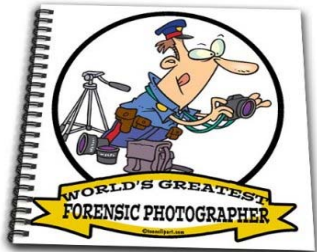


## Forensic Photography



October/November 2018

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### OBJECTIVES

- Discuss the purpose of photography
- Discuss patient's rights during forensic examination
- Describe bookends
- Describe orientation photographs
  
- Nursing Diagnosis
  - Anxiety related to disturbances in self-concept when confronted with using medicolegal photographs in investigative and judicial procedures

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## Forensic Photography

The term implies that when a photograph is properly obtained it may be used in legal proceedings



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## Photography

- Digital photography is widely used in medicine
  - Dermatology
  - Wound care
- Useful in diagnosis and treatment
- Quality assurance and quality improvement – case review
- Supports written documentation
- Evidence can be used in prosecution
- **Remember** – photo is a two dimensional representation – doesn't capture what you saw

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### Admissibility of Photographic Evidence:

- To be accepted in a court of law the photograph must be an **accurate and objective depiction** of its subject
- The photographer and the photograph must be able to withstand legal challenges as to **authenticity, integrity and credibility**
- **Federal Rules of Evidence** allow the admission of digital photography

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### In court...

the medical provider must be ready to answer:

- When and where the photo was taken
- Exactly what the photo depicts in medical and lay terms for the jury
- The exact anatomic location
- Type of camera used
- Filters used
- If consent was obtained
- How photographs are stored



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### A judge will not admit a photograph into evidence if...

- The photograph is taken at a distance
- Out of focus
- Over-exposed
- Ruler covering part of wound
- Photograph was not taken at a 90 degree angle



The defense has a right to challenge the accuracy of the photos

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### Patient Rights

- Impact of abuse involving photography for patients
- Informed Consent
  - Patient must consent to photography
  - Explain procedure and purpose
  - Inform patient about the use of photos
  - Explain follow-up photos may be needed
  - Consent form is part of the medical record
- Patient has the right to decline any or all photos
- Privacy
  - Respect patient's need for privacy
  - Drape areas not being photographed



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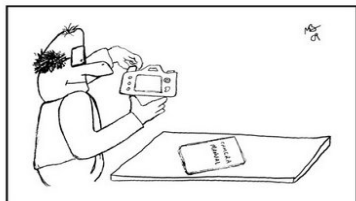
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### Getting Started

- Read the manual
- Practice, Practice, Practice



Before reading his camera manual, Uncle Bob was always careful to switch his camera over to the "manual" setting.

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### Equipment

- Camera
- Purple or blue gloves
- Tripod
- Batteries
- Memory cards
- Photo ID cards
- Blue/green backdrop



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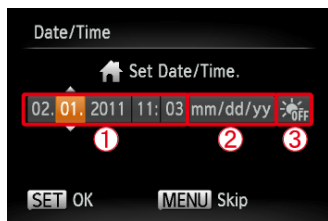
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### Set the Time

- Reset the time when we “Spring” ahead and “Fall” back



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### Wear gloves



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### Background

- Background should not detract from photo
- Blue is a good background color
- White is stark



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### Lighting

- Fluorescent light gives photos a washed out yellow or green hue
- Warm colors will make person look yellow
- This can be eliminated by using flash and by adding more artificial non-fluorescent light
- Flashlight can be used to add illumination from the side to highlight shallow details



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### Lighting



Ambient light

Auxiliary light

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### Oral Photos

- Invert camera to illuminate palate
- Use flash



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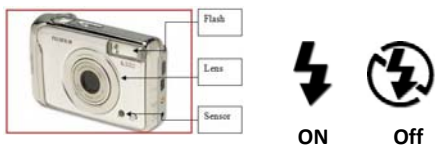
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### Flash

- The effective range for an on-camera flash is generally three to ten feet
- **Turn off the Flash:** The flash is usually too harsh and washes out the subject



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### Flash



*Image 7—Sometimes, an electronic flash unit (EFU) can cause reflections from the victim's skin, creating overexposed areas that render the photographs useless (see Image 8).*

*Image 8—If the electronic flash unit (EFU) is causing exposure problems, move the flash so that it has a more oblique—or indirect—orientation to the victim's skin.*

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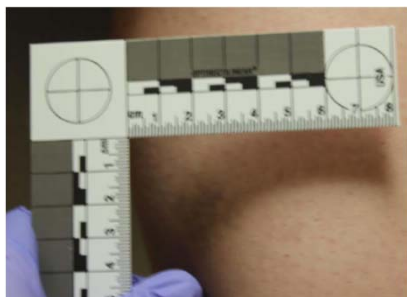
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### Shadows



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### Shadows



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### Shadows



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### Focus

**Remember to Half-Click first**



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### Auto-Focus

- Camera unable to auto focus
- Use contrast with auto focus



Swab shaft used to assist with auto focus

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### Point and Shoot Camera



- Lighter and smaller
- Harder to grip
- **LCD screen to compose** an image

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### How to hold a Point and Shoot Camera

- First, hold it with **both hands!**
- Second, **don't hold it too far** from your body
- Create a **human tripod**



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### Shooting from the lower point of view

- The easiest is to **kneel** with right foot on the floor, while supporting the left hand on your left knee.
- If you don't want to get down and dirty, you can **squat** and sit back on your right heel.
- You can also **sit down** on the floor and rest your hands on your knees.



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### Zoom

- **Don't use the zoom feature**
- **Switch to Macro Mode**



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### Macro Setting



1. 3 feet      2. 3 inches      3. 1 inch

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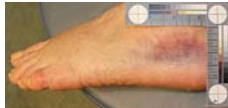
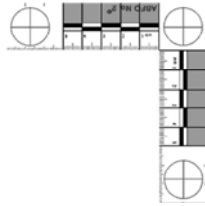
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### Measuring Devices- ABFO Ruler

- L shaped measuring device with markings on the inside of the L
  - Cross hair circles
  - Contrasting metric measuring bars
  - 18% Gray scale reference patch
- Used to measure size of injuries
  - Place in horizontal or vertical plane
  - Should be at a 90 degree angle
  - Photos with and without ruler



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### Other Standards

- Adhesive ruler
  - Metric scale placed above or below injury



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### 90 Degree Angle

- Accurate forensic photography



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### 45 Degree Angle

- Picture and measurement distortion



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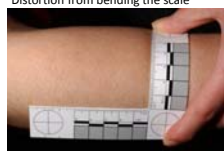
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### Using Scale

Scale is not in the same plane as the injury



Distortion from bending the scale



No distortion

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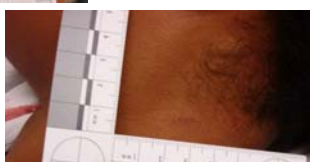
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### Challenges with Scale



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Positioning is important



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Use a forceps



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What's wrong with this photo?



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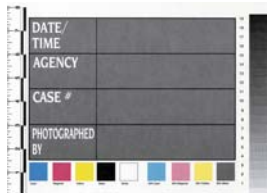
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## Identification of Photographs

- The very FIRST picture serves as a starting bookend and LAST as the finishing bookend
- A bookend identifies each exam/case as unique
- **Do not** have the patient hold the bookend card




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## Examples of Bookend Cards

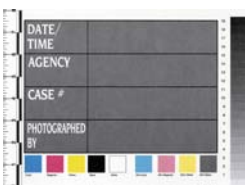


PHOTO I.D. CARD

SDI™-TeleMedicine SDI - Secure Digital Forensic Imaging  
SDFF® Secure Beyond Reasonable Doubt® www.SDI.com

WebSite: [www.SDI.com](http://www.SDI.com)  
© 2014 SDI Inc. SDI, SDFF and SDI are trademarks of SDI Inc. All rights reserved.  
SDI® is a registered trademark of SDI Inc. SDI is a registered trademark of SDI Inc. SDI is a registered trademark of SDI Inc.

Date:

Name:

Case #:

Photographer:

ID Record #:

D.O.B.: (mm/dd/yyyy)  or Age:

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## Develop a Process

- Full body first
- Photos should be taken from:  
Side to side - right to left  
Top to bottom
- Take multiple photos
- Do not delete photos

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### How many photographs?

- Bookends
- Overall patient photos 4-6
- Each injury 3-5
- Follow-up photos may be necessary

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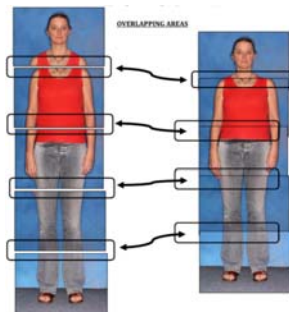
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### Overlapping Photography

- Full frame head shot showing patient's facial features
- Upper body photo neckline to waistline
- Upper body midriff photo waistline to just above knees
- Lower body photo knees to mid-shin
- Lower leg photo mid-shin to feet
- Repeat overlapping storyboard photos for right, left, back and sides if needed
- Kneel to maintain 90 degree angle



SDFI website <http://www.sdfi.com/>

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### Injury Photography

- At least 3 photos of each injury
- Medium distance photo
- Take all close-up pictures to that **one** injury
- Close-up without a measuring device at a 90 degree angle
- Close-up with a measuring device at a 90 degree angle




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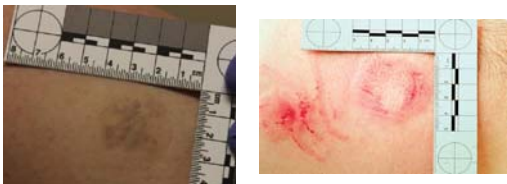
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### Close-up Photos

- Position the camera at 90 degrees to prevent distortion
- Fill the view finder with the subject matter



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### Labels



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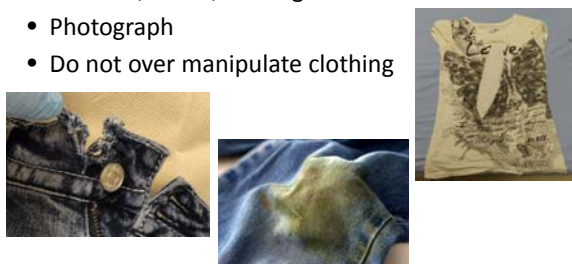
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### Photographing Clothing

- Observe clothes for rips, tears, debris, foreign material, stains, missing buttons etc.
- Photograph
- Do not over manipulate clothing



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### Alternate Light Source



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*Suspected body fluid on cloth. Visualized in White light.  
Stain is old and as such has begun to oxidize (turn brown) under room light conditions*

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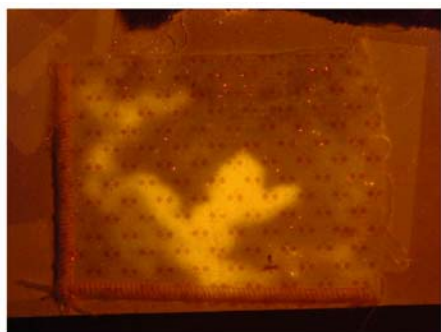
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*Suspected body fluid on cloth. Visualized in Blue light (450nm) with an Orange camera filter.  
Using a longer wavelength illumination and its appropriate camera filter starts to reduce (reject) the background and increase the fluorescence of the stain.*

<https://spexforensics.com/applications/body-fluids>

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### Photography with ALS

- Room needs to be dark
- Turn off camera flash
- Camera with an integrated flash, make sure it is turned off
- Forensic light source photography is essentially low light level photography
- Tripod if necessary or help!

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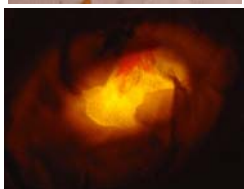
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### Alternate Light Source



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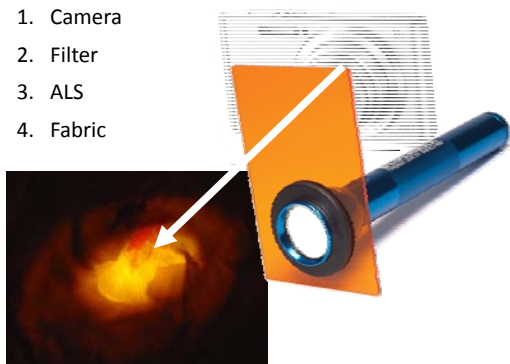
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1. Camera
2. Filter
3. ALS
4. Fabric



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### Genital Photography

- Genital photos
  - Close range
  - Use tripod
  - Macro setting on point and shoot camera
  - Labial traction and separation may distort size
- Vaginal/Cervical photos
  - Photos should be centered
  - Cervix clearly visible

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### Genital Photos

Use a Tripod



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No Hands?



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### Genital Photos

- Two-dimensional still photo lacks the dynamics of real-life observation, where the examiner can change their position and angle of view according to the light source
- Mucous membranes are difficult to photograph because of reflections, folds and natural differences in color

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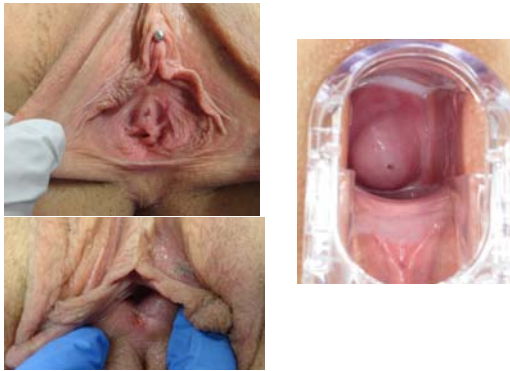
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### Genital Photos



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### Do not delete Photos

- All photographs on a digital camera are numbered
- What would happen if one was missing?



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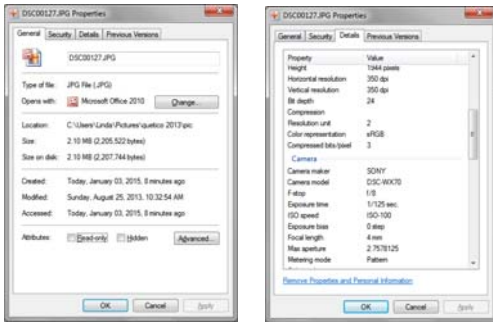
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### Meta data




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### Storage of Photographs

- Follow hospital procedures
- Some hospitals use DVD/CD-R (read-only)
- SDFI system – secure photo storage
- Label  
Patient name, date, time, MRN, Case number, person taking the photos
- Maintain Chain of Custody

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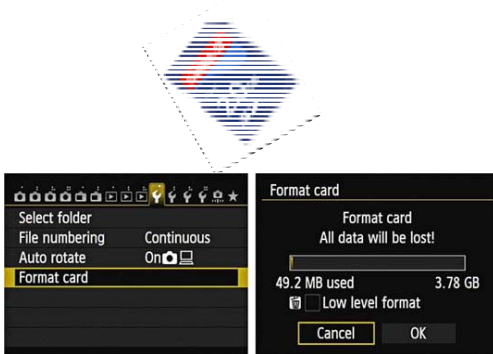
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### Don't Delete – Format




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### Common Mistakes

- Poorly focused images
- Blurred images due to camera shake
- Over- or under-exposed images
- Poor color reproduction
- Image noise

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### Parting Shots

- Practice, Practice, Practice!
- Make sure to check and re-check everything in your control
- Have your camera ready to go before you need it!
- Preset settings into the camera to save time
- Always try to visualize the finished photograph in your mind before exposure
- Remember it is seldom that you get a second chance to make the images

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### 10 Photography Tips:

- **Turn off the Flash:** The flash is usually too harsh and washes out the subject.
- **Lose the Zoom:** You can get better detail in your photos with a photo editing application after the fact than with zoom setting
- **Switch to Macro Mode**
- **Don't delete, re-format**
- **Focus!**
- **Think Blue:** Use a blue background when possible (use a blue fitted sheet or a blue drape) with all skin colors
- **Save the battery**
- **Set the Time:** reset the time when "Spring" ahead and "Fall" back
- **Read the Manual:** If you don't have a manual, Google your camera to find it on-line
- **Take lots of pictures:** When you are with a patient and at home, get comfortable with the camera!

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## Resources/References

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