

LIGHTNING DATA CENTER
MINUTES
July 9, 2004
St. Anthony Hospital, Denver, CO
www.Stanthonyldc.org

Quote of the Month:

“The discovery of penicillin, the first broad-spectrum antibiotic, revolutionized medicine. It was made, however, by a very unlikely revolutionary – a modest, reticent, and self-effacing man who hid his brilliance and intense drive from almost everyone. Alexander Fleming’s (1881-1955) eye fell on a petri dish dotted with colonies of staphylococcus bacteria contaminated by a splotch of mold. Fleming instantly noticed that the staph colonies close to the mold had dissolved. Fleming presented his first findings about penicillin to the Medical Research Club. And his colleagues ignored what he had to say.”

Robert E. Adler, 2004 in *Medical Firsts*

1. Meeting began at 11:30 am and adjourned at 1:30 pm.
2. Members present: Bourg, Burrows, Cherington, Clark, Cohen, Collier, Coniglio, Ellis, Estep, Finnegan, Foley, Gift, Glancy, Grant, Keen, Mendez, Moore, Nibbe, Nitka, Olsen, Olson, Resignolo, Russon, Sandstrom, Stewart, Stoll, Thomas, Wachtel, Wells, Wiggins, Yarwood.
3. I brought the following articles (abstracted in part here):
 - a. Gatewood MO, Zane RD. Lightning injuries. *Emerg Med Clin NA* 2004;22:369-403

“A victim is highly unlikely to die unless cardiopulmonary arrest is suffered as an immediate effect of the strike. The respiratory arrest caused by paralysis of the medullary respiratory center might last far longer than cardiac arrest. Other than a few anecdotal reports, there is no reason to believe that lightning victims can recover after prolonged CPR. If the victim has not regained a pulse after 20 to 30 minutes of resuscitation, as in most cardiac arrest, the chances for recovery are slim to none and the rescuer should not feel guilty about stopping the resuscitation. Before pronouncing the victim dead, the rescuer must be sure that other reversible problems such as hypothermia are not clouding the victim’s response to resuscitation efforts.”

- b. Schlatter T. Weatherqueries. Can lightning strike the sea surface? If so, what happens to the fish and the water in the vicinity? R. Botha Weatherwise July 2004, pp 55-6

“What if you are unlucky enough to be swimming when lightning strikes the water? Lightning experts agree that most of the electric current in a lightning strike spread out on the surface of the water. Little current enters the water. Thus if fish or humans are completely submerged when lightning strikes nearby they may avoid injury. If they are only partly submerged, they risk injury.”

4. We started with a brief round table discussion of cardiac arrest, respiratory arrest, precordial thump, ventricular fibrillation and CPR. Gerald Estep, Larry Moore and Sheryl Olson lead the discussion. Sheryl mentioned that since the heart is capable of automaticity, a patient’s pulse might return spontaneously. By contrast respiratory arrest is not characterized by this automatic behavior. Tom Resignolo stated that recent data on CPR save rates reveals that better results are being reported with effective CPR. Save rates of a few years ago were about 1 to 3%. More recent experience reported from the Seattle area reveals a CPR save rate of nearly 30%.
5. Today’s presentation was an outstanding one. It generated much discussion. Tom Resignolo, Pre-Hospital Field Coordinator, was the moderator. The presentation dealt with three lightning cases. Two of the lightning victims were on a golf range. The patients were attended to by members of the West Metro Fire Department who arrived shortly after the strike. Brendon Finnegan described the findings and care of the 16 year old patient. Randy Stoll discussed the findings and care of the second golfer, a 48 year old man who did not survive the lightning strike. The LDC members, who listened to the details of these rescue attempts, were impressed by the professionalism and competence of the West Metro Fire Department personnel who are called to these events. The third case was presented by Joe Ellis of South Park Ambulance District. Joe also gave a compelling presentation of a man who was struck at about 13,500 feet on Cameron Peak near Fairplay, CO. He was hiking alone when the lightning struck at about 12:30 pm. He was thrown to the ground. Both hiking boots were damaged. The patient survived the lightning strike. He walked down the mountain on his own.
6. Several members discussed the value of Automatic External Defibrillators (AED). Kurt Sandstrom of Zoll spoke about the increasing utilization of AEDs (in airplanes, golf courses, etc.) . Larry Moore stressed the importance of CPR along with AED. Pam Bourg mentioned that the initial studies on AEDs were done on golf courses in Scottsdale, AZ.

7. I shared an email sent by a physician whose patient was riding a bike when lightning struck a nearby mast carrying power cables. This mast was 3 feet from the biker. The patient had no skin changes but did complain of pain and tingling in the left arm. The physician asked if the patient's symptoms could be caused by "strong fields?" Rick Russon and Howard Wachtel suggested that charge build up prior to the actual lightning strike can have clinical effects.
8. These minutes do not represent official positions of LDC or its members. They simply reflect the comments made at the meeting.
9. Next meeting: Friday, August 13, 2004 at 11:30 am in the Main Auditorium of St. Anthony Central Hospital.

Scheduled speaker: Philip Yarnell, MD
Topic: Lightning cases – Colorado 2004

Respectfully submitted,

Michael Cherington, MD