



The Examiner



<http://www.wcmea.com>

Fall 2010

PRESIDENT'S MESSAGE



INSIDE THIS ISSUE:

President's Message	1
Just Say Yes	2
MS Related Heat Death	3
Fatal Fall Analysis	4
Safe Sleep Campaign	5
Flu Season	5
Jim Schurman	6
An Opportunity Worth Sharing	6
NamUs Training	7
Training Opportunities	7
MS Related Death Cont.	8



Greetings from Green Bay, I hope each of you has had an enjoyable summer! The summer months are traditionally quiet for activities pertaining to the WCMEA and this summer was no different. I did however, devote some time to filtering through years of history as I went through the President's briefcase that Jenifer Keach handed to me following the June elections.

While sorting through the impeccably arranged documents, I couldn't help but feel the "spirit" that seemingly floated out of the 1970's vintage "attaché case." Feelings of pride, dedication, and concern seemed to jump out at me with every file that was moved. It reminded me of the importance and responsibility of holding this position of President, and the reasons that I sought another term.

During these past three months I have had an opportunity to speak with many of you either by phone, e-mail, or in person. I have come away from these conversations with a clear picture of the frustrations that many of you share: from staffing problems and low wages to inadequate budgets and "not so understanding" politicians. However, in the same vein, I also sense complacency. Far too many people are throwing up their arms in surrender;

"This the way it's always been," or, "They are never going to give us more" . . . it goes on and on.

As we are all in the middle of budget preparation, there is only one way that things are going to change, and that is through you. Find ways to sell your program. Find friends in local government that will support your cause. Look for

opportunities to sell yourself to your community so that you not just viewed as the "person that takes care of dead people." If you are not involved in your budget preparation then get involved. Put together some numbers, calculate expected costs, and anticipate revenue. It takes time, it takes patience, and above all, it takes dedication.

If I, or other members of the Board of Directors can assist you in any way, be it resources, letters of support, or just plain someone to talk to, please feel free to contact us. Let's go into 2011 with the understanding that we are in this together!

AI



Have an interesting or unusual case to share? Know of a special person you would like to have highlighted in an upcoming issue of the Examiner? We want to hear about them! Please send us, your friendly editors, case information or personal profiles for consideration in the upcoming publications.

Entries can be sent to:

Patrice Plungis or Jennifer Schroeter

515 W. Moreland Blvd.

Waukesha, WI 53188

pplungis@waukeshacounty.gov

jschroeter@waukeshacounty.gov

Just Say Yes

It has recently been brought to my attention that there are some concerns and perhaps confusion when it comes to the coordination of autopsies, and the procurement of tissue and vascularized organs. Although WI Act 230 addresses our perspective roles, I think it would be much easier to present to you some guidelines and explanation as seen through the eyes of someone in the business. As such, I would like to present the following in an effort to clarify our roles as both death investigator and advocate of donation. Please keep in mind that I am referring to deaths where we hold jurisdiction.

- Coroners/Medical Examiners should consult with pathologists to determine restrictions and timing of the donation when an autopsy is to be performed. This is done to protect any evidence and the integrity of the investigation.
- Nurses are not allowed to release bodies or speak on behalf of Coroners/Medical Examiners with regard to tissue donation. It is the responsibility of the Recovery Agent to directly contact the Coroner/Medical Examiner for permission to proceed with donation.
- If the death occurs in a hospital, the donation of tissue shall be to the tissue bank with which the hospital has an agreement. If the death occurs outside the hospital (even if the body is brought in for the purpose of autopsy) the tissue shall be to the tissue bank with which the Coroner/Medical Examiner has an agreement. You may not transfer the decedent to another hospital to eliminate this requirement.

Consent versus Permission

- **Consent** for tissue donation is determined by first person consent or is obtained and documented from families on behalf of their loved one. Consent may come from a family but permission must come from the Coroner/Medical Examiner.
- **Permission** to proceed with tissue donation is obtained from the Coroner/Medical Examiner of record. They have the legal right to restrict or deny permission for tissue donation, and must be contacted with each case falling into their jurisdiction. The Medical Examiner or Coroner is permitted to order a biopsy or deny the removal of the organ/tissue to determine the cause of death **provided a report is filed identifying any reason for determining that the organ may be involved in the cause of death.**

When both consent and permission have been obtained, it is possible for the OPO or Tissue Recovery Agent to consult with the pathologist that will be performing the autopsy so that the recovery does not hinder our ability to determine cause and manner of death. They must also work with the pathologist or their representative to coordinate the recovery with the autopsy schedule.

Communication

- It is imperative that the Recovery Agent clearly communicate with the Coroner/Medical Examiner and with the pathologist if requested. When doing so they should make sure to differentiate consent from the family versus permission from the Coroner/Medical Examiner. For example, when coordinating a recovery with an autopsy, the pathologist or representative should be told that “they have consent from the family for heart valves, bone, skin, connective tissue and eyes and they have spoken with the Coroner/Medical Examiner and gained permission for heart valves, bone, skin, connective tissue and eyes.” Please note - it is not unusual to have consent for a specific gift that may be (**for good reason**) restricted by the Coroner/Medical Examiner.
- The Coroner/Medical Examiner should have discussed the case with the pathologist prior to the pathologist being called by the recovery agent. Often times the call to the pathologist is the first notification they receive about the pending case despite the fact that the Coroner/Medical Examiner was contacted to receive permission. The recovery agent is not responsible for providing case details to the pathologist as they are not the experts and they do not have access to detailed information that is necessary for the pathologist to determine whether or not proceeding with donation will impede their process.
- Inform the Recovery Agent if the recovery can take place prior to autopsy, in conjunction with autopsy, i.e. heart valve recovery witnessed by pathologist, or after autopsy. Keep in mind that reports from recovery surgeons/technicians indicating the condition of the organ/tissue will be made available upon request. Also if a heart is recovered for valves, the processor will upon request provide a full pathology/histology report on the heart that will meet the needs of the pathologist. This is provided in a very timely manner and free of charge.
- If cases are deferred by the recovery agent for any reason, they need to make sure they notify the Coroner/Medical Examiner of that decision. This will allow for other arrangements to be made to assist in the cause and manner of death determination.
- Please remember to request that blood be drawn if recovery is to take place in conjunction with, or after autopsy.

In Wisconsin, hospitals are responsible for reporting all deaths to the OPO and approaching families when patients are eligible for tissue donation. Many times Coroners/Medical Examiners are very knowledgeable about the donation process and are willing to approach families as well. In “the field”, it is the sole responsibility of the Coroner and Medical Examiner to approach the family and make a referral if consent is received. This is a system that has worked very well for families, hospitals, and the donation agencies here in Wisconsin. It is our job to honor and respect that system. Just say yes!

Submitted by Al Klimek, WCMEA President

MS Heat Related Death—A Closer Look

The Waukesha County Medical Examiner's Office investigated the death of a 74-year-old Caucasian male found in the back yard of his residence. He was last seen alive two days prior to being found. He was lying in the grass just outside of a cement patio. His t-shirt was bunched up towards his armpits, exposing his stomach and back. His shorts were pulled down to the middle of his thighs. His socks were partially removed from his feet. He was lying on his left side. He had fixed lividity on his face, left side of his chest, lower arms, legs, hands, and feet. There were no signs of trauma. The temperature that day was hot, sunny and approximately 90 degrees. He was lying in direct sun exposure. The decedent's scooter chair was located partially in the grass and stuck between the flat rocks that bordered the cement patio. The left arm rest of the scooter was up. The decedent had a known history of multiple sclerosis, with numerous calls for emergency lift assistance due to falls.

Significant findings at autopsy included a slightly enlarged heart, mild atherosclerosis of coronary arteries, and finely granular kidneys. The brain was remarkable for multiple, irregularly shaped, sharp-edged areas of demyelination (plaques) identified in the white matter tracts, most prominent in angles of the cerebral ventricles. Plaques were also seen in the cerebellum and brainstem.

CAUSE OF DEATH: ENVIRONMENTAL HEAT EXPOSURE COMPLICATING MULTIPLE SCLEROSIS

Multiple sclerosis is a multifocal, inflammatory demyelinating, and axonal disease of the central nervous system. ¹ The majority of patients have a chronic relapsing and remitting course, characterized by episodes of neurologic dysfunction followed by recovery. Many patients with MS experience a steady decline in neurologic function over time. A minor proportion of MS patients experience a faster decline in neurologic function from the onset of disease without remissions. ²

The detrimental effects of elevated core body temperature on multiple sclerosis have been known for a half century. ³ Many patients with multiple sclerosis experience worsening of their neurologic deficits with exercise and other induced states of hyperthermia. ⁴ This phenomenon is the reason for the "hot tub test" utilized to aid in the diagnosis of the disease. Historically, patients suspected of having multiple sclerosis were placed in a hot bath. During the test, the induced hyperthermia incites the appearance of new signs and symptoms indicating the presence of previously silent lesions. ⁵ The hot tub bath was presumed to be a safe test. The effects of the increased temperature were usually rapidly reversible when the patient was removed from the bath. However, several reports described irreversible neurologic deficits related to the hyperthermia during hot bath testing. ⁶ For this reason, the hot bath test is rarely utilized to assist in the diagnosis. Additionally, new diagnostic testing including nuclear magnetic resonance imaging and evoked potentials have simplified the diagnosis of the disorder. ⁷

In 1990, Waxman and Geschwind described a young woman with multiple sclerosis who developed increased disability in a hot tub bath such that she became unable to get out of the tub, and developed extensive and ultimately fatal second and third degree burns. ⁸ Another case described a 35-year-old woman with a long standing history of relapsing-remitting multiple sclerosis who became physically incapacitated by heat-induced muscle weakness while sunbathing and suffered fatal heat exposure. ⁹

We believe our case above suffered a similar fate. The fact that the arm rest of the chair was up indicated that he likely exited the scooter in an attempt to free it from the rocks where it was stuck, and became overwhelmed by the heat. He was likely removing his clothing in an effort to cool off.

The physiological basis for the adverse effects of increased core temperature on neurological symptoms in multiple sclerosis involves a blocking of the impulse conduction in the demyelinated nerve fibers. Normal myelinated neurons maintain normal conduction until the temperature reaches 44 degrees Celsius when it slows and eventually fails. Patients with multiple sclerosis are at particular risk when the body temperature is raised because as the neuron is progressively demyelinated, the temperature at which nerve conduction fails decreases. A point can be reached where a patient has adequate neuronal conduction at normal body temperature, but even a slight increase in temperature can cause the neuron to fail. ¹⁰

Continued on page 8...

Older Adult Fatal Fall Analysis in Waukesha County

Falls are the leading cause of injury related deaths in the United States.¹ Currently, Wisconsin leads the United States in fatal falls.¹ Recently, in Waukesha County all 2005 and 2006 elderly fall deaths were retrospectively reviewed. Data from death certificates and medical records were examined, and descriptive and analytical statistics resulted in noteworthy preliminary findings.

In 2005 and 2006 there were a total of 216 deaths in Waukesha County due to falls in persons 68-97 years old (mean=85.58 years, SD 6.51). Of those people who died in the county, 127 (59%) experienced a hip fracture as a result of their fatal fall and 18.5% incurred a head injury/subdural hematoma as a result of their fall. Females made up 62.5% of all the falls. The average number of co-morbidities for people who fell was 7.78 (SD=3.8) and the average number of medications prior to falling were 5.8 (SD=3.9). Most of the fatal falls (53.7%) occurred at home, while 25.9% occurred at an assistive living facility, 16.7% at a skilled nursing facility and <2.5% occurred at a hospital.

Females made up 62.5% of all the falls. The average number of co-morbidities for people who fell was 7.78 (SD=3.8) and the average number of medications prior to falling were 5.8 (SD=3.9). Most of the fatal falls (53.7%) occurred at home, while 25.9% occurred at an assistive living facility, 16.7% at a skilled nursing facility and <2.5% occurred at a hospital. Walking, including slips and trips made up 45.6% of the activities residents were involved in when the fall occurred.

Probably, the most startling statistic found through this review was the average number of days from fall to death after each specific injury. Especially startling was the fact that after hip fracture, death occurred on average within 33.35 days (SD 38.65) after the fall. See **Table 1** for time of fall to death from other injuries.

Hip fractures after falls are particularly devastating and caused the greatest number of elderly fall deaths in Waukesha County. This is also consistent with nationwide statistics.² Therefore, further analysis of hip fracture data were performed to determine possible associations with other variables.

Body mass index (BMI) was examined for those who incurred a hip fracture; that is the amount of body fat based on a person's height and weight was assessed, as this may give suggestions on who may be more at risk for hip fractures after a fall. An independent *t*-test found statistical differences ($t=3.837, p=.00$) in the BMI for those who sustained a fatal hip fracture (BMI=22.46, SD= 5.2) and those who did not (BMI=25.73, SD=6.5) after their fall. Further analysis confirmed that when looking at just those people who died after falls with a resultant hip fracture, persons that were considered overweight or obese had fewer hip fractures than expected, where as persons who were considered underweight had higher than expected rates of fatal hip fractures ($X^2_{(3)}=17.316, p=.001$). This suggests those with lower body fat may be at more risk for hip fractures after a fall.

Body Mass Index (BMI)

Residents who experienced a hip fracture had an average number of 7.89 comorbidities and were taking an average of 5.71 medications prior to their fall. Thus, there were no statistically significant differences between the number of comorbidities or medications between those who fell and broke their hip, and those who fell and did not sustain a hip fracture. Subsequent analyses looked at specific medications to determine if there is a link between medication and hip fracture after a fall. For example, anti-ulcer medications have been linked to increase rate of hip fractures.³ However, assessment of Waukesha County data found no statistically significant link between those taking and not taking medications for GERD or heartburn ($X^2_{(1)} = 1.78 p=.182$). Proton pump inhibitors (PPI), however, are specifically linked to the increase in hip fractures and this analysis did not separate between PPI and H2 blockers. Likewise, despite the fact 44.9% of all people who fell were taking one or more anticoagulant medications, upon statistical analysis there does not seem to be an association between fatal hip fractures and anticoagulants ($X^2_{(1)} = .007 p=.936$). As an aside, there also was no association between fatal subdural hematoma and anticoagulants ($X^2_{(1)} = .187 p=.172$) as one might have expected.

Additionally, it might be hypothesized that there is an increase in falls in the winter months.

Continued on next page

Fatal Fall Analysis Continued

Irrespective of Wisconsin weather, there was no significant difference in the number of falls ($X^2_{(3)} = .502, p = .918$), hip fractures ($X^2_{(3)} = .925, p = .820$) or head injuries ($X^2_{(3)} = 6.092, p = .107$) that occurred across seasons. This is consistent with what other authors^{4,5} have found; specifically there does not seem to be a seasonal pattern of falling. Though older adults do *not* fall more in the winter, fall rates do appear to be influenced by climate. That is, those who live in colder climates do fall more, despite no difference in falls or fall deaths by season.

1. CDC. WISQUARS Injury Mortality Report. www.webappa.cdc.gov.
2. <http://www.cdc.gov/HomeandRecreationalSafety/Falls/adulthipfx.html>
3. YX Yang, J D.Lewis, S Epstein, DC. Metz. Long-term Proton Pump Inhibitor Therapy and Risk of Hip Fracture *JAMA*. 2006;296:2947-2953.
4. Saari P, Heikkinen E, Sakari-Rantala R, Rantanen T. Fall-related injuries among initially 75- and 80-year old people during a 10-year follow-up. *Arch Gerontol Geriatr*. 2007;45:207-215.
5. Stevens JA, Thomas KE, Sogolow ED. Seasonal patterns of fatal and nonfatal falls among older adults in the U.S. *Accid Anal Prev*. 2007;39:1239-1244.

Table 1 Average Days from Fall to Death

Injury after fall	Mean	SD	Range
Hip fx (n=127)	33.35	38.65	1-261
Subdural /head injury (n=40)	24.55	45.04	0-220
Pelvic fx (n=14)	18.07	13.98	3-40
Rib fx (n=8)	20.37	31.45	1-96
UE fx (n=6)	20.67	17.52	4-48
Compression fx (n=6)	36.67	30.53	1-76
Vert/cervical fx (n=3)	42.33	37.60	14-85
LE fx (n=6)	45.17	40.82	12-107
Overall	29.91	37.76	0-261

Body Mass Index

<18.5=underweight
19 -24.9= average weight
25-29.9 =overweight
>30 = obese

Written and Submitted By Sara M Deprey PT, DPT, MS, GCS, and Clinical Associate Professor at Carroll University

fx = fracture

The 2010-2011 Flu Season

As we transition from summer to fall, the brisk winds send a chilling reminder that the 2010-2011 flu season is fast approaching. According to the Centers for Disease Control and Prevention (CDC), flu activity most commonly peaks in January and February. Influenza, however, can be just as unpredictable from season to season as Brett Favre's commitment to play football. Vaccinations are already available, and are recommended by the CDC as the first and most important step in protecting against this disease. The 2010-2011 vaccination will protect against the three most common strains seen in 2009 including the H1N1 virus. To highlight the importance of the vaccine, National Influenza Vaccination Week is scheduled for December 5-11, 2010. So, go ahead . . . Get Vaccinated!

A Look at Milwaukee's Safe Sleep Campaign

October is SIDS Awareness month, so with this in mind, we checked in with the Milwaukee County Medical Examiner's Office regarding the Safe Sleep Campaign. The campaign was started in December 2009 by the City of Milwaukee Public Health Department in response to the apparent growing number of infant fatalities related to unsafe sleeping environments. Since its inception, the campaign has been featured on TV, radio spots, billboards, and newspaper ads. A Safe Sleep Summit was also held in May 2010. Most recently, the Safe Sleep Campaign hit the streets of Milwaukee. Neon colored infant silhouettes were painted on numerous mattresses and sofas lining neighborhood streets. The illustrations were linked with ominous messages driving home the potentially fatal consequences of bed-sharing and unsafe sleep environments. With all of these dramatic efforts in conjunction with the media attention, has the Safe Sleep Campaign made a difference?

According to Dr. Brian Peterson, Milwaukee County Medical Examiner, it is still too early to tell. Dr. Peterson stated, "I don't think our numbers (of infant deaths) so far this year have been especially different from any other year."

It may take years not months to see true results. But, it is the continued, consistent community outreach and education that saves lives. Dr. Peterson will be keeping up with educational efforts by participating in the Wisconsin Child Death Review (CDR) Summit this fall. He will be one of several speakers on a panel of experts at the summit, which will be held on November 12, 2010 in Wisconsin Dells.

To obtain additional information regarding the Wisconsin CDR Summit, please Contact Abby Collier at 414.292.4016 or ajcollier@chw.org.

Coroner/Medical Examiner Community Suffers Another Loss

Washburn County mourns the loss of their Deputy Coroner Jim Schurman. Mr. Schurman, 62-years-old, died at his Chicog residence on Tuesday, August 31, 2010. No further details surrounding Mr. Schurman's death are known at this time; however, funeral services were held on September 7, 2010.

Mr. Schurman had been working as a Deputy Coroner and first responder for the last six years, and was a member of the Minong Fire Department for the last nine years. On behalf of the WCMEA, we would like to offer our condolences to Washburn County and the Schurman family.

An Opportunity Worth Sharing

As a member of the WCMEA, I feel that any educational opportunities that one has experienced should be shared. I was fortunate enough to attend the "Outdoor Recovery Course" in Knoxville, Tennessee from June 7, 2010 through June 11, 2010. This was one of the best courses I have taken in recent years.

This course takes place both 'under the stadium' and at the Anthropology Research Facility (ARF), better known as the "Body Farm." First, a little history on the Body Farm. It was started by William Bass, PhD in 1981 during his teaching and tenure at the university in Knoxville, Tennessee. Dr. Bass, with the many donated bodies to his facility, was able to study the rate of decomposition under the various modes. In this facility, there currently are about 300 bodies in an area just over an acre. Some are buried, some are out in the open under trees, or in an open area. They are even studying the bodies that have been 'hanged' with a ligature. Dr. Bass is considered the leading expert in anthropology.

The first 2 ½ days of class were lectures by leading anthropologists that covered the topics of *Human Osteology*, *Introduction to Forensic Anthropology*, *Time Since Death Estimation*, *Forensic Odontology*, *Forensic Entomology* and a lecture called *Case Reviews* by the esteemed Dr. William Bass.

On Day 3, we were taken to the "Body Farm" (It should be noted here that most of the current staff prefers to call it "ARF"). The afternoon was spent on "Scatter Exercise and Entomology Field Exercise." This was excellent in showing what animals do with the bones, for instance we were shown bones that have been gnawed on. Most of the bones are there but you can see what the animals prefer or how they scavenge. The entomology part was very educational as they showed us the various stages of the flies, maggots, beetles and other insects while the body is decomposing. They showed us where to look for the pupae, how far out they can go, and where they can be found.

The final two days were spent on learning how to identify a possible gravesite, and how to properly mark off the site for delineation. In delineation of any grave, you want to work down inch by inch and should keep the level of the grave even all around. In the Body Farm, the soil is layered with clay. After you get down several inches, then you get into the dry soil. We found our bones at a depth of about 24 inches.

I recommend this course for those that are interested in this. Will I ever do a grave recovery? Most likely not due to our structure in Wisconsin, since we have a state crime lab that law enforcement agencies use or it is possible that the agencies will do it themselves. If an opportunity should ever arise, and I am allowed to be at the recovery site to observe or help, I will be a willing participant and will know how things are being done.

If there is any interest in this class, go to <http://web.utk.edu/~fac/courses.html> and check out the information.

Submitted by Thomas O'Connor, Chief Investigator for the Fond du Lac County Medical Examiner's Office

Interesting cases handled by Wisconsin's death investigators

- In Fond du Lac County, a 52-year-old man died after being struck and then run over by a tractor on his farm.
- In Milwaukee County, a 43-year-old man died while in police custody. He had just been picked up and was being transported for a mental health evaluation.
- In Winnebago County, a 26-year-old man died when a trench collapsed at a job site.
- In Columbia County, a 32-year-old man died in a fiery crash when the semi he was driving struck the back of another semi, which had slowed down in a construction zone.
- In Waukesha County, a man called police, telling them "if the police don't get here, he'd end up killing someone". He did, shooting and killing his friend. The pair had spent several hours drinking before they got into an argument.
- In Sawyer County, a utility worker was electrocuted by a downed power line during storm clean up.
- In Bayfield County, a 61-year-old man died on the ore boat "Stewart J. Cort" 10 miles northwest of Devils Island. The man was crushed when he got caught in a conveyer belt.
- In Racine County, a 52-year-old man died after being gored by a bull.
- In Marinette County, a man died while trying to retrieve a fishing pole, which had fallen into the water. The man drowned.

Wisconsin contingent attends NamUs Training

Five people from Wisconsin attended NamUs training July 19-21 in St. Louis, MO. NamUs stands for National Missing and Unidentified Persons System. NamUs is a clearinghouse for missing persons and unidentified decedent records. NamUs is a free online system that can be searched by medical examiners, coroners, law enforcement officials and the general public to solve these cases.

When a new missing persons or unidentified decedent case is entered into NamUs, the system automatically performs cross-matching comparisons between the databases, searching for matches or similarities between cases. NamUs also provides free DNA testing and other forensic services, such as anthropology and odontology assistance.

Wisconsin coroners, medical examiners and law enforcement personnel are strongly encouraged to check out NamUs and are asked to consider entering appropriate cases into the NamUs database. Their website is www.namus.gov. If you have a case that you would like entered, you can contact Jon Hagen (jonhagen@aol.com) for more information.

Wisconsin representatives at the conference were Genevieve Penn, investigator for the Milwaukee County Medical Examiner's office; Susan WhiteHorse from the Wisconsin Department of Justice; Barbara Nelson, Criminal Justice Center of Fox Valley Technical College; Don Simley, DDS, Forensic Dental Consultant; and Jon Hagen, RN, D-ABMDI, Chief Deputy Coroner of Outagamie County. Julie Howe, Executive Director of the American Board of Medicolegal Death Investigators (ABMDI), served as the moderator for "Team Wisconsin."



(L-R) Jon Hagen, Genevieve Penn, Julie Howe, Barbara Nelson, Susan WhiteHorse and Dr. Don Simley.

Other states participating in the regional training were Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Ohio and West Virginia. This course was the first of five regional training courses to be held in the United States. Upcoming conferences are scheduled for Albuquerque, Los Angeles, Baltimore and Atlanta.

Submitted by Jon Hagen, Outagamie County Chief Deputy Coroner

Training Opportunities...

National Association of Medical Examiners 44th Annual Meeting, Renaissance Cleveland Hotel in Cleveland, OH. October 1-6, 2010. For more information contact: Mary Fran Ernst (314) 422-6846 or ernstmf@slu.edu

Cyril H. Wecht Institute of Forensic Science and Law 10th Annual Conference - Cause and Manner of Death. November 19-20, 2010. Hosted by The Cyril H. Wecht Institute of Forensic Science and Law. To be held at Duquesne University in Pittsburgh, PA. Contact: www.duq.edu/forensics

Homicides, Suicides and Suspicious Death Investigations
Nov. 1 - 3, 2010 0800-1630 Cost \$155
Contact Jessica Heimann (920) 735-4773 heimann@fvtc.edu

Investigative Photography
January 4- 7, 2011 Cost \$395 contact Jessica Heimann (920) 735-4773 heimann@fvtc.edu
Classes are at Fox Valley Technical College in Appleton.

27th Annual Forensic Science Seminar, October 14-15, 2010, Brooklyn Center, Minnesota.

Visit <http://home.earthlink.net/~mc-mea/>

22nd Annual John R. Teggatz Forensic Science Seminar. November 3-4, 2010. Please contact the Milwaukee County Medical Examiner's Office for more information 414-223-1200

Basic & Advanced Training in the Medicolegal Investigation of Death. Hosted by the New York City's Office of the Medical Examiner and funded by the National Institute of Justice. Multiple dates in 2010 and 2011. Email Barbara Butcher at BButcher@ocme.nyc.gov or <http://www.nyc.gov/html/ocme/html/training/courses.shtml>

The National Missing and Unidentified Persons System (NamUs) Training Academy. November 8-10, 2010 in Albuquerque, New Mexico. Sponsored by the National Institute of Justice.

<http://www.ojp.usdoj.gov/nij/training/forensic.htm>

Patrice Plungis & Jennifer Schroeter
 Waukesha ME's Office
 515 W. Moreland Boulevard
 Waukesha, WI 53188
 (262) 548-7575



MS Heat Related Death...Continued from page 3

In summary, significant elevations in body temperature are risky for patients with MS. Elevated temperatures may precipitate a permanent neurological deficit or expose the patient to circumstances that may lead to serious injury or death. First responders should be aware of this phenomenon so that rapid treatment is made available. Additionally, individuals with MS should be advised to avoid exposure to excessive heat.

REFERENCES

1. Dutta R, Trapp BD. Pathogenesis of axonal and neuronal damage in multiple sclerosis. *Neurology* 2007;68(Suppl) 3:S22-S31; discussion S43-S54
2. Noseworthy JH, Luchinetti C, Rodriguez M, et al. Multiple sclerosis. *N Engl J Med* 2000;343:938-952
3. Simons DJ. A note on the effect of heat and cold upon certain symptoms of multiple sclerosis. *Bull Neurol Inst NY.* 1937; 6:385-6
4. Raymond LA, Sacks JG, Choromokos E, Knodadad G. Short posterior ciliary artery insufficiency with hyperthermia (Unthoff's symptoms). *Am J Opth.* 1980;90:619-23
5. Malhotra AS. The hot bath test in the diagnosis of multiple sclerosis. *JAMA.* 1981; 246:1113-4
6. Berger JR, Sheremata WA. Persistent neurological deficit precipitated by the hot bath test. *JAMA.* 1983;249:1751-3
7. Rolak LA. Hot bath test. *JAMA.* 1983;250:3281-2
8. Waxman SG, Geschwind N. Major morbidity related to hyperthermia in multiple sclerosis. *Ann Neurol.* 1983;13:348
9. Harbison JW, Calabrese VP, Edlich RF. A fatal case of sun exposure in multiple sclerosis patient. *Journ of Emerg Med.* 1989;7:465-7
10. Davis FA, Jacobson F. Altered thermal sensitivity in injured demyelinated nerve: a possible role of temperature effects in multiple sclerosis. *J Neurol Neurosurg Psych.* 1971;37:152-61

Submitted by Dr. Zeldia Okia, Associate Medical Examiner for the Waukesha County Medical Examiner's Office