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Interview with Donna Seger

(In this special issue on toxicology, we have interviewed three world famous toxicologists. This is the first in this special series.

Donna Seger obtained both her B.S. and M.D. from the University of North Dakota, Grand Forks, North Dakota. Following a rotating internship in Fargo, North Dakota, she completed a residency in Emergency Medicine and then a Toxicology Fellowship at the University of Cincinnati in Cincinnati, Ohio. She was Residency Director in the Department of Emergency Medicine in Jacksonville, Florida from 1981 to 1985. From 1985 to 1988, she was Assistant Residency Director in the Department of Emergency Medicine and Associate Medical Director of the Arizona Poison Center in Tucson, Arizona. She has been at Vanderbilt University Medical Center since 1988, first in the Department of Emergency Medicine and then in the Center for Clinical Toxicology. She is Assistant Professor of Medicine and Program and Medical Director of the Tennessee Poison Center.).

Donna Seger



Dr. Seger currently supervises the toxicology admitting and outpatient services and acts as Fellowship Director for the clinical toxicology training program in the Center for Clinical Toxicology. Her research interests include carbon monoxide toxicity and clinical outcome studies.

We at the "Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology" approached her for an online interview and she graciously agreed. The interview was conducted by our guest editor Professor V.V. Pillay for well over two months. Some excerpts.. ..)

Q. What made you take up toxicology as a career option?

A. During my internship, I developed a great interest in pharmacology. My first rotation was in the Newborn Intensive Care Unit. I was fascinated giving such small doses of drugs, (such as 1 mg of furosemide). That rotation also gave me an in-depth look at drug interactions, and the differences in drug metabolism, etc., in the neonate. I wanted to learn more about drugs. My interest in toxicology continued during my Emergency Medicine Residency. Upon completing that residency, I decided to do a Toxicology Fellowship.

Q. Could you tell us a little more about that fellowship? Which University offers it, and how it is different from an MD in Toxicology?

A. I completed my Fellowship at the University of Cincinnati in Ohio. To enter a Toxicology Fellowship, one must have obtained an MD degree, and completed one residency. I was one of the first Fellows in Toxicology. I spent most of my time in the Intensive Care Unit, some of my time in the Emergency Department, and a bit of time doing research. It was not well structured at that time. The Toxicology Fellowships are much more structured now.

Q. Do you ever feel you made the wrong decision? Given a second chance would you choose differently?

A. I feel very fortunate that I made this decision. I was an emergency physician for almost 20 years, and spent a part of that time in toxicology, but did not have the salary support that allowed full time practice of toxicology. Due to some administrative changes in the hospital in 1997, I was able to start to spend more time in toxicology, and subsequently was able to move into toxicology full time. It was a risky decision to leave emergency medicine and move into toxicology, as I did not know where the field would lead me. But it's been a great ride.

File photo of Donna Seger in her earlier days (from our archives)



Q. What exactly is the nature of your work as Medical Director of Tennessee Poison Center?

A. My work varies, which is one of the things I enjoy. One-half day each week, I see patients in my clinic. These are primarily occupational exposures. At all times, I see both adult and pediatric overdose patients in the ED. I have admitting privileges for adult overdose patients in the Medical Intensive Care Unit.

As Medical Director of the Tennessee Poison Center, I am responsible for the medical recommendations given by the Specialists in Poison Information, the budget, the day-to-day operation of the center, and I am on-call as physician toxicologist back-up for the Center.

We have Emergency Medicine Residents and Pharm D residents who rotate through the Poison Center. I spend time teaching and lecturing each day. I also travel throughout the state and give toxicology lectures to physicians and other health care providers.

Q. What is your work schedule and level of professional satisfaction?

A. I am on call 24 hours a day, 7 days a week. I see the majority of admitted overdose patients, discuss them with residents, and take part in their care. On Mondays, I am in the clinic for half the day. I present a case (or the emergency medicine resident does, after discussion with me) at the Tuesday noon conference every week. My academic appointment is in the Division of Clinical Pharmacology, Dept of Medicine. I am required to attend at least 2 hours of conference/ week in this Department. I have been a member of various hospital committees such as the Investigational Review Board (IRB). I deal with administrative issues in the Poison Center every day such as staff meetings, budgets, and day-to-day operations. I give lectures to medical students, residents, and at conferences for emergency physicians, nurses, and other health care providers throughout the state.

I am intermittently involved with the state Dept of Health regarding medical policies. I will speak before the legislature this week regarding a bill about Alternative Medicine.

I occasionally do media interviews on current toxicology topics for both radio and television.

I am very satisfied with my job.

Donna's Superlatives



Here is Donna Seger for you in a nutshell:

First award : Valedictorian, Senior High School

First book: Laura Ingalls Wilder Series

Greatest inspiration: Grandmother

I am passionate about: unfairness

I don't compromise with: fools

I hate: incompetence

I Love: Travel

I would like to be marooned on a desert island with: a group of friends.

My Birthday: July 30, 1952.

My favorite food: tomato sandwich on white bread.

My favorite possession: pictures of my children

My favorite quote: Winston Churchill "The road to hell is paved with good intentions"

My greatest necessity: warmth.

My life's mantra: Do no harm.

My strength: humor

Place Of Birth: North Dakota, USA.

The move that kick started my career: First female intern in North Dakota

What touches me most: compassion in others.

Where do I see myself five years down the line: still working.

Who or what would I like to be born as in my next life: President of the US

Q. What are the kinds of cases that are commonly encountered in your area? Any memorable or unusual cases?

A. We see many intentional overdoses, which include anticonvulsants (I think there are so many of these anticonvulsants which are also used to treat patients with mood disorders) and myriad other drugs. Most of the cases are multiple drug overdoses. Acetaminophen is frequently encountered in suicidal overdoses, as well as supratherapeutic overdoses that result in hepatotoxicity. Many of the interesting cases that I have seen have involved overdoses of salicylate, hydroxychloroquine, thallium, and tricyclic antidepressants. I also see a number of brown recluse spider bites and snakebites.

Q. Your schedule seems to leave very little time for other activities! What are your interests with reference to sports, music, etc?

A. I have two teenage sons, which takes all of my free time. Although I have only two sons, there always seems to be from 3 to 5 teenagers in my house! I enjoy working out daily and do some Yoga. I play piano and flute. I also love to read mysteries.

Q. Does your center have an analytical facility to test samples for poisons or drugs? What instruments do you use?

A. We have an analytical toxicology laboratory. Sheila Dawling PhD is the Chief of the Toxicology Lab. All testing and equipment is under her guidance. We have 24 hour availability of toxicology testing for both urine and blood.

Our center is nationally accredited, which means it fulfills all the accreditation requirements set forth by the American Association of Poison Control Centers. This year, our Poison Center hotline will answer more than 100,000 telephone calls from the public and health professionals. These calls include toddler misadventures, occupational and environmental exposures, analytical questions, and questions from physicians/nurses regarding management of sick overdose patients We also do approximately 400 Poison Prevention presentations a year.

Q. Wow! That's more than 250 calls a day! How do you manage to deal with so many calls?

A. We have 11 Certified Specialists in Poison Information. These professionals are physicians, nurses, or pharmacists who have received their certification by passing an examination in Poison Information. They answer the calls in the telephone hotline. I am paged if the patient meets the criteria for a life-threatening overdose, or if there is a request to transfer the patient to our institution, or if a physician wants to speak to me.

Q. Is toxicology a part of the undergraduate curriculum for medical students in the USA? If so, is it taught as a separate entity, or is it clubbed with some other specialty such as internal medicine? Are you happy with the existing situation, or should something more be done to train medical students in toxicology?

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A. The toxicology curriculum varies considerably among medical schools. Medical schools that have a Poison Center affiliated with the University are more likely to have some aspect of toxicology as part of their curriculum. Toxicology is most frequently taught within the Department of Emergency Medicine, sometimes Internal Medicine. There is a paucity of toxicology taught in the medical schools at this time. That is changing, but the change is very slow.

Q. How do medical colleagues react to the field of toxicology? Do they consult you often?

A. My medical colleagues consult me frequently on matters relating to drug overdoses, drug adverse effects and drug interactions, as well as poisoning with chemicals. It has been a process for them to learn about the field of toxicology.

Q. What has the American Academy of Clinical Toxicology (AACT) achieved with regard to improvement of the specialty in your country?

A. Due to divergence of opinions on matters relating to gastrointestinal decontamination (GID), the AACT and the European Association of Poison Centers and Clinical Toxicologists (EAPCCT) worked together to develop Position Statements on GID in 1997. During my tenure as President, these were updated. This was a great effort from members of more than 60 countries. But it has changed the practice of GID in both Europe and North America.

A Memorandum of Understanding between AACT and the National Institute of Occupational Safety and Health (NIOSH) was also signed, which gives AACT the opportunity to work with the government on many projects.

One of the major goals (and accomplishments) of the AACT is the annual conference - The North American Conference of Clinical Toxicology (NACCT). This conference is a major educational endeavor. Last year 700 toxicologists attended this meeting. It is a 3.5 day event, and includes multiple symposia - some with well-known invited speakers, presentations of research from both platform and poster venues, and committee meetings. Social events are also a highlight.

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Q. Membership of the American Academy of Clinical Toxicology is very expensive. And the journal (*J Toxicol Clin Toxicol*) is beyond the reach of most doctors and hospitals in India because of the cost. Is there any way of subsidizing the costs, so that medical professionals from developing countries such as India could have easier access?

A. I shall discuss this issue with the current editor of J Toxicol/ Clin Toxicol and get back to you.

Q. Is toxicology better developed in Europe as compared to the US?

A. Toxicology is different in Europe as compared to the US. In Europe, the majority of calls made to poison centers come from health professionals. In the US, the majority of the calls come from the general public. Poison centers in the US are very different from state to state, depending on how they are funded, their liaisons, interaction with public health, state government, etc. At the NACCT and the International Congress of EAPCCT, toxicologists from poison centers in Europe and North America have joint symposia and discussions to learn from each other. The World Health Organization is working to bring toxicologists from poison centers in countries all over the world together to exchange ideas.

Q. How would you compare the situation with reference to toxicology in the US and developing countries such as India?

A. The AACT is an international organization and supports toxicologists in developing countries. One of the projects I had undertaken as AACT President was to develop a grant so that investigators from developing countries could attend the NACCT. In 2004, two investigators were funded to attend the NACCT in Seattle, Washington, and present their research. Dr. P.P. Kaul, from the Industrial Toxicology Research Centre in Lucknow, India presented a poster on "Intrauterine Lead Exposure in Pre-eclamptic Pregnancies". Dexter Tagwireyi, Ph.D from the University of Zimbabwe presented a poster on "Differences in Poisoning Admission Between Urban and Rural Heath Centers in Zimbabwe". This grant is a step towards understanding the needs of toxicology in developing countries, and from that understanding, the development of future projects.

Q. Any plans of writing a textbook or reference work in toxicology?

A. Yes. I have recently agreed to be one of the editors of a textbook in toxicology. Negotiations are in progress now.

Dr. Seger can be approached via E-mail at donna.seger@Vanderbilt.Edu.

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