IMI National Guidelines
A Guide to Good Practice

Wound Management Photography

These guidelines have been developed by the Institute of Medical Illustrators, in consultation with specialist advisors. They should be considered a guide to good practice, providing a baseline for auditable standards. If necessary, adaptations may be made to take into account your local conditions.

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1. Introduction

As medical illustrators, we are frequently asked to produce photographic documentation of skin conditions, described largely to us as ‘wounds’. Under the blanket terminology of ‘wound’ however, there are numerous wound classifications that are used to further define the wound type, which provide clinicians with more significant clinical information from which to determine a specific care plan for the patient. Photographs of a wound are often requested by clinicians to support the patient care plan by providing a visual aid to monitor wound progression, over a prolonged period of time. The intervals for photography are dependent upon the type of wound. Acute wounds typically progress more quickly and therefore should be photographed at each dressing change. Chronic wounds develop more slowly therefore there is little benefit to photographing this type of wound any more frequently than every 2-4 weeks otherwise evaluation of progress will be made more difficult (local guidelines for frequency of photography should be followed). It is important however, to photograph a wound if any significant changes occur as this may have implications upon the course of treatment.

Although there are many types of wounds, some of those that medical illustrators may commonly be asked to photograph can include;

- **Ulcer** - an open sore on an external or internal surface of the body, caused by a break in the skin or mucous membrane. Ulcers range from small, painful sores in the mouth (canker sores) to pressure sores, diabetic foot ulcers, corneal ulcers and serious lesions of the stomach (gastric ulcers).

- **Surgical wound** – a cut or incision created during a surgical procedure in order to treat a condition.

- **Abrasion** – also referred to as a scrape or a graze. An abrasion is a shearing or friction injury that results in a scraping or rubbing away of the outermost layers of skin.

- **Sinus wound** – a tract to the surface of the skin from an abscess or some sort of irritant material or foreign body (eg. sutures) which becomes infected. Sinus tracts can occur in various conditions including hidradenitis suppurativa (a skin condition that causes abscesses and scarring, generally affecting the groin, armpits, buttocks and beneath the breasts), pressure ulcers, abdominal surgery in the morbidly obese and pilonidal disease.
• Bite wound – an injury inflicted by the teeth of a human or animal, ranging from superficial scratches to puncture wounds, crush injuries, major tears and degloving. Human bites can be separated further into actual bites and clenched fist injuries (sustained when a clenched fist hits a person’s teeth).

• Laceration – a wound that is produced by the tearing or rupturing of soft body tissue (internal or external). A laceration is usually irregular and jagged and is often contaminated with bacteria and debris from the object that caused the injury.

• Blister – a thin walled separation of tissue caused by thermal injury, friction damage or acute inflammatory reactions. Blisters may contain clear fluid or fluid of brown/black discolouration indicating haemorrhage.

• Burn – traumatic injury to the skin or other tissues (muscles, tendons or bone) primarily caused by thermal or other acute exposures. Burns occur when some or all of the cells in the skin or other tissues are destroyed by heat, electrical discharge, friction, chemicals, or radiation.

• Skin graft – A graft is biological tissue which is removed from one part of the body and then applied to another part of the same body. The graft requires adequate blood supply from the new recipient site in order to survive.

The IMI National Guidelines for Wound Management have been prepared for use by professional medical illustrators and other healthcare professionals involved in the photography and treatment of wounds. The aim of the guidelines is to provide those involved in the capture of such images, with relevant information relating to the subject, as well as highlighting issues (technical considerations, preparing for photography, standardisation, photography carried out by other healthcare professionals etc.) to consider when photographing patients for the purpose of wound management. It may also be used to assist individuals to devise their own departmental standard operating procedure for wound photography.

The guidelines have been produced by the careful collation of published guidance and recommendations for best practice from trusted organisations including the National Institute for Health and Care Excellence (NICE), the National Pressure Ulcer Advisory Panel and the Royal College of Paediatrics and Child Health. The guidelines will not provide a recommended
standardised set of clinical views for the photography of wounds as this will differ depending on
the type of wound being photographed, the anatomical location of the wound and the requesting
specialty (eg. Tissue Viability, Plastic Surgery, Ophthalmology). Medical illustrators are advised to
adhere to relevant IMI National Guidelines or the West Midlands Clinical Photographic Handbook
for recommended anatomical positioning where appropriate.

2. How and why are wounds assessed?

Patients presenting with any type of wound will normally have an initial assessment by a clinician
before a treatment plan is put in place. The assessment is vital to ensure that the wound is
properly and thoroughly examined so that a realistic treatment plan can be devised and
appropriate treatment provided. As part of the assessment, clinical notes will be made of all
significant features or physical characteristics of the wound, including the cause (or suspected
cause) of the wound, its size and anatomical location, whether the wound is acute or chronic, any
presenting symptoms and the predominant tissue types present at the wound bed. The four tissue
types that are commonly described in wound assessment are;

- Epithelialising tissue (Fig. 1) - this type of tissue provides a protective layer over the entire
  body. It is a series of tightly-packed cells that provide one or more layers of a natural
dressing for the underlying tissues. A large amount of epithelialising tissue in a wound
  usually means that a wound is healing well.

- Granulating tissue (Fig. 2) – this type of tissue is created when a wound is healing.
  Granulating tissue is normally red or pink due to the number of tiny blood vessels present
  and can be quite lumpy (appearing like small buds). This type of tissue is generally healthy,
  and means the body is working to provide a strong, protective new layer of flesh. Some
  wounds however, may be described as overgranulating or hypergranulating.
  Overgranulation is defined as an excess of granulating tissue, beyond the amount required
  for the wound to heal adequately, which can subsequently lead to infection.

- Sloughy tissue (Fig. 3) – this is a mixture of dead tissue and bacteria that is separating itself
  from the wound site. Most sloughy tissue is white, yellow, green or grey in colour. It is
normally recommend that the tissue that is disconnected from the underlying surface is
removed, before placing an appropriate dressing over the area.

- **Necrotic tissue (eschar)** *(Fig. 4)* – this type of tissue is non-viable (it has no blood-supply and
will not heal with time or treatment). It may be yellow, grey, purple, brown or black and can
have a soft and slimy consistency or be hard and leathery. The presence of necrotic tissue
can delay wound healing, and it may be necessary to surgically remove (debride) the
necrosis in order to encourage healing.

Another important factor in wound assessment and management is to create a record of the
involvement of the different skin layers within the patient’s medical records, so that any changes to
the layers affected can be acted upon if necessary. Skin is made up of a number of different
layers, however the three most commonly referred to are the epidermis, the dermis and the hypodermis (also known as the subcutaneous layer). Within these layers are a network of veins, vessels and nerves, beneath which lie supporting structures made up of muscle and bone (Fig. 5).

Fig. 5. Illustration of skin layers and the underlying structures.

A record of the involvement of the different skin layers is especially significant for wounds such as pressure ulcers which can be categorised or graded, depending upon this factor, as below.

- **Category 1** (Fig. 6) - skin is intact but may be discoloured and warm with oedema. A localised area of non-blanchable redness may be present and is usually situated over a bony prominence.

- **Category 2** (Fig. 7) - presents clinically as an abrasion or blister. Partial thickness skin loss is evident and involves the epidermis and/or dermis.

- **Category 3** (Fig. 8) - may reach but not penetrate the underlying fascia. Full thickness skin loss involving damage to or necrosis of subcutaneous tissue is evident.
• Category 4 (Fig. 9) - with or without full thickness skin loss. Extensive destruction, tissue necrosis, or damage to muscle, bone, or supporting structures may be evident.

Fig. 6. Category 1 pressure ulcer.  
Fig. 7. Category 2 pressure ulcer.  
Fig. 8. Category 3 pressure ulcer.  
Fig. 9. Category 4 pressure ulcer.

Pressure ulcers may also be defined as ‘unstageable’ (whereby the depth is unknown because the base of the ulcer is covered with slough and/or necrotic tissue) (Fig. 10), or as a ‘deep tissue injury’
(an area of discoloured, intact skin or a blood-filled blister with damage to the underlying tissue) (Fig. 11).

Fig. 10. Unstageable pressure ulcer.  Fig. 11. Deep tissue injury.

Recording the size of a wound at first presentation is essential for provision of a baseline guide from which to monitor progress against and to determine whether a wound may be healing, deteriorating or static. Measurements can be taken of a wound’s length, width, depth and volume and there are a number of methods for measuring wounds including:

- **3D scanning** - a wound is scanned and the results downloaded to a computer to provide length, width and depth measurements before volumetric measurements are calculated automatically.

- **Acetate tracing** - the outline of the wound is traced onto an acetate tracing grid with the depth being measured with a probing device. Volumetric measurements are calculated by multiplying length, width, and depth.

- **Ruler method** - the greatest length and width of the wound is measured with a disposable ruler and the depth measured with a probing device. Volumetric measurements are calculated by multiplying length, width and depth.
Whilst no method of measuring a wound has been found to be absolutely accurate, 3D scanning techniques have been found to produce the most reliable results, however their greater costs mean that they are more likely to be reserved for research studies, where a particular treatment is being evaluated. Acetate tracing can also be a useful aid to wound management however, perhaps due to its simplicity and cost-effectiveness, the ruler method of wound measurement is more likely to be selected for the general day-to-day practice of wound management. The most reliable ruler method involves recording the greatest length, head-to-toe and the greatest width, perpendicular to length. Wounds change shape as they heal, and the head-to-toe orientation ensures the length and width points remain constant. The recommended method for measuring depth is to carefully insert a cotton-tipped bud, into the wound area, then grasping it at the wound edge, measure depth of insertion against a ruler. Plastic probes are also available that are pre-marked with cm markings. Like all methods of wound measurement, the ruler method cannot be relied upon to be absolutely accurate, although it does provide a useful aid to indicate any changes.

3. Why might photographs be requested?

The most common reason for requesting clinical photography of a patient’s wound is to provide a record of the natural course of, or impact of treatment on a condition. Photographs are normally taken for the patient’s case notes but may also be requested for legal purposes, whereby it is suspected that the wound has been caused either intentionally, or as a result of neglect (medical illustrators should refer to IMI National Guidelines for Photography of Non-accidental Injuries for specific guidance).

Photographs can be taken to show the patient their wound for reassurance purposes and in order to promote concordance with treatment. They may also be used by community nursing staff for monitoring and assessment within the patient’s home, following discharge from hospital-based care. Community nursing staff may also take their own photographs at times, to monitor wound progression outside of the hospital environment (community staff should seek advice from their Medical Illustration Department to ensure their photographic practice conforms to their individual trust or health board standards – refer to section 9). Photographs may also be supplied directly to the patient to help them to monitor any changes that occur to a wound, after being discharged from hospital. This particular process can have a significant positive impact in the reduction of
patient readmission rates, as early detection of deterioration in the wound can help to reduce the severity of the deterioration overall.

Occasionally, it may be necessary for a patient with a wound to be referred to another specialty, or for medical practitioners to consult with counterparts within other trusts or health boards for diagnostic advice. Photographs may also be taken for remote triage purposes whereby key medical staff (e.g. Tissue Viability Nurses) are based at another hospital site and cannot view the wound in person. In cases such as this, it may be necessary to transfer patient images via email to the requesting clinician, so that patient care can continue wherever they are situated. The act of sharing data (including photographs) for the purpose of remote access by off-site clinicians however, must adhere to local procedures for safe and secure methods of practice. NHSmail is accredited to government official status for the sharing of such information, meaning it meets an information security control criterion that offers a set level of protection against loss or inappropriate access. In England and Scotland, emails can be sent using NHSmail (between two @nhs.net accounts). In Wales, emails can be sent and received securely using @wales.nhs.uk.

For the purpose of safeguarding, a request may be received to transfer patient information outside of the healthcare setting. The following email domains are secure for the receipt of patient email from a secure NHS email;

- Central & Local Government - .gov.uk, .gov.scot, .llyw.cymru or .gov.wales. *
- Police and Criminal Justice - .pnn.police.uk, .scn.gov.uk, .cjsm.net
- Ministry of Defence - .mod.uk

For information on the correct process for transferring information securely, individuals should refer to local policy.

* As of March 2019, the Government Digital Service (GDS) has ceased issuing new gsi-family domains. This means that email domains such as gsi.gov.uk, .gse.gov.uk, .gcsx.gov.uk, .gsx.gov.uk must be replaced with a government domain such as gov.uk, gov.scot, llyw.cymru or gov.wales. Please also note that @orgname.gov.uk is not secure.

4. Technical considerations for clinical photography
There are various technical factors that must be considered so that Medical Illustration Departments can offer a wound photography service, which is beneficial to both the clinician and the patient.

4.1 Photographic equipment

It is essential to have good quality, reliable photographic equipment, which is in a good state of repair. A digital SLR camera of a professional or semi-professional grade is highly recommended. A fixed focal length lens with integral macro facility such as 60mm, 90mm or 100mm is useful for close-up photography of wounds. The ability to photograph subjects at 1:2 magnification is useful to show detail within a wound (or for smaller wounds, to show the entire affected area). A magnification of 1:2 will be possible with most long focal length lenses whereas some will require additional extension tubes (see 4.2 for further information on standardised magnification ratios). A suitable flashgun and ring-flash is also recommended with the option of a flash extension cable for use off-camera to extend the flash range.

The date and time embedded in the camera should be programmed correctly and checked regularly as this information is essential should the resulting photographs be required for legal purposes (this information can be verified by viewing the metadata of the image). Date and time information must be updated on all cameras at the earliest opportunity following an adjustment to the time as a result of ‘Daylight Saving Time’. If photographs are taken with the incorrect time embedded in the metadata, this should be noted within accompanying documentation.

All members of staff who are required to use the camera equipment must be fully trained to do so. Ideally, a camera kit should be available in the studio, ready to use whenever necessary. It is also good practice to keep a camera bag ready, containing all necessary equipment, which can be taken to other wards and clinics at short notice.

Ideally, equipment should be transported in a hard case that can be cleaned regularly to prevent cross-infection between ward/clinics. Some Medical Illustration Departments however, use soft backpacks or shoulder bags. If departments choose to use this type of bag, they should opt for the most wipe-able bag available and one that has the fewest clasps, toggles and zips.
Personal mobile telephones (mobile phones that are not owned by a trust or health board) should never be used to take clinical photographs, as the act involves substantial unacceptable risks to the security and confidentiality of the images, with the potential for legal action to be taken against an individual or organisation, if a patient’s privacy or rights were to be compromised.

4.2 Standardisation

The value of clinical photography in wound management lies predominantly in the ability to achieve repeatable, comparative views over a period of time. Standardisation of working procedures, equipment, lighting, background, viewpoint and magnification is critically important because accurate serial photographs mean that images (and therefore progression or deterioration in the condition of the wound) can be compared objectively throughout a course of treatment. It is highly recommended that Medical Illustration Departments adhere to an agreed set of standardised magnifications for photography of each anatomical area. The West Midlands Clinical Photographic Handbook advises that for adults, the following areas should be photographed according to the Westminster scale of magnification (Fig. 12).

<table>
<thead>
<tr>
<th>Anatomical area</th>
<th>Magnification</th>
</tr>
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<tbody>
<tr>
<td>Head</td>
<td>1:10</td>
</tr>
<tr>
<td>Eyes</td>
<td>1:4</td>
</tr>
<tr>
<td>Ear</td>
<td>1:4</td>
</tr>
<tr>
<td>Nose &amp; forehead</td>
<td>1:4</td>
</tr>
<tr>
<td>Mouth &amp; tongue</td>
<td>1:2</td>
</tr>
<tr>
<td>Teeth</td>
<td>1:2</td>
</tr>
<tr>
<td>Hands</td>
<td>1:10</td>
</tr>
<tr>
<td>Fingers</td>
<td>1:1 (&amp; 1:4 for all four fingers together)</td>
</tr>
<tr>
<td>Arms</td>
<td>1:15</td>
</tr>
<tr>
<td>Breasts</td>
<td>1:15</td>
</tr>
<tr>
<td>Torso &amp; abdomen</td>
<td>1:25</td>
</tr>
<tr>
<td>Genitalia</td>
<td>1:4</td>
</tr>
<tr>
<td>Legs</td>
<td>1:25</td>
</tr>
<tr>
<td>Feet</td>
<td>1:10</td>
</tr>
</tbody>
</table>

Fig. 12. Westminster scale of magnification.
The Westminster scale of magnification applies to a ‘full frame’ imaging chip. Macro lenses have a ratio scale on the lens barrel that relates to ‘full frame’ cameras. As the imaging chip in many digital cameras is smaller than full frame (resulting in a cropping effect when compared with full frame), calculations need to be made to determine an alternative magnification ratio that will provide comparable results to those acquired with a full frame camera. It can be helpful to mark the alternative ratio points on the barrel of the lens but it is also worth noting that one manufacturer may equip different camera bodies within their range with different size chips, which would affect the magnification ratio again.

Occasionally it may be necessary to deviate from set magnification ratios in order to competently photograph larger (bariatric) or smaller (adolescent) patients. If the magnification used is different from the standard ratio, this should be noted on the photographic request form (or other documentation) so that it may be repeated as changes in the wound occur.

### 4.3 Lighting

It is important that the quantity and direction of light falling upon the subject is carefully controlled. The photographic studio is the ideal location for clinical photography, as it provides optimum lighting capabilities. Alternatively, when patient photography must be carried out on hospital wards and in clinic areas, the placement of a portable electronic flash over the lens or as close to the lens as possible will create sufficient even, repeatable and effective lighting, whilst providing control over unwanted shadows. Ideally, for patients that are seen multiple times for photography, it is best for standardisation purposes to use the same lighting source each time, however this may not always be possible for patients that are photographed in areas such as the operating theatre or in the community. Medical illustrators should make careful notes regarding any non-standard lighting techniques, in order to enable repeat photographs to be taken.

### 4.4 Background

Backgrounds should always be plain and neutral, so as not to distract from the clinical area. In the studio environment, a permanent black or white background is a common feature however for photography on wards and in clinics, a transportable photo background should be made available so that obtrusive elements around the subject can be omitted/minimised. For bed-bound patients or patients/conditions that aren’t suitable for positioning in front of a background, it is
recommended that a disposable sterile sheet (ideally blue or green) is used. The sheet should be placed underneath or very close to the patient in order to minimise any shadows. The sterile sheet can also be used to preserve the patient’s dignity if it is thought that any sensitive areas may be inadvertently photographed (Fig. 13). If sterile sheets are not available or the ward/clinic are unable to supply them for the purpose of photography (due to high purchase costs), then disposable paper roll (usually pale blue or white) or plain white bed sheets are a suitable alternative and are normally readily available, although care must be taken to minimise any lighting flare.

![Figure 13. Large abdominal wound with sterile sheets placed around the wound area to avoid photography of sensitive areas and to minimise surrounding distraction.](image)

### 4.5 Colour control

True-to-life colour reproduction is an important factor in wound management photography, and it can be useful at the capture stage to include a calibrated colour chart or neutral grey card in the frame (where practicable), or at the beginning of a series of images from which to set the white balance. Starting with an accurate white balance ensures the colours captured are true. It also provides a consistent reference point for minor adjustments to the photograph at the editing stage.

At the editing stage, monitor calibration is the first step to controlling colour in a digital workflow. Monitor calibration serves two main purposes;
a) it permits photographers to edit images with confidence because the colours displayed on the screen are an accurate reflection of those captured on the digital image file.

b) it can help to ensure that the colours seen on screen closely match output (if prints are to be produced). There are a number of ways that this can be achieved and monitors and printers should be calibrated regularly to ensure consistency.

4.1 Measurement scales

The L-shaped ABFO#2 scale is ideal for use in wound photography (providing the wound presents no significant risk of infection) and in particular, for photography of suspected non-accidental injuries as it was designed specifically for legal purposes, providing crucial measurements in both horizontal and vertical directions. The scale should be held in place on the same plane as the wound, with the wound being photographed from a 90° angle. It should be held in place by the corner, with care being taken to ensure the circular marking is visible, to demonstrate that correct perspective has been achieved (Fig. 14 and 15).

![Correct positioning resulting in no distortion](image1.jpg)

![Incorrect positioning resulting in angular distortion](image2.jpg)
Care must be taken not to apply excessive amounts of pressure to the area with the scale, as this may distort the appearance of the wound. The L-shaped ABFO#2 scale is reusable and as such, must be disinfected according to local protocol, after each episode of patient use.

Disposable paper scales may be used where there is a significant risk of infection. Because of their flexibility however, they have a tendency to curve or distort with the contours of the skin and are therefore of limited value (because of this, paper measurement scales should not be used in photographs of suspected non-accidental injuries as the measurements provided are less reliable and are therefore unsuitable for use in any subsequent legal proceedings). They can however, be useful to give an impression of the extent of a wound, particularly over large curved surfaces.

**4.2 Using a mirror**

If a wound is located in an awkward position or if the patient is unable to achieve a suitable position for photography, it may be helpful to incorporate the use of a mirror for photography. A mirror specifically designed for use during photography or a large dental mirror can be used. The mirror should be positioned so that the photographer is able to see the wound clearly and without
any obstruction in the reflection (Fig. 20 and 21). The photographer can then photograph the reflection (resulting images should be reversed so that the wound is seen normally). The mirror should be cleaned in accordance with local infection control guidelines before it is put into use and once again, when the photographic session has ended.

Fig. 20. Mirror positioned on flat surface beneath foot so photographer has clear and unobstructed view of sole. Fig. 21. Resulting image has been reversed so that view is seen normally.

5. Gaining consent to clinical photography

Valid consent to treatment is absolutely central to all forms of healthcare. Not only do patients have a right to know exactly what will happen to them whilst under our care but failure to obtain proper consent, where a patient subsequently suffers harm in some way, can lead to claim of negligence against both the individual and the organisation. It is therefore vital that all staff involved in seeking consent from patients for any form of treatment, understand what is involved, who may seek consent, what ‘informed consent’ means, how to discuss consent with patients, and what needs to be recorded or written in patients notes. Medical Illustrators should be aware that there are special rules which apply in the case of young people and children, and for adults who lack capacity. For clarification of issues relating to consent with regards to Medical Illustration, please refer to IMI National Guidelines for Consent in Clinical Photography. For specific
information relating to consent to photograph a patient with suspected non-accidental injuries, please refer to IMI National Guidelines *Photography of Non-accidental Injuries*.

### 6. Receiving a request for photography

At the booking stage, it is important to establish key details regarding the patient. Notes should be made of the nurse/health professional responsible for looking after the patient at the time of photography. The exact location of the patient within the hospital should be noted as well as an agreement made of the time that photographs will be taken. Whilst it is not always possible to stick stringently to times, due to additional unforeseen and often urgent requests for photography that are usually dealt with straight away (photography in the emergency department or the operating theatre etc.) as well as possible limited staffing at times, it is best practice to attend at the agreed time, especially if dressings are being removed in preparation for photography. Delaying the photography session may pose an infection risk to the wound, which may be exposed waiting for the photographer to attend. It could also add to the patient’s discomfort as they may be positioned specifically for photography (e.g. lying on a side to expose the sacrum). Ideally, photographs should be arranged to be taken at a time that coincides with a dressing change. This will lessen the impact upon the patient and nursing staff whilst also potentially reducing costs associated with additional dressing changes.

Some patients will be identified as requiring special infection control precautions therefore any specific access restrictions should be noted. If the patient has been isolated in order to limit the spread of an infectious disease, it is useful to be aware of this beforehand. Precautions such as hand washing before and after patient contact, wearing the correct PPE and leaving any unnecessary equipment outside of the patient’s room are standard infection control procedures. Medical illustrators should be aware of local infection control policies and should ensure they are strictly followed.

It may be beneficial to know whether the patient is situated in a bed or chair before attending ward/clinic (the location of some wounds may make it difficult for photography to take place whilst seated in a chair). If the patient is fairly mobile, this may not be problematic, however if they have limited mobility, preparations may need to be made prior to photography.
It may be helpful to have a list of questions pre-prepared for use when taking requests for wound photography from wards or clinics. The list can be used by the photographer to prepare in advance for the photography session (Fig. 22).

| Ward/department patient is located: | ………………………………………… |
| Patient’s name: | ………………………………………………… |
| Patient’s bed number: | ……………………………………………… |
| What is to be photographed: | ……………………………………………… |
| Is request form filled out: | ……………………………………………… |
| Does patient have dressings on: | ……………………………………………… |
| What is best date & time for photos: | ……………………………………………… |
| **(Are dressings being removed specifically for photography or could photography coincide with a dressing change)** |
| Patient’s named nurse: | ……………………………………………… |
| Name of person calling: | ……………………………………………… |
| Tel. no: | ……………………………………………… |

*Fig. 22. Suggested checklist for taking requests for wound photography from wards or clinics.*

Following a request for wound photography, checks should be carried out to see whether the patient has had previous photography. If they have, effort should be made to repeat the views that were taken previously so that the images have comparative value. The camera settings may be checked by viewing the metadata of the images.

A review of the camera bag should be made to ensure that all necessary camera equipment and supporting accessories are contained and in full working order.

### 6.1 Attending the ward/department to photograph a patient

Upon attending the ward, the patient’s named nurse (or an alternative member of staff familiar with the photographic request) should be sought. Ideally they should be present whilst photographs are taken, to provide any assistance where necessary. The photographic request card should be checked for all pertinent information including the patient’s details, the requesting clinician’s details and the specific area to be photographed. Listing the patient’s clinical diagnosis alone may be insufficient as this may not provide specific detail relating to the particular area of interest for
7. The photographic session

7.1 Preparing to photograph the patient

All necessary camera equipment and supporting accessories such as measurement scales, measuring probe and background should be prepared and ready to use before the patient is placed into position for photography. Extraneous clothing should be removed by the patient (or healthcare staff). Often wound photography can involve the sacral and genital areas and it is preferable to remove briefs, however the patient’s dignity should not be compromised.

The wound and the surrounding area (particularly the perineum) should be cleaned before photography, otherwise there may be confusion as to the condition and extent of the wound. Occasionally, for teaching purposes, wounds are photographed before and after cleaning or debridement. This is typical in the recording of burns, which may be photographed before and after the blisters are removed. All effort should be made to ensure images taken before and after cleaning are comparable (Fig. 23 and 24).

7.2 Manual handling

Fig. 23. Surgical site of previous keratotic lesion – before debridement.

Fig. 24. Surgical site of previous keratotic lesion - after debridement. Wound margins are more evident.
Due to the physical demands of many healthcare work-related activities, NHS staff are at a particularly high risk of experiencing musculoskeletal injuries. When carrying out any type of clinical photography, it is essential to minimise the risk of injury from manual handling tasks and difficult working positions, for all staff involved in the photography session. For patients with little or no significant mobility issues, it is recommended that they are asked to stand/sit/lie in a suitable position so that photography can be achieved without staff members having to compromise their own posture. For patients with mobility issues, it is recommended that they are assisted into a suitable position by ward/clinic staff with specific patient handling training. Any necessary supportive accessories (mirror for photographing heels etc, hoist to elevate bariatric patients) should be used to achieve photography with minimal risk to staff.

7.3 Patient positioning

The positioning of the patient can have a significant impact on the quality of photography achieved. Awkward angles can often be difficult for the end user of the photograph to comprehend (Fig. 25 and 26). With this in mind, clear communication with ward staff regarding positioning and what it is hoped will be achieved, is vital before any movement of the patient occurs.

Fig. 25. Wound to dorsum of left hand. Patient placed hand on hospital bed for photography. Distortion of perspective is evident with the hand sloping backwards, making wound assessment difficult.
For patients with limited mobility, it may be easier to photograph certain anatomical areas with the patient lying on their bed rather than seated in a chair. The heels/posterior aspects of the lower limbs are one particular area that can be easier (and safer from a manual handling point of view for the photographer – see section 7.2 for further information) to photograph if the patient is lying on a bed. If the patient is able to turn onto their side, photography of this area can be easier to achieve (Fig. 27).

7.4 Sequence of photography

The sequence of photography and the images taken of a wound will vary between patients (and will also depend on the type of wound being photographed) although in general, a standard practice for photography should be followed. A location/establishing view of where on the body the wound is situated including a wide area of healthy tissue (which allows for wound growth or retraction) should be taken. Following this, a separate close-up view(s) to show detail within the wound should be taken with a measurement scale included. The same view without a
measurement scale should also be taken to demonstrate that no important detail was concealed by its use (Fig. 28).

![Image of measurement scale and wound](image)

Fig. 28. Recommended sequence of photography.

7.5 Viewpoint and technique

Although it is advisable to check for any previous images the patient has had taken of their wound (and for any relevant notes on the request form) with effort being made to achieve repeat views, it must be noted that patient positioning can be an extremely difficult variable to control, especially for patients with limited or changeable mobility. With this in mind, a good starting point for photography is for the patient to be comfortably positioned in the correct anatomical position (if achievable) with the camera being held perpendicular to the wound.

If the patient has had previous photography and the camera settings and magnifications are known, the desired magnification should be pre-set and the camera moved until the area of interest is sharp. For subjects such as sacral pressure sores that may require staff assistance for patient manual handling, the patient should be rolled on to the same side as previous so that the photograph is comparable, providing the patient is able to do so.

If given a choice, it may be easier to photograph the patient in a lying position as some wounds (particularly those on the buttocks) distort easily and slight movements such as the flexing of a
muscle or a slight change in the patient’s position may significantly alter the appearance of a wound. Additionally, the natural curvature of the patient’s body can be an issue, especially where wounds extend around a limb (e.g. pressure ulcer on the heel or elbow). It may be helpful to photograph such wounds in a ‘relaxed’ position and then again with assistance by nursing staff.

7.6 Recording people present during photography

For patients that present with suspected non-accidental injuries, it is vital to record the details of any chaperones and nursing staff present so that they can be called upon should the images be required for legal purposes.

8. Digital file management

Any digital file processing after photography should follow a strict standard operating procedure (SOP). The SOP may also be used to form an audit trail, which is essential if the images are later required for legal use.

Digital image files should be downloaded from the media card to a computer where they should be uniquely labelled as soon as possible. Information such as job number, date and patient’s hospital number should be recorded as a minimum.

A recommended procedure for the storage of digital image files is to save a RAW unmodified file as a master copy, along with a working copy (jpeg). The files should ideally be stored either on a secure server or uploaded to a suitable image database. The benefit of a digital image database is that it allows clinical photographs to be shared across the health team and accessed by those with the relevant authority and justification to do so, thus aiding clinical management of the wound.

Photographs form part of a patient’s medical records and must therefore be securely logged and stored according to local Case Note Policy. Please refer to IMI National Guidelines Patient Confidentiality and Clinical Illustrative Records for further information.

9. Photographs taken by other healthcare professionals
Medical Illustration Departments will provide superior clinical photography in wound management as they have professionally-qualified staff, specifically trained to carry out this task. It is acknowledged however, that other healthcare professionals may also be involved in recording the occurrence and progression of wounds (although the images would normally be managed post-capture, by the Medical Illustration Department). Medical Illustration Departments should offer advice relating to the purchase of suitable camera equipment for use by other healthcare professionals. Any equipment purchased should be recorded upon an asset register with a responsible, designated person listed to whom the equipment is assigned. This person should sign the asset register upon receipt of the equipment, with a copy of the register being stored by both the Medical Illustration Department and the receiving department.

The Medical Illustration Department should be prepared to offer training and should help to devise an SOP for the entire photographic process. A record of all staff members that have received training should be made, so that work quality can be monitored over time to ensure consistency. Training should be offered regularly to ensure new staff members are aware of the photographic process.

Occasionally, patients might take their own photographs of their wound and doctors or healthcare professionals may feel it would be beneficial to the healthcare plan to have these photographs stored within the patient’s medical records. Whilst the Medical Illustration Department may have no control over the capture process for such images, it is important that there is a system in place whereby the images can be securely received and uploaded to the patient’s record (any upload of such material to the patient record must be done in accordance with local trust policy).

9.1 Camera equipment for other healthcare professionals

A compact digital camera is ideal for wound photography to be carried out by other health professionals. Although available funding may influence the exact choice of make and model, a camera with a zoom of x5 is generally adequate for this type of photography. All photography should be undertaken with the camera’s flash switched on and the white balance set to flash, so that consistency in the colour of the illuminating light is achieved.

10. Conclusion
Clinical photography of a patient’s wound has the potential to provide a significant aid for monitoring and comparison throughout the course of clinical treatment. It can provide an additional, objective assessment of the development of the wound and can even have an impact on the choice of treatment given. Although it cannot be relied upon as a stand-alone assessment tool, owing to the potential variables between each photographic session, its benefits are numerous and clinicians within the healthcare environment would be wise to include its use as a standard part of the patient’s healthcare plan.

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Photographs/Illustrations

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