Wound Photography

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Wound photography is a complex topic, consent, storage, privacy, as well as the actual taking of the photo all need to be considered. In brief, the main points for us to remember are:
- Ensure consent
- Consider privacy and dignity
- Have something in the photo to use as a scale reference
- Take a clear photo!
- Do not use personal phones or anything that is not secured
- Date and sign photos just like all other documentation
- Ensure the camera does not become an object for wound contamination
- Ensure safe storage for the images

Ethical Considerations

Ensure the patient has provided consent for the images to be taken. The lowest form of consent is for the image to be taken for the use of managing that wound within the context of the wound service. This is often verbal and documented within the patient notes. However, if it is anticipated that the images are to be used in education or publication, written consent is required[1]. This may be a separate consent document or the organization may have a generic photographic consent as part of it's admissions paperwork or contract of service for the health care organization[2]. Ensure you know what is used by your organization.

To protect the patient's privacy use coded information within the photograph, ensure there are no faces or marks that would identify the individual. Use things like towels or blueys to cover identifying features and also to frame the wound area[1].

A stand-alone camera and the organisation's secure computer network are the most secure way to take and store an image. Cameras and mobile devices that are connected directly to the Internet are inherently unsecure and there is an un-quantified risk that the image will end up in a public location. The photo at the top of the next page is from the Internet, from a site called "Documenting Reality", which has the slogan "Your Source For Death Pictures and

Death Video". Do you think this person, or their legal guardian/representative, gave consent for this photo to be published in this manner? How might this photo, very likely taken in a hospital, make its way to the Internet? Before taking any photos, confirm with your organization the policy for gaining consent and taking photos on personal devices.

Where possible, also consider the person's dignity. Cover genitalia and if the wound is on the genitals, decide if the photo is really necessary for the management of the wound[3].

Technical Considerations

These are items to consider when preparing to take, and taking, the photo[1, 2].
- Clean the wound and the area prior to taking a photo. If the wound is to be Ensure there is an object for scale reference within the photo (like a ruler)
- Use lighting to ensure the best representation of colours and depth (shadows) within the photo. Direct flash can cause shiney/white patches to appear within the wound or shadows to hide the wound base.
- Position the patient to view the wound clearly without discomfort to the patient
- Keep all of the wound in focus
- Consider taking multiple photos: a wound close-up with measurement, a photo including the periwound skin, and/or a regional photo
- Frame the wound with a single colour, if possible medium blue, to minimize contrast and distractions

The photos below are of the same wound model taken under different lighting conditions. It shows the impact of light on how the wound looks in a photo.

Normal Room Lighting-No Flash	Normal Room Lighting-Flash	Natural Light
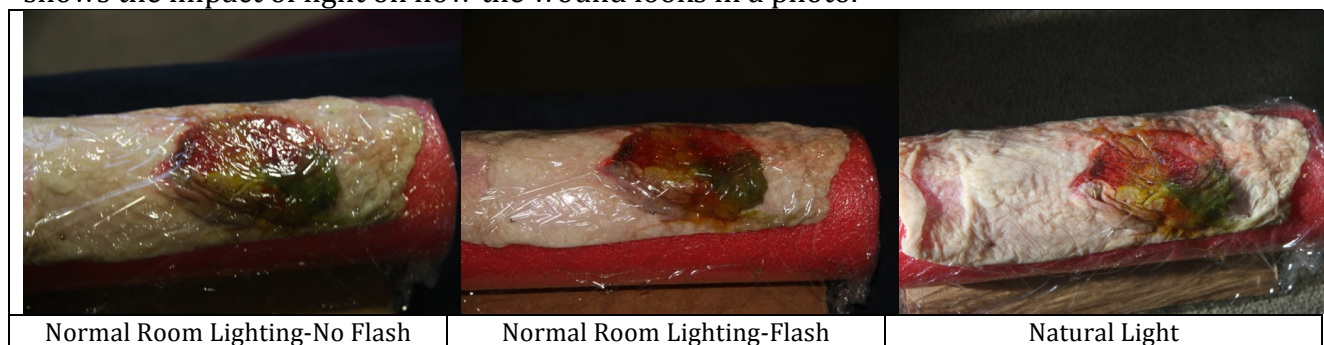
Other Considerations

Image sizes[2] – modern cameras promote that they can take photos in up to 24 megapixels. This means that the file size of the original photo is up to 72 megabytes per photo. To put this in perspective, you can fit less than 10 of these photos on a CD, around 55 on a DVD. Your IT guy might start getting upset with you if you're taking maximum definition photos and storing them on the organisation's server (which is backed up daily, effectively doubling, or more, the space used). Strike a balance between definition required (ie – how far you can zoom in and it's still clear) with smaller file size. So, for example, a photo taken with a 3 megapixel setting (or an old 3 megapixel camera!) will take a photo which will fill (and be a little bigger than)

your monitor which is set to 1920x1024. If you're screen is running at an older setting, like 1024x768, the image will be too big and you'll have to scroll around to see it. I find that 3 megapixels is sufficient for the wound detail I require and also creates files that are around 1 megabyte each.

Infection control[2, 4] – The camera is a fomite, just like a stethoscope, phone, or any other object that can come into contact either directly or indirectly with the patient. As such, you need to be very clear about how you manage infection control with this device. I personally wash mine with alcohol wipes or Tuffies after every use, however this has led to a very short life-span for things like moving parts (lens covers and extending lenses) and has occasionally gotten into the buttons causing some irregular results!

Time Series[2] – By taking weekly (or other regular interval) photos we can produce a good time-series of photos showing changes in the wound. The best results will be when the photo is taken from the same angle, in the same lighting and from the same distance. This isn't always going to be possible, so it is important to always have a ruler and it may also help to annotate the photo with an orientation marker (such as 'head this way -->').

Appendix A – Wound Photography Protocol Example

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Wound Photography Protocol

Purpose of Document

To standardise the methodology required for taking photographic images of wounds; allowing for consistent clinical images to be used for progressive assessment.

Image Requirements

Lighting

Wherever possible, use natural light, avoid extremes of light or dark, minimise shadows and **avoid using flash** to accurately capture skin tone and other aspects of the wound.

Background

A white or pale, neutral background should be used for the photograph. Avoid bright or patterned backgrounds and remove anything distracting such as dressing products or equipment.

Technique

To avoid image distortion it is best to shoot at right angles or square to the wound.

Additionally, to allow the viewer to identify the wound in context an initial photograph from a distance, showing the body part, is recommended.

The close up photo should be such that the wound fills the frame and the wound margins are captured.

Consistency

To ensure reliability of information these conditions and techniques should be employed consistently for each clinical photograph. If possible a previous photograph may be used to guide light exposure, background, size and positioning of client and camera.

Taking the Image

1. In line with the above principles, prepare the environment and position the client to ensure optimal photo quality.

2. Place close to the wound the disposable tape measure with client's study code number and date recorded on it. Avoid any other identifying information.

3. Take the required number of views of the wound ensuring that the image is clear, the whole wound area and tape measure can be seen and that the top of the wound in the view finder is towards the head.

References:
WoundsWest 2010. Digital Photography in Wound Management. WoundsWest IT Solution - MMeX
American Professional Wound Care Association 2013. Photographic Guidelines. APWCA.

References

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3. Hampton, S., *How and When to Use Antimicrobial Dressings.* Nursing and Residential Care, 2010. **12**(11): p. 522-529.
4. Bradshaw, L.M., M.E. Gergar, and G.A. Holko, *Collaboration in wound photography competency development: a unique approach.* Advances in Skin & Wound Care, 2011. **24**(2): p. 85-92.