

The 2009 Ellenhorn Lecture Steven M Marcus

I stand here honored and humble to have been chosen for this honor. For many reasons I really never thought that I would receive such an honor. In fact, when I was called by Keith informing me of the fact that the college wanted to honor me, my first reaction was, “you have to be kidding.” I never thought that anything I have ever done represented anything particularly innovative, that what I have done all of my life was to simply apply other peoples’ innovations. When I first arrived in New Jersey, I was considered innovative, by simply practicing what I had learned through my experience in my residency and in the Navy. My second reaction was that I had not been totally happy with the organization or the direction the discipline had been going over the past decade and really did not think that I could accept it. I remembered the comment by Groucho Marx, one of my childhood heroes, that I would not want to join a club which would have me. At Keith’s urging, I agreed to discuss it with others and call him back. Among those I called, it turned out, was one of the individuals who, unknown to me at the time of my call, had nominated me for the award. He stated that of everyone he knew in the medical toxicology movement, I was the modern Matthew Ellenhorn. He told me that he felt my style, my actions all represented what Matt Ellenhorn lived. This started some intensive introspection. At some age, and obviously I reached it, one does begin looking back on where you came from, what you have done in your personal and professional life and what you would like to still accomplish. This past year has been very stressful in that I was forced to come to grips with my own mortality by experiencing the sudden death of individuals, friends and acquaintances I knew, often younger than I, and who appeared, obviously only on the surface, more vital than myself. I guess all of us were affected in some way from the death of our colleague Michael Shannon.

Yesterday we heard from Marty Smilkstein about what he described as random movements in his career. On the other hand, I believe that my personal career was guided by some other force, even my acceptance of this award seems almost to have been lead by some mysterious force.

As part of my decision making I called my brother in law, my personal ethics helper, “Rabbi Ken,” as my children lovingly call him. He actually officiated at the marriage of all three of my children. We talked a bit about my reasons to decline the award but, more importantly, he asked the date of the award and when I mentioned NACCT “week” his reaction “that’s yuntoff.” I rarely look much farther ahead than the next day, so I had not checked the schedule. I said that he must be wrong, or I must have the wrong dates. I could not believe that the organizing groups could be so insensitive or could have missed such a thing. Apparently I was incorrect, the NACCT planning committee had either not done its homework, or was uninformed, or just insensitive about the seriousness of planning the meeting this week. If the planning committee had done its homework, it would have noticed that at both ends of the week lay the two holiest days in the Jewish calendar, Rosh Hashanah, the Jewish New Year was celebrated Friday night through Sunday evening and Yom Kippur, the Day of Atonement, begins at sundown this Sunday. Interestingly, even when we pointed out to the powers involved with planning the

meeting, or even parts of the meeting we were told that nothing could be changed, of course even the National football league changed games this year scheduled on the day of the beginning of Yom Kippur. A senior, well respected medical toxicologist, one that I even support, asked me why I thought that the “world has to revolve around me.” He stated that he had just been through organizing a meeting and it is difficult to “satisfy everyone.” He also admitted that many fewer had attended his meeting because it conflicted with the Jewish and Muslim Holidays. Even he missed the point. As an aside, one of my idols growing up in Brooklyn was Brooklyn Dodger great Sandy Kofax, who refused to pitch on Yom Kippur. The man whose name the award I am accepting, Matthew Ellenhorn was a learned, observant Jew. Both editions of his textbook carry the Talmudic statement: “He who saves one life is as one who has saved a whole world.” Matthew actually elected to include only a portion of the actual phrase from Sanhedrin, Mishnah Five: “Therefore but a single person was created in the world, to teach that if any man caused a single life to perish from Israel, he is deemed by Scripture as if he had caused a whole world to perish; and anyone who saves a single soul from Israel, he is deemed by Scripture as if he had saved a whole world.” The ten days starting with the eve of Rosh Hashanah, and ending with Yom Kippur are commonly known as Yamim Noraim, the Days of Awe, or the Days of Repentance. This is classically a time for serious introspection, a time to consider the sins of the previous year and to repent before Yom Kippur. In our tradition it is said that G-d has a “book” in which he writes our names. Each year G-d opens the book on Rosh Hashanah and deliberates upon who will have a good life and who will have a bad life for the next year and who will live and who will die. Our actions during the Days of Awe can alter G-d’s decree. During the week Jews are expected to perform acts of teshuvah¹, repentance, tefilah, prayer and tzedakah, charity. Generally that excludes activities such as attending a meeting such as NACCT.

When I looked at booking my trip here and the way the meeting was sandwiched and the stress of trying to arrange flights, my wife Amy and I decided to stay in Texas and celebrate Yom Kippur in Corpus Christi with my brother in law the rabbi, his wife, Amy’s sister and Amy’s mother and stepfather. I suppose there is another phrase in action here, if you are left lemons, make lemonade. Perhaps some force, outside of me or even NACCT, drove Amy and I to come to Texas this week to receive this fantastic award and spend at least part of the holiday with Amy’s family in Texas. This will give me the ability to celebrate the holiday with Rabbi Ken, the first time I have ever seen him officiate at a High Holiday service, and for him to come to San Antonio with my sister in law to hear me speak today.

Speaking of that external force which I believe has inexorably led me to this podium today, there is a Yiddish term that I would like to teach all of you today, “bashert.” This is a Yiddish colloquial term for fate. My wife and I met because it was bashert, her father and my father were college fraternity brothers. I really did not know Amy until her mother and my stepmother happened to meet while voting in a teacher union election, actually it was a vote as to whether to strike or not. They had not seen each other for a

¹ Teshuvah: humbling of the heart, forgiving others, introspection and prayer, apologizing to all, accepting blame, remorse, willingness to suffer consequences, confession, reconciliation and restitution, not repeating the sin.

while and discussed their families and the subject of Amy and I came up. My stepmother mentioned Amy to me and I decided to call her. Our first date was the night after the break the fast of Yom Kippur. That is why I agreed to accept this great honor. The perfect storm of the award named after Matthew Ellenhorn, offered to me during the Days of Awe, in Texas near my wife's family, was just too much of a coincidence, it was obviously "bashert."

A little more about that "perfect storm." We all know that we are about to embark on some form of health care reform, or as I prefer to call it medical insurance reform. It is awesome that carrying on with the bashert theme, another Jewish man, this one from Louisville, Kentucky who possessed neither a doctoral degree in a science or a medical degree, Abraham Flexner, virtually single handedly, as an employee of the Carnegie Foundation, revolutionized medical education. We stand at the threshold of a new era in medical care in this country. I have been very concerned about the President and Congress using the incorrect term "Health Care Reform" since all they seem to be involved with is discussions regarding medical insurance reform. The current system used to educate physicians and who can provide medical care was established by Abe Flexner 100 years ago and has not really changed much until today. Many of us old dinosaurs lament on the changes in the way medical care is delivered and the apparent change in work ethic. Barry Rumack and I recently discussed how 20-30 years ago when we were junior attendings, we were generalists, if a catheter needed to be inserted, we did it, we inserted pic lines, we did the LPs, etc. Today it appears that residents do not get the experience and young attending then are unable to do these procedures that were routine in our era. I am not stating that this is wrong, it is just different and may produce a profound effect in health care. Recently, I was involved in treating a neonate for lead poisoning. I suggested that an exchange transfusion be performed to rapidly lower the baby's blood lead level. I almost had to perform the exchange myself, the neonatologists at the involved hospital had never even witnessed one being performed let alone ever actually doing one. We finally found someone a little younger than I with much better eyes and hands to perform it. A pediatric ED physician who helped train my youngest daughter gave me the greatest compliment a parent can expect, he told me that when he saw that he was working with Leigh he would relax, since, unlike many others, her work ethic was such that he knew he could relax a bit. I have done admission interviews at my university for many years. Recently I interviewed a young woman who told me that she hopes to go into emergency medicine. I thought that she had looked up my background and tried to impress me. No, when I pursued this line of discussion, she then stated that she wanted a career which paid well and gave her flexibility in scheduling, able to work 3 shifts a week and have no other responsibilities. Medical students, often by the second semester, speak about the "ROAD" to happiness, Radiology, Ophthalmology, Anesthesiology and Dermatology.

What part will medical toxicology have to play in the future health care delivery system? We, the current elite of medical toxicology, need to do some careful introspection of our own discipline. Are we to produce medical toxicologists who work their trade from armchairs or will they roll up their sleeves and become bedside toxicologists. One fellowship director saddened by what he perceives as a change from the clinical practice

of toxicology told me recently that one of his fellows will finish his training without ever seeing a patient in an anticholinergic crisis! As we continue the shift from a subspecialty based on primary care training to one based on acute care, shift work emergency medicine training, what sort of working environment will the toxicologist of the future function in? So evident is this shift that a third year pediatric resident recently told me that although interested in pursuing her interest in medical toxicology, she is being discouraged since every fellowship program she spoke to told her they only want an emergency medicine trained individual. A senior medical toxicologist who has been providing the salary for a full time practicing medical toxicologist has been unable to attract anyone to fill the position. Will the future medical toxicologists be happy simply giving telephone advice and providing guidance for others who will actually handle the patient or will he/she morph into a bedside non-shift worker. Perhaps it is time to question why we are training so many medical toxicologists?

A little more about Matthew Ellenhorn. Those of us fortunate enough to know Matthew each have our own image and impressions of the man. I remember him as the bald eagle like presence wearing his characteristic white shirt and black pants, first up to the microphone. None of us will ever forget preparing our own presentations, or helping to prepare others to handle "Ellenhorn Questions!" I recently spoke to Sylvia, or Syma as she is usually referred to, his wife, about who the man was, but mostly how he came to be the Matthew Ellenhorn we all knew. He was a native of Chicago and graduated from the University of Southern California Medical School and trained in internal medicine. He launched his clinical career in 1955 in Torrance, a suburb of LA, with a 24 hour emergency medical practice, way ahead of his time. In 1960 he purchased a practice but was not content with it. Syma told me that she remembers Matthew speaking to a patient and that patient telling him that Reader's Digest had an article about treating what she thought that she had. To this Matthew stated, that she should make Reader's Digest her physician. His wife stated that she first realized how unhappy he was, when he gave his Cadillac to his father and purchased a red convertible with white leather seats. Soon after, the Ellenhorn's sold the practice, the car, packed up their 4, 2 1/2 year old and 6 month old and off they went to Europe. Matt was involved in working on an early, unfortunately for him but perhaps fortunately for all of us, "artificial kidney." The family drove through Italy and hopped a boat to Israel. They had hoped to make aliyah but Matt failed to find a position which could support his family. He saw an advertisement in JAMA for a position in New Drug Surveillance at the FDA and stayed there for 3 years until he reached the highest position he could without senatorial appointment. Then it was back to LA and his famous "Beverly Hills" office, consulting work for various pharmaceutical companies, forensic work, teaching and of course *Medical Toxicology* with Don Barceloux and then *Ellenhorn's Medical Toxicology*. The last extensive conversation I remember having with Matthew was at the NYC meeting in 1993. He seemed his usual self, we had a talk about our outspokenness. He encouraged me to continue to keep the others "on their toes." Never flinching in his desire for scientific perfection, he completed his text in early 1996, and died shortly after, in February 1996, the book was published shortly after that. When I spoke to Matthew's wife and son, I told them that some have said I am very much like him and that I felt honored to be compared to him. The family told me that he was always outspoken, and frequently got

himself into trouble because of this. His wife asked me if I had the same problem, to which I said, sort of! By the way, Matthew had 3 children, 2 girls and a boy, just as I have. Further, his son is named Joshua, as is mine, his son does surgical oncology while my daughter Leigh, is at National Cancer Institute preparing for a career in Pediatric Oncology..

So that you will all know a little about the Matthew Ellenhorn that often did not bubble up to the surface. He was interviewed by Geraldo Rivera to interpret the toxicology results from Elvis Presley's post mortem. He clearly stated that the death was from a combined overdose of medications. He also was one of the carriers of the Olympic torch for the Los Angeles Summer Olympics! His wife said to me that he also loved to eat and drink fine wines. I have been in a wine tasting group which meets monthly, for thirty years.

Matthew was an observant Jew. He personified a 2000 year or so tradition of Jewish medical scholars. Until recently, Jews tended not to be the doers and shakers in medicine. Jews through the ages adopted the medical teachings of the prevailing cultures in which they lived, and proceeded to enhance them through their own significant contributions. They translated the works of others into many languages, just as Matthew interpreted others' work and produced his treatise. For those of you who might be interested, there are 613 "commandments" which form the backbone of Jewish teachings of how to live one's life. Of these, 213 are considered to have some connection with medicine. Matthew Ellenhorn was the personification of the scholarly, observant Jewish physician.

Now, to those of you sitting and saying, so where is the meat. No one in the past has ever said that Steven Marcus was at a loss for words. But, when told that I could speak on any subject that I cared to, I was stuck! Most of you have heard me enough, why on earth would anyone want to give me the free use of a microphone. I struggled with this thought for months on end. A voice kept haunting me, when are you going to get started. Another voice gave me an ultimatum, if we do not have learning objectives by June 30, we can not give CEU credits for your talk. Along came our hero Keith Burkhart who sent me an e-mail on June 22:

May I be pretentious to propose three ideas all of which are true of course and highlight themes that I know of your career.

1. Medical toxicologists use epidemiologic skills that rival CSI investigators to solve such mysteries as mass murder, heroin adulteration and fish poisoning.
2. Leadership often requires persistence until your voice is heard and then understood.
3. There is no substitute for seeing and evaluating patients at the bedside.

Keith, you really put the screws on me. I have often been asked "how do you do it? How do you get yourself involved in these things?" I have never before been able to answer with anything but to say, I have no idea. This Ellenhorn award then became my quest to determine if there is a teachable moment in "how I do it." First I had to look at where I came from, what were the influences and was it genetics or environment?

I thought of my childhood and early adult heroes. I grew up reading Dick Tracy, Superman and all of the super heroes. Then there were the physicians in classic books like Sinclair Lewis' *Arrowsmith* and AJ Cronin's *The Citadel*, both of which were on the reading list in high school and again on the reading list I received upon acceptance into medical school. I was introduced to Dr Thomas Stockmann, in Ibsen's *An Enemy of the People* in my advanced placement high school English class. I urge everyone to read it if you have not yet. I also thought of television's Konrad Styner, the host of the early television series "Medic," as played by Richard Boone, who later became "Paladin" in "Have Gun Will Travel." I will never forget the show about the real life of William Beaumont and his patient Alexis St Martin, how this back water physician revolutionized the knowledge base regarding human digestive by capitalizing on a patient's misfortune. The other book, which became my virtual bible, was also on my medical school reading list, Berton Roueche's *Eleven Blue Men*, later released as *The Medical Detectives*. This book presents the stories of medical sleuths, the real "CSIs" that he met during his career as essayist for The New Yorker. Perhaps by presenting my experiences as a medical detective we can see how the initial contact with a patient sparked my "aha" moment and resulted in my involvement in some bizarre and fascinating experiences.

As we go through the examples which I will describe from the last 40 years or so of my life, watch for the common threads in what happened. Many of the readings I mentioned previously demonstrate someone's ability to grasp the circumstance he was in and to make the best of it. If you get stuck with lemons, make lemonade! The Latin phrase is *carpe diem*, but in this case it should really be "carpe momento", seize the moment. If you miss the moment you miss a chance of a lifetime. If you miss the moment others may suffer or even perish.

It is how we view a situation, how we "think out of the box" which is important. Claude Bernard said: "It is what we think we know that prevents us from learning." We need to question ourselves at every turn. I am frequently asked, why do you question so much. Because that is how I learn. I don't really want to harp on the religious connection, but it may be part of my background. From the very beginning of learning Jewish tradition, we are taught to argue, and debate. Remember the argument in *Fiddler on the Roof*, "it was a horse, it was a mule."

Once you seize the moment, as Keith stated, one needs to be persistent until others understand and adopt what you say. As one of my other heroes, Samuel Adams said: "It does not require a majority to prevail, but rather an irate, tireless minority keen to set brushfires in people's minds."

Matthew, I know that you are here and are about to give me a hard time, about to question me unmercifully. I hope that I can make you proud of your legacy.

Question what you know all of the time, Matthew would have agreed with this, and indeed many of us were the recipients of his questioning. The Mishnah censures physicians for few reasons, overconfidence in their craft and commercializing their profession and failure to attend to the poor.

Herz, in the 18th century stated; “May I be moderate in everything except in the pursuit of the knowledge of science. Grant me the strength and opportunity always to correct what I have learned...for knowledge is boundless.”

Abayye said: *We have a tradition that one is not poor unless he lacks knowledge.* Babylonian Talmud Nedarim 41A

My educational Objectives:

After the lecture the attendee will be able to:

1. Understand the concept, n=1
2. Be able to develop strategies to improve surveillance.
3. Know where to turn when the “going gets tough.”

National 800

We established NJPIES as the regional center by encouraging the passage of enabling legislation in the NJ legislature. We decided, at first, to publish 2 telephone numbers, one a local number, to save us the cost of the toll free service, and a toll free number. There was some controversy at the time within the AAPCC what “toll free” meant, so we felt comfortable, since most people had telephone plans which had message units and the local number was not considered a toll call if called by someone with message units. We soon found, however, that offering toll free service to some people of the state was not received by them as positive, they thought that the northern part of the state had it’s own poison center and they would be stuck with some impersonal center somewhere. In addition, the media folks refused to push 2 separate numbers, so we abandoned the “local number” in favor of one 800 number. At that time NJ Bell was our vendor. All of the calls to the poison center were filtered through the NJ Bell “Central Office, CO” the local telephone switching station which was across the street from our host hospital. It turned out to be a very old CO, dated back 30 + years. It also turned out that if it was a Tuesday and it rained, the CO failed and we lost telephone service. In an effort to avoid this, we discovered that we could have all of our calls funneled through one of 2 COs, but to do that we would need a national 800 number serviced by AT & T. In that way, when the CO went down, AT & T could redirect all of our calls, effortlessly, through another CO across town. We then had the option of paying to not list that 800 number nationally, which cost more, or to let it be listed nationally. To save funds, we, of course, elected to list the number nationally. We began to receive calls from other states. First we tried to figure out how to be sure we did not receive such calls by wording the listing carefully, but at the same time, I came up with the “brilliant idea” that if AT & T could redirect our calls, why could it not redirect calls into the 800# to the appropriate poison center based on the geographical location of the caller. At the time I became aware that American Express moved its call center across the country as the day went on. If they could have their calls redirected by the hour of the day, why not PCCs by the geography of the caller. A T & T worked on this and found that it could. AT & T made a formal presentation of “my idea” and A T & T’s ability to perform this task, at the AAPCC meeting in Toronto.

There was a great deal of anger and argument about this. Looking back, I am even more amazed today at the reluctance. I then received a letter from Reggie Aranow and the board of AAPCC, telling me that they had decided against even considering such a plan any further.

I could have given up at this point, but remembered 2 of my favorite “people” the founding fathers of the United States and Dr. Thomas Stockman of the Ibsen play *An Enemy of the People*. Samuel Adams, cousin of John Adams and a member of the “Brotherhood of the American Revolution,” who was said to have been steering his fellow colonists towards revolution well before the outbreak of the Revolutionary War, was said to have remarked that “It does not require a majority to prevail, but rather an irate, tireless minority keen to set brushfires in people’s minds.” I would not let go of my desire to have a nationwide 800#. It seemed to me such an obvious way to publicize the services of the poison center movement. I heard all sorts of reasons to explain the lack of desire to move forward, including even that it might precipitate an increase in call volume. Think of that, providing a needed service in such a way that those in need could find it more easily, perhaps even save a few lives along the way. That is when Dr. Stockman’s idea popped into my head: “Should I let myself be beaten off the field by public opinion, and the compact majority, and such devilry? No, thanks. Besides, what I want is so simple, so clear and straightforward.”

I kept pushing on with my efforts at convincing others of what to me was just so obvious. When a physician in Texas contacted me for advice and direction in establishing a system of poison centers in that state, I agreed to help with the understanding that they would eventually adopt an 800# and that it would be one which we would share. That was the start of 800-POISON-1. Of great interest to me was the fact that New York City had tried to use the spelled out word poison for their local number and when we queried the first few people walking along first avenue in front of the building in which NYC’s poison center was housed, none of them could actually spell poison on a telephone. Some just had no clue how the word was spelled, others confused the numeral 1 with the letter I, the letter O with zero, etc. At about the same time, another major coincidence occurred, Susan Smolinske told me that a Michigan System was being formed and that they would use an 800# I pleaded with her to share a number with Texas and NJ. She said that she had no problem with the idea, except that she had 2 requirements, that it not be the NJPIES number and that Trestrail agree, since he was to run the other center in the state. I called John and his only problem was that he had already paid for a few thousand stickers with their telephone number. I proposed buying the stickers from him and for him to print new ones, with 800-POISON-1, with those funds. When he agreed we were then off to the races.

The next step in the transformation of the national system dates from the fall of 1996 in Chapel Hill North Carolina. A coed from NJ, Leigh Marcus, decided to pledge Chi Omega, a sorority on the UNC campus. I remember Leigh telling us about “parents’ day” at Chi-O and the lunch and dinner she had set up with her close friends and their parents. She said that she was going to have us meet her friend Kaylin Karnes from Nebraska and that we would be sitting next to her parents. Now, I never met anyone

from Nebraska, nor did I even have any idea where it was. I am distinctly bi-coastal and ignorant of the vast expanses of land between the coasts. What on earth would I have in common with these folks. Leigh went on to state that he was a US Senator. That really threw me for a loop. Most of the members who attend NACCT probably think that I am this loud extrovert, but in fact, I am just the opposite. I do not like notoriety, and try to disappear into the wall at parties and social gatherings. Well, anyway, at the lunch we sat and tried to make small talk. What does a liberal, Democrat, Jewish kid from Brooklyn say to a Republican from Nebraska? It was a little awkward at the beginning, to say the least. We did talk a little about his time in the Senate and, unfortunately the subject of his loss in an election, talk about awkward. He then asked me about what I did. After dinner he stated that I so interested him with my stories that he would ask around and see if there was anything he could get his friends to do. A couple of weeks later he said that he had spoken to Arlen Specter and there was a good possibility that there could be federal help for a nationwide effort. I asked what we could do, and was told that Specter was running for office and could use a little cash to help. Amy and I almost got into a fight over my sending a check to the Specter re-election campaign, because all she knew about him was what he did to Anita Hill in the senate hearings. We got a little help from Specter's office and that led to asking other medical directors to help out as well. I did receive some "hate mail" in response to my letter to the medical directors asking them to donate. We did come up with sufficient funds to be heard. I guess the rest can be fast forwarded and that dinner resulted, so far, in nearly \$200 million in federal aid to the poison centers, and yes to a national 800#, again though that number had to be changed and 800-POISON-1 became a part of history.

Now, let's talk about my personal experiences, have a little fun and maybe spark an interest in expanding your practice into that which has consumed me over the years, medical detective work.

45 Blue Kids

On a cool October afternoon Wilma Pomerantz, a SPI at NJPIES received a call from a school nurse in a parochial school in Passaic County. Some children had gone outside to play after lunch and came into the nurse's office with blue lips. The poison specialist asked about berries and candy, but then more children came in and some complained of headache and the question of berries was dismissed. Within a short period of time some of the children started vomiting. We called EMS and some of the children were taken to an ED. In the ED they were cyanotic with O₂ sats of 85%. The ED resident, Julia Lajoie called to speak to me. She had done a rotation a few months previously and remembered reading Roeweche's Medical Detectives and discussing the case of "Eleven Blue Men" with us. She also remembered my comment, if someone is blue and has an O₂ sat which should not make him/her blue think methemoglobinemia. She said her lab refused to give her the result until it was confirmed by another lab. By the time the "you know what hit the fan," there were 45 children in various hospitals. The working diagnosis in each hospital was the same, carbon monoxide poisoning, despite the diagnosis in the first hospital as being correct. I got into my car and went to 3 separate hospitals to help them manage the children. At each hospital I had to contend with the medical staff's belief

that they were dealing with CO and not methemoglobinemia. Picture what I saw, in one hospital the ED used blue scrub suits for the staff, blue gowns for the patients and the walls were painted pale blue, the patients were all blue, and I used a blue dye to treat them. I thought I was in smurfland! Then I had to determine what the source of the exposure was. In interviewing the children and their parents, it was clear that only the children who ate during the second lunch period got sick. Further, only those who ate the soup, but not all of those who ate the soup. I then narrowed it down further to only those who had “seconds.” The nun who cooked the soup claimed that the soup was a major brand soup, straight out of the #10 can. I had to battle with the state health department to open their lab and analyze the unopened soup in fear that the company may have produced a contaminated batch, and also to analyze the left over soup. This was no easy chore. The health department first refused to do the work stat, saying that if we got the samples to them they would run them the following day. I got on the telephone with an old friend of mine at NJDHSS, and the then assistant commissioner of health, Leah Ziskin, and gave her my strongest Jewish guilt. First I tried, if your child turned blue, or if your child was even one of the children who did not turn blue, wouldn't you want the state to find out what caused it stat? When that didn't work, I hit her harder with, what if tomorrow you heard of a child dying in California from exposure to the same soup, how would that make NJ look? When the unopened soup tested clean and the left over contained both sodium nitrite and borate, I re-interviewed the nun with the information that the soup she served seem to be contaminated with boiler water, she “confessed” that she had ‘stretched’ the soup with tap water. Inspection of the plumbing in the school resulted in finding of a faulty backflow valve between the school's boiler and the potable water supply. The first of 2 such out breaks within the state over the next 10 years. By the way, I learned something else from the experience. I did not immediately publish the series and found that the Epidemic Intelligence Service Officer assigned from the Centers for Disease Control performed a survey after the dust had settled and published the series never once mentioning either my involvement or that of NJPIES. So a take home is publish early and often!

It isn't clinically possible!

Our poison center received a call about a patient seen in a small community hospital in a relatively rural part of the state. An individual in the ED said he snorted some “bad heroin” because he “felt funny.” He was a known drug abuser, snorting heroin for years 2-3X/week and knew that what he was feeling was ‘not normal.’ He was agitated, tachycardic, tremulous, and complaining of a headache and some chest pain. His initial BP was 85/38, HR 127, RR 25, pupils dilated, Na 143, K 2.2, Cl 105, CO₂ 19, BUN 13, Cr 1.8, glucose 228, ECG revealed ischemic changes. He was not making urine and needed a fluid bolus of 5 liters before he voided. UDS was positive for opiates, benzodiazepines and marijuana. We suggested that this could be a contaminant, withdrawal or something weird and to watch carefully. The treating ED then gave him Cardizem for the tachycardia and Haldol for the agitation and his BP dropped to 60/13 and his pH dropped to 7.27 with a pCO₂ of 29.5 and pO₂ of 127. His serum lactate was then reported as 10.6 mmol/L. The treating physician was concerned about a possible

toxic alcohol while the poison center suggested that hypotension and lactic acidosis, particularly with a lactate over 10 mmol/L suggested the diagnosis of cyanide intoxication and we suggested running a venous pO₂. At around that time a call came from another hospital in another part of the state with a very similar case. When the venous pO₂ was report as 76 torr we suggested thiosulfate and the patient improved clinically. The scenario of clinical deterioration and rising pVO₂ suggested recurrence of toxicity and the need to repeat therapy to the point that the hospital ran out of thiosulfate and had to reach out to other hospitals for more thiosulfate. With 2 more cases coming into that ED, and 6 more in two other hospitals in other areas of the state, I went to the bedside to see this patient and his 2 “friends.” I remember speaking to the Commissioner of Health about the situation and his asking me if I knew how long it would take to drive to the particular hospital, to which I replied “who cares, there is a patient I want to see, who happens to need my specific skills,” so off I went.

What I saw was among the most amazing experiences of my life. The patient was agitated, asked for “Valium,” he was breathing at over 30/minute, his HR was over 130 (sinus) and his pVO₂ was then over 100! Watching the nurse draw blood for the laboratory from “a vein” and seeing what looked to me like arterial, I had to roll up my sleeves and repeat the stick myself, and prove that she had not hit an artery. Despite standing there with me and seeing the bright red blood, the treating pulmonologist exclaimed, it can’t be, it is impossible and went to the ABG lab to redo the analysis himself. Many of you may remember the photograph of the patient’s blood. How many of you have heard the story of why my own blood was included in the photo? Well, I went to the lab to get a photograph of the blood of two of the victims to show how red they looked and wanted to have a control specimen in the photo. The lab refused to allow me to use any tube in the lab, it would be a HIPAA violation wouldn’t it? I then asked the technologist if she could draw my blood and when she said yes, I gained my 15 minutes or exposure, at least my blood did.

I was able to get the index case to give me some left over drug and I had to play “Solomon” between the Easton, PA (the location in which he purchased the drug) and NJ State Police each claiming jurisdiction on the drug. I gave ½ to each.

The following day I recall getting a call from a NJ State Police laboratory technician telling me the drug was not heroin at all, but an animal pharmaceutical called clenbuterol. I had never heard of it before that, but soon became an expert. The next amazing part of the story, little known to you all, is the fact that the NJ State Police and the NJ DHSS got into a debate on who would release an alert and what would it say. How do you tell the public that this drug is dangerous, when every one knows heroin is dangerous. Further, since it had no heroin at all, was it correct to call it contaminated heroin? As many of you know, I didn’t really care what they all thought, I put out an alert to all of the medical directors and posted the information on Epi-X. This gained me the furor of the state epidemiologist who was upset that I had posted the alert and that it was only preliminary data. To the day he left the state, he never forgave me for it, compounded by my repeating this effort on several other issues, posting on Epi-X without clearing it with him first. I felt like Ibsen’s Dr. Stockman for sure with a little bit of Adams!

An enlightening breakfast

Another fascinating time of notoriety occurred innocently enough. Dave Gruber, the then director of the state EMS division of the NJDHSS, called me to ask if I had heard of anything unusual over the weekend in Camden, NJ. I had been on call all weekend and nothing particular seemed to have happened. He stated that the head of the state police and the commissioner of health had breakfast together and the colonel mentioned that there seemed to be an inordinate number of EMS calls over the weekend. I called my friends at Cooper Hospital, at the time I was giving a monthly tox conference to their ED residents, and was told that yes, they did seem to have more than the usual cases of heroin overdose, and, they needed to get more naloxone from the pharmacy when they “ran out” in the ED. I called Gruber back and told him that yes, indeed, there had been something in Camden and that we would try to pin it down. We then had our educators call every hospital in expanding concentric circles from Cooper until we received consistent negative responses. We plotted the answers on a map of the state and we determined that in fact, there had been a distinct excess of ED visits for heroin OD over the weekend and most required more than the usual dose of naloxone to wake up. We also noticed a geographical distribution that was indeed radiating out from Camden, and perhaps across the river in Philadelphia. Again, without “clearance” from the epidemiologist, I posted an alert on Epi-X. That was about 2 hours after the initial Gruber call. Within minutes of the posting, about an hour after I submitted it, I received a call from someone from Maryland’s health department telling me that over the weekend, there were several bad OD on the “eastern shore” with one patient not expected to survive and that their lab had examined drug and believed it to be methyl fentanyl, our old friend china white! We posted that as a follow-up. The rest is history. We discovered after our report, that there was an ongoing outbreak in Detroit and Chicago and later that the DEA had been watching the activities of a Mexican ‘factory’ which was eventually closed after the extent of the outbreak was recognized.

Oh yes, again I was reprimanded for posting without permission, in fact, a complaint was filed about it with CDC in an attempt to block my future postings without authorization from the state epidemiologist. The argument involved whether Epi-X should be used for preliminary reports. It was my feeling that by so doing, lives could be saved. The state epidemiologist argued the opposite. The CDC editors supported the role of poison center directors to post preliminary details without approval from state officials.

The episode produced another “battle,” that between the State ME office, the office of the state toxicology laboratory and the Director of the Center for Health Statistics over how to assign fentanyl as cause of death in individuals who died in NJ and had fentanyl detected in their blood. It is often difficult to sort out fentanyl as being in the blood versus being the cause of death, that point was the point of contention between the two. Some of you might remember that prior to this outbreak, nationally, many ME offices did not even screen for fentanyl. It is my understanding that most now do. We learned a great deal during this outbreak about the transport of abused drugs across the country, the differences between northern NJ and southern, and the mind of abusers stimulates them

to seek drug which killed other abusers thinking that it is “good stuff” and that they know how to use strong drug and survive. Some didn’t survive that mistake.

Demons of the sea

One evening I was awakened from a deep sleep by a call from one of our CSPIs about a husband and wife who became sick after eating fish which the husband’s brother caught in Florida and brought to NJ. Shortly after eating the fish, they both developed numbness around their lips and a little nausea. We sent them into an ED and the wife developed chest pain and numbness down her left arm. The fish was said to be blowfish, something I had a great deal of experience with summering at my family’s home on Long Island and had never heard to produce anything like this. Certainly I knew about fugue from puffer fish, but never heard of it from blowfish on the east Coast. Assuming there was a screw up in the type of fish, we suggested that a run of mannitol be given in case we were dealing with early ciguatera toxicity. When the wife developed a progressive decrease in pulmonary function and had to be intubated to maintain her O₂ saturations I became totally perplexed. Both the victims made a rapid recovery and we were able to obtain left over fish. Thus started a search for someone to analyze the fish for tetrodotoxin, the toxin in fugue poisoning, ciguatera or something new.

I called AAPCC and asked for a look at the data base to see if anything odd in terms of unexplained patients in ICUs on ventilators would turn up over the past weeks or months. Two weeks later another patient presented to the same ED with similar physical complaints, only this time he had purchased the fish from a local market. He recovered rapidly and also was able to give us left over fish. Bruce Ruck, my partner in crime in many of our exploits, got on the telephone and tracked the fish back to a location in the Indian River in Florida, as it turned out the exact same location from which the privately caught fish of our first victims came from. By then we had discovered that the FDA could not do an assay as requested, but an investigator in Halifax Nova Scotia, Mike Quilliam, who had published something about fish toxins and who I had reached out to after the first episode was just back from a vacation and was able to do such an assay. A few days later he called explaining that he had discovered an intriguing toxin. He reported that he found not what we had expected to find, he found saxitoxin, the agent usually associated with paralytic shellfish poisoning, not tetrodotoxin nor ciguatera. Again in my role as Solomon, I had sent a specimen to the FDA. All that the FDA could confirm was the presence of a Na-channel active toxin of some sort. After we had the toxin isolated, we finally heard from AAPCC acknowledging that there were many reports of strange symptoms along the eastern seaboard which did seem related to exposure to eastern blowfish.

I trust that you understand why I highlighted these case series. As Louis Pasteur is reported to have said: “Chance favors the prepared mind.” Similarly, Marty Smilkstein, yesterday quoted Albert Szent-Gyorgy: “A discovery is said to be an accident meeting a prepared mind.” Each of these cases represented the sound of hoof beats which if only considered to possibly be horses would have missed the real outbreak. Patients do not

present as multiple choice questions. A prepared mind will consider the sound of horse hooves, but not exclude the zebras out of hand!

At some time I have to ask, how did I come to gain my inquisitiveness, is it something I was born with or something I learned? I attribute some of this to my mother and her driving me nuts by responding to my questions with other questions, making me look things up, requiring me to make decisions based on facts, considerations of facts and not “helping” me. Mrs. Schwartzman, my fourth grade teacher who, after my mother died, kept the pressure on me as to my interest in science. George Kapp my HS chemistry teacher and Mr. Naglar my HS biology teacher pushed me in my interest in science and exploring what I do not know. My college medical school advisor told me I had no chance of getting into medical school thus forcing me to strive that much harder to accomplish that. Ralph Tanz, my “boss” at NY Medical College and at Geigy Pharmaceuticals, where I, incidentally, met Lew Goldfrank in the summer of 1964, let me roam intellectually in his lab. Joe Borzelleca, my pharmacology professor at MCV who helped me get funding for my first totally independent study, the role of catecholamine depletion on heart rate and the interaction with the autonomic nervous system. Sam Stone, my first clinical educator at Bellevue taught me how to match the practice of medicine and academics; Sylvia Micik my attending in the pediatric clinic at Bellevue later came into my life with David Boyd and David Allan, and their roving dog and pony show: “Developing Regional Poison Centers” 30 years ago, in Boston in June 1979. At that meeting I met the leaders in toxicology Fred, Bill, Barry, Tony and yes, even Dr. Moriarty.

Lest I forget, I could never perform the job I do without the talent and support of the staff at NJPIES. The SPIs keep me on my toes. The support staff and educators are there to respond to my sometimes lame brained ideas. Of course my life mate and best friend Amy who helped steer me to this place and day and this award.

Maimonides stated: “Most men know that medicine is a craft which requires experience and scientific study. It is also an error to believe that a man may be skilled in medical practice without knowledge, but it is possible and true, for a man to be learned in medicine, familiar with its roots and its branches, without being skilled in medical practice.” We, the sages in Medical Toxicology may be at an important crossroad in the development of our discipline, are we to be physician scientists who actually care for patients, or will we be content as telephone consultants. As my time winds down, I will simply leave you all with this question: Where are we going?

I feel confident today, that as Pasteur said: “Whether our efforts are, or not, favored by life, let us be able to say, when we come near the great goal, ‘I have done what I could.’”

It is a custom in my synagogue on the eve of Yom Kippur, the evening of the singing of the awesome prayer Kol Nidre in which we ask G-d’s permission to pray with those who have sinned, to seek reconciliation with people you may have wronged during the course of the year and a plea for absolution from vows made by humans to G-d that can not be kept.. It is impossible for many of us, particularly me, to even know who we have

offended or wronged. In my synagogue we ceremonially apologize to those near us by turning to them, offering our hand and asking for forgiveness. As I end this tribute to Matthew Ellenhorn, I ask each of you now to stand, turn to those around you and ask for their forgiveness. At this awesome time of year, in this wonderful city of San Antonio, I now repeat Matthew Ellenhorn's suggestion to me about intellectual integrity, which happens to be San Antonio's motto, "never retreat, never surrender."

I extend my best wishes to you all for the year to come and I say to the men: **L'shanah tovah tikatev v'taihatem** and to the women: , "L'shanah tovah tikatevi v'taihatemi", "May you be inscribed and sealed for a good year." Amen.