A Skin Biopsy Workshop for Interns 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 interns, 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

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**Methods**

**MATERIALS & LOGISTICS**
- Availability of Skin Biopsy Tools
- Specimen Labeling
- Specimen Transfer to Lab

**PROCESS**
- Gathering of Materials
- Discussion of Risks & Benefits
- Clinic Schedule

**PROCESSES**
- Patient Understanding
- Attending Comfort
- Resident Training

**PEOPLE**
- Wait for Dermatology Follow-up
- Communication with Dermatology Office
- Communication with Patient
- Insurance Authorization

**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.

**Figures 1 & 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
- Reserved and/or Prioritized Dermatology Consultations
- Skin Biopsy Workshop for Residents
- 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.

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**Results**

**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.

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**References**