Lesion Size Inclusion on Dermatopathology Requisition Forms: A Quality Improvement Project

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Introduction

- Requisition forms (RFs) are the primary communication tool from clinicians to pathologists
  - Dermatopathology RFs → dermatologist to dermatopathologist
- RFs provide demographic and clinical information
  - Allows for generation of a relevant and appropriate specific and/or differential diagnosis


COCKERELL
DERMATOPATHOLOGY
DERMATOPATHOLOGY REQUISITION
CLINICAL INFORMATION
BILLING METHOD | INSURANCE INFORMATION

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Introduction

- Dermatopathologists viewed their role as more than providing pertinent histopathologic findings and specific diagnoses [Comfere]
  - 90% viewed medical decision-making guidance as part of their role
- Inclusion of detailed information improves diagnostic accuracy of the reading dermatopathologist [Stevenson]

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Introduction

- Previous study found that diameter of pigmented lesions was provided on RFs 22% of the time [Waller]
  - Authors of study classified lesion diameter as “the most useful of the ABCDE criteria”
  - Histologic features must be interpreted within the context of the size of the lesion
    - “ie, a limited amount of intraepidermal scatter of melanocytes may potentially be weighted differently in a 3-mm well-circumscribed lesion vs a 1.3-cm lesion”
- Dermatopathologists rely on clinical information reported on RF [Cockerell]
  - As much information as is reasonably possible should be reported
  - “If the specimen is a pigmented lesion, it should be described by its diameter”

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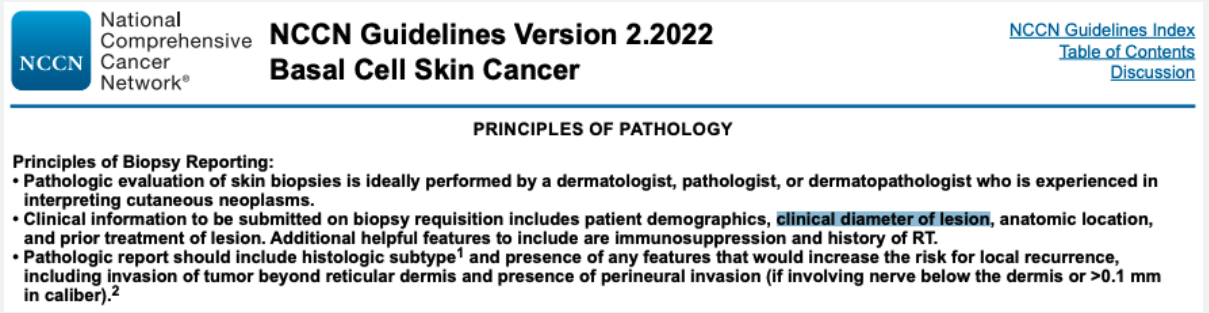
Introduction

- Importance of lesion size is not limited to pigmented lesions
- NCCN guidelines for basal cell carcinoma also emphasize the clinical diameter of the lesion to be submitted on the biopsy requisition



National Comprehensive Cancer Network. **NCCN Guidelines Version 2.2022**
Basal Cell Skin Cancer

NCCN Guidelines Index
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Discussion

PRINCIPLES OF PATHOLOGY

Principles of Biopsy Reporting:

- **Pathologic evaluation of skin biopsies is ideally performed by a dermatologist, pathologist, or dermatopathologist who is experienced in interpreting cutaneous neoplasms.**
- **Clinical information to be submitted on biopsy requisition includes patient demographics, clinical diameter of lesion, anatomic location, and prior treatment of lesion. Additional helpful features to include are immunosuppression and history of RT.**
- **Pathologic report should include histologic subtype[1] and presence of any features that would increase the risk for local recurrence, including invasion of tumor beyond reticular dermis and presence of perineural invasion (if involving nerve below the dermis or >0.1 mm in caliber).[2]**

National Comprehensive Cancer Network. Basal Cell Skin Cancer (2.2022). https://www.nccn.org/professionals/physician_gls/pdf/nmsc.pdf. Accessed 2022 Jun 2.

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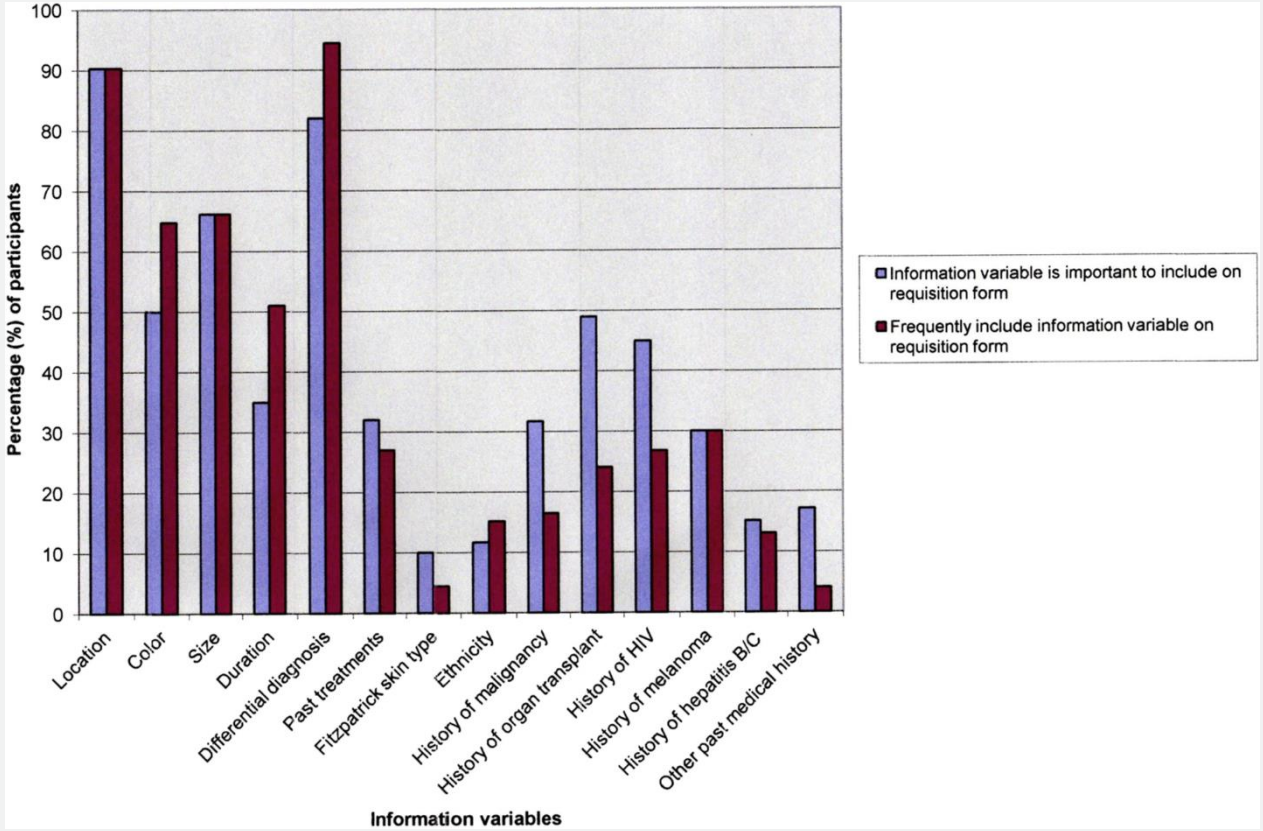
Introduction

- What information do **clinicians** consider important to include on RFs?
  - 1. Location
  - 2. Differential diagnosis
  - **3. Size**
- Approx. 65% of dermatologists considered size of lesion important to include on RF
  - The same proportion frequently include lesion size on the RF



Chismar LA, Umanoff N, Murphy B, Viola KV, Amin B. The dermatopathology requisition form: Attitudes and practices of dermatologists. J Am Acad Dermatol. 2015;72(2):353-355. doi:10.1016/j.jaad.2014.10.021

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Introduction

- The importance of lesion size reporting led some authors to modify the RF to emphasize its inclusion

SPECIMEN TYPE (CIRCLE ONE)	FINDINGS & INSTRUCTIONS (USE EXTRA SHEETS FOR ADDITIONAL SPECIMENS)	
SPECIMEN A: PUNCH BX SHAVE BX SNIP BX INCISIONAL BX EXCISIONAL BX **CHECK MARGINS** ALOPECIA SECTIONS SLIDE CONSULT **DIF** (Circle One) INVOLVED SKIN UNINVOLVED SKIN **INDIRECT IF** (SERUM REQUIRED)	**SITE:**	**CLINICAL FINDINGS AND DIAGNOSIS:** **SPECIAL INSTRUCTIONS:**

SPECIMEN TYPE (CIRCLE ONE)	FINDINGS & INSTRUCTIONS (USE EXTRA SHEETS FOR ADDITIONAL SPECIMENS)	
SPECIMEN A: PUNCH BX SHAVE BX SNIP BX INCISIONAL BX EXCISIONAL BX **CHECK MARGINS** ALOPECIA SECTIONS SLIDE CONSULT **DIF** (Circle One) INVOLVED SKIN UNINVOLVED SKIN **INDIRECT IF** (SERUM REQUIRED)	**SITE:** **LESION SIZE:** **mm** **cm**	**CLINICAL FINDINGS AND DIAGNOSIS:** PARTIAL BX OF LARGER LESION? YES [ ] NO [ ] SITE OF PRIOR BX/THERAPY/TRAUMA? YES [ ] NO [ ]

Waller JM, Zedek DC. How informative are dermatopathology requisition forms completed by dermatologists? A review of the clinical information provided for 100 consecutive melanocytic lesions. J Am Acad Dermatol. 2010;62(2):257-261. doi:10.1016/j.jaad.2009.06.049

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Problem Statement

Lesion diameter is inconsistently reported on RFs, limiting the consulting dermatopathologists' ability to provide an accurate diagnosis and recommendations for further management.

This is standard of care that is recommended by numerous guidelines in dermatology and dermatopathology.

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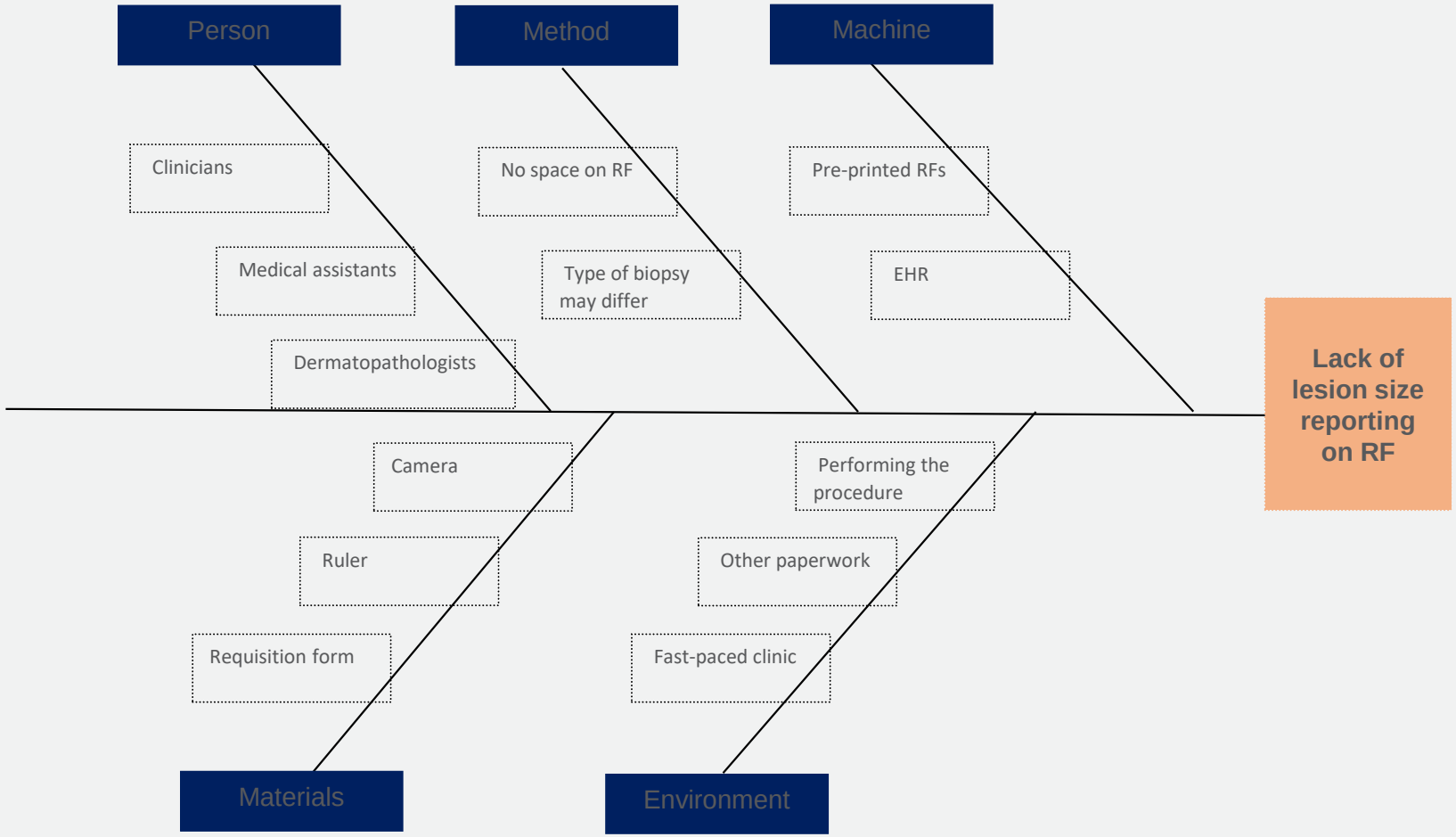
Root Cause Analysis



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Methods

- Plan-Do-Study-Act (PDSA) Framework
- **Objective:** increase the rate of reporting diameters of neoplasms on RFs to **greater than 65%** from February to June of the 2021-2022 academic year.

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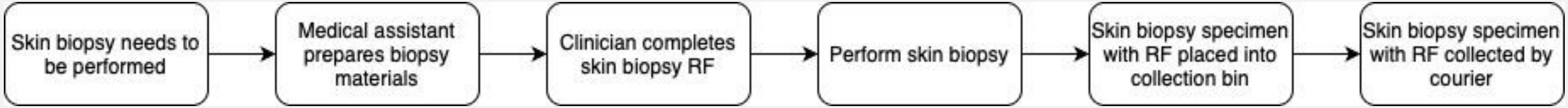
Old Process Map



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Plan

- 839 skin biopsies recorded from July 1, 2021 - February 4, 2022
  - 68 specimens excluded due to inability to access RF
  - 177 removed from analysis due to technique used to obtain the specimen
    - 67 skin biopsies obtained by surgical excision
    - 110 samples taken from eruptions as opposed to neoplasms
- 594 samples met criteria for analysis
  - Specimens obtained from neoplasms with an accessible RF
  - Of these 594, 49 samples included lesion diameter on the RF
- Final reporting rate was 49/594 = **8.25%**

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Do

- A journal club was held to systematically review dermatology and dermatopathology practice guidelines regarding reporting of lesion diameters on RFs.
- One primary faculty and all residents were in attendance and participated in the activity. These clinicians comprised of the intervention group.
- One primary faculty was not in attendance. This clinician served as a control group for comparison.

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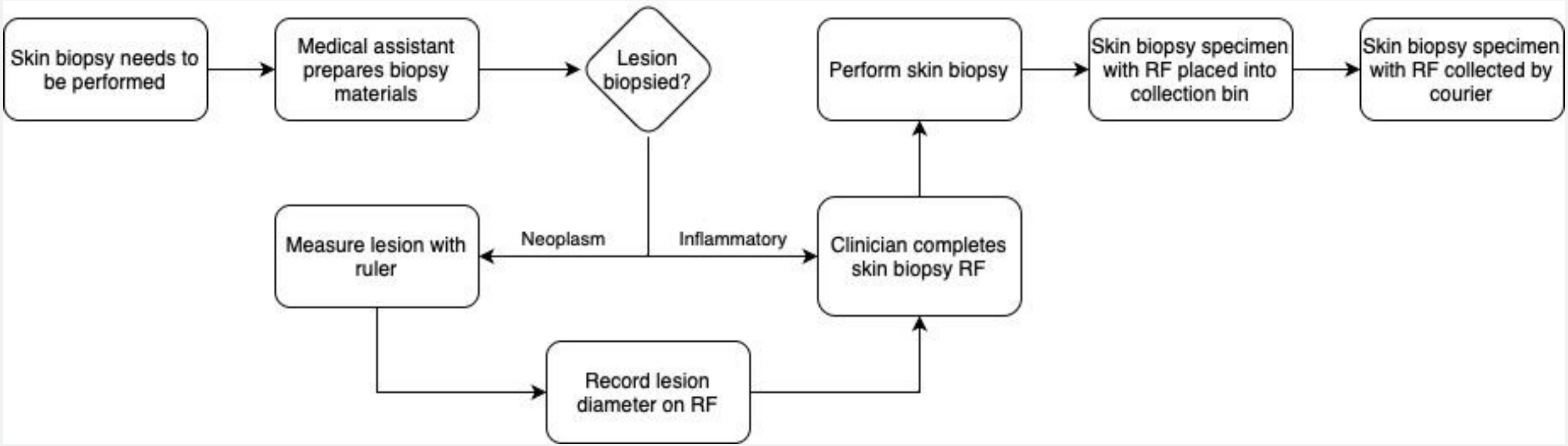
New Process Map



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Study

- 567 skin biopsies recorded from February 5, 2022 - June 14, 2022
  - 3 specimens excluded due to inability to access RFs
  - 1 specimen excluded due to no clinical impression on RF
  - 103 removed from analysis due to technique used to obtain the specimen
    - 37 skin biopsies obtained by surgical excision
    - 66 samples taken from eruptions as opposed to neoplasms

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Study

- 567 skin biopsies recorded from February 5, 2022 - June 14, 2022
  - Control group: 289 samples met criteria for analysis
    - Of these 289, 5 samples included lesion diameter on the RF
    - Final reporting rate for control group is 5/289 = **1.73%**
  - Intervention group: 171 samples met criteria for analysis
    - Of these 171, 85 samples included lesion diameter on the RF
    - Final reporting rate for intervention group is 85/171 = **49.71%**

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Study

- Chi-squared analysis
  - Between retrospective cohort and intervention group
    - $p < .00001$
  - Between control group and intervention group
    - $p < .00001$

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Act

- All clinicians surveyed at the end of the study period
- Reasons for not reporting the lesion diameter on the RF
  - Time constraints during the office visit
  - Lack of a reminder on the RF
- Plan to incorporate stamp to add space on RF to include lesion diameter
  - Reminds clinicians to include this vital information prior to RF submission

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Limitations

- Classification of lesions during data collection
  - Determination of neoplasm vs. eruption was made by a single dermatology resident from clinical impressions recorded on RF
    - May mimic real-life experience for dermatopathologist, as the RF is all the clinical information they may receive
- Miscategorization of data to control vs. intervention group
  - Limited, but some, crossover between control and intervention groups due to scheduling of staff
- Lack of complete data set
  - May be underpowered as some RFs were not accessible

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Future Directions

- Completion of next PDSA cycle
  - Assess long-term adherence of size reporting status-post intervention
  - Utilization of stamps on RFs to remind clinicians to report lesion diameter
- Quantified or qualified data from dermatopathologists who receiving RFs with and without lesion size
  - Determination of effect on clinical outcomes
- Impact of EMR access on clinician-pathologist communication
  - Use of clinicians' EMRs by pathologists may enhance access to clinical information
  - Increasingly, RFs are generated by EMRs, resulting in incomplete RFs that fail to provide vital clinical information to the reading dermatopathologist

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