

A Skin Biopsy Workshop for Internists to Improve Diagnostic Evaluation of Dermatologic Disease in a Primary Care Clinic

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Introduction

Problem Statement

- Skin disease is frequently encountered and treated in primary care. 6% to 7% of all outpatient visits are for skin complaints.¹
- The most common malignancy in the United States is skin cancer.²
- Primary care doctors, including internists, have limited structured training in dermatologic clinical assessment and procedural skills which can lead to misdiagnosis, delayed diagnosis and/or improper disease management.²
- It has been reported that up to 85% of primary care residents feel uncomfortable or very uncomfortable managing dermatologic issues in ambulatory clinics.³

Current State

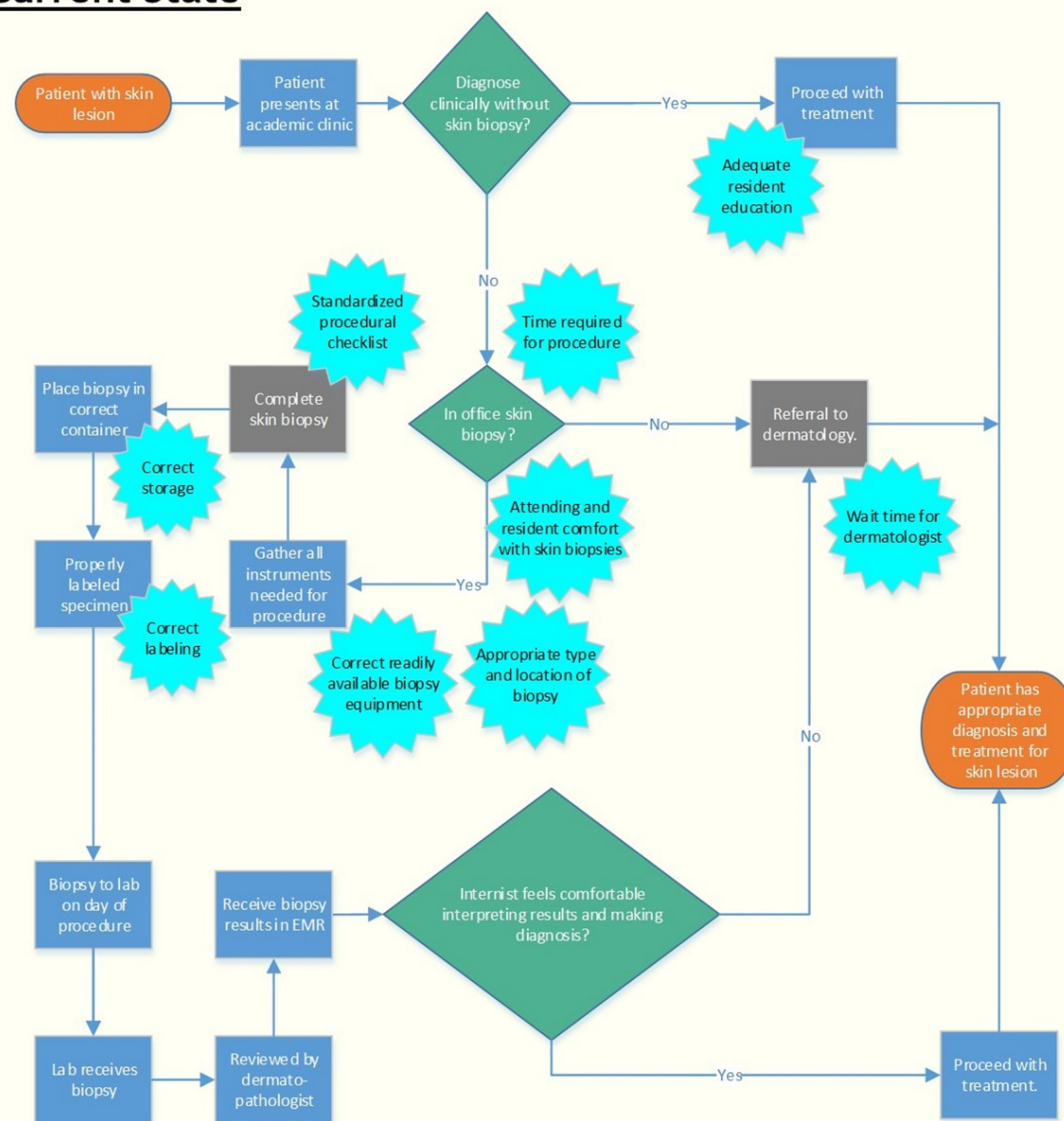


Figure 1. Demonstrates the complexities and challenges, including in-office skin biopsies and referral process, of obtaining the appropriate diagnosis and treatment of skin disease in our primary care clinic.

Project Aims

- Primary AIM: To consistently provide access and availability of in-office skin biopsies to patients in our primary care resident clinic.
- Secondary AIM: To provide residents didactic and procedural skin biopsy training for application in the primary care setting.

Project Timeframe

- July 2018 to December 2020

Methods

Root Cause Analysis

- We evaluated the contributing obstacles to patients receiving appropriate dermatologic care in our academic clinic including larger scale process barriers to smaller procedural challenges.

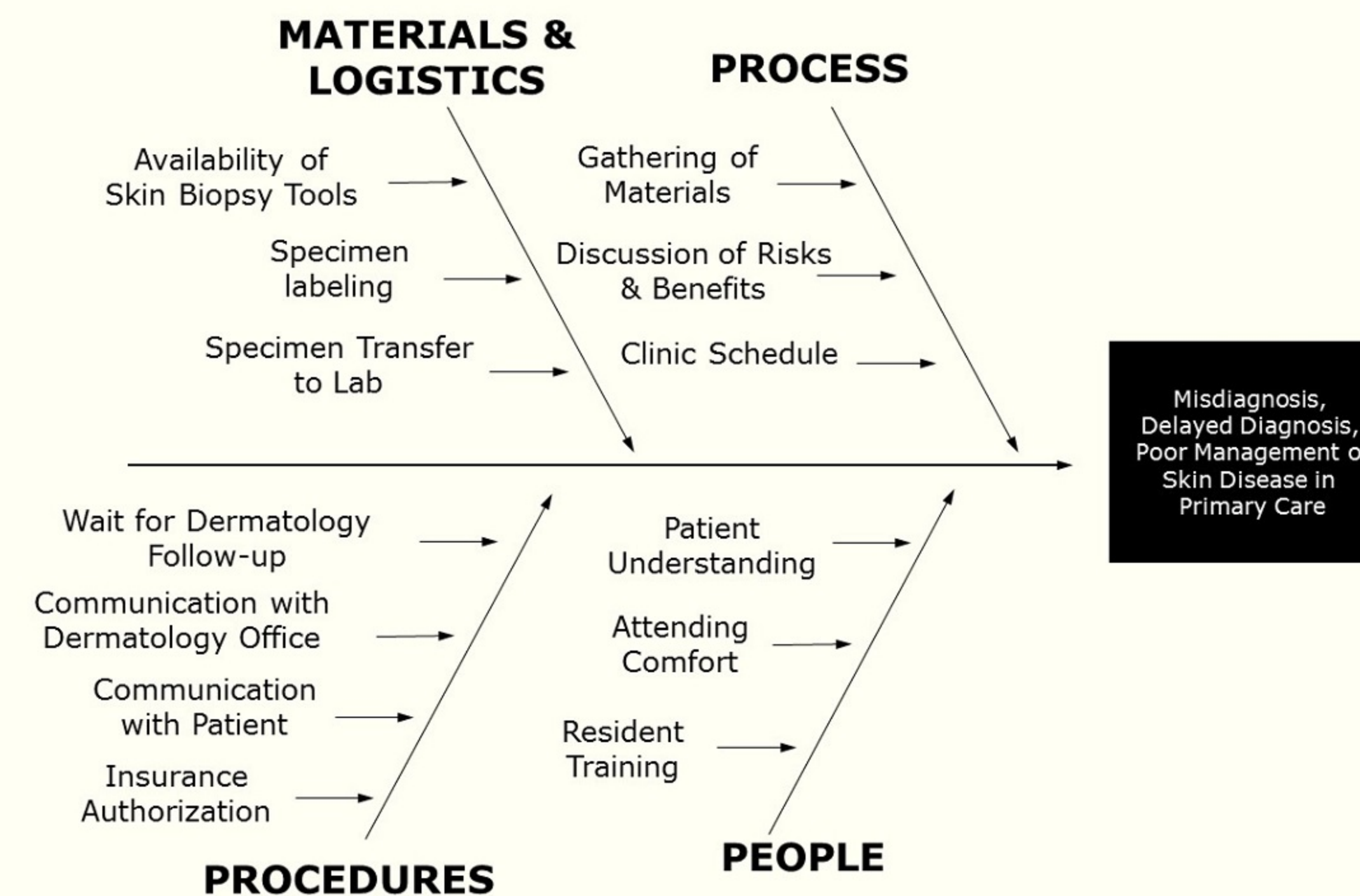


Figure 2. Focused Ishikawa causal diagram showing global and specific potential contributing factors on our clinic's ability to provide appropriate dermatologic care.

Solutions

Skin Biopsy Workshop for Attendings	Procedural Skin Biopsy Checklist	Checklist for Labeling and Processing to Lab
Phone Call to Patient with Authorization Approval	Skin Biopsy Workshop for Residents	Reserved and/or Prioritized Dermatology Consultations
Longer Visits Times for Skin Complaints	Designated Medical Assistant to Follow Up on Referral Authorization	Prepared Skin Biopsy Tray

Table 1. Potential solutions considered to our problem

- Focus was narrowed to resident education and training.
- A skin biopsy course for residents was selected in light of project scope and feasibility.

Intervention: Skin Biopsy Workshop

- Modeled after a didactic and skills dermatology workshop where combined IM-dermatology residents taught their IM peers at the University of Minnesota.⁴
- HonorHealth Dermatology Residency were directly involved.
- Didactics session included the recognition of suspicious lesions, indications, contraindications, risks, & benefits of biopsies, and when to refer to a specialist.
- Procedural skills session including shave and punch biopsies on pigs' feet via educational instruction from HonorHealth dermatology residents.
- Measured via anonymous evaluations pre and post course for knowledge and skin biopsy procedures.



Results

Results Analysis

- We changed from attribute data to variable (Likert scale).
 - Completely = 3, somewhat = 2, not at all = 1
- Two-sample t-test assuming equal variances.
- Pre and post groups were the same composition of residents (n = 17).

Perceived Resident Knowledge	Pre-test	Post-test	95% CI	P-value
Steps of Shave Biopsy	1.82	3.00	0.915-1.438	<0.005
Steps of Punch Biopsy	1.88	2.90	0.739-1.379	<0.005
When to Use Shave Versus Punch Biopsy	1.64	2.82	0.820-1.533	<0.005
Limitations and Complications of Skin Biopsies	1.88	2.94	0.739-1.379	<0.005
When to Perform Biopsy Versus Referring to Dermatologist	1.71	2.94	0.876-1.595	<0.005

Perceived Resident Skills	Pre-test	Post-test	95% CI	P-value
Administering Local Anesthesia for Minor Skin Procedures	3.53	4.23	0.085-1.327	0.027
Performing Shave Biopsy	2.11	3.94	1.117-2.530	<0.005
Performing Punch Biopsy	2.11	3.88	0.950-2.580	<0.005
Suturing for Minor Skin Procedures	3.11	4.11	0.185-1.815	0.018

Dermatologic Knowledge	Pre-test	Post-test	95% CI	P-value
Resident Identification of Basal Cell Carcinoma	0.41	0.76	0.022-0.684	0.037

Table 2. Statistically significant data. All other questions from dermatologic knowledge examination were not statistically significant.

Discussion

Conclusion

- Skin biopsy course was a low level intervention focusing on education as a potential cause of possible future misdiagnosis, delayed diagnosis or improper management of skin disease.
- Subjectively participants considered the skin biopsy course worthwhile increasing their knowledge and comfort level with shave and punch biopsies.
- There was no meaningful improvement in the didactic multiple choice exam which could be attributed to low power and/or use of invalidated questions.

Future Directions

- We could include validated questions (e.g. MKSAP) to ensure accurate assessment at an appropriate level and/or focus on another identified root cause.

References

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