obtained quantitative procedure data using retrospective chart review. We catalogued number and type of procedure for each clinic from April 2020 to April 2021. Procedure types performed in high volume (eg, cautery, cryosurgery, shave procedure, skin tag removal) were capped at a quantity of 10 per procedure clinic in our analysis (with actual range per clinic of 1-26, with one clinic recording an outlier of 100 skin tag removals). Although consensus recommendations give guidance as to minimum numbers for these procedures,³ specific targets for achieving comfort and competence are lacking. Based on our judgement and in consultation with four additional family medicine faculty, we concluded that 10 of each of these simple procedures would conservatively provide enough experience for any participating resident to achieve comfort. We deduced that including every individual instance of these high-volume procedures would inflate procedure numbers without adding additional meaning to the data.

The Providence St. Joseph Institutional Review Board determined that this study protocol did not constitute human subjects research.

Results

Fifteen residents participated in 21 procedure clinics. The majority were third-year residents (n=11, 73.3%), with equal representation of first- (n=2, 13.3%) and second- (n=2, 13.3%) year residents. Five residents participated in more than one clinic. Each clinic saw an average of 5.1 procedural patients (108 patients during study duration). Eighteen procedure types and 268 procedures were performed (Table 1), with a mean of 5.3 procedure types each clinic. Each resident performed an average of 12.8 procedures per clinic, with a range from 3-29 (in some cases, multiple procedures were performed on single patients). More than 50% of residents (N=15) obtained experience with skin lesion excision (53.3%), nail removal (53.3%), punch and shave procedures (73.3% and 66.7%, respectively), joint injection (53.3%), newborn circumcision (53.3%), and implantable contraception management (60.0%).

Most residents agreed with queried educational benefits (Table 2). Narrative comments expressed satisfaction with procedure variety, opportunities to learn new techniques, and feedback received (Table 3). One critique recommended improved preclinic communication between community site and participating resident to better prepare for sessions.

Discussion

Community procedure clinics supervised by nonfaculty physicians enhanced resident education by providing additional office-based procedures recommended for family medicine ambulatory practice.^{1,3} Residents regarded the clinics as useful for skill, comfort, and knowledge acquisition. The level of teaching and supervision was viewed favorably. Over 80% of residents said the clinics provided procedures that were limited in their residency, thus helping to potentially fill gaps in their procedural training. This small study suggests that community-academic collaborations are a feasible model to outsource procedural training, an approach that has been suggested for settings with limited training resources.¹

One barrier to implementation might be concerns for maintaining nonfaculty attending physician productivity when training learners.¹⁸ Although we were not able to adequately study impact on attending productivity due to our sample size, information from our two community attending physicians suggested no adverse impact on productivity. This should be formally measured in future studies to provide a more complete assessment of value for nonresidency primary care procedure clinics.

Other limitations include retrospective study design, small study size, and single site setting. Moreover, our study attendings had an interest in teaching and procedural care. To improve generalizability, additional studies should focus on a similar training model implemented with increased clinic frequency, a wider training network, or additional primary care specialties. In determining acceptability of these procedure clinics, our study primarily relied on resident perception of their experiences in the clinics. Having a comparator group to assess the magnitude of impact of the clinics would have been helpful. Furthermore, future studies should evaluate the effect of such clinics on specific procedural competence attainment or readiness for future practice.

Conclusion

Procedure clinics in a nonresidency site hosted by nonfaculty attending physicians are a feasible way to enhance resident training and to fill potential training gaps in procedures that are common to primary care office-based practice. We hope these findings can assist residency programs in their procedural training curricula.

Tables and Figures

Table 1. Summary of Procedures Performed

	Procedure numbers* (N=268) n (%)
Integumentary	211 (78.7)
Cautery	12 (5.7)
Cryosurgery	46 (21.8)
Excision, cyst or lipoma	14 (6.6)
Excision, skin lesion	9 (4.3)
Incision and drainage	3 (1.4)
Nail removal	14 (6.6)
Paring, skin lesion	1 (0.5)
Punch biopsy or excision	14 (6.6)
Shave biopsy or excision	30 (14.2)
Skin tag removal	68 (32.2)
Musculoskeletal	19 (7.1)
Injection and/or aspiration, joint or bursa	14 (73.7)
Injection and/or aspiration, tissue or tendon	5 (26.3)
Genitourinary	38 (14.2)
Circumcision, newborn	11 (28.9)
Colposcopy (with or without biopsy or endocervical curettage)	4 (10.5)
Endometrial biopsy	1 (2.6)
Implantable contraceptive insertion and/or removal	17 (44.7)
Intrauterine device insertion and/or removal	4 (10.5)
Vasectomy	1 (2.6)

*For procedure groupings, percentages represent those of total procedures performed. For individual procedures, percentages represent the proportion of a procedure done within each procedure grouping.

Table 2. Resident Postparticipation Survey Results (N=11)

	Agree or strongly agree n (%)
My anticipated goals were met.	11 (100)
I performed an appropriate number of procedures.	11 (100)
I obtained more experience in patient counseling and informed consent.	10 (90.9)
I better understand indications/contraindications of the procedures performed.	11 (100)
I enhanced my technical skill in performance of procedures.	11 (100)
I enhanced my knowledge base surrounding procedure performance.	11 (100)
I learned different approaches to previously performed procedures.	11 (100)
I had the chance to perform procedures that are more limited in my residency training.	9 (81.8)
I received exposure to additional procedures I may want to pursue further in my residency training.	8 (72.7)
I feel more prepared to perform procedures in my remaining residency training and future practice.	11 (100)
I feel I can perform additional procedures independently after involvement in procedure clinic.	10 (90.9)
I had an appropriate level of autonomy.	11 (100)
I was given the opportunity to ask questions.	11 (100)
I received appropriate feedback on my performance.	11 (100)
I received effective teaching.	11 (100)

Table 3. Narrative Themes from Postparticipation Resident Surveys

Major themes	Representative quotes
Satisfaction with procedure variety	<i>"I got a lot of variety in different procedures which made me feel confident I can perform procedures after residency."</i>
Satisfaction with procedure appropriateness, quantity and timing	<i>"Appropriate procedures and time scheduled, when possible additional procedures were added."</i>
Opportunity to learn new procedures, skills or techniques	<i>"It was very high yield all around! I had a wonderful variety of procedures scheduled and also had the chance to perform a new procedure to me." "It was nice to [...] work with two different providers, learning different styles and nuances for the same procedure."</i>
Satisfaction with support, feedback and autonomy levels	<i>"Given the appropriate amount of independence to perform procedures based on comfort level, but with adequate support and feedback to improve."</i>

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