

July 11, 1997      Minutes      Lightning Data Center      St. Anthony Hospital Central

Quote of the Month:

"A charming, if apocryphal, story concerns Niels Bohr, the eminent physicist, who was asked by a friend who had noticed a horseshoe hanging on his wall, "Do you really believe in the superstition about horseshoes?" "Absolutely not," replied Bohr. "Then why do you hang one in your home?" "Because," responded Bohr, "it has been clearly demonstrated that horseshoe bring good luck, even when one doesn't believe in them."

Richard B. Blacher [*Perseps Biol Med* 1997]

1. Meeting began at 11:30 am and adjourned at 1:40 pm.
2. Members present: Cherington, Clark, Foley, Hasty, Kamin, Kimberling, Kithil, Simmons, Swanson, Toler, H Wachtel, Yarnell.
3. I reported on a meeting held on June 20 in the Administration Board Room of St. Anthony Hospital Central to complete the unfinished business of our June 13 meeting. Those in attendance were: Cherington, Glancy Kamin Keen Kithil Swanson, Yarnell. Since its inception over 5 years ago, LDC has grown in size and reputation. Up till now LDC has provided a forum for sharing information among our members and with others. A new structure is needed to deal with the increasing numbers of issues that confront us (e.g. develop new programs, issues of patient confidentiality; remind members that they speak for themselves, not LDC, when speaking to the media, unless they get clearance from our Administrative Committee; developing a speakers panel; study the feasibility of position statements, arrange for programs at our meetings, etc. etc.) An Administrative Committee (AC) was nominated composed of physicians and other scientists, and members of St. Anthony Hospital: Cherington, Gustafson, Holle, Kamin, Keen, Kithil, Wachtel, Yarnell. Rich Keen was nominated as AC Chair. Cherington was nominated as Vice Chair. Members agreed that medical focus of the group be preserved.

All agreed that "think tank" aspect of LDC with the relaxed "give and take" of our monthly meetings be preserved. Cherington will continue to chair the Scientific Committee of LDC. AC will meet each month at 11:00 am just prior to our Scientific Committee Meeting. All LDC members are invited to attend the 11:00 business meeting as well as the Scientific Meeting. LDC members expressed their approval of the AC.

4. I brought the following articles to the meeting:
  - a. The underreporting lightning injuries and deaths in Colorado by Lopez, Holle, Heitkamp, Boyson, Cherington, and Langford. Bull Am Meteor Soc 1993;74:2171-78. This article contains the mission statement of LDC. Our Administrative Committee will review that statement and decide if any changes and revisions in our mission statement should be recommended.
  - b. Apoptosis and delayed degeneration after spinal cord injury in rats and monkeys. by Crowe, Bresnahan, Shuman, Masters, Beattie. Nature Med 1997;3:73-76

{I find this article to be of interest because of the clinical observations that some

lightning and electrical trauma neurologic disorders have been reported to occur after a delay of days to months.} The authors define apoptosis as a morphologically defined form of programmed cell death seen in a variety of circumstances, including immune cell selection, carcinogenesis and development. Apoptosis has been seen after ischemic or traumatic injury to the central nervous system. Apoptosis of remote oligodendrocytes might be initiated by the withdrawal of trophic factors after axonal loss. Alternatively, cytokines secreted by microglia might induce apoptosis...a possible cause of demyelination in multiple sclerosis.

c. Recent advances in the management of spinal cord injury (SCI).

by Morris, Marshall. West J Med 1997;166:414-5. "As soon as any neurological deficit consistent with spinal cord injury is identified, the spinal axis is presumed to be unstable...and full spinal precautions must be instituted...The patient is immobilized in a rigid cervical collar secured to a full-length backboard with straps securing the torso and pelvis. Any patient transfers or movements must preserve this alignment....New evidence has just been published from a double-blind prospective randomized trial which studied tirilazad, a new aminosteriod with potent antioxidant effects...In the optimal management of SCI, high-dose methylprednisolone therapy is indicated...If the initial bolus is started within 3 hours of injury, 24 hour treatment is appropriate.

d. Lightning in the region of the TOGA (Tropical Oceans and Global Atmosphere COARE (Coupled Ocean-Atmosphere Response Experiment)). by Orville, Zipser, Brook, Weidman, Aulich, Krider, Christian, Goodman, Blakeslee, Cummins. Bull Am Meteor Soc 1997;78:1055-67.

"In the United States, there are now networks of lightning sensors that monitor the characteristics of lightning flashes to ground over millions of square kilometers. These characteristics include the location, time number of return strokes in the flash, and the polarity and peak signal strength (peak current) in the first stroke... Measurements along coastlines and near islands suggest that the average flashing rate is less than that in storms over land at midlatitudes, perhaps once per minute... The deployment of direction finder network for 12 months along the equator in the western pacific is a unique experiment from which we are just beginning to analyze data. Our initial results document the relatively low cloud-to-ground flash activity with a measured ground flash density maximum of 2.0 flashes km<sup>-2</sup> for the year."

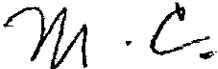
5. Julie Kimberling brought us up to date on the ongoing project to collect and analyze data on lightning casualties. Julie, Michael Boyson, and I met yesterday to review the data from: Colorado Hospital Association inpatient and outpatient categories; death statistics from the Colorado Department of Health; Storm Data. As expected, the number of outpatients exceed the number of inpatients. There are two areas that need examination: 1) Coroner's data on out of state fatalities. Mike Foley will check this area by next meeting; 2) Newsclips for past 3 years. Steve Clark will work with Julie on this part of our project.
6. Rich Kithil submitted the NLSI report which is attached to these minutes. He also summarized data on lightning damage as accumulated by NFPA (National Fire Protection Association) which is attached.

Rich suggested we develop a questionnaire to be sent with this mailing. We invite all members to respond to this questionnaire and send it along with their CV or resume by mail or fax to our office (fax number = 303 595 6905). The questionnaire is attached with these minutes.

Rich reported that 2 paragliders were injured when lightning struck the rope between them. This accident occurred in Naples, Florida.

7. Phil Yarnell invited two patients to attend our meeting.
  - a.) A woman suffered an electric shock from the phone which she held to her right ear. Since then she has had many symptoms. On examination she shows an asymmetry of her face with possible weakness of the right face. Two co-workers had experienced smaller shocks from the same phone earlier. Mike Foley suggested two possibilities to explain the electrical fault: 1) static electricity; 2) equipment malfunction.
  - b.) A police officer suffered ventricular fibrillation when he held a measuring tape near an overhead powerline. He was in a bucket truck on an assignment. The tape was of fiberglass material. CPR was administered immediately. He has retrograde amnesia (3 hours).
8. Warren Simmons read a letter from the USGA (United States Golf Association). USGA has provided posters to directors of golf courses. Many of the "shelters" on golf courses are open on all sides. They are rain shelter, not lightning shelters.
9. Gary Hasty reported on lightning incidents in the National Parks. On June 22, 6 hikers were injured in The Great Smoky Mountains. On July 5, the beach at Cape Hatteras was closed by the life guard because of thunderstorms. An 18 year old man was killed and 11 other people were injured.
10. Carl Swanson showed slides of lightning. Some of the photos were taken at the Langmuir site in Socorro, NM.
11. In an article in the July 3 issue of the New England Journal of Medicine on 'residential exposure to magnetic fields,' Howard Wachtel is listed in the acknowledgment section. Howard will discuss this article at our next meeting.
12. Next meeting: Friday, August 8, 1997 at 11:30 am in the Main Auditorium of St. Anthony Hospital Central.

Respectfully submitted,



Michael Cherington, MD  
Chair, Scientific Committee, LDC

# **LDC MEMBER QUESTIONNAIRE**

(PLEASE RETURN VIA FAX TO CHERYL TOLER 303-595-6905

OR MAIL TO:

ST. ANTHONY HOSPITAL- LIGHTNING DATA CENTER

3 NORTH- C/O ORTHO/NEURO/REHAB SERVICES

4231 WEST 16TH AVENUE, DENVER, CO 80204)

1. Is the LDC newsletter useful to you?

Why? \_\_\_\_\_

\_\_\_\_\_

Why not? \_\_\_\_\_

\_\_\_\_\_

2. LDC is seeking new directions and new missions. What future work should LDC undertake? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Would it benefit your organization for LDC to work more closely with it? In what areas or capacity?

\_\_\_\_\_

\_\_\_\_\_

4. What is your specific interest in lightning issues? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Would you be interested in actively participating in research projects taken on by LDC? This may include writing a research paper.

\_\_\_\_\_

\_\_\_\_\_

6. Other?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

PLEASE SEND YOUR RESUME (CV) TO LDC FOR OUR FILES AND REFERENCE.