**PHOTOGRAPHY**

**I. INTRODUCTION**

Although it will usually be the role of law enforcement to document a scene with photography, under certain circumstances and in certain jurisdictions, the coroner may take photographs.

**II. TYPES OF PHOTOGRAPHS**

The best way to determine what type of photograph to take is to decide what needs to be communicated. As the photographer, the coroner has the best opportunity to evaluate the whole subject. Don't assume photographs of only specific areas of interest will effectively communicate all pertinent findings. All findings must be viewed in appropriate context. Forensic photography is utilized to tell a story and preserve findings so your photographs should include a sequence of images for orientation, detail and measurement. Consider the following variables when capturing images:

1. VANTAGE POINT: Your position relative to the subject to best depict pertinent findings begins with an overall view progressing to a detailed view by gradually moving closer to the subject matter. Your vantage point should be perpendicular to the subject whenever possible to decrease distortion.

2. EXPOSURE: Exposure is determined by evaluating the light intensity reflecting from the subject of a photograph and utilizing the most appropriate combination of shutter speed and lens aperture to record light, dark, and intermediate values in the subject. Longer shutter speeds vs. shorter shutter speeds increase exposure. Larger apertures vs. smaller apertures increase exposure. Proper exposure requires the right combination of shutter speed and aperture. Most commonly used cameras incorporate light meters and automatically adjust shutter speed and aperture to achieve the “correct” exposure. Depending on the color of the subject, surface reflectivity and lighting conditions, the automatic exposure may not render the values accurately/appropriately and therefore result in under exposure (image too dark) or over exposure (image too light). Digital cameras provide the photographer an opportunity to immediately review a photograph and therefore adjust the exposure while the photographer has the opportunity to do so. Failure to review image exposure will compromise the photographer's ability to document a scene or evidence. Since each camera is different, use your camera's instruction manual to learn how to increase or decrease exposure.

3. FOCUS: Focus is determined by adjusting the lens of a camera closer to or farther away from the image plane (digital sensor) in order to render the subject sharp. Cameras that are focused manually are available. Cameras issued to the coroner adjust focus automatically (autofocus). Autofocus will be sufficient to render a subject sharp; however, in some instances autofocus will not record the desired subject sharply and thus the image will appear blurry. Since each camera is different, use your camera's instruction manual to learn how to focus your camera.

4. FILE SIZE: File size indicates the amount of data recorded by a digital camera. Simply stated, the larger the file size, the greater the amount of detail can be rendered by that file when viewed in print, monitor or projection form. An image size of 1600 pixels produces a photograph with sufficient detail.

5. FILE TYPE: All photographs shall be saved in JPEG (Joint Photograph Experts Group) format.

6. COLOR TEMPERATURE: Visible light is a narrow band of electromagnetic radiation that exists from a wavelength of 400 to 700 nm and is subjectively interpreted as deep blue to red respectively. Most light sources represent a combination of wavelengths and vary considerably from source to source. Digital cameras provided to the coroner have a default setting that automatically adjusts the white balance, also known as color temperature. Since each camera is different, use your camera's instruction manual to learn how to adjust your camera's white balance.

7. ILLUMINATION: Besides the different characteristics of color temperature, the type of illumination available at the scene can have profound effects on photographic quality. In general, the three light types are: natural, artificial, or ambient light. Natural light is regarded as outdoor light and artificial light is produced by a man-made source. Ambient light is the consequence of natural and/or artificial light typical for a given scene such as a room with windows and incandescent light during daytime hours. Regardless of the light type used to illuminate a subject, light can further be classified as direct or diffuse. Direct light is typically a single discrete light source and will usually produce distinct shadows when illuminating three-dimensional objects. Diffuse light does not have a discrete source and will usually produce indistinct shadows when illuminating three-dimensional objects. The coroner must keep lighting in mind in order to produce the best quality photograph.

**III. LIGHTING AND USE OF FLASH**

1. DAYTIME PHOTOGRAPHY OUTSIDE: This is the easiest type of shot. In full sun use the flash to fill in shadows, if necessary. Your eyes constantly adjust to the different lighting situations, but the camera cannot. The bright sunlight will fool the meter in the camera to underexpose the dark or shadow areas. If you are photographing an overall scene at a distance, and the detail in the shadows is minimal, the flash will not be necessary. If the sun is directly behind you and the scene is well lit, you should not need the flash. Avoid having your shadow in any photograph.

2. DAYTIME PHOTOGRAPHY INSIDE: Use the flash even with room lights on. If you are going to photograph a highly reflective surface such as a mirror or a window, shoot it at an angle so the light will not bounce back into the camera.

3. NIGHT PHOTOGRAPHY: The camera's flash as the single source of light presents a disadvantage for night scene photography. When trying to photograph a motor vehicle collision for example, one must attempt to get all vehicles involved in one shot for an overall photograph. However, the reach of the flash is limited. If possible, try to concentrate on the inside of the vehicle and specific areas of the vehicle such as the fender, the headlight, the windshield, etc. A photograph that depicts the location of the decedent at time of impact is important if the decedent has been moved for life-saving intervention.

**IV. SCENE TYPES AND SUGGESTED PHOTOGRAPHY**

1. OVERALL GUIDELINES: No two scenes will be exactly alike. The following sections provide basics only and each scene will need to be evaluated such that photographs taken will tell a story relating to the death being investigated. Remove any artifact brought into the scene by others (except EMS). When taking photographs with a scale, shoot perpendicular to the scale. Use evidence markers as needed. Take one photograph of the decedent's driver's license and Social Security card if available.

2. NATURAL DEATHS: In the case of presumed natural home deaths or hospital deaths, only an ID and one overall scene photograph are necessary in addition to the body photographs. However, the coroner should take additional photographs that depict lifestyle, supporting artifact or any other information that may be applicable to the investigation. If the decedent's face is extensively damaged, try to shoot a profile. (The above information applies to ALL scenes)

3. MOTOR VEHICLE COLLISIONS (MVC): MVC's should be photographed systematically. In daylight, an overall of the vehicles involved should be taken at different angles. Day or night, try to record points of impact and the decedent(s). Any pertinent articles should also be recorded, i.e., alcohol containers, skid marks, seat belt use, airbag deployment, etc.

4. HOMICIDES: Law enforcement officials may take hundreds of photographs to document a scene and the evidence. The coroner is not concerned with all aspects of the scene, rather only the decedent(s) and evidence directly related to the death. For example, the coroner would not photograph footprints outside a house but would photograph footprints near the decedent if they showed the position of an assailant. A good order of shots is: overall of scene, decedent and cause of trauma (weapons, etc.)

5. SUICIDES: In general, follow the same guidelines as for homicides. If it looks as though the decedent may have ingested or injected prescription medications or other drugs, photograph whatever is left or any empty containers. Try to document any pertinent objects directly related or contributory to the death. There are no clear-cut rules on what should or should not be photographed. The coroner must employ best judgment, keeping in mind the above objectives.

6. ON-THE-JOB DEATHS: The safety of the coroner is of the utmost importance. If the scene has been rendered safe by the appropriate individuals, proceed as with any other scene. A good order of shots is: overall of scene, decedent and cause of trauma (weapons, etc.).

7. FIRE-RELATED SCENES: Investigating fire related scenes is a time consuming task requiring a considerable amount of physical work and attention to minute pieces of physical evidence. The coroner will be responsible for investigating fire related fatalities as a result of motor vehicle accidents, structural fires, or any circumstance whereby the decedent has died from thermal or inhalation injuries from a fire.

Some things to consider are that dark subjects tend to require more light than lighter colored subjects. Dark subjects absorb more light, therefore fire scenes tend to reproduce rather dark photographs, especially fire scenes photographed at night. It is possible with certain cameras to override the automatic exposure setting and get good quality photographs. If your camera/flash combination is a simple manual set-up, then just open the lens one to two stops from what would be your normal setting. If it is a full automatic set-up, adjust your ASA setting to the next lower setting from what you were using. For example, if the film you are using is 100 ASA, adjust your ASA setting to 50 ASA. This will fool the camera metering system into getting more light to the sensor. Since each camera is different use your camera's instruction manual to learn how to adjust your camera's exposure settings.

The basic steps for photographing a fire scene are as follows:

a. Structure Fires:

i. Photograph the house, building or structure from all four sides if possible.

ii. Photograph any accelerant cans or evidence that might be helpful to determine the cause of death.

iii. If the decedent is inside the structure, take an overall photograph of the room where the body is found.

iv. Take a full length photograph of the body prior to removing the remains.

v. Take a close up photograph of the face and head.

vi. Use your discretion to take appropriate photographs of the structure inside that might contribute to the cause of death.

b. Motor Vehicle Fires:

i. Take an initial photograph of the overall accident.

ii. Take photographs of the vehicle in which the body is in from all four sides.

iii. Take a photograph of the body position inside the vehicle.

iv. Take appropriate photographs of the vehicle interior involved in the fire. Pay particular attention to materials and articles that could have caused the fire.