

# Preventing Disasters in Procedural Dermatology

*A Focus on Quality Improvement*

Kimberly Ken, MD, FAAD  
Assistant Professor of Dermatology  
Penn State Health  
kken@pennstatehealth.psu.edu

1



2

# National Quality Forum

**Table 1.** Serious reportable events which apply to inpatient and outpatient (most cases) care.

Category of serious reportable events	Examples of serious reportable events
Surgical or Invasive Procedural Events	Wrong-site, -person, or -procedure; retained foreign object; perioperative death of healthy patient (ASA class 1)
Product or Device Events	Patient death or serious injury from: 1) use of contaminated drugs, devices or biologics; 2) use or function of a device which is used or functions other than as intended; 3) intravascular air embolism
Patient Protection Events	Patient disappearance or suicide; discharge to unauthorized person
Care Management Events	Death or disability from medication and blood product administration errors; labor/delivery in low-risk pregnancy/neonate; falls; pressure ulcers; specimen loss; failure to notify of test results
Environmental Events	Death or disability from electric shock, burns, O <sub>2</sub> or gas administration errors or from physical restraints
Radiologic Events	Death or serious injury of a patient or staff associated with the introduction of a metallic object into the MRI area
Criminal Events	Sexual or physical assault or abuse; impersonation; abduction

Adapted from National Quality Forum 2011 [6].

Dermatol Online J. 2021 Mar 15;27(3):13030



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

3

# National Quality Forum

**Table 1.** Serious reportable events which apply to inpatient and outpatient (most cases) care.

Category of serious reportable events	Examples of serious reportable events
Surgical or Invasive Procedural Events	Wrong-site, -person, or -procedure; retained foreign object; perioperative death of healthy patient (ASA class 1)
Care Management Events	Death or disability from medication and blood product administration errors; labor/delivery in low-risk pregnancy/neonate; falls; pressure ulcers; specimen loss; failure to notify of test results

Dermatol Online J. 2021 Mar 15;27(3):13030



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

4

## Aims

- Prevention of wrong-site surgery
- Optimizing the biopsy/surgical pathway – Specimen loss



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

5

## Aims

- **Prevention of wrong-site surgery**
- Optimizing the biopsy/surgical pathway – Specimen loss



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

6

## Wrong-site Surgery in Dermatology

# 19%



JAAD. 2013 May;68(5):729-37



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

7

**Table VI.** Top-10 most serious errors reported

Rank order	Category	Percent of total reported (n)*
1.	Wrong-site surgery	19% (21)
2.	Incorrect diagnosis—error in clinical judgment	14% (15)
3.	Phototherapy	10% (11)
4.	Postanalytical error—delayed or absent response to test	8% (9)
4.	Surgical—technical error during procedure	8% (9)
6.	Preanalytical error—inaccurate quality/quantity of specimen	6% (7)
6.	Prescribing error—medication with known allergy/contraindication ordered	6% (7)
8.	Administration error by provider	5% (5)
9.	Preanalytical error—incorrect information on sample bottle/request form	4% (4)
10.	Postanalytical error—problem reporting result to physician	3% (3)
10.	Laser	3% (3)

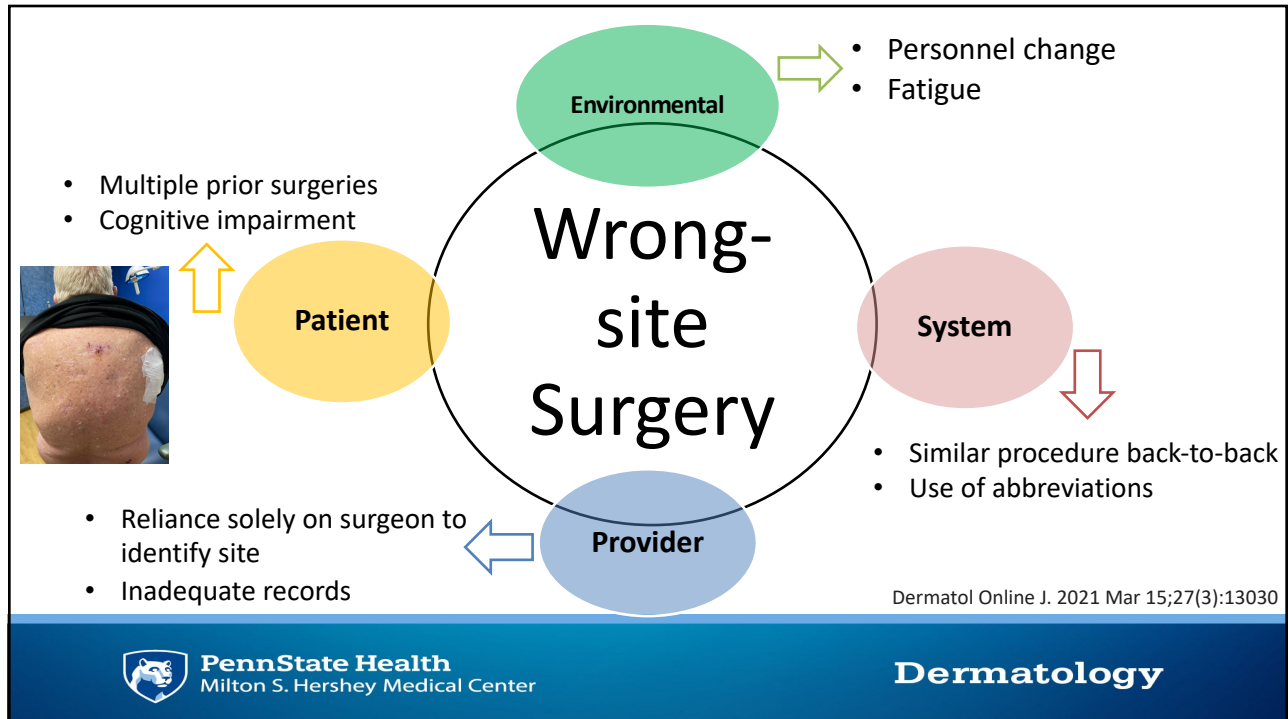
JAAD. 2013 May;68(5):729-37



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

8



9

## Risk factors for misidentification of biopsy site

<p><u>Patient Factors</u></p> <ul style="list-style-type: none"> <li>&gt;6 weeks from biopsy to surgery</li> <li>Inability to see the biopsy site</li> </ul> <p style="text-align: center; color: #4F81BD;">Misidentify sites 30%</p>	<p><u>Physician Factors</u></p> <ul style="list-style-type: none"> <li>&gt;6 weeks from biopsy to surgery</li> <li>Simultaneous biopsies performed at other anatomic locations</li> </ul> <p style="text-align: center; color: #4F81BD;">Misidentify sites up to 12%</p>
---	--

Dermatol Surg. 2010 Feb;36(2):198-202  
J Am Acad Dermatol. 2016 Jun;74(6):1185-93

**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

10

## What can we do?

**Photograph is most useful for identifying biopsy sites**

J Am Acad Dermatol. 2012 Aug;67(2):262-8.



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

11

### Final Recommendations

**Strong consensus:**  
Take a high-quality photograph with  
 $\geq 1$  visible anatomic landmarks

**Moderate consensus:**  
Take 2 photographs, one close-up  
and the other from far away with  
 $\geq 1$  visible anatomic landmarks

JAMA Dermatol. 2014 May;150(5):550-8.



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

12

## What we are doing at Penn State...

### Dermatology FY 2022

- Biopsies 27,242
- Procedures 11,642



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

13

## Penn State Standard Operating Procedure

- A. All biopsy sites must be **marked** with dots or circled with a skin marker
- B. If the biopsy site is on the head or neck, the patient's mask must be removed for the photos
- C. No operator fingers/objects used for pointing in at least 2 photos as these can obscure other cutaneous landmarks
- D. No patient clothing obscuring photo or anatomical landmarks
- E. Two photos must be taken of each biopsy site
  - i. First photo for **mapping** including at least 2 visible landmarks
  - ii. Second photo for **magnification** to identify nearby cutaneous landmarks
- F. For patients with multiple biopsy sites
  - i. Number sites on the patient with skin marker superior to inferior and left to right according to the physician or provider
  - ii. The numbering on the patient will correspond to the numbering with name of anatomic location on the pathology order
  - iii. Biopsy sites may be photographed individually, but when there are multiple biopsy sites in the same field, one photograph should be taken at a distance to include all lesions in relation to each other and at least 2 anatomical landmarks



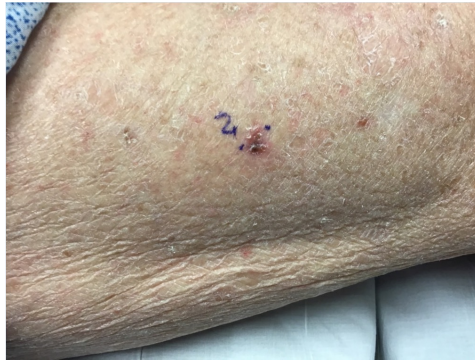
**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

14

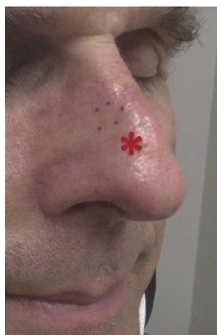
## Penn State Standard Operating Procedure

A. All biopsy sites must be **marked** or circled with a skin marker



## Penn State Standard Operating Procedure

B. If on the head or neck – removed mask



JAAD Case Rep. 2022 Mar;21:148-149.



## Penn State Standard Operating Procedure

C. No operator fingers/objects

D. No patient clothing obscuring photo or anatomical landmarks



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

17

## Penn State Standard Operating Procedure

**E. Two photos** of each biopsy site

i. First photo for **mapping** w/ at least 2 visible landmarks

ii. Second photo for **magnification** to identify nearby cutaneous landmarks



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

18

# Penn State Standard Operating Procedure

Multiple Biopsy Sites.....

Number sites on the patient

- Superior to inferior
- Left to right



- ✓ Mark
- ✓ Map
- ✓ Magnify

## What we are doing at Penn State...

- SOP implemented July 2023
- Audit via Qualaris

### Compliance Field

1 Does the photo of the site(s) match the name of the location on the pathology report?

2 Are there at least 2 photos of each biopsy site?

3 Is the biopsy site designated with skin marker?

4 Is one photo of each site a close-up?

5 Does a photo of each site show at least two anatomic landmarks?

6 If multiple sites, are they numbered top to bottom and left to right?

7 Are the photos in focus?

8 Do the numbers shown in the photo correlate with those submitted to pathology?

9 Are you 100% certain where the biopsy was taken according to the photos?"

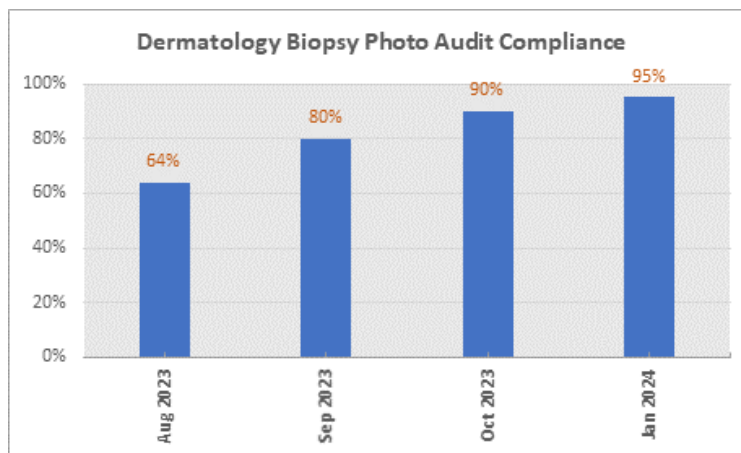


**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

21

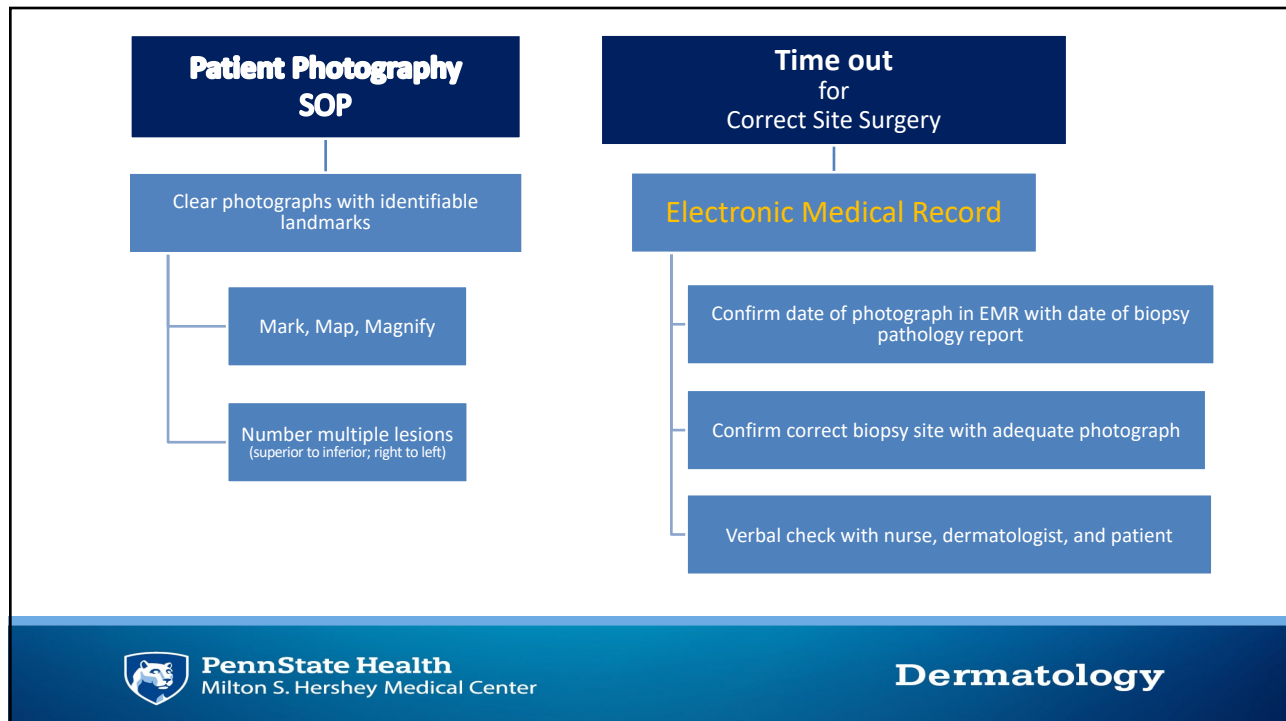
## What we are doing at Penn State...



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

22



23

## What we are doing at Penn State...

- No wrong-site surgeries since implementation of SOP
- Future.... Outside referring clinicians

The bottom of the slide features the PennState Health logo and 'Milton S. Hershey Medical Center' on the left, and the word 'Dermatology' on the right.

24

## Aims

- Prevention of wrong-site surgery
- **Optimizing the biopsy pathway – specimen loss**



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

25

**Table VI.** Top-10 most serious errors reported

Rank order	Category	Percent of total reported (n)*
1.	Wrong-site surgery	19% (21)
2.	Incorrect diagnosis—error in clinical judgment	14% (15)
3.	Phototherapy	10% (11)
4.	Postanalytical error—delayed or absent response to test	8% (9)
4.	Surgical—technical error during procedure	8% (9)
6.	Preanalytical error—inaccurate quality/quantity of specimen	6% (7)
6.	Prescribing error—medication with known allergy/contraindication ordered	6% (7)
8.	Administration error by provider	5% (5)
9.	Preanalytical error—incorrect information on sample bottle/request form	4% (4)
10.	Postanalytical error—problem reporting result to physician	3% (3)
10.	Laser	3% (3)

JAAD. 2013 May;68(5):729-37



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

26

## Missing Pathology Specimens

- 270,754 Biopsies
  - 83 cases → 0.031%
    - 69 cases: empty container
    - 14 cases: 2 specimens in 1 container
  - 51% Shave biopsies
  - 53% from head/neck location
- 4,400 Biopsies
  - 3 cases → 0.068%

J Cutan Pathol. 2021 Nov;48(11):1347-1352

Dermatol Surg. 2010 Jul;36(7):1084-6



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

27

## Missing Pathology Specimens

- Increasing trend for shave biopsies

**Comparison of Skin Biopsies**

	1988 (n=125)	1993 (n=125)	1998 (n=125)	2003 (n=125)	Total (N=500)
Trimmed mean of shave biopsy volume, mm <sup>3</sup>	65.00	38.89	35.58	33.90	37.67

Cutis. 2005 Nov;76(5):335-9.




**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

28



**STANDARDIZATION**  
IN CONTINUOUS IMPROVEMENT

 **PennState Health**  
Milton S. Hershey Medical Center


**Dermatology**

29

## Tips for Preventing Missing Specimens

- Apply Gentian violet ink to the patient prior to biopsy
- **Check the bottle for a specimen before leaving the room**
- Verbal call-out and/or written documentation by two people
- “**Small specimen**” stickers
- Placing specimen immediately into contain

J Am Acad Dermatol. 2013 Jan;68(1):53-6.  
Am J Dermatopathol. 2016; 38(7):510-512.

 **PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

30

## What we are doing at Penn State...

- Nursing staff and physician confirm patient label correct
- **Verbal and Visual** confirmation of specimen in the cup
- Sticker box checked



- Specimen log book
  - 2 nursing staff members confirm “specimen in the cup” and log



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

31

## Take Home Points

- Biopsy photograph is paramount – have a SOP for your practice
- Verbal and visual confirmation of specimen in the cup in patient room



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**

32



**Thank you!**

kken@pennstatehealth.psu.edu



**PennState Health**  
Milton S. Hershey Medical Center

**Dermatology**