



PICS Working Group Guidelines on photography

May 2017 Review date May 2020 – check www.fflm.ac.uk for latest update

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Foreword

These guidelines are predominantly intended for healthcare professionals (HCPs) who work in police custody and Sexual Assault Referral Centres (SARCs). As independent practitioners, custody and SARC HCPs face technical, ethical and legal issues beyond those usually faced by clinicians in more conventional settings.

The Photography In Custody and SARCs (PICS) Working Group is a multi-professional agency that was established in October 2015. The guidelines are intended to cover salient features regarding photography that might test the custody or SARC practitioner. It is hoped that they will allow safe and best practice when photographing patients and this may assist in the criminal justice system.

It should also be emphasised that training clinicians in the art of photography is not intended to undermine or displace SOCO/CSI (Scene of Crime Officer/Crime Scene Investigation) units, whose role is one of evidence preservation, integrity, recovery and recording. The guidelines are designed with the intention of raising standards of HCPs who document injuries as part of their daily repertoire.

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1. Key points

- It is advisable that the clinician should complete an approved course in clinical photography prior to undertaking photo-documentation in the custody or SARC environments.
- Photo-documentation of injuries by clinicians can offer great potential benefit to assist patients and the criminal justice system, enhancing and reinforcing written descriptions and hand-drawn body diagrams. The alleged mechanism of injuries must be documented.
- The camera system should be dedicated specifically to such work. A digital SLR (Single Lens Reflex) camera represents the gold standard, though other camera systems (e.g. compact and bridge cameras) are acceptable. Personal cameras and smartphones should be avoided wherever possible and should only be used as a 'last resort' in emergency situations as they may create problems surrounding information governance and audit trails, the photographs may be deemed inadmissible, and the equipment may also be seized as part of an on-going police investigation. Cameras on mobile phone cameras and tablets often have unknown focal lengths which may result in unrecognised lens distortion.
- The camera should be stored securely at all times.
- The camera's internal clock should be adjusted in line with the custody or SARC clock.
- Consent should be obtained, either orally or written, for photo-documentation of injuries. If the patient lacks capacity, photography may be conducted with parental responsibility (in the case of a child), or on the basis of best interests of the patient or of public interest. An audit trail of the integrity of the images should be established thereafter.
- There is no need to embed date and time into the images. If the issue of timing of photography becomes critical, this information is already stored in the images' metadata.
- Consideration should always be given to the need for a chaperone, and professional guidelines should be consulted in this regard.
- Practice shots prior to the patient entering the medical room may help the clinician decide on camera settings for different lighting and room size.
- The clinician should aim for a fast shutter speed, low ISO and high f-value.
- Whenever possible, background 'clutter' should be moved away from the subject. Background sheeting may be employed to allow for a clear backdrop.
- Each injury should be taken with the camera plane at 90° to the skin, to reduce 'angular distortion' of dimensions.
- A 'Three photo principle' of location-photo, close-up, and close-up with scales should be employed with each injury.
- Images should be checked as they are being taken, and repeated if required. In particular, the clinician should check for over and under-exposure, blurring and injury 'cut-off'. Images should not be deleted if they are 'bad' photos.
- If the wound is bloody or dirty, 'before and after' photos should be taken whenever possible, provided consideration is given beforehand to the need for involvement of CSI/SOCO for swabbing, blood spatter analysis, evidence gathering etc. Health and safety policies and procedures should be respected.
- It is good practice to record, in the patient's medical notes, the first and last image numbers of the photos taken. This helps identify the images as belonging to a particular patient, which may be particularly important when photographing several patients in quick succession. 'Head shots' may also be considered, though 'Identifier cards' may be more appropriate with intimate images.
- The images should be downloaded onto a password-protected secure system, e.g. hard drive or non-rewritable CD/DVD ('CD-R' or 'DVD-R') as soon as possible. This is designated the Master Copy. A non-rewritable copy of the Master Copy should also be created as soon as is practical and will be designated as a Working Copy.
- Unadulterated Working Copies should be submitted to the Courts, with a full audit trail of the images being available, if requested. Any alteration of images such as cropping, lightening and contrast enhancement is acceptable, but should be explained at the time of submission of the images and should accompany the Working Copies.
- Legislation surrounding the handling of images should be adhered to.



2. Introduction

Despite the rapid evolution and adoption of digital technology in mainstream society, there has been reluctance by many practitioners to use digital cameras to document clinical findings such as injuries. However photographic images can be immensely valuable in supplementing written descriptions and hand-drawn body diagrams of injuries, and when properly taken, will assist in the justice process.

The Photography In Custody and SARCs (PICS) working group was established by the Faculty of Forensic & Legal Medicine in 2015 to provide guidelines on clinical photography for those clinicians who work within the police custody and SARC (Sexual Assault Referral Centre) environments. It is a multi-professional group, with expertise in clinical forensic medicine, photography, legislation and the care of victims of torture. This document builds on previous work from the National Policing Improvement Agency (dissolved 2013), the Association of Chief Police Officers (replaced in 2015 by the National Police Chiefs' Council, NPCC) and Home Office Guidelines.^{1, 2}

PICS intends that these guidelines will assist in achieving safe and best practice. Consideration is given to the issues of equipment, technique, legal and ethical issues and training in clinical photography. The guidelines will be subject to regular revision as and when dictated by case law, changes in statute, changes in practice and technological developments.

3. Considerations before photography

3.1 Camera, smartphone or tablet?

PICS advises that, whenever possible, a camera that is used for documentation of injuries should be dedicated to such a purpose. The danger of 'mixing business with pleasure' and reaching for a personal phone that also contains images of family and friends cannot be overstated. To allow even the possibility of such images to be seen by family or friends would be wholly inappropriate for the patient's welfare and could be disastrous for the clinician's career. In addition, the risk of patients' images being accidentally uploaded to a worldwide audience in perpetuity to search engines and social media can also not be under-estimated. Therefore, employing a camera that is used purely for professional use is to be recommended.

A digital SLR (Single Lens Reflex) camera is arguably the best option for taking high-quality images. These cameras have changeable lens systems and tend to have more capabilities than compact cameras, bridge cameras, mobile phones or tablets. However, SLRs are technically more difficult to master than the simpler alternatives and the clinician must therefore be confident on the technical aspects of using his or her SLR, otherwise he or she will merely end up with badly-taken photographs on an expensive piece of equipment. Moreover,

SLRs tend to be bulkier and more expensive than their counterparts and this has to be borne in mind if purchasing a new system. Compact and bridge cameras have the distinct advantage of being technically straightforward, easier to learn to use and usually cheaper to purchase.

There may be rare occasions, (e.g. where the first-line camera is not working) where there may be no alternative to using a personal mobile phone or tablet. The clinician and patient should accept that, in such a scenario, there may be issues further down the line in proving the validity of the audit trail from the taking, storage and submission of those images and that the clinician may be forced to submit the phone or tablet as part of the investigation.³ Additionally, cameras on mobile phones and tablets tend to have short focal lengths (e.g. 30 – 50 mm equivalent) and this can produce distortion of sizes in forensic photography.

The camera should be stored securely, preferably under lock and key when not in use. It should not be stored in the clinician's car: aside from the obvious security concerns with leaving a camera in a vehicle, condensation is likely to appear on the camera by the following morning. Moisture is disastrous for the working of a camera and may result in damage to the camera and images.

It is good practice to have the charger stored in the same location as the camera. Rechargeable batteries are preferable to single-use batteries and are economically superior. A 'battery grip' (Fig. 1) is a relatively inexpensive piece of equipment that is available for digital SLRs. It inserts into the base of the camera and allows the system to work from two separate rechargeable batteries, rather than just the one. If the camera uses non-rechargeable batteries, it is worth investing in a spare set of batteries for emergency situations.



Fig. 1 A battery grip allows for an extra battery to be stored.



As different clocks frequently show dissimilar times, it is advisable to adjust the camera's clock in line with the custody or SARC clock, thereby ensuring that the electronic log is comparable to the times stored on the camera's images. There is no need to embed the date and time into the photos: if the timing of the photos becomes an issue, this data can be easily inspected in the photos' metadata (the 'hidden' data contained within the electronic photo file). If dates and time are embedded into an image, they have the disadvantage that they might obscure a part of the wound or a significant anatomical landmark and can also divert the viewer's attention away from the main features of the photo.

It is also worth noting that many digital cameras will not automatically alter their clocks to account for British Summer Time, and the clinician may therefore have to manually alter the camera's clock twice per year. Failure to do so could potentially look embarrassing in statements, and the clinician would have to account for the one hour discrepancy between the electronic log and the time that the photo was taken.

It is important to realise that the camera is 'All or nothing', i.e. if the camera is lost, so are the images. It is therefore advisable to download the images onto a secure system as soon as is practically possible. Remember that accidental pressing of 'Delete' or 'Format' may also result in loss of some or all of the images. (Storage of images will be discussed on page 13).

3.2 Body maps

Although the image from a digital camera is unquestionably superior to that resulting from hard graft with a pen and paper on a traditional body diagram (Fig. 2), PICS would suggest that body diagrams still play a part in supplementing injury documentation, by helping with logging the descriptions of the injuries. There will also be occasions when an injury cannot be captured with a photograph, such as an area of tenderness, or a painful shoulder from being rear-handcuffed, and a body diagram would therefore be essential.

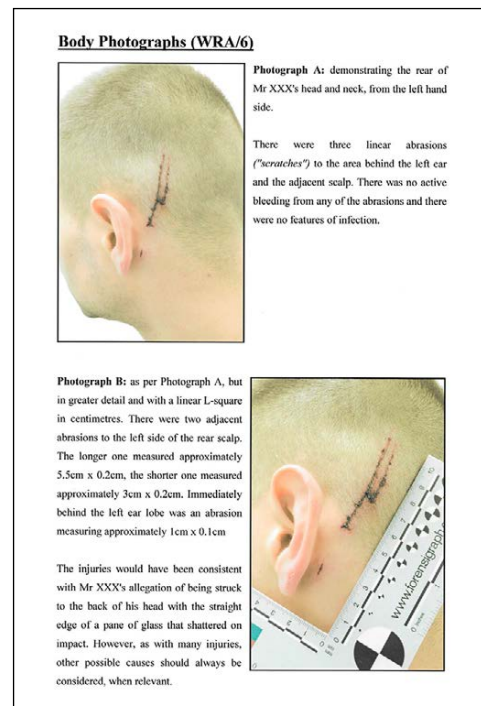
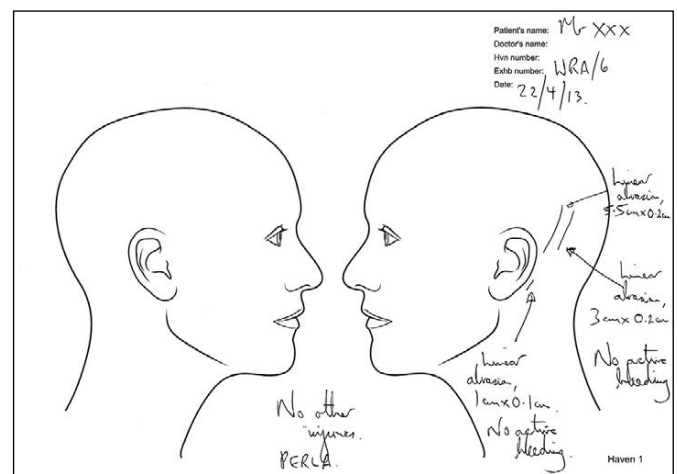


Fig. 2 The same injuries described in two different ways. Traditional body diagram vs. photographic images embedded into an A4 document.



3.3 Medical room

The clinician should familiarise him or herself with the environment in which the images are being taken: most commonly a medical room, but the clinician may be called to other locations such as a police cell, hospital emergency department or ITU. Practice shots, e.g. on a latex arm, or a pen torch, allows for the clinician to alter camera settings prior to meeting the patient. Assessing the environment will also allow for the clinician to calculate the best positioning of the patient, e.g. standing, sitting in a chair, lying on an examination couch. Preparation is all-important as, once the patient is present, the opportunities for re-arranging furniture and checking camera settings are greatly reduced.

Medical rooms are frequently very cluttered environments and do not have the order and discipline associated with a photographic studio. The medical cabinet, sink, chairs, posters, and computer are usual accessories in the medical room and can provide distraction in a photo by steering the viewer's gaze away from the main focus of the photograph. 'Mergers' are a particular type of clutter (Fig. 3) where a line or object appears to be emanating from the subject's body. Again, inspecting the local environment and moving potential clutter or the subject away from the merger are simple ways of improving the photographs.



Fig. 3 Mergers are common features of working in cluttered environments.

Ideally, the subject should be positioned a distance from the background (to help reduce shadowing) and an appropriate depth of field used to ensure the background is not sharp. A clear space on a wall may offer a perfect clutter-free backdrop, but if this is not possible, other options include the use of a small portable screen or using background sheeting that is stored and rolled-up until required (Fig. 4). (If the background sheeting is stored folded rather than rolled, undesirable square patterns will appear once the sheeting is unfolded). The sheeting should also be made of white or neutral grey matt plastic that does not reflect excessive light and that is easy to wipe away blood, secretions and dirt. However, if there are any particular 'DNA concerns' in a given



case, it is advisable to use a disposable background such as a single-use couch cover.



Fig. 4 Plastic sheeting can be used as a backdrop for a table or examination couch.



Paper towelling that is used to cover examination couches does not make for a good background. Although it appears flat and even when laid out on the couch, it will tear and ruffle as soon as the patient lies on the couch and this will detract from the photo. (Fig. 5)

Fig. 5 Paper towelling rips and folds very easily with the patient's weight.



3.4 Lighting

Not infrequently, the main limitation to good photography within a police custody medical room is poor lighting. This is often best-illustrated in older police buildings where the needs of the medical room were low on the architect's priority list. A darkened room results in less light striking the camera's sensor, making for darker and grainier images. When there is insufficient ambient light, the options available include:

1. 'Raising the ISO'. In automatic or semi-automatic modes, the camera compensates by making the sensor more sensitive to light. This is referred to as 'raising the ISO'. Unfortunately, the sensor also becomes more sensitive to everything else, including artefact and 'noise'. The final image will inevitably appear more 'grainy', thereby reducing the overall quality of the image. As low an ISO setting as possible is desired, e.g. ISO 200-400.
2. If the photographer is shooting in manual or near-manual mode, there is greater opportunity to tailor the camera's settings to a particular situation:
 - a. Increase the exposure time (reduce the shutter speed), e.g. from 1/100 of a second to 1/60 of a second. By keeping the shutter open for longer, more light enters the camera to strike the sensor. The main disadvantage of increasing the exposure time is the greater risk of 'camera shake' as the camera has to be kept still for longer, thus raising the opportunity for the image to appear blurred. A fast shutter speed is therefore desirable whenever possible, e.g. 1/100s-1/200s.
 - b. Reduce the f-stop (or f-value): the f-stop is an indicator of the diameter of the camera's aperture, which sits in front of the camera's sensor. It can be automatically or manually altered to allow more or less light into the camera. Increasing the diameter of the aperture (i.e. reducing the f-stop, e.g. to f-2.8) allows more light to enter the camera but the periphery of the image is more likely to appear blurred. A higher f-stop (e.g. f-11) will allow sharper images to be obtained but may cause the image to appear darker. A high f-stop is usually preferable for clinical photography, e.g. f-8 to f-11.
 - c. The photographer may perform a combination of each of these, but should be aware that altering one may have a knock-on effect on the other settings.

Another option available to the photographer is to increase the ambient lighting. This can be achieved by using an additional light source such as a built-in or external flash, or by employing strategically-placed light reflectors or external light sources, such as a 'soft-box'. When dealing with detainees, the clinician should consider that such pieces of equipment could be attractive to volatile individuals who may merely regard an expensive piece of kit as a make-shift weapon.

Bulky and costly equipment should be used with caution as it could easily be damaged (or cause injury to the clinician) in the wrong hands.

3.5 Consent

Generally speaking, it is not acceptable for a clinician to take photos of a patient without his or her consent. This therefore differs from the entitlement of police officers who, under the Police and Criminal Act (PACE) 1984 (s.117), can legally take photographs of individuals and 'may use reasonable force, if necessary, in the exercise of the power'.⁴

The General Medical Council (GMC) has outlined the requirement of consent in its 2011 document *Making and using visual and audio recordings of patients*.⁵ The need for consent is clear, though this consent does not need to be written:

'It is good practice to get the patient's written consent, but if this is not practicable, the patient's oral consent should be obtained. Written consent or a record of oral consent should be stored with the recording.'^{5, para 24}

That oral consent is acceptable when taking photographs in the custody environment is to be welcomed, bearing in mind that many of the detainees have poor literacy skills, drug and alcohol dependencies, aggressive mood swings and behavioural issues. The signing of a consent form may be nigh impossible and may merely meet with suspicion and resentment. There is also the consideration that the patient may not have understood the details of the form, but was still prepared to sign on the dotted line. The act of handing a pen to an unpredictable and volatile patient may also pose a threat to the clinician.⁶ As detailed an explanation as possible should be given to the patient as to why the photos are being taken, as well as clarification as to how and where they will be used, stored and viewed, and by whom (e.g. for teaching and training medical colleagues). When written consent is being sought, the FFLM has produced a Photography Consent Form for these situations and PICS recommends the use of this publication.⁷

In the case of the incapacitated subject, in line with the Mental Capacity Act 2005,⁸ the clinician will have to balance whether it is reasonable and in the public or individual's best interests to take a photo without consent⁹ and whether other options, e.g. waiting until capacity has been regained, would be a better alternative. For instance, in the case of a sedated patient on ITU who appears to have sustained life-threatening injuries, failure to take photographs could be seen as unreasonable on the part of the clinician and not in either the individual's or public's best interests. Delays in documentation will also result in a changing appearance of any injuries and this should also be borne in mind.



When considering photography of children, the GMC offers guidance to the clinician, with a Gillick-competence-type approach to assessing the child's maturity, with consideration given to involving the parents whenever possible. It makes reference to under 16s, in line with the Family Reform Act 1969, rather than under 18s:

*'Children or young people under 16 who have the capacity and understanding to give consent for a recording may do so, but you should encourage them to involve their parents in the decision making. Where a child or young person is not able to understand the nature, purpose and possible consequences of the recording, you must get consent from a person with parental responsibility to make the recording.'*¹⁰

If the clinician is faced with photo-documentation of intimate images, i.e. the breasts, genitals or anus, additional precautions are required to ensure that inappropriate viewing of the images does not result. The FFLM issued joint guidance in 2014 with the Royal College of Paediatrics and Child Health (RCPCH) and the Association of Chief Police Officers (ACPO) with respect to intimate images.¹¹ The clinician should ensure informed consent is obtained from the complainant or the individual who holds parental responsibility (in the case of a child), though under 16s with capacity can consent alone: however, under 16s should be encouraged to involve their parents whenever possible. The consent should outline that disclosure of the images to medical experts and the Courts may be required at a later stage. The document advised that the patient's face should not be included if intimate images are also taken. Disclosure of such images will be discussed on page 14.

3.6 Chaperones and appropriate adults

There is a requirement for the doctor, under Section 47 of Good Medical Practice (2013) that *'You must treat patients as individuals and respect their dignity and privacy.'*¹² This concept extends to photography and to the need for a chaperone during photo-documentation. If a chaperone may be required, it is good practice to ask around before the patient is seen, to prevent any awkwardness when sitting with the patient whilst a suitable chaperone is found. In 2013, the GMC published specific guidance on intimate examinations and on the requirement and role of chaperones¹³. Although it could be argued that most of this guidance is common sense, it should be adhered to in order to protect the patient and clinician against allegations of impropriety. Simply assisting a patient to undress may be misconstrued if informed consent has not been given and could then prove disastrous for the doctor's career and reputation. The details of the chaperone's name and role should be documented in the patient's notes.

The requirement for appropriate adults in custody is established in England and Wales in the Police and Criminal Evidence Act (PACE) 1984.¹⁴ If an appropriate adult (AA) is required for an under-18 or for a vulnerable adult, the AA should ideally be present during the photography, though

discretion should be used to prevent embarrassment to the patient, e.g. asking the AA to turn his or her back if the patient has to undress for the photography.

3.7 File formats

Images are stored in different formats. In the 2007 Home Office/ACPO publication *Digital Imaging Procedure, Version 2.1*, Cohen and MacLennan-Brown stated that

*'... the format is not relevant to the admission of the evidence, only that the quality is fit for purpose.'*¹⁵

Formats are rapidly changing entities and this makes insistence on one particular file format over another impractical. The maximum information is stored with the RAW format but, as RAW is manufacturer-specific, it may therefore not be supported by certain cameras and could present difficulties when attempting to access the images. This will be particularly apparent if the person who receives the images does not possess the technical knowledge to download the appropriate software to allow the images to be viewed.

The commonest format is the JPEG (Joint Photographic Experts Group). Although this has the distinct advantage of being readable by most viewing software, it has the disadvantage that the data is compressed to varying degrees and will therefore possess less data than when it was originally processed. In addition, the JPEG image can corrupt with repeated usage (e.g. opening and closing the images hundreds of times) and this will result in irreversible erosion of the image. Some cameras will allow different JPEG compressions, e.g. JPEG Fine, JPEG Large, JPEG Small. In this scenario, the best quality option should be the preferred choice. Double formatting of images may also be a consideration with certain cameras, i.e. for every image that is taken, the camera may store the image in the RAW and JPEG formats as an option in the set-up menu, and this possibility should therefore be considered.

3.8 Correct sequence: history, examination or photography?

Prior to taking the photos, the clinician should decide the best order in which to proceed. In the vast majority of cases, it should be possible to take a history, perform an appropriate examination and then progress to photography of the injuries with fully informed consent. Occasionally, this order of events may have to be modified depending upon the urgency of the particular situation. Indeed, if clinical priority dictates, e.g. if urgent hospital transfer is required, there may not be an opportunity to photograph the patient, as his or her welfare remains the priority. In each individual case, it is therefore a judgement call by the clinician as to which order the assessment is conducted.



4. Considerations during Photography

4.1 Head Shots/ID Shots

Many forensic photographers are keen that a series of photos should begin (and possibly end) with a 'head shot', i.e. a photo of the subject's head and shoulders which will help to match the injuries with that particular patient. From a purely forensic perspective, this is an acceptable and totally understandable approach as it strengthens the audit trail. However, it may not be appropriate in certain situations, e.g. when documenting intimate images. PICS therefore recommends that the need for a head shot should be discussed on a case-by-case basis with the subject. If this is not possible due to the patient's lack of capacity, the clinician has to make a decision, based on best interests, public interests and professional guidelines, as to whether a head shot is suitable for that particular set of images.

One common practice in SARCs is to take a photo of an 'identifier card' of the patient's details e.g. initials, DOB, date, time and location of assessment, etc. to help allow identification of the patient without the need to show the individual's face. A similar ID photo can be taken at the end of the photography, to allow the photos to be enclosed within the ID shots. This technique has the advantage of maintaining the patient's identity in a near-anonymised fashion, but has the distinct drawback of not specifically identifying the patient concerned: there is no guarantee that the details being photographed definitively relate to the patient in question.

4.2 Composition

The clinician should be confident about asking the patient to move himself or herself into a particular position. For instance, asking a patient to turn his or her head to the left to photograph the right side of the face is not an unreasonable request and may make all the difference to the quality of the resulting images. If the patient is uncooperative with such requests, it is worth advising them that the photos will be sub-optimal unless they are prepared to co-operate with these requests. The camera should be held perpendicular to the wound so that the light enters the camera at 90°.16 This will reduce 'angular distortion' caused by viewing the injury from an acute angle (Fig. 6). The object of interest should be positioned as centrally as possible within the frame. Centralising the injury may not be possible on the initial 'location shot' (see page 10 under 'Three Photo Principle') where other anatomical landmarks may be required to help with orientation.

If asked to comment on such photographs, e.g. in expert work, PICS advises the clinician to consider that sub-optimal photos will result in sub-standard opinions. Failing to comment on a patient's photograph may be devastating from the patient's perspective, but a clinician could damage his or her reputation by best-guessing a less than adequate image. This approach

tallies with the GMC's advice in its 2013 publication *Acting as a witness in legal proceedings* which states that

*'If you do not have enough information on which to reach a conclusion on a particular point, or if your opinion is qualified (for example, as a result of conflicting evidence), you must make this clear.'*¹⁷

and

*'If you are asked to give an opinion about a person without the opportunity to consult with or examine them, you should explain any limits this may place on your opinion. You should be able to justify the decision to provide your opinion.'*¹⁸

In such circumstances, it may be appropriate to request that the photography be repeated by someone suitably qualified (although this may not be feasible depending on the nature of the injuries or the time that has elapsed) or the clinician should preface any opinion that is submitted by declaring that the photos are of sub-optimal quality.



Fig. 6 Left hand photographed perpendicularly. Angular distortion of the same hand caused by the photograph being taken at an acute angle.



4.3 Use of linear scales

Different forms of scale are available, including straight rules, L-shaped rules (Odontology scales), disposable, flexible and rigid (Fig. 7). The anatomy of the area may have a bearing on which scale might be used. For instance, it is very difficult to place a rigid L-square next to an injury on the side of the upper nose as facial structures tend to obstruct proceedings. Disposable scales may have an adhesive surface, though these can be unpredictable, especially with hirsute or moist skin.

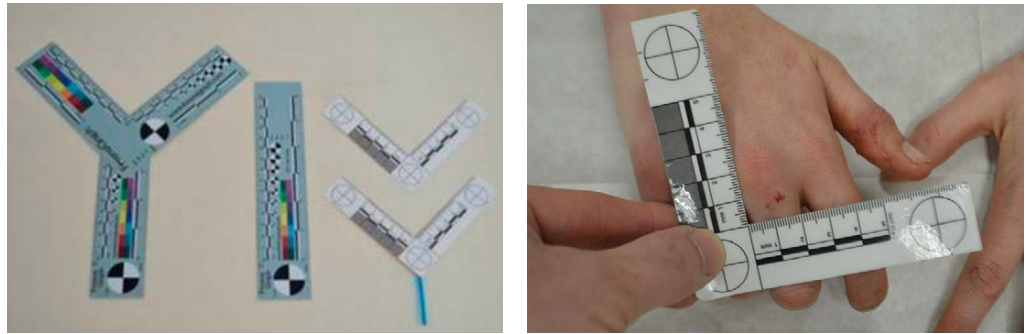


Fig. 7 A range of scales is available. Taping a 'handle' or straight rule to the back of the scale allows the photographer to keep his hands out of the image.

The scale should be as flush with the skin as possible, but should not distort the skin. If the scale is too close to the camera and too far from the subject, the body and injury will appear smaller than they actually are (Fig. 8). Ideally, the scale should be aligned so that the length of the rule highlights the maximum length of the injury, though this may not be possible with irregularly-shaped injuries. The scale should not occlude the injury or any important local anatomical landmarks, as this may make it more difficult to orientate and interpret the injury. The rule should be disinfected with antiseptic after use unless disposable scales are being used.

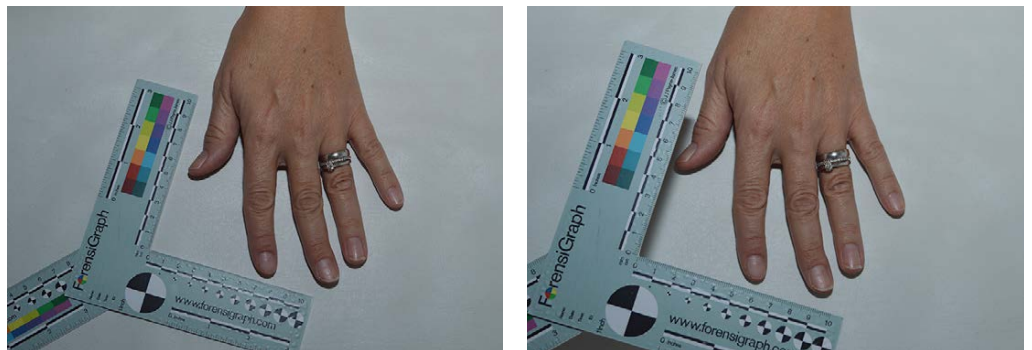


Fig. 8 Keep scales as close to the skin as possible, otherwise body and injury will appear smaller than they actually are.



4.4 'Three photo principle'

In general terms, each area of concern should have at least three photographs taken.

Firstly, an overview or location ('context') shot should be taken to allow the observer to orientate himself to appreciate which part of the body is being considered. This should include important local anatomical landmarks, wherever possible. The rationale behind this is that different parts of the body can look very similar in close-up (Fig. 9) and could easily lead to confusion at a later stage. Surrounding anatomy and landmarks help to explain the location of the injury.



Fig. 9 The left side photo may appear to be 'Breasts or buttocks' but is actually the anterior right axilla.

Secondly, a close-up photo should be taken, by either physically moving closer to the patient, allowing the injury to be seen in greater detail, or by using the zoom lens feature on the camera. As many patients in the custody and SARC environments are unpredictable, invading their personal space by moving closer to them may be intimidating for clinician and patient alike, and could antagonise a situation. A zoom lens may therefore be preferable as it will allow the frame to be filled without occupying their personal space.

Thirdly, the close-up photo should be taken with a linear scale adjacent to the wound, with local anatomical landmarks being visible whenever possible. This is therefore the same as the second photo, but with a linear scale in situ. The photographer's fingers should preferably be avoided as they can detract from the main subject of the photo. As per Fig. 8 (page 9), attaching a 'handle' to a linear scale can allow the photo to be taken without the photographer's fingers obstructing the view.



Fig. 10 Three photo principle.

1) Overview

2) Near shot

3) Near shot/linear scales



4.5 'Before and after' photos

The importance of cleaning and exposing a wound cannot be overstated. Quite simply, the wound cannot be assessed properly unless it can be seen free from distractions such as clothes, dirt and blood. Whenever possible, the clinician should strive to take before and after photos of the injury. Asking the patient to clean the wound himself will prevent accusations of the clinician being heavy-handed. Tap water, moist wipes or antiseptics should be used to best clean the wound. (NB: it is important that the wound is not cleaned until it is confirmed that swabbing of the area is NOT required as part of the police investigation. Blood distribution, spatter analysis and establishing whose blood is present may form part of the CSI investigation. CSI should therefore be contacted to ensure that such analyses are not required).



Fig. 11 Before and after pictures can give a completely different perspective on an injury's appearance.

After the wound and surrounding skin have been washed, they should be dabbed dry (rather than rubbed) to reduce the risk of re-bleeding. Dry skin is also preferable to wet skin as there is less reflection glare in the images. It should also be remembered that a small amount of blood can go a long way and, equally, an apparently large amount of blood may be obscuring a tiny wound.

Before and after photographs also help confirm that a standard and duty of care have been respected, and this might offer the clinician a degree of protection if being faced with criticism in the quality of treatment that was provided.

When dealing with dirty or bloody cases, the clinician should wear gloves. He or she may need to change gloves during the assessment as blood and dirt are easily transferred onto the camera and this is obviously undesirable. Gloved hands can also make for more difficult control of the camera including the pressing of buttons: the clinician should therefore be familiar with handling a camera whilst wearing gloves.



Fig. 12 An apparently 'large' amount of blood may be covering tiny wounds.



4.6 Checking your photos

It is good practice to check the photos as they are being taken as it is easy to experience camera shake, subject movement, flash reflection, over or under-exposure, or injury 'cut-off.' The photos should be repeated as required, though bad photos should not be deleted:^{19, 20} they are part of the medical documentation and questions could be asked at a later stage if sections of such documentation are missing. The photos should be regarded in the same manner as any other part of the medical notes and must not be erased. If there are any concerns that the photographs are in some way not fully representative of the injury, these considerations should also be documented in the notes, e.g. 'the patient refused to keep still'.

4.7 Photographing negative findings

It is relatively common to find that there are no apparent injuries despite vehement claims from the subject. Therefore, it may be appropriate to document negative, pre-existing and inconsistent findings as they may be significant at a later juncture.

Figure 13 illustrates how photography of negative findings should always be contemplated. In this particular case, the alleged loss of front teeth by the detainee during arrest can be robustly challenged by appropriate history, examination and photography of the supposed injuries.



Fig. 13 Photographing negative findings should always be considered.

5. Considerations after photography

5.1 Enhancement (cropping, brightness, contrast)

Minor corrections of Working Copies are considered acceptable, e.g. lightening or cropping of images, provided that such alterations can be explained, are appropriate and can be of assistance to the Court process. If not, the clinician may be liable to accusations of manipulating the image and trying to mislead. There is therefore a strong argument for the clinician to tread carefully by leaving all images intact, with any enhancements being undertaken by specialists working within a forensic photography unit.²¹

The Master Copy must remain intact and in its original format at all times. If enhancement is undertaken by the clinician, the enhanced Working Copy image should be allocated a corresponding file name. For submission, the unaltered Working Copy should also be submitted for comparison with the enhanced image.



5.2 Storage of images

Internal memory space for storing images is usually limited with digital cameras, so most digital cameras store onto a removable and reusable Secure Digital (SD) card, with memory storage typically between 2GB and 32GB. Data from the SD Card then has to be transferred to a separate medium for long-term storage.

The Floppy Disc, with its very limited 1.44MB capacity, has come and gone, having largely been surpassed by the Compact Disc and Digital Versatile Disc (CD and DVD). However, by technological standards, the CD is now reclining into middle age with many modern laptops choosing not to feature a CD-DVD drive. The timeframe between 'novel' and 'obsolete' is short. USB memory sticks offer convenience with great storage potential but run the risk of being mislaid due to their compact size. Printed photographs are at danger of fading with time, and paper body diagrams may be convenient but are simplistic and are often completed by clinicians with limited artistic abilities. The current front runners in the world of storage media are possibly Cloud and hard drives, but these media have not stood the test of time and questions remain over their security.

In Nov 2007, Cohen and McLennan-Brown recommended in the Home Office/ ACPO publication on *Digital Imaging Procedure* that 'all the files need to be transferred to new media regularly, possibly as often as every five years, or transferred to professionally managed data management archive systems.'²²

Whether such advice has been heeded is questionable, but it emphasises the changing world of technology and that we should be prepared in our clinical practice to adapt to such changes. The correct storage of data is probably one of the main concerns facing the clinician. Indeed, a 2016 study²³ by PICS of SARC Managers in the UK highlighted that storage and retrieval of images were among the main anxieties when dealing with patients. Problems that have arisen include forgotten passwords, lack of encryption, inability to retrieve images from a hard drive and being unable to play a DVD of stored injuries.

Legal requirements should be welcomed as they protect both the patient and the clinician by ensuring that all data is handled securely and professionally. However, the danger of over-zealous and inappropriate (but well-intended) regulation must also be discouraged as such restrictions will hinder the numerous benefits that modern technology can bring to clinical practice. With clinical software and hardware varying so greatly across the UK, it is therefore advisable to recommend general principles, rather than specifics.

The storage of images should be in line with local data protection policies, which should themselves be in keeping with national guidelines and statutory requirements outlined in the Data Protection Act 1998, as well as expectations from supervisory bodies such as the GMC or NMC. (Regulatory

guidelines summarise the legal framework in a readable way and also emphasise the ethical duty to the best interests of the patient, and the public interest and common law duty of confidentiality regarding image storage).

If such local policies do not exist, it is important that existing strategies are appropriately modified or new ones created. Discussion with the local Caldicott Guardian or SIRO (Senior Information Risk Owner) and Medical Defence Organisations would be advisable to ensure compliance with legal and ethical duties.

- Secure storage of images should be in a password-protected medium that is 'write once read many' (WORM), such as a hard drive or non-rewritable CD (CD-R) or DVD (DVD-R). The initial images should be designated as 'Master Copy' and should remain unaltered. A copy of the Master Copy should be made as soon as possible and should be designated as the 'Working Copy'. Electronic files and discs should be marked with the patient's number rather than the patient's name; CDs and DVDs should be labelled with an indelible marker.
- The Working Copy should be password-protected. Any dealings with the images should be via the Working Copy and not the Master Copy.
- The data should be accessible on a need to know basis.
- An audit trail of access should be available (e.g. to the Courts or for regulatory inspection) as and when required to ensure compliance with legal requirements and local policies.

Every photograph taken by the camera will generate its own individual image number. It is good practice to document in the medical notes the first and last image numbers for that particular patient (e.g. '0235 – 0240') as this will also help to identify which images belong to which patients. This may be of particular relevance when several patients are photographed in a short period of time, where there is an increased risk of confusing which injuries belong to which patient.



5.3 Submission of images

Most commonly, the reason for the Custody/SARC clinician to submit images is with a Court statement, where the clinician is either acting as a professional witness of fact or as an expert witness. The clinician's duty is to the Court. The patient should have given consent at the initial discussion when the photos were being considered, although the court may order disclosure without the patient's consent. In its 2017 publication *Confidentiality: good practice in handling patient information*, the GMC clarifies that the clinician is protected in these circumstances:

*'You should tell patients about disclosures you make that they would not reasonably expect, or check they have received information about such disclosures, unless that is not practicable or would undermine the purpose of the disclosure – for example, by prejudicing the prevention or detection of serious crime.'*²⁴

and

*'You must not disclose personal information to a third party such as a solicitor, police officer or officer of a court without the patient's explicit consent, unless it is required by law, or ordered by a court, or can be justified in the public interest. You may disclose information without consent to your own legal adviser to get their advice.'*²⁵

The images should be submitted as a Working Copy on a non-rewritable CD/ DVD, with the disc being given an exhibit number that is documented in the statement. Best practice would also dictate that printed copies of the images using photographic paper should be submitted in tandem with electronic images, with the printed images also being awarded a separate exhibit number. The costings for such printing should be determined locally. The statement should also describe the make and model of camera that was used and detail that it was used specifically for documentation of injuries.

The duty of confidentiality continues after death and disclosure of information relating to deceased patients is outlined by the GMC. Requests by the Coroner, Procurator Fiscal, Director of Public Prosecutions (DPP) or other legal authority, public enquiries and National Confidential Inquiries are examples of where submission of images may be entirely appropriate after the patient's death.²⁶

Specific consideration should also be given to the submission of intimate images. Guidance in this area was offered by a joint FFLM/ RCPCH publication (2014)¹¹ which considered 'intimate' to refer to the breast, genital or anal areas, with the recommendation that the doctor should disclose in the medical statement whether intimate images had been taken. However, the images should not be attached to the statement and should only be disclosed if there is a specific request from the Court or appropriate informed consent has been provided by the patient: until such a request is made, line drawings should be submitted with the statement. In the event of

uncertainty as to whether one or more images should be disclosed, discussion with the clinician's medical defence organisation would be advisable.

When presenting images at a public forum, such as a medical meeting, the clinician should not present images that allow the patient to be identified. Cropping of images may be appropriate to prevent such identification and the clinician should advise the audience that photographing of slides is not permissible.

6. Training and qualifications

PICS recommends an accredited course in clinical photography, such as that currently offered by the Ministry of Defence School of Photography (DSOP). This course is designed to meet the needs of the HCP working in police custody or SARCs and has been formulated jointly by the Faculty of Forensic and Legal Medicine (FFLM), the British Institute of Professional Photography (BIPP), and DSOP. Completion of such courses may allow for membership of an accredited organisation such as BIPP and the usage of a post-nominal qualification.

7. Discussion and conclusions

Photo-documentation of injuries by clinicians is something that should be welcomed. Clinical knowledge combined with correct training in the use of modern cameras will serve the public and criminal justice systems well. Provided the clinician is well-versed in the technical aspects of photography and the legal and ethical duties that may present, the clinician should be able to proceed with accurate documentation of injuries without any fear of breaching legal, ethical or regulatory concerns.

There is a learning curve to acquiring the skills of clinical photography but this is a skill-set that is well within the capabilities of the well-motivated individual who is keen to apply his or her clinical skills and experience to the world of photography.



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