WOUND PHOTODOCUMENTATION MORE THAN POINT AND CLICK

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OVERVIEW AND OBJECTIVES

Explain legal issues including privacy requirements, HIPAA, de-identification, and patients’ rights

Discuss overcoming imaging/photographic techniques pitfalls likely to be encountered when taking a photograph

Discuss safeguarding and documentation using wound images/photographs

PHOTODOCUMENTATION

Risk Management - Two Fold

- Monitor patient care
  - Demonstration of skin or wounds imported to the facility
  - Establishes a pattern of change in the resident’s record
  - Corroborates narrative descriptions
  - Validates the PoC and tracks wound progress

- Mitigates liability concerns
  - Preservation of detail
  - Proof of fact beyond reasonable doubt
**CHALLENGES**

*Difficult Family*
- Internet
- “Watch out for the family”
- Guilt, Fear, Anger
- Do not understand, interpret information

*Litigation*
- Negative public image/bad publicity
- Large damage awards
- Increased interest by plaintiff’s attorneys – recovery of attorneys’ fees and cost
- Investigations by federal and state survey agencies provided

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**PHOTODOCUMENTATION**

*Photographs, Electronic or Digital Images*
- Usage
  - Education (conferences)
  - Publication (textbooks and journals)
  - Treatment (objective way of comparing progression of the wound over time)
- Quality photodocumentation
  - Allows defense attorneys to demonstrate clinical progression
  - Educates a jury on difficult-to-treat ulcers
  - States differ regarding their stance on the admissibility of photographs in court
PHOTODOCUMENTATION

National Pressure Ulcer Advisory Panel (NPUAP)

Photography may offer a more accurate means for assessment of wound dimensions and wound base characteristics over time.

Rates of healing and therefore measures of therapeutic efficacy, are more readily appreciated when the data are held in a visual format.

A serial visual record verifying attention to the problem and mitigates liability concerns.

PHOTODOCUMENTATION

Frequency Criteria

- Initial assessment
- Weekly – until treatment is complete
- Significant changes
- Patient has undergone a procedure that has significantly altered the appearance or condition of the wound
- A change in one or both measurement axes due to a significant change in wound shape from the initial photograph
- Clinically necessary
- End point (closure)
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International Association for Identification (IAI)

- Forensic photography or imaging
- Electronic digital imaging
- Scientifically valid and proven technology for recording, enhancing and printing images
- The quality and reliability of an electronic or digital image is dependent on:
  - Equipment technical specifications
  - Quality control procedures
  - Training and ability of the photographer or imaging specialist

Photographs, Electronic or Digital Images

- Double edge sword
- Guidelines or protocols
  - Compliant with local laws, regulations and standards
  - Review and edit as needed or at regular intervals
- Legal counsel
  - Review photographic policy
PHOTODOCUMENTATION

Guideline

- Informed Consent
- Ownership rights
- Allowed access to view photographs or obtain copies
- Stored in a secure manner that will protect resident privacy
- Retained for the time period required by law or as outlined in policy or guideline
- Photographs possible identifying the patient may be released and/or used outside the institution only upon written authorization from the patient or legal surrogate

- Written Authorization
  - Filed as designated by the facility
  - A new authorization form should be signed for each new series of photographs taken by individuals other than those named in prior authorizations
  - The authorization for photography remains valid unless the resident or legal proxy withdraws or restricts the authorization

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**HIPAA Guidelines**

- Respect the rights and dignity of the resident or patient
- De-identify information
  - To the fullest extent possible before information is used or disclosed

**Identifiers**

- Name
- Date of birth
- Telephone number
- Fax number
- Email address
- Social Security Number
- Medical record number
- Account number
- Driver’s license number
- Credit card number
- Names of relatives
- Name of employer
- Health plan beneficiary
- Vehicle or other device identifiers
- URL
- IP address
- Finger or voice prints (biometrics)
- Full face photographs

**PHOTODOCUMENTATION**

**Chain of Trust Agreement**

- Electronic or digital images
  - Accurate and not modified or altered
  - Accuracy and band integrity of the photographs or image may be questioned
- No retouching for treatment occurred
- Security certificates and specialized programs to check for manipulation
- Working copy
PHOTODOCUMENTATION

Photographic Evidence

- Digital photography
  - Hard to distinguish a copy from the original

Encryption

- “Digital signature” attached to a file, to prevent alteration
  - Verification that the data has not changed since the attachment was generated
  - Verification extends to cover digital copies

Authentication

- A witness qualified to testify that a photograph or image accurately portrays a wound familiar to the witness
  - Guards against outright fraud
  - Chain of custody provides additional insurance

PHOTODOCUMENTATION

Storage

- Data storage
  - This facilitates storage, editing and viewing of the images on a viewing device

- “Digital film”
  - Burned onto a non-rewriteable CD-ROM
  - Secured server
  - Digitally encoded and stored
  - Can be transferred to a computer for printing
  - May be stored in the medical record when possible to prevent alterations or as facility designates
  - Policy or guideline
PHOTODOCUMENTATION

Storage
- Theft
- Corruption of original data
  - Accidental - magnetic disc placed near a powerful magnetic field (monitor)
  - Intentional - software packages which allow the user to remove elements from an image
  - Fraudulent - offense of deliberately deceiving another in order to damage them

PHOTODOCUMENTATION

Computer Forensics
- Saved data
  - Any data that is normally accessible on a hard drive
  - Documents, images, internet logs, program files
- Meta data
  - Data about data or information about information
  - When a file was created, when it was last modified and when it was last accessed
- Deleted data
  - Requires special software or special methods to retrieve from the hard drive
CAMERA SYSTEM

**Do Your Homework**
- Ease of use
- Digital camera
  - Allow user to review the photograph as soon as it is taken
- Costs
- No cell phone photography
  - Confidentiality and security risks

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**CAMERA SYSTEM**

**Capabilities**
- Easy to use and require minimal training
- Offer accurate color balance
- Provide automatic exposure
- Have a built-in flash
  - Quick recharge (flash recharge within 2 - 3 seconds)
- ≥5.0 megapixels
- 3x optical zoom to ensure top-quality images
**CAMERA SYSTEM**

*Read the Manual*
- Parts of the camera
- Operations
- Basic Photography

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**CAMERA SYSTEM**

*Photomacrography*
- Macro mode
- Press the multi selector
- Flower
- Multi selector to choose ON
- Press OK
- Autofocus mode
- Full-time AF
- Flash mode
CAMERA SYSTEM

Resolution
- Resolution to meet your needs
  - Dependent on the initial scanning resolution
  - Dots, or pixels as "dpi," (dots per inch)
  - One megapixel = one million pixels
- Increased resolution
  - Captures greater detail
  - Enlarge to a greater size without loss of print quality

Macrophotograph

PHOTOGRAPHY

Guidelines
- Digital photograph
- Naming convention, identification, number, date and scale in the image
- Use the same digital camera for successive images
- Have the wound in the same relative position as previous images
- Image resolution settings on the digital camera
- Light source, intensity and angle
- Camera angle, distance, rotation and height from the wound
- Choose either pre or post debridement for all images in a sequence
- Select the same magnification for the digital camera lens ("zoom")
PHOTOGRAPHY

"Tricks of the Trade"
- Measuring scales
- Flashlights
- Chain
- "Dot"

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PHOTOGRAPHY

Cleansing
- Tissues
  - Photographed after cleansing
  - May photograph prior to cleaning if there is a reason to do so or if there is a characteristic of particular interest
  - Minimize any misinterpretation

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Debridement
- Photograph
  - Before and after procedure
  AOIs

PHOTOGRAPHY

- Measurements
  - Taken in a consistent manner
  - Accurate and repeatable
  - Percent of closure

- True depth
  - Cannot be measured if debris or necrotic material cover the ulcer

- Ulcer measurements
  - Areas of Interest (AOIs)
PHOTOGRAPHY

Background

- Use blue or green background
- Avoid white or yellow background
  - Reflects too much light and changes skin color
- Avoid unnecessary body exposure
- Familiar objects
  - Watches, bracelets etc. should not be near the wound area to be imaged
- Clean linen
  - Used to cover unnecessary body areas

Photographing the Wound

- Be aware
  - Camera strap hanging in front of the lens or flash
  - May show up as a shadow or obstruction in the photograph
- Photographing the wound
  - Straight on (level) provides the best overall view of the surface and extent of the wound
  - Repositioning the camera slightly will provide better depth and texture to the ulcer
PHOTOGRAPHY

**Measurement Scale**
- Demonstrate intra-observer and inter-observer reliability

**Inclusion**
- Resident Identification
- Ulcer location
- Date taken
- Time (optional)
- Visible parameters for comparison

**Information must be legible and readable**

**HIPAA Privacy and Security**

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PHOTOGRAPHY

**Complete Set**
- **Overview photograph**
  - May or may not use measuring scale
- **Mid range photograph**
  - Show relevant objects and immediate surroundings
- **Close-up photograph**
  - Measuring scale
  - Document detail

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PHOTOGRAPHY

Serial Photography

- Permanent visual record
- Verifies staff attention to a problem
- Show physical dimensions and tissue types at each assessment
- Provides educational reinforcement concerning ulcer progression
  - Ability to improve the quality of care if progress has plateaued
- Enhanced communication
  - Health care professional
  - Resident
  - Legal proxy
  - Family member

PHOTOGRAPHY

Ulcer Characteristics

- Location
- Size
- Sinus tract
- Tunneling
- Undermining
- Exudate
- Necrotic tissue
- Granulation tissue
- Epithelialization

Periulcer Characteristics

- Ulcer edge
- Edema
- Erythema
- Induration
- Maceration
- Desiccation
- Callous formation
- Hair distribution
PHOTOGRAPHY

Positioning and Distance
- Place the camera at the same distance
- Differences can create the impression that the size of the ulcer has changed when it has not
- Camera angle
  - In relation to the ulcer
  - May affect the precision of the photographic measurement

Composition
- Fill the frame
  - Center on the wound
  - Eliminate unwanted background
- Shoot the appearance of the wound
  - Not the dressings or the objects that may be part of the photograph
PHOTOGRAPHY

Composition

Points of interest or reference
- In the wound bed or perulcer area
- Noted in the documentation

Ungloved hands
- Not be visible in the photograph
- Open wound

PHOTOGRAPHY

Zooming

Focus on a Area of Interest (AoI)
- Closest distance at which the camera can focus
- Varies depending on the zoom position
- Permits a more reliable comparison of healing over time
PHOTOGRAPHY

“Shutter bug”

- Pressing down the shutter release
  - Does not mean that the image observed will be captured just the way
  - Not WYSIWYG
  - Do not lift the camera to the eye and immediately hit the shutter in one jerking movement

PHOTOGRAPHY

Pre-focusing

- Frame the image
- Press the shutter release down half way
- The camera sets focus and exposure (shutter speed and aperture value)
- Focus and exposure remain locked while the shutter-release button is pressed halfway
- Continue to hold down the shutter release half way down until the moment the image capture
- Then press the shutter the rest of the way
PHOTOGRAPHY

Take at least two photographs (three is preferred)

Do a quick preview to assess the quality of the image
- Allows for image errors and permits selection of the best exposure

PHOTOGRAPHY

Photographing the Wound

Relax
- Hold the camera in a natural way

Do not cover the flash with a finger

Hold the camera steady before, during and after taking the image
- Shaking while taking the photo causes the picture to be blurry
- Holding your breath when shooting the image will decrease diaphragmatic movement, eliminating unwanted up and down motion
PHOTOGRAPHY

**Swelling (edema)**
- Exhibit a strong reflection
- Minimize reflection
  - Turn off flash if possible
- 30° to the wound plane
  - Reduce reflections

**Circumferential**
- Multiple planes
- Photograph from same the perspective
- Multiple photographs

PHOTOGRAPHY

- Back-lighting
- Overexposure
- Exposure
- Flash

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PHOTOGRAPHY

In Summary

- Consent and authorization
- Use the same digital camera for successive images
- Use the same image resolution settings on the digital camera
- Use the same light source, intensity
- Have the camera at the same angle, distance, rotation and height from the ulcer
- Select the same magnification for the digital camera lens ("zoom")
- Have the wound in the same relative position as previous images
- Use reference markers to achieve consistency (resident code, date, scale)
- Choose pre or post debridement for all images in a sequence
- Choose image archive method/security

American Professional Wound Care Association. Proposed APWCA photographic guidelines for wounds

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REFERENCES


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Stanford Hospital and Clinics, Medical Staff UPDATE online, 2003, 27:5.