Enhancing Full Skin Examinations in the Outpatient Family Medicine Continuity Clinic: A Quality Improvement Initiative

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BACKGROUND

- Skin cancer is the most common malignancy in the United States; early detection significantly improves patient outcomes
- Full skin examinations (FSEs) remain underperformed in primary care due to limited clinician confidence and inadequate training during residency
- Family Medicine residents frequently report low confidence in identifying skin lesions and lack structured workflows for incorporating FSEs into routine visits
- Addressing these gaps has direct implications for early skin cancer detection at the primary care level

OBJECTIVES

To determine whether a structured dermatology educational intervention could improve resident:

- Confidence in performing FSEs
- Ability to recognize common benign and malignant skin lesions
- Frequency of offering and performing FSEs during routine outpatient visits
- Integration of FSEs into the continuity care workflow

METHODS

Design: Quality improvement project using a pre/post intervention survey design with matched within-subject comparison
Setting: Samaritan Health Services Family Medicine Residency Continuity Clinic, Corvallis, Oregon
Participants: PGY-2 and PGY-3 Family Medicine residents; n = 14 matched respondents completing both pre- and post-intervention surveys
Intervention: Structured one-hour didactic lecture around covering identification of common benign and malignant skin lesions and practical workflow strategies for integrating FSEs into annual wellness visits and routine encounters
Primary Outcome Analysis: Resident confidence and self-reported FSE frequency assessed via paired Likert-style surveys (1–5 scale); analyzed using paired t-tests or Wilcoxon signed-rank tests (α = 0.05); yes/no barrier items analyzed using McNemar's test
Secondary Outcome Analysis: Skin-related primary diagnosis rates extracted from Epic Slicer-Dicer during matched 10-week pre- and post-intervention periods compared using a Poisson rate ratio test

RESULTS

- 14 residents completed both pre- and post-intervention surveys (matched cohort)
- 92.9% reported lack of time as a barrier both before and after the intervention

Statistically significant improvements in confidence were observed for:

- Performing a full skin examination (p = 0.013)
- Identifying suspicious skin lesions (p = 0.005)
- Distinguishing benign vs. malignant lesions (p = 0.034)
- Identifying actinic keratoses (p = 0.034)

Trends toward improvement, not statistically significant:

- Identifying seborrheic keratoses (p = 0.059)

Training-related barriers decreased following the intervention:

- Lack of training: 35.7% to 0.0% (p = 0.063) — clinically meaningful reduction
- Lack of confidence: 50.0% to 28.6% (p = 0.375) — decreased, not significant
- Lack of time: 92.9% to 92.9% (p = 1.000) — unchanged; near-universal barrier

Secondary outcome — skin diagnosis rates (Epic Slicer-Dicer):

- Skin-related primary diagnoses decreased from 3.59 to 1.95 per 1,000 encounters (IRR = 0.54; 95% CI 0.29–1.01; p = 0.054) — non-significant; see conclusions section

Figure 1. Mean resident confidence scores before and after educational intervention (1-5 Likert scale)

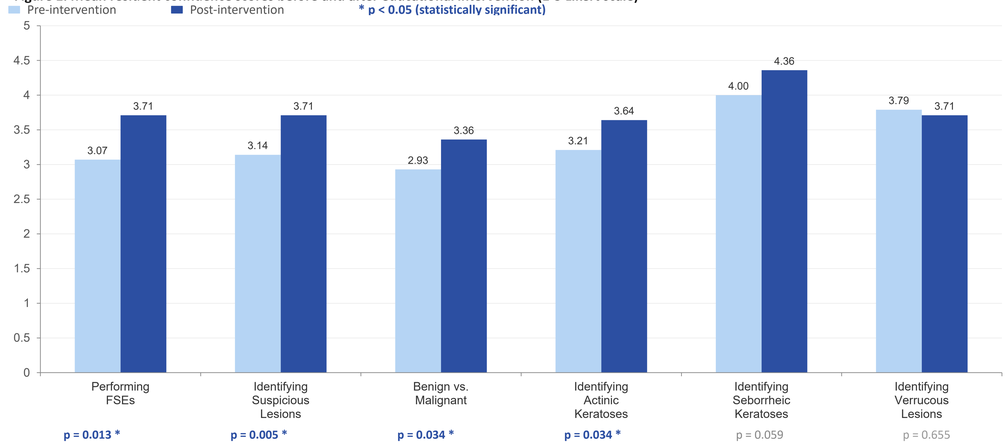
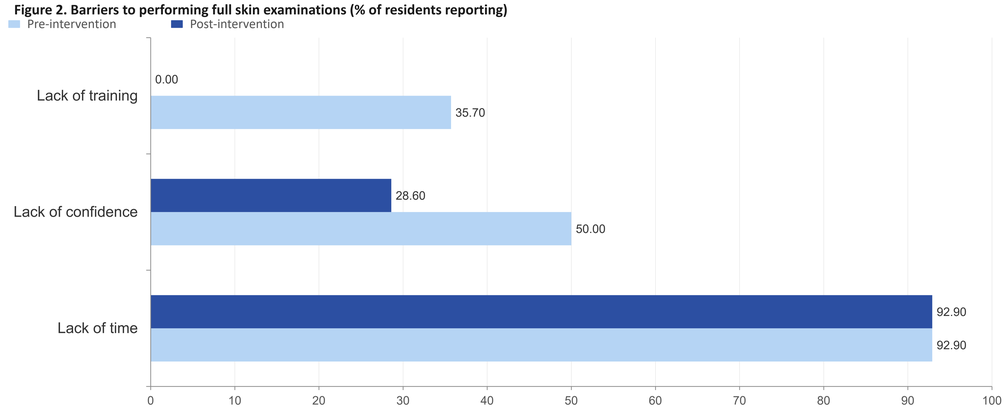


Figure 2. Barriers to performing full skin examinations (% of residents reporting)



** Statistically significant (p < 0.05) | Confidence items: 1-5 Likert scale | Barrier items: yes/no, analyzed using McNemar's test*

CONCLUSIONS

- A focused dermatology educational session along with structured workflows for incorporating FSEs into routine visits significantly improved FM resident confidence in performing FSEs and identifying skin lesions
- Four confidence domains reached statistical significance: performing FSEs, identifying suspicious lesions, distinguishing benign from malignant lesions, and identifying actinic keratoses
- The proportion of residents citing lack of training as a barrier fell from 35.7% to 0%, a clinically meaningful reduction
- Lack of time remained a persistent, near-universal barrier (92.9% pre and post)
- Skin-related diagnosis rates did not increase following the intervention, likely reflecting ICD-10 coding variability, time interval limited to 10-week follow up, and documentation practices, rather than a true reduction in exam performance

FUTURE IMPLICATIONS

- Ongoing educational reinforcement and structured EMR documentation prompts are needed to translate confidence gains into measurable changes in clinical practice
- Dedicated dermatology training within FM residency curricula should be prioritized given the frequency of skin pathology encountered in primary care
- Future work should include longer follow-up windows, more uniform documentation and coding practices, and larger multi-site samples
- Targeted ICD-10 coding education may improve the ability to detect changes in skin examination rates using EMR-based secondary outcomes

REFERENCES & ACKNOWLEDGEMENTS

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