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- Friday Noon Conference – Luncheon
  **Hepatitis C: 1998**
  Willis C. Maddrey, MD
  March 6, 1998, 12:30 - 1:30 p.m.
  Doctors Dining Room

**Learning Objectives**

At the conclusion, participants will be able to:

- Understand the natural history of chronic hepatitis C viral infection and factors which influence the course in an individual patient.
- Recognize the range of clinical disorders associated with hepatitis C.
- Develop a comprehensive program for the long term management of patients with chronic hepatitis C.

We would like to acknowledge the Educational Grant Schering Oncology Biotech.

- Friday Noon Conference – Luncheon
  **Mixed Anxiety and Depression**
  Peter L. Forster, MD
  March 13, 1998, 12:30 - 1:30 p.m.
  Doctors Dining Room

**Learning Objectives**

At the conclusion, participants will be able to:

- Understand relationship of anxiety and depression.
- Learn how to assess patients and initiate effective treatment.
- Effectively discuss anxiety and depression with patients.

We would like to acknowledge the Educational Grant Bristol-Myers Squibb.

- Friday Noon Conference – Luncheon
  **Evaluation, Diagnosis and Treatment of Impotence for the Primary Care Physician**
  March 20, 1998, 12:30 - 1:30 p.m.
  Doctors Dining Room

**Learning Objectives**

At the conclusion, participants will be able to:

- Provide the primary care physician with an anatomic and physiologic overview of normal erectile function and erectile dysfunction (ED).
- Discuss the causes of organic impotence.
- Discuss the diagnosis, evaluation and treatment options of the erectile dysfunction patient.

We would like to acknowledge the Educational Grant Osbon - IMAGYN.

- Friday Noon Conference – Luncheon
  **Hospice Case Studies**
  Elizabeth Nelson, RN, MPH & Kathy Hallock, LSW
  March 27, 1998, 12:30 - 1:30 p.m.
  Doctors Dining Room

**Learning Objectives**

At the conclusion, participants will be able to:

- Describe the hospice philosophy and admission criteria as well as services offered.
- Understand the referral process.
- Describe the difference between hospice home care and residential hospice care.

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Visit Straub's homepage at http://www.straubhealth.com
This Special Issue honors the Hawaii Poison Center—helping physicians, nurses and the general public for 40 years.

Last year the Center received more than 12,000 calls for help and information. One in five calls came from health professionals.

Guest editors John Racine, PhD, RN is an Assistant Professor in University of Hawaii—Manoa School of Nursing and Chair of the Education Research Committee of the Hawaii Poison Center and Alson S. Inaba, MD Associate Professor of Pediatrics in the John A. Burns School of Medicine and Medical Director of the Hawaii Poison Center, have provided a very special Special Issue.

This issue belongs in every pediatric, family practice, and internal medical practice office as well as every emergency room in the State! It is an extremely valuable source of practical information on clinical toxicology and the operations of the Poison Control Center.

Mahalo to John Racine, Al Inaba, and Debbie Ahina, manager of the Hawaii Poison Center for a superb Special Edition.

A limited number of extra copies are available at the Journal office. Call 536-7702, ext. 2239 for more information.

We appreciate the opportunity to commemorate the 40th anniversary of the Hawaii Poison Center (HPC) with this special issue of the Hawaii Medical Journal on Clinical Toxicology and the Hawaii Poison Center. Poisoning is a serious health problem, with which clinicians are probably familiar, particularly if they have family, internal medicine, or pediatric practices. Usually classified as an injury, poisoning is the third leading cause of unintentional deaths in the United States. The call volume of the HPC, almost 12,000 calls in 1996-1997, indicates that it is also an issue in our State. As an analysis of these calls in this issue has shown, clinicians also seek the expertise and information from the specialized databases of the Center, comprising 13 percent of all callers. For an inside look at operations and some of the specific queries received by the Center, another article in the Journal provides a sense of the resources available for health professionals and the protocols followed for victims.

In this issue, several features are provided for the continuing education of clinicians. First of all, a systematic approach to assessment of the poisoned child, the most likely victim, is presented. Secondly, there are questions to challenge current clinical knowledge of toxicology, accompanied by their answers. Third, since acute poisoning usually presents in panic, clinical techniques for crisis intervention and emergency counseling are reviewed in a case study. Finally, selected references from the print and electronic databases of the Hawaii Medical Library are recommended for further investigation into clinical toxicology.

It is very appropriate for the Journal to dedicate a special issue to this topic on the 40th anniversary of the Hawaii Poison Center. The Journal had published a study by Dr L. T. Chun in 1951, reprinted in this issue, which called attention to kerosene poisoning among children, as well as articles by Drs Ho and Char over the years. The dissemination of this research helped to alert the medical community about this serious health problem in our community and resulted in the creation of the Hawaii Poison Center. These medical leaders were sought out to reconstruct the history of poisoning in Hawaii and the origins of the Center which is recounted in this issue. Poisoning, as stated above, continues to be a problem in the State of Hawaii. The Hawaii Poison Center, as suggested in the economic analysis discussed in the issue, is a low cost and accessible alternative to the treatment of poisoning emergencies and offers benefits to the public, providers, and third party payers.

We again thank Dr Goldstein and the Journal for reminding the medical community that the problem of poisoning persists. We believe that the Hawaii Poison Center deserves all of our support in order to continue providing the specialized and expert resources in preventing and managing human poisoning in our State.

References
President’s Message

Leonard Howard MD

What is this Consortium that we keep hearing about? We have something new in the political scene in Hawaii. The physicians have finally realized that it is necessary to present a unified front to outsiders, be they legislators, health insurance companies or federal agencies. Thus was born the Consortium, which is an association of five physician organizations including, in alphabetical order, Hawaii Coalition for Health, Hawaii Federation of Physicians and Dentists, Hawaii Medical Association, Pacific Medical Administrative Group, and Queen’s Medical Group. The Consortium was formed during the discussions with HMSA, and presented a unified front in the continuing meetings, first with the Insurance Commissioner, then with the leadership of HMSA. With the aid of lawyer members of the Coalition, the HMSA Provider Agreement was carefully examined for its effect on the practice of medicine, and the ability of physicians to make the decisions as to how their patients are to be treated. A position paper was developed which was the basis for continuing discussions, both public and private, which ultimately led to creation of an agreement that was at least acceptable to the Consortium. It did not answer all the problems, but was the basis for a two-year trial period to see how it would work in practice.

When Queen’s Hospital put out a Participating Provider Agreement for their new Worker’s Comp and No-Fault Provider Group, many of the problem areas identified in the HMSA contract were also identified. When these were brought to the attention of Queen’s Hospital by the Consortium, they immediately accepted all the changes that had been made by HMSA in the previous discussions. There was no need for the prolonged discussions and media debates that went on with the original efforts. At this point in time, St. Francis has put forth another Provider Agreement, containing many of the same problems. The Consortium has offered their assistance to St. Francis’ administration in order to bring their agreement into a form that will be acceptable to the physicians.

In the legislative arena, the Coalition, Federation and the HMA are working in a coordinated fashion to represent the physicians of Hawaii in legislative matters. It has evoked comments from the legislators that “the physicians are finally speaking with one voice” which is much more effective. The Consortium concept allows each organization to maintain their own philosophic standards, while coming together as a unified whole when the action is acceptable to all members. The HMA will continue to hold our traditional values while at the same time working for the common good. I don’t think anyone has any idea that managed care is going away. Our job now is to ensure that managed care is quality care. The only way we do this is by working together for our patients. If we don’t we will sink together by ourselves. In Unity there is Strength!
Military Medicine

Tripler's Emergency Medical Response Team

MAJ Robert E. Johnson MD
Assistant Commander
Emergency Medical Response Team
Tripler Army Medical Center

...a passenger jet crashes on takeoff from the Majuro airport...a canister of mustard agent is accidentally dropped and leaks at the Chemical Demilitarization Plant at Johnston Atoll, resulting in several severe chemical casualties...an explosion rips through the new convention center, resulting in scores of deaths and hundreds of trauma victims, overwhelming Honolulu EMS capabilities, and worse yet, many victims are found convulsing and apneic, demonstrating evidence of a sinister terrorist bombing with nerve agent. Use your imagination and think of the recent disasters that have occurred worldwide, both acts of nature and acts of terrorism, and wonder how we would respond here in Honolulu or elsewhere in the Central Pacific.

For almost twenty years, Tripler Army Medical Center has had an Emergency Medical Response Team (EMRT), dedicated to responding to just such scenarios. When the Johnston Atoll Chemical Demilitarization Plant was under construction in the 1980's, increased emphasis was placed on the EMRT, leading to substantial improvements in its organization, training and equipment. The bombings of the World Trade Center and the Alfred P. Murrah Federal Office Building in Oklahoma City, the Tokyo sarin gas attack by the Aum Shinrikyo cult and other incidents have led the Department of Defense to increase its emphasis on assistance to the civilian populations of our nation and its friends. At Tripler, this emphasis has been translated into another generation of improvements in the EMRT, to better enable it to assist and interface with local and regional emergency response plans.

The EMRT is comprised of thirty doctors, nurses, corpsmen and two administrative officers. All members are volunteers, and are recruited based on their individual motivation, commitment, and level of experience in medical operations in austere environments. Of these thirty, eight are physicians: a commander and assistant commander with extensive experience and training in military operational medicine and nuclear, biological and chemical (NBC) casualty management; two emergency physicians; two general surgeons and two critical care physicians. All physicians are qualified in Advanced Trauma Life Support (ATLS) and have attended the U.S. Army’s course in chemical and biological casualty management. Two nurse anesthetists and two registered nurses are also team members; they, too, are required to attend the chemical and biological casualty course. The complement of enlisted medical personnel includes two LPNs, several paramedics and EMTs, as well as laboratory and radiographic technicians. All team members receive enhanced training in trauma management, triage, personal protective equipment, decontamination of chemical casualties and emergency management of NBC agent casualties. If needed, the EMRT can be augmented with personnel from Tripler’s Mental Health and Radiation Accident Management Teams.

The EMRT has a three-tiered mission. Its primary responsibility is to back up the medical operations at Johnston Atoll in the event of a large scale accident. The risk of such an event is extremely low, due to the multiple layers of safety checks and containment engineered into the plant. Even so, the EMRT maintains a high level of readiness with frequent event simulation exercises and state-of-the-art medical and chemical protection equipment.

Because of the team’s rapid response capability and ability to treat and stabilize trauma victims in hostile environments, the TAMD commander, Brigadier General Warren Todd, has decided to make the EMRT available as a response asset to augment the emergency responders of the State of Hawaii in the event of a mass disaster. The team would be especially effective if the disaster involved the use of weapons of mass destruction (WMD), i.e., nuclear, biological or chemical weapons. This is its second mission. In this scenario the EMRT would provide assistance in two ways: 1) it functions as a platform for the provision of ATLS in the proximity of a WMD or conventional disaster, and 2) team members in advanced personal protective equipment would be able to triage and provide EMT-level medical care to victims who had not yet been decontaminated or evacuated from the scene of the accident. EMRT leadership personnel have developed a close liaison with the emergency response community in Honolulu, to include leaders in the State and County civil defense offices, Honolulu EMS, Fire and Police Departments, as well as with FEMA and other Department of Defense agencies.

An important spin-off of this liaison has been the involvement on a consulting basis of EMRT physicians in the development of Honolulu’s planned Metropolitan Medical Strike Team (MMST). MMSTs are currently being formed in the 26 largest U.S. cities with support from the federal government. Their purpose is focal and unique to respond to mass disasters involving WMDs.

The third mission of the EMRT is to provide assistance to other territories and nations in the Pacific who request assistance in the event of a disaster involving significant casualties. The EMRT is currently directing its energies at enhancing its response capabilities in this role. The types of disasters that might require the team’s assistance include hurricanes, tsunamis, earthquakes, aircraft accidents and explosions.

Because of the insular nature of the Hawaii community, we are not likely to benefit from the emergency deployment of disaster assistance teams from the mainland in the event of a catastrophe. The central Pacific area is home to many people who lack an effective health care system and certainly lack the ability to respond effectively to a mass disaster. The command group at Tripler and the personnel of the EMRT are keenly aware of these dilemmas. It is our purpose to fill this gap.
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The Role of Geriatric Psychiatry in Medical Education

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The citizens of Hawaii currently enjoy an average life span of about 79 years, about 3 years longer than the mainland counterpart. In 1990, 11.2% of the state population was elderly. This percentage is expected to increase to 18.5% by the year 2020. Individuals over 85 years are the fastest growing cohort with a projected tripling of current numbers by the year 2020. Many elderly have mental health problems. It has been estimated that 15-25% of the elderly have psychiatric disorders with the proportion increasing to 40-50% for hospitalized elderly. Unfortunately, despite the ever increasing geriatric population and need for services, relatively few psychiatrists in Hawaii have been interested in working with this population. Nationally there has been a shortage of psychiatrists with geriatric expertise. Prior to 1978 there was only one training program in geriatric psychiatry. By 1995 there were 40 Accreditation Council for Graduate Medical Education (ACGME)-approved residencies. Psychiatrists are eligible for geriatric training after completion of a four-year general adult psychiatric residency. The first examination for added qualifications in geriatric psychiatry was given by the American Board of Psychiatry and Neurology (ABPN) in 1991. By 1996 there were 1200 psychiatrists who had passed this examination. However, in Hawaii, there were only seven psychiatrists as of 1996 who had attained a certificate for added qualifications in geriatric psychiatry. Since most of these psychiatrists practiced in a university or federal system, there was a great need for geriatric services in the community. As a result, a geriatric psychiatry training program was created which would fulfill this critical shortage area for Hawaii and the Pacific Basin.

The John A. Burns School of Medicine (JABSOM) geriatric psychiatry residency involves one year of sub-speciality training. It is a part of the Department of Psychiatry which includes adult, child and adolescent psychiatry. The supervisors are JABSOM geriatric psychiatrists who see patients with the residents at a number of sites including Hawaii State Hospital, Queen’s Medical Center, Geriatric and Family Consultation Service (GFCS) and Hale Pulama Mau at Kuakini Medical Center, Veter-
nity. An example is the Geriatric Education Series at Kuakini Medical Center. Residents in family practice and internal medicine have had some elective time in geriatric psychiatry. An elective in geriatric psychiatry is available for medical students. There has even been some training to law students at the University of Hawaii William S. Richardson School of Law regarding advanced directives and assessment of decisional capacity of health care needs. The geriatric psychiatry trainees themselves are involved in both formal and informal teaching of geriatric psychiatry in various settings to residents, medical students and other health care personnel. The didactics for the course involves selected topics in geriatric medi-

cine, geriatric psychiatry, neuropsychology, community psychiatry, and neurology taught by JABSOM faculty and community gerontologists.

Although research is not a specific requirement of the training program, the residents are given protected time for research and encouraged to pursue interests. The faculty are involved in some collaborative research projects with geriatric medicine and neuropsychology. Already, the faculty have presented at national meetings including the American Psychiatric Association (APA) and the American Association for Geriatric Psychiatry (AAGP). With the clinical and teaching base established at this point, it is hoped that research will gain further importance in geriatric psychiatry.

The geriatric medicine program started in 1986 and by 1995 had graduated 18 new geriatricians. In June of 1997 the first two geriatric psychiatry residents graduated from the program. Hopefully, this new geriatric psychiatry training program will be able to provide sufficient numbers of future clinicians, teachers and researchers for the state of Hawaii and the Pacific Basin.

References
We describe a case of a pancreatic duct stricture in a young female resulting in chronic intermittent obstructive pancreatitis, and requiring repeated hospitalizations over a ten-year period. The stricture was identified by computed tomographic (CT) scan and endoscopic retrograde cholangio-pancreatography (ERCP) and noted to be in the distal pancreatic duct. The patient was treated successfully with distal pancreatectomy. This case report illustrates the utility of CT scanning and ERCP in determining the etiology of pancreatitis. When a stricture is identified, these studies give anatomic detail that aids in intra-operative decision making.

Key words: Pancreatitis, obstructive—Pancreas, CT—Pancreas, US—Pancreas, ERCP—Pancreas, stricture.

Case report

A 26-year-old Micronesian female presented to the general surgery service at Tripler Army Medical Center, Honolulu, Hawaii with a ten-year history of intermittent pancreatitis. This was manifested by epigastric abdominal pain, nausea, vomiting, and hyperamylasemia. She had been managed successfully with conservative therapy on multiple previous admissions to her local hospital. The patient had no medications during this time period, and had no history of alcohol use, trauma, or hyperlipidemia.

At the time of referral to our institution, the patient was asymptomatic. Physical exam was unremarkable. Laboratory exam revealed an amylase of 63 U/L, a lipase of 104 U/L, normal liver enzymes and total bilirubin, a normal arterial blood gas, a calcium of 8.5 mg/dl, and a white blood cell count of 8,100.

The patient was initially evaluated with a right upper-quadrant ultrasound which was normal. This was followed by an ERCP. The pancreateogram demonstrated a focal pancreatic duct stricture in the mid-body of the pancreas with dilatation of the duct distal to the stricture. Subsequently, a helical CT scan of the pancreas was obtained with 3-mm collimation and a pitch of 1.5. Contrast was demonstrated within the biliary system and pancreatic duct. An acute focal narrowing of the distal portion of the pancreatic duct was noted, with no contrast seen distal to this point (figure 1). This corresponded directly to the isolated stricture seen on ERCP. The classic chain of lakes appearance of the pancreatic duct and pancreatic calcifications were absent. Given the location of the stricture, the patient underwent distal pancreatectomy and splenectomy. She had an uneventful recovery and was discharged home on postoperative day nine. She remained pain-free at the last evaluation, 6 months postoperatively.

Pathologic examination of our patient’s pancreas revealed microscopic and gross changes consistent with obstructive pancreatitis. On gross examination (figure 2), the pancreas distal to the stricture was shrunken, firm and fibrotic in appearance. Microscopically, the pancreas distal to the stricture showed diffuse pancreatic atrophy (figure 3). Inflammatory cells were not prominent, nor were any calcifications, inspissated secretions, or saponification identified. Proximal to the stricture, the pancreas was normal.

Discussion

Obstructive pancreatitis is an unusual form of chronic pancreatitis and represents only 5% of cases.1 This case report demonstrates a classic example. History and physical examination and laboratory examination generally offer few clues. Usually, radiographic evaluation using ultrasound, ERCP, and CT scan are required to elucidate the etiology of pancreatitis. Obstruction may be caused by tumors, inflammation, congenital anomalies, and strictures from previous injury.1,2 The clinical presentation of obstructive pancreatitis resembles other forms of chronic pancreatitis, but differs both radiographically and pathologically.

Patchy atrophy of exocrine tissue characterizes nonobstructive
pancreatitis, whereas, diffuse atrophy in the pancreatic tissue distal to the obstruction is more common in obstructive pancreatitis.\textsuperscript{1,3} Protein plugs within the pancreatic duct are also frequently found.

The optimal surgical approach to obstructive pancreatitis has not been studied extensively, but distal pancreatectomy appears to be the best choice.\textsuperscript{4} Since pathologic changes manifest themselves distal to the pancreatic duct stricture, distal pancreatectomy is the procedure of choice to deal with this problem. Nonobstructive forms of chronic pancreatitis affect the pancreas and the pancreatic duct more diffusely and are managed more appropriately with larger resections or side-to-side pancreaticoenterostomies. It is, therefore, imperative to obtain preoperative anatomic and morphologic information on the pancreas to determine the most likely form of chronic pancreatitis involved, and thus, the optimal surgical approach.

Right upper quadrant ultrasound to rule out cholelithiasis or choledocholithiasis followed by ERCP and then CT scanning is a logical radiologic approach to this disease process. The need for ultrasound and ERCP seems obvious. However, the addition of CT scanning provides valuable information about pancreatic parenchymal morphology. The CT scan in our patient was largely unremarkable except for the stricture. CT scanning may show, however, alternating areas of stenosis and dilation (the “chain of lakes”), as well as calcifications in nonobstructive pancreatitis. Uniform dilation of the pancreatic duct distal to the stricture without a chain of lakes appearance or calcifications, however, distinguishes obstructive pancreatitis from nonobstructive forms of pancreatitis on CT scan and ERCP.

This case underscores the need for a complete preoperative radiologic workup to include ultrasound, ERCP, and then CT scan to determine the most likely form of chronic pancreatitis involved and, therefore, the best operative approach. We believe that in cases of obstructive pancreatitis, distal pancreatectomy is the optimal surgical procedure.

References

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Accidental Poisoning in Children
with Special Reference to Kerosene Poisoning

L.T. Chun MD*, Honolulu

reprinted from the Hawaii Medical Journal November-December 1951 issue

This study on accidental poisoning in children is the result of a review of cases admitted to the Kauakeana Children’s Hospital over a five year period from August 1945 to May 1950. The purpose of this study was to determine the most frequent types of poisoning so that an emergency room could be set up at the Children’s Hospital to meet the most common needs. No attempt has been made to determine the best method for managing any one particular type of poisoning, because when the cases were admitted there was no unified study made with this in mind.

The cases presented are those that were admitted to the Children’s Hospital, and do not necessarily reflect the most common types that may be seen in private practice or at the local Emergency Hospital.

Observations

The total number of cases admitted was 221 with 3 deaths, a mortality rate of 1.3%. The deaths were due to one each of the following: kerosene, oil of eucalyptus, and water color paint. The age range was from 10 days to 12 years with an average (median) age incidence of 3.8 years. The mode was 2 years; 40 cases occurred at this age, an incidence of 17.8%. The other ages in the order of frequency were: 1.5 years, 24 cases or 10.7%; 1 year, 20 cases or 8.9%; 3 years, 18 cases or 8.03%; 2.5 years, 17 cases or 7.6%. One hundred and forty-nine boys and 72 girls were admitted. There were 3 cases who ingested poisons twice. One was a 2-1/2 year old female who ingested phenolphthalein in the form of “Ex-lax” twice 4 months apart. Another was a 3-year-old male who was first admitted for ingestion of oil of eucalyptus and fourteen months later was admitted for kerosene ingestion. The third case was a one-year-old male who ingested kerosene twice five months apart.

There were 59 types of poisons encountered. To facilitate the discussion of the different types of poisoning, they have been divided into four major groups, namely, medications, chemicals, foods, and plants. The individual poisons encountered are as follows:

A. Medications

1. Oil of eucalyptus, 13 cases; phenolphthalein, 7 cases; barbiturates, 7 cases; salicylates, 6 cases; camphorated oil, 5 cases; rubbing alcohol, 4 cases; thyroid tablets, 3 cases.
2. There were two cases of each of the following: Benadryl; iodine; “Vapor Cresoline”; benzedrine; ethyl alcohol; aconite.
3. There was one case of each of the following: “Antistine”; potassium permanganate; stilbestrol; morphine; mercury; atropine; sulfonamide; mercurochrome.

B. Chemicals

1. Kerosene, 69 cases; arsenic, 17 cases; pine oil, 7 cases; turpentine, 4 cases.
2. There were three cases of each of the following: Cigarette lighter fluid; carbon tetrachloride; ant poison (unidentified).
3. There were two cases of each of the following: Phosphorus, gasoline, water color paint, nicotine, “Clorox,” “Flit,” lye, inhalation of “Chemtox” (termite fumigation fluid), creosol.
4. There was one case each of the following: Vanilla extract, witch hazel, creolene, “Tintex” dye, nail polish remover, incense sticks, D.D.T., shoe polish, “Borax,” “trupine,” denatured alcohol, lacquer thinner, camphor crystals, lead, weed poison (unidentified).

C. Foods (spoiled)

1. Butter fish, 7 cases; black sea bass, 1 case; cream puff, 1 case; corned beef, 1 case.

D. Plants

1. Berries (unidentified), 2 cases; nuts (unidentified), 3 cases; fruit (unidentified), 1 case; Dieffenbachia (dumb cane), 1 case.

The most common general treatment employed for the ingested poisons was gastric lavage. Out of the 221 cases admitted, 167 were so treated. Thirteen had vomited prior to the lavage, and of these, it was induced in 7 by home remedies of milk, egg and milk, egg white, or mustard water. Ten were given emetics at home with no success. Most of the cases were treated by the Emergency Hospital before being admitted to the Children’s Hospital.

On reviewing the cases, it was found that in most instances, the exact amount of ingested poisons was unknown. The time interval before the patient was seen was usually from one-half hour to one hour. The following is a discussion of the more commonly encountered poisons:

Commonest Poisons

Of the 13 cases of oil of eucalyptus ingestion, in 5 it was given as cough medicine by mistake. The most common symptom reported was convulsion, which occurred in 6 cases. Respiratory depression occurred in 3 cases; in 5, no common signs or symptoms were recorded. The symptoms appeared to be related not to the amount ingested but to how soon after ingestion therapy was started. It was noted that those treated within one-half hour presented no unusual findings. The treatment was mainly lavage. The one fatal case of oil of eucalyptus ingestion occurred in an 8 month old infant who was said to have ingested 1 ounce and was not treated till two hours later.
On admission, the child was cyanotic, convulsing, and comatose. The temperature was elevated and he died nine and one-half hours after admission without regaining consciousness. The essential findings at autopsy were “hydrothorax, hydroperitoneum, and acute hemorrhagic peritonitis.”

Of the 7 cases of phenolphthalein ingestion, 5 were due to “Ex-lax” and 2 to “Feen-a-mint.” The symptoms were confined to mild diarrhea. Treatments considered of lavage and, in only 1 case, kapectate and paragoric.

The 7 cases of barbiturate ingestion showed drowsiness as the most common symptom. Five were treated by lavage, one case was given caffeine, and one other was given benzodrine.

Of the 6 cases of salicylate poisoning, 2 were due to oil of wintergreen, and 4 to aspirin. The 2 cases of oil of wintergreen poisoning showed signs of acidosis on admission and were treated with glucose water and lactate solution parenterally. The one other case showing signs of acidosis on admission gave a history of ingesting 5 grains of aspirin once or twice every hour for one week, through a mistake in following directions. He had a salicylate level of 21.7 mg% on admission.

Of the 5 cases of camphorated oil poisoning, only one showed signs of intoxication. The child convulsed shortly after ingestion of the poison and had two more convulsions after admission to the hospital. She was treated by lavage only and given sulfadiazine for an associated nasopharyngitis. The next day she was free of symptoms.

Thirteen of the 17 cases of arsenic ingestion were due to cockroach powder and paste containing lead arsenate as the main ingredient. One other was due to rat poison and the three others occurred simultaneously in siblings who drank a garden spray solution containing an arsenic compound. The exact amount ingested and whether the poison was actually swallowed could not be determined with certainty in all the cases. Only those three siblings who drank the garden spray solution showed toxic effects. They complained of vomiting and abdominal pains and were treated with BAL.

There were 7 cases of pine oil ingestion. Spiking fever a few hours after ingestion and lasting for about twelve hours was reported in 4 cases. One case had hyperemia and swelling of the mucous membrane of the oropharynx and signs of croup. Every case was treated by gastric lavage.

Three of the 4 cases of turpentine ingestion developed abnormal signs and symptoms, including fever of short duration. One of them had pneumonia, which was confirmed by x-ray. The other had convulsions, became cyanosed, and had urinary retention. He also developed polymorphonuclear leukocytosis.

Two of the 3 cases of cigarette lighter fluid ingestion developed fever for three days. One of the cases also showed lethargy and had findings of pneumonia both by physical examination and x-ray. Blood counts on this patient taken on admission and two days later were normal. Four days after admission, he had an anemia of 2.9 million red cells and 9 gram of hemoglobin which responded favorably to blood transfusion.

Two of the 3 cases of carbon tetrachloride ingestion had fever and leukocytosis on admission. One of them became extremely ill with jaundice and anemia of 1.11 million red cells, 19% hemoglobin, 21% nucleated red cells, and 59,000 leucocytes. The urine showed 3+ albumin and was normal six days later. The anemia was corrected with two blood transfusions. There was no record of any liver function tests.

Of the 7 cases of poisoning due to spoilage of butter fish, 5 involved children who were at the same party. The outstanding symptoms were nausea, vomiting, and diarrhea. No specific treatment was employed. The 2 other cases were siblings who had similar symptoms and were admitted a day before the other five. The other cases of food poisoning due to spoilage all had similar symptoms of nausea, vomiting, and diarrhea.

The fatal case of water color paint ingestion involved a 17-month-old girl who ingested an unknown quantity of yellow, green, and blue water color paint. She was admitted to the hospital eight hours later in a semicomatose condition, having rapid and shallow respirations, vomiting, and bloody diarrhea. She was treated with parenteral fluids but failed to respond and died five hours later following an attack of convulsions. The only significant finding from the coroner’s report was acute pulmonary edema. The one other case of water color paint ingestion showed no unusual symptoms. He was lavaged within an hour after ingestion of the water color paint.

Less Common Poisons

It might be of interest to mention briefly some of the outstanding findings of the other cases of poisoning that were less frequently encountered.

One of the cases of iodine poisoning had a mild burn of the lip. The 2 cases of benzedrine poisoning showed hyporexictability which was controlled with barbiturates. Whiskey and beer accounted for the 2 cases of ethyl alcohol poisoning. Inebriation was the presenting symptom. Two of the 4 cases of rubbing alcohol poisoning were drowsy, flushed, and had fever. One of them ingested the alcohol, and the other had the alcohol given as an enema by accident. One of the patients who had no symptoms was a 10 day old infant who had the alcohol poured into his mouth by an older sibling. The 1 case of morphine poisoning received 1/2 grain by accident and became extremely drowsy. The case of sulfonamide poisoning developed urinary obstruction from precipitation of the sulfonamide crystals in the urethra. He was successfully treated by catherization.

One of the cases of ant poison ingestion had a temperature elevation of 102° for eight hours. The 2 cases of gasoline ingestion had temperature elevations. One of them had transient rales in the chest. One of the cases of nicotine ingestion was admitted in a collapsed condition. He was successfully treated by gastric lavage. Both cases of “Clorox” ingestion had second degree burns of the oropharynx. No systemic effect was noted. One of the cases of “Flit” ingestion was admitted in a shocked condition with heavy grunting respirations. The other case had no systemic effects but experienced coughing and choking. Only one of the cases of lye ingestion was reported to have burns of the oropharynx with febrile reaction. No further complication developed. The two siblings who were involved in the termite fumigating fumes (Chemtox) had fever, wheezing, labored respirations, and polymorphonuclear leukocytosis. Inebriation was the only symptom noted with the vanilla extract ingestion. The child who ingested the nail polish remover was said to have had difficulty in breathing immediately after the accident but had no unusual symptoms when seen at the hospital an hour later. Cyanosis of the nail beds and slight temperature elevation resulted...
from the ingestion of unknown quantities of shoe polish. The patient was lavaged on admission and on discharge two days later was entirely well. The child ingesting the “Borax” complained of a stomach ache but was symptom free after the gastric lavage. The case of lead poisoning occurred in a 1-1/2-year-old boy who gave a history of ingesting paint over a period of time. He was admitted because of convulsions. X-rays showed deposition of heavy metal at the ends of long bones. Sodium luminal was used for controlling the convulsions. No specific deleading procedure was carried out.

On of the cases of berry poisoning had nausea an vomiting on admission but was not severely ill. The cases of nut poisoning involved 2 brothers and a friend. They all had vomiting and diarrhea immediately after ingesting the nuts. The case of fruit poisoning had nausea and vomiting. The case of dieffenbachia poisoning had abdominal pains only.

The cases not discussed presented no abnormal signs and symptoms. This in itself does not mean that the poisons were harmless. Many factors are responsible for this, such as, the small amounts taken, the poisons not being actually swallowed, and the early institution of treatment, mainly, gastric lavage.

Kerosene poisoning

There were 69 cases of kerosene ingestion, an incidence of 31.3%. The age range was from 11 months to 8 years with an average age of 21 months. The mode was 2 years— 14 cases occurred at this age group, an incidence of 20.3%. The other ages in the order of frequency were: 1.5 years, 13 cases or 18.8%; 1 year, 11 cases or 15.9%. There were only two children over 3 years of age, a 4-year-old and an 8-year-old. The age incidence emphasizes the fact that children at the “age of exploring” are the ones most likely to get into trouble. In most instances, the accident occurred when the kerosene was kept carelessly in open cans, soda pop bottles, or containers with leaking spigots. The exact amount of kerosene ingested could not be determined accurately in most instances; estimates varied from a sip to a mouthful.

Gastric lavage was employed in 62 of the 69 cases. Three had spontaneous vomiting prior to admission and in four others there was no record of either lavage or vomiting. Sixteen patients received penicillin for prophylaxis and for treatment of pneumonia; one received sulfonamide alone, and two patients received both penicillin and sulfonamide. Plain water was used for gastric lavage in 54 cases and the other 8 were lavaged with sodium bicarbonate solution. In 12 cases, the gastric lavage was followed by the instillation of some medication—8 received milk of magnesia, 2 each received mineral oil and plain milk, and 1 each received olive oil and magnesium sulfate.

The most frequent complications are as listed in Table 1. An attempt has been made to group them into cases who were lavaged and those who were not. Because of the insufficient number of cases in the group not lavaged, no conclusions can be drawn from study as to the frequency of complications between those who were lavaged and those who were not. There were 12 cases (17.3%) who presented no symptoms, and these were all in the group of cases who were lavaged.

The fever was observed usually after the child had been in the hospital from four to eight hours and was of short duration, lasting twelve to twenty-four hours. The temperature varied from 101° to 104°. Those cases with pneumonia had longer duration of fever lasting from three to five days.

The coughing and choking recorded were those observed at the time of hospitalization. More detailed histories might have revealed these symptoms to be prevalent in the other cases also.

In 9 instances, the pneumonia was confirmed by x-rays, which showed a peribronchial infiltration in the lower lobes. The physical findings recorded were slight impairment to percussion and moist rales over the involved areas.

Most of the cases of vomiting occurred spontaneously after ingestion of the kerosene, though some were induced at home with emetics.

The lethargy ranged from drowsiness of short duration to unconsciousness of two to four hours' duration. One case was reported as begin semi-comatose for eight hours.

Every case had a routine CBC on admission. Only 6 showed an elevated white count, ranging from 15,000 to 33,000, neutrophilies ranging from 52 to 76%. Only 1 case developed anemia which occurred six days after the ingestion of kerosene and responded well to blood transfusion.

The one fatal case of kerosene ingestion occurred in a 1-1/2-year-old child. The exact amount ingested was not known. She was lavaged at the Emergency Hospital about an hour after the onset of the accident and on admission to the Children’s Hospital, the child was unconscious and gasping for breath. She expired forty minutes after admission.

Discussion

It is beyond the scope of this paper to discuss all the different types of poisoning as each type would deserve a full paper discussion. The reader is referred to the excellent discussion of this subject by Dr J. M. Arena in the Ciba Clinical Symposia. However, since kerosene was the most common one encountered, a brief review of the literature on kerosene poisoning may be in order.

The subject of pulmonary manifestations following kerosene ingestion is always of considerable interest. Pneumonia occurs more frequently than we are led to believe. Lesser et al. x-rayed 22 patients following kerosene ingestion and found 77% had signs of pneumonia. Of these, only 24.2% showed physical signs which appeared about four hours after ingestion. Reed et al. followed 19 cases of pneumonia due to kerosene for six months to four years. They found no evidence of residual damage to the respiratory system.
systems. The pulmonary changes resolved in two weeks. The cases at the Kauikeolani Children’s Hospital were not x-rayed routinely, hence, the incidence of pneumonia may have been higher than 18.8%.

The institution of gastric lavage as treatment in kerosene ingestion is controversial. The issue is about the mode of developing pneumonia. Lesser et al.³, Waring,⁴ and Reed et al.³ have shown by experiments with rabbits that pneumonia is caused by direct aspiration of kerosene into the lungs and that no pneumonia was observed when kerosene was instilled directly into the stomach. Rabbits were used in the experiment because they do not vomit. Deichman et al., on the other hand, have shown that pulmonary changes can occur without direct aspiration of kerosene into the pulmonary system. When kerosene is introduced directly into the stomach, pulmonary changes can occur from absorption into the blood stream.⁵

In the above experiments, all mentioned that drowsiness occurred when large amounts of kerosene were instilled into the stomach. Degenerative changes in the liver, kidneys, lungs, and heart have also been described.⁵ At a recent clinical conference at the St. Louis Children’s Hospital,⁶ the occurrence of mediastinal and subcutaneous emphysema and pneumothorax in kerosene poisoning have been pointed out as not being unusual.

The observations made on the complications of kerosene poisoning in this study are similar to those made by others. Leukocytosis is the only exception. While this study reported an incidence of 8.6%, Reed et al.³ report leukocytosis in 65% of their cases.

**Lead Poisoning**

Because lead poisoning in children is unlike that in adults, brief mention will be made of another case of lead poisoning which occurred after this study was completed. The case was that of a 2-year-old girl admitted because of an acute onset of convulsions not associated with fever. A careful history revealed the fact that the child had been eating paint off the wall over a period of 2 months. A flat x-ray of the abdomen showed scattered dense shadows in the shape of paint peeling.

Increased intracranial pressure and cerebral edema are the outstanding features of lead poisoning in children. Therefore, it is hazardous to do lumbar punctures on patients with acute lead encephalopathy. In the chapter on lead poisoning in Mitchell and Nelson’s *Textbook of Pediatrics*⁷ it is stated that approximately one-half of the infants and small children have encephalitic manifestations and among these the mortality is about 25%. Of those who recover, about one-third are left with permanent neurologic sequelae. Encephalitis with convulsions may be precipitated in a quiescent case by the release of the lead from the bones during an intercurrent acute infectious or metabolic disturbance. Because of the permanent residual effects that may develop from lead poisoning, the public should be educated to use lead-free paint in all house interiors and toys.

**General Measures**

At the Conference on Poisoning at the Duke Hospital⁸ in 1947, it was said that 400 different types of poisons kill over 500 children in America annually. Caustic alkali poisoning was said to be the most frequent followed by kerosene. It was emphasized that many of the cases of poisoning were preventable and the responsibility is with the parents. They suggested the following emergency measures in handling acute poisonings.

1. Identify the poison as soon as possible.
2. Evacuation of the poison from the stomach by lavage or emetic except in cases of kerosene and caustic alkali poison.
3. Antidoting the residual poison in the stomach when possible.
4. Antagonist when available.
5. Symptomatic treatment when indicated.
6. When the nature of the poison is unknown, give universal antidote of: pulverized charcoal 2 parts, tannic acid 1 part, magnesium oxide 1 part. The pulverized charcoal may be given in the form of burned toast, the tannic acid in the form of strong tea, and the magnesium oxide in the form of milk of magnesia. The first will absorb phenol and strychnine, the second will precipitate alkaloids, glucosides and metals, and the last will neutralize acids.

**Summary**

A study of 221 cases of accidental poisoning admitted to the Kauikeolani Children’s Hospital over a 5 year period is presented. Fifty-nine different poisons were encountered. There were twice as many boys as girls admitted. The age of greatest frequency was 2 years, followed by the age groups of 1-1/2 years, 1 year, 3 years, and 2-1/2 years.

Kerosene poisoning is the most common, and 69 cases of kerosene poisoning are presented in detail with a brief discussion of the literature. Other more common types of poison are: arsenic compounds, oil of eucalyptus, phenol, oil of camphorated oil. There were 3 deaths, due to one each of the following: kerosene, water color paint, and oil of eucalyptus.

**Conclusions**

This study probably does not give a complete picture of the most common poisons encountered in the Hawaiian Islands. In order to have this study complete, further information should be obtained from the practicing physicians and the cases of poisoning admitted to the Emergency Hospital should be reviewed.

There are, however, two important points this study emphasizes:

1. Many of the cases of accidental poisoning are preventable.
2. We must never underestimate the 18 month to 3-year-old child’s knack for getting into trouble, and we recognize his natural curiosity for exploring the unknown through his mouth.

**References**

8. Clinic on Poisoning, Conference at Duke Hospital, J. Pediat. 32:207 (Feb.) 1948.
Who Calls the Hawaii Poison Center?

Debbie Ahina, RN, BSN

The types of callers and calls received by the Hawaii Poison Center’s telephone triage service during the last fiscal year (July 1, 1996 through June 30, 1997) are described. A comparison to national data for human toxic exposures is provided. Methods included a review of Hawaii Poison Center statistics, the American Association of Poison Control Centers annual report, and a retrospective recall of cases.

Introduction

The Hawaii Poison Center provides poison information services to the people of Hawaii, the Pacific Basin and Pacific Rim. The center operates a 24-hour hotline, 365 days a year (on Oahu phone 941-4411 or 911, and neighbor islands toll-free 1-800-362-3585). Specially trained registered nurses perform telephone triage, providing quick assessment and treatment of poison exposures for both lay people and medical professionals. Medication identification for imprinted tablets and capsules, and general information is available over the phone. Community poison prevention talks and professional education workshops on toxicology are conducted.

The Hawaii Poison Center received almost 12,000 calls during the last fiscal year. The majority of calls 10,297 (87%) were from the general public rather than medical professionals. Private individuals such as anxious parents whose children may have accidentally been poisoned called most frequently, followed by police requesting identification of confiscated medications, as well as businesses, schools, and other government agencies where a toxic exposure has occurred. (Figure 1) The remaining 1,585 calls (13%) were from medical professionals caring for the poisoned patient.

The Hawaii Poison Center assists medical professionals with assessing toxicity and recommending appropriate treatment. Information is provided over the phone and via fax. Emergency department calls are the most frequent followed by calls from other medical professionals, usually involving patients who directly called their personal physician, physicians’ office, or clinic when a suspected poisoning occurred. (Figure 2)

A Profile of Hawaii Poison Center Calls

As expected, the majority of Hawaii Poison Center calls were from Oahu. For the neighbor islands, the Poison Center provides a particularly crucial service for callers where the closest emergency department or even a doctor’s office can be many miles away. (Figure 3)

On Oahu, most of the calls came from the densely populated Honolulu (from Hawaii Kai to Salt Lake/Moanalua) 50%, and Leeward (from Aiea to Mililani/Wahiawa and to Waianae) areas 32%. The remaining calls were from the Windward side (Kailua, Kaneohe, Waimanalo) 15%, and the North Shore (from Kaaawa to Haleiwa/Waialua) 3%.

Human poison exposures accounted for most of the Hawaii Poison Center calls. These commonly involve ingestion, inhalation, eye or dermal contact with a possible or known poisonous substance. Remaining exposures include bites or stings from venomous insects and marine organisms.

The center also received informational calls which are general questions not involving an actual exposure, frequently prevention oriented in nature, and related to the safe handling of toxins. Examples include “can I use olesander flowers to make a lei and garnish food dishes?” or “how do we dispose of four gallons of chemicals that have been stored under the house for years?” Requests for medication identification are usually received from the local police departments for confiscated medications. Over the phone, the Hawaii Poison Center can identify most tablets or capsules with imprinted numbers and letters.

Hawaii Pediatrician’s Perspective

“Countless times I’ve received desperate calls from parents of patients who have ingested the gamut of poisons from over-the-counter to prescription drugs, from solvents to desiccants. Each and every time I’ve relied on the Hawaii Poison Center - seconds away by phone, manned with calm professionalism, supported by the exhaustive information bank that is the Poisindex. And each and every time I was thankful the facility survived the variable winds of funding.

“What the Poison Center provides this community is more than the obvious financial benefits of reducing health costs and improving health care delivery. The center has created for these islands an intangible, but very real sense of security - a civic security blanket. It’s something that money can’t buy.”

Jeffrey Lim, M.D., FAAP

“As a pediatrician in a solo private practice, the Hawaii Poison Center’s specially trained and dedicated 24-hour staff provides me and my patients a means of immediate telephone consultation regarding any issues of medical toxicology. The Hawaii Poison Center’s forty years of experience with “local” poisonings, as well as access to texts, files, and computerized databases makes it the best source of information and guidance on poisoning. Not only does the center provide an effective means of disseminating information, it assists with medical consultation, and arranging for follow-up, therefore reducing unnecessary hospital visits.”

Michael Sia, M.D., M.P.H.
Figure 1.—Calls from General Public (FY 96-97)
Business (1%)  School (1%)  Government Agencies (1%)
Police (7%)  Private Individual (90%)

Figure 2.—Calls from Medical Professionals (FY 96-97)
Emergency Room (ER) (39%)
Paramedic (1%)  Dentist (1%)
Nurse (5%)  Doctor's Office (5%)
Veterinarian (7%)  Clinic (7%)
Pharmacist (10%)
Non-ER Physician (14%)
Urgent Care Clinic (11%)

Figure 3.—Calls by Island (FY 96-97)
Kauai (4%)  Oahu (75%)
Molokai and Lanai (1%)  Maui (9%)
Hawaii (11%)

Figure 4.—Types of Calls (FY 96-97)
Animal Exposures (3%)
Information (25%)
Human Exposures (72%)

Table 1.—Age Gender of Human Poison Exposures
<table>
<thead>
<tr>
<th>Age</th>
<th>Hawaii%</th>
<th>National %</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years or less</td>
<td>39.7</td>
<td>52.8</td>
</tr>
<tr>
<td>6 - 12 years</td>
<td>5.9</td>
<td>6.8</td>
</tr>
<tr>
<td>13 - 19 years</td>
<td>5.6</td>
<td>7.4</td>
</tr>
<tr>
<td>Adults &gt; 20 years</td>
<td>37.5</td>
<td>27.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>11.3</td>
<td>5.9</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex</th>
<th>Hawaii%</th>
<th>National %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>43.8</td>
<td>50.9</td>
</tr>
<tr>
<td>Male</td>
<td>43.0</td>
<td>48.5</td>
</tr>
<tr>
<td>Unknown</td>
<td>13.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2.—Reason for Human Poison Exposures
<table>
<thead>
<tr>
<th>Reason</th>
<th>Hawaii%</th>
<th>National %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unintentional</td>
<td>79.4</td>
<td>85.7</td>
</tr>
<tr>
<td>Intentional</td>
<td>11.3</td>
<td>11.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>9.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Other</td>
<td>0.0</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
The remaining calls were from pet owners or veterinarians regarding poisoned animals including dogs, cats, rabbits, birds, turtles, pigs, chicken, and horses. Some examples of calls are "my bird drank bleach from a coffee stained mug" or "my dog may have eaten rat poison." Animal toxicology information is provided to the veterinarian as available. (Figure 4)

A Comparison Of Hawaii And National Human Poison Exposures

A comparison of human poison exposures for the Hawaii Poison Center (8,666 cases) and the American Association of Poison Control Center's national data (2,155,952 cases) is presented.

A summary of age and gender is displayed in Table 1. As expected the majority of both Hawaii and national cases involved children 5 years of age or less. Differences are noted with Hawaii having a higher incidence of adult poisonings, and national poisonings occur much more frequently in children age 5 years old and less. Hawaii and national gender distribution was nearly equal.

Unintentional (accidental) poisonings outnumbered intentional (suicidal gestures or experimentation) poisonings for both Hawaii and national exposures (Table 2).

Ingestions accounted for the vast majority of exposure routes for both Hawaii and national cases (Table 3). However Hawaii has a much higher incidence of bites and stings (12.8%) compared to the national data (3.8%). Hawaii's unique tropical environment surrounded by water results in more outdoor and ocean activities, and therefore increased exposure to venomous insects and marine organisms.

Table 3.—Route of Exposure for Human Poison Exposures

<table>
<thead>
<tr>
<th>Route</th>
<th>Hawaii%</th>
<th>National %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestions</td>
<td>61.6</td>
<td>74.0</td>
</tr>
<tr>
<td>Bites and stings</td>
<td>12.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Dermal</td>
<td>8.9</td>
<td>8.1</td>
</tr>
<tr>
<td>Inhalation</td>
<td>6.2</td>
<td>7.0</td>
</tr>
<tr>
<td>Ocular</td>
<td>5.7</td>
<td>5.9</td>
</tr>
<tr>
<td>Parenteral</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Other</td>
<td>0.2</td>
<td>0.4</td>
</tr>
<tr>
<td>Unknown</td>
<td>4.4</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.—Substances Involved in Human Poison Exposures

<table>
<thead>
<tr>
<th>Substance</th>
<th>Hawaii%</th>
<th>National %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medications (prescription, over-the-counter)</td>
<td>49.3</td>
<td>29.5</td>
</tr>
<tr>
<td>Household products (cleaning and personal care)</td>
<td>34.8</td>
<td>22.0</td>
</tr>
<tr>
<td>(cleaning and personal care products, hydrocarbons)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Envenomations (bites, stings)</td>
<td>15.1</td>
<td>4.4</td>
</tr>
<tr>
<td>Pesticides (includes herbicides, rodenticides)</td>
<td>7.7</td>
<td>4.0</td>
</tr>
<tr>
<td>Plants</td>
<td>6.9</td>
<td>5.3</td>
</tr>
<tr>
<td>Food products, food poisoning</td>
<td>5.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Industrial products, chemicals</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>Liquor</td>
<td>1.1</td>
<td>2.6</td>
</tr>
</tbody>
</table>

NOTE: One poisoning exposure may involve multiple substances. Percentages are based on the total number of human exposures rather than the total number of substances.

(Table 4) presents the most common substance categories listed by frequency of exposures. While medications, followed by household products are the most common, the incidence of these types of exposures is much greater in Hawaii. Again bites, stings, and pesticide exposures occur more frequently in Hawaii.

The vast majority of both Hawaii and national cases were low to moderate toxicity (Table 5) in which the patient is likely to develop symptoms unless treatment is undertaken to minimize the exposure. Based on the type of exposure, Poison Center staff advise the caller on first aid, home management, and/or referral for further medical care).

The next group of exposures were non-toxic in which the caller was reassured that the exposure was not dangerous. Poison Center staff educates these callers on poison prevention and poison-proofing the home. Some examples are silica gel dessicant, crayons, and balloons. Possible foreign body obstruction is a risk and is assessed.

The remaining exposures were highly toxic, life and health threatening, requiring referral to the nearest emergency department or ambulance. The Poison Center then calls the emergency department with details and stands by to assist the emergency department with toxicology information. These cases are often suicidal gestures.

Conclusion

The Hawaii Poison Center receives a variety of calls from urgent human poison exposures to general informational questions and pet exposures. Overall, the human poisoning cases reported to the Hawaii Poison Center are similar to national trends, with some toxins unique to Hawaii.

References

Hawaii Poison Center
Forty Years of Saving Lives and Health Costs

Willow S. Morton, MSW*

The Hawaii Poison Center was established because poisoning was a significant public health problem in the 1950s. The history and status of the Center, in the context of national trends and key issues in poison control public health infrastructure, is reviewed.

Introduction

Forty five years ago, when the first poison control center opened in Chicago, poisonings were a leading cause of injury in children. The success of early centers in saving lives by providing physicians with immediate and accurate information initially fueled a rapid expansion of poison control centers (PCCs) across the US. Later, as efforts to improve quality led to regionalization, poison control centers consolidated while expanding their geographic catchment areas to millions of people.

Unintentional poisoning among children today continues to be a significant public health problem. Although the number of pediatric deaths has declined dramatically since the passage of the Poison Prevention Packaging Act of 1970, the majority of poisonings continue to be in children under 5 years and still occur in sizable numbers—nationally 53% of the 2.2 million poison exposures reported in 1996.

Poison centers today are in a critical financial condition. Generically funded via a patchwork of state and country government funds, hospitals, medical schools, and private donations, poison centers have faced a decline in funding due to various budget cuts. Closings and consolidations have resulted in a decline in poison centers to 87 in 1994.

The Hawaii Poison Center, established in 1957 by the physician community in response to child poisonings, reflects mainland trends on poison control. The history of poison control on the mainland and in Hawaii is traced in this article and significant issues for the future of poison control in Hawaii are identified.

Methods

A literature review of various medical journal articles, congressional hearing reports, special studies and correspondence from the American Association of Poison Control Centers was conducted. Key informants were identified through inquiries of members of the Hawaii Chapter of the American Academy of Pediatrics and review of the Hawaii Poison Center’s business documents. These individuals were contacted for phone interviews on the history of the center and poison control management in Hawaii.

History

In 1951, Honolulu pediatrician L.T. Chun published an article in the Hawaii Medical Journal and Interisland Nurses’ Bulletin entitled, “Accidental Poisoning in Children/With Special Reference to Kerosene Poisoning.” Two hundred and twenty-one pediatric cases admitted to Kauakeolani Children’s Hospital over a five-year period from August 1945 to May 1950 were reviewed, and of the 59 poison agents noted, kerosene was the most common poison. Three deaths were reported: one each by kerosene, water color paint, and oil of eucalyptus.

The study reflected a significant public health problem — accidental poisonings — both in Hawaii and nationally. In 1950, when the American Academy of Pediatrics Committee on Accident Prevention was formed, poisoning was a leading cause of injury in children. In 1952, the Academy conducted a survey revealing that 51% of reported child accidents were related to poisonings. Shortly thereafter in 1953, the first poison control center opened its lines in Chicago, offering speedy and lifesaving access to toxicology information in cases of exposure. Center openings in several other cities around the country soon followed. In 1956, the National Clearinghouse for Poison Control Centers was established under the auspices of the US Public Health Service’s Accident Prevention Program, serving as a collection agency for information on poisons and potential poisons and compiling data from individual poisoning reports.

The Hawaii Poison Center was established in 1957. The Honolulu Pediatric Society, then a small organization of some 20 or so pediatricians, advocated for poison control as a key child health issue in Hawaii. (Phone interview, L.T. Chun, MD, 9/30/97.) Dr

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Donald Char, pediatrician and full time Director of Medical Education for Kaukeolani Children’s Hospital, garnered support from Dr. Kay Edgar, Chief of Maternal and Child Health at the State Department of Health, and other stakeholders. Regarding management of poisonings as integral to the training of pediatricians, Dr. Char organized the Poison Control Center, as it was then known, under the Department of Medical Education as a service to physicians and other medical professionals. (Phone interview, Donald Char MD, 11/13/97.) With limited funds he brought together toxicology reference materials and trained the pediatric residents who then became responsible for answering the phone line 24 hours a day. The residents relied on textbooks and publications on product dangers, and in the first year fielded 286 phone calls. (Hawaii Poison Center 1984 Annual Report.) Mr. Will Henderson, Kaukeolani Children’s Hospital administrator at the time, commandeered a large closet adjacent to the emergency room and installed a phone line and furniture, giving the center an identity and visibility. (Interview, Will Henderson, 10/19/97.)

Pediatrician Richard Ho, who became involved with the Poison Center as a resident, subsequently became its first medical director. Majoring in chemistry before going on to medical school, Ho began to build up the technical reference library, wrote articles periodically for the *Hawaii Medical Journal*, and tirelessly carried his poison prevention educational efforts into the schools, health fairs, and medical conventions.

After 20 years as medical director, Ho recruited recently retired Dr. Rea Chittenden, who had previously been involved in the Los Angeles Poison Center. By then the Children’s Hospital had moved to its present Punahou Street location via the merger with Kapiolani Maternity and Gynecological Hospital. Chittenden, as medical director, was supported by the first administrative director, Margaret Lezereti, a nurse. Following Dr. Chittenden’s death, Dr. Gwen Naguwa became the medical director. (Phone interview, Jane Kagihara, RN, 11/21/97.)

In 1974, Jane Kagihara, RN succeeded Lezereti. The advent of state funding via grant-in-aids had made possible 24 hour dedicated staffing by trained nurses. Throughout her thirteen year tenure Kagihara lobbied the legislature to stabilize state funding, applied for corporate grants, implemented the certification of the center’s staffing, and ultimately opened the lines of the center to the general public, as many of the key centers on the mainland were doing. By 1979, the center was fielding nearly 7000 calls per year. (1984 Annual Report.)

In September 1980, the center installed a toll-free line to the Neighbor Islands, as only 3% of the calls came from Maui, Kauai, and Hawaii Counties. As a result, call volume jumped by 24%. And by 1983, neighbor island calls climbed to approximately 15% of calls. (1984 Annual Report.) Because of the growth in call volume as well as more extensive toxicology information available, the center computerized its documentation and clinical databases to improve services. (Kagihara)

The Hawaii Poison Center’s history closely parallels the trends of mainland poison centers. In the decades of the sixties and seventies, heralded by pediatric groups, public health agencies, hospitals and community organizations, financial support and the number of centers in the US grew steadily to a peak of 661 in 1978. Based typically in emergency rooms or hospital pharmacies, the centers were staffed by medical personnel with no special training or expertise in toxicology and limited information resources. By the late 1970s, with financial assistance from the Emergency Medical
Table 1.—Historical Timeline for Poison Services

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>American Academy of Pediatrics forms Committee on Accident Prevention, leading to identification of poisoning as a key public health issue.</td>
</tr>
<tr>
<td>1953</td>
<td>Chicago Poison Control Center opens.</td>
</tr>
<tr>
<td>1956</td>
<td>National Clearinghouse for Poison Control Centers established.</td>
</tr>
<tr>
<td>1957</td>
<td>Hawaii Poison Control Center established.</td>
</tr>
<tr>
<td>1970</td>
<td>Poison Prevention Packaging Act passed by Congress.</td>
</tr>
<tr>
<td>1973</td>
<td>Emergency Medical Services Act passed by Congress.</td>
</tr>
<tr>
<td>1978</td>
<td>Peak number of 661 centers reached nationwide, 100% coverage of U.S. population achieved.</td>
</tr>
<tr>
<td>1980s</td>
<td>Decline in centers begins due to regionalization and funding pressures.</td>
</tr>
<tr>
<td>1994</td>
<td>Congressional hearings held on the financial plight of poison control centers.</td>
</tr>
<tr>
<td>1995</td>
<td>Hawaii Poison Control Center loses state funding.</td>
</tr>
<tr>
<td>1997</td>
<td>Health and Human Services report to Congress regarding federal assistance to stabilize poison centers.</td>
</tr>
</tbody>
</table>

In follow-up to the Congressional Hearings, the Secretary of Health and Human Services was asked to report back to Congress on mechanisms for stabilizing poison center services in the United States. The first report, by the Poison Control Center Advisory Work Group of the Centers for Disease Control and MCH/Health Resources and Services Administration, recommends immediate federal assistance, six fundamental initiatives essential to a redesigned poison control system that maximizes economies of scale, under oversight of the Department of Health and Human Services, and use of a Robert Wood Johnson study to redesign the US poison control system. Whether Congress will act in response to the crisis of funding and fragmentation of the system remains to be seen.

In Hawaii, similar economic pressures resulted in state government defunding of its Center at the end of 1995. Kapilolani Medical Center for Women and Children, a tertiary teaching facility, continues to underwrite the program today, with financial support from other major medical centers and health corporations throughout the state, such as Kaiser Permanente, and other corporate donors. A community advisory board, composed of health care professionals, business executives, and consumers, was formed to guide the center in its mission of service and education, and assist with fundraising.

The threatened closure, however, resulted in a significant drop in calls from 13,505 in fiscal 1995 to 11,849, over 12%, in the following year. This reflects a penetrance level of slightly more than 9 calls per 1000 population, versus the recommended 15 calls per thousand benchmarked against longstanding certified poison control centers with well established community education and outreach programs. Fearful that the decline in calls may increase the level of harm from exposures and increase overall health care costs, especially those stemming from emergency room visits for exposures which could be managed at home, the Hawaii Poison Center will redouble public awareness and education efforts for its yearlong fortieth anniversary celebration. At the same time, the Center will also increase fundraising efforts to address immediate financial shortfalls, as well as long term fund development.

Critical Condition of Poison Services Today

In March 1994, Congressional hearings were held to discuss the plight of PCCs. Economic pressures and escalation of health care costs had destabilized centers such that only 87 still survived in 1994. The largely voluntary and private funding arrangements of poison control centers was unstable, and centers needed to deal with multiple funders and donors, none of whom felt indispensable. And in a managed care environment in which purchasers of health care services now aggressively seek the lowest price for care, hospitals and academic medical centers, the traditional sites for PCCs, must keep costs low to compete, a feat particularly difficult for teaching hospitals.

In the 1980s, a trend toward regionalization resulted in a rapid decline in the number of poison centers, as small local centers combined to serve larger geographic areas, generally leading to improved quality, better economies of scale, and increased call volume. By 1983, the number of US poison control centers had dropped to 395. In 1994, when Congressional hearings commenced 87 centers remain. The trend toward regionalization also meant that benefits were provided to a wider community—extending well beyond the revenue base of the sponsoring institutions.

Summary

In this era of health care reform, as harm reduction, prevention, and other public health strategies become ever more important, the Hawaii Poison Center continues to play a significant role in improving the quality of health and reducing health care costs for Hawaii. Patterned after centers on the mainland, the center’s history parallels mainland trends in poison management services. After 45 years of service, the key issue facing centers today is survival, as the funding for centers erodes and become ever more fragmented and vulnerable to economic pressures.

References:
In Moderate Inflammatory Acne,

Lead Role

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First Line Therapy
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"[Benzamycin Gel] ... produced a significantly better response in therapy of moderate acne than did either component alone."

Adverse reactions infrequently reported include dryness, erythema and pruritus.

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**Warnings**

Benzamycin® Topical Gel is contraindicated in those individuals who have shown hypersensitivity to any of its components.

**CONTRAINdications**

Benzamycin® Topical Gel is contraindicated in those individuals who have shown hypersensitivity to any of its components.

**WARNINGS**

Pseudomembranous colitis has been reported with nearly all antibiotic agents, including erythromycin, and may range from mildly to life-threatening. Therefore, it is important to consider this diagnosis in patients who present with diarrhea subsequent to the administration of antibiotic agents.

Treatment of severe and persistent pseudomembranous colitis has included metronidazole, vancomycin, or both. Vancomycin has been reported to be the treatment of choice. The use of anaerobic antibiotics may be associated with the overgrowth of noncarmicolase organisms including fungi. If this occurs, desensitization and tincture appropriate therapy.

**Precautions**

General: For topical use only; not for ophthalmic use. Concurrent topical acne therapy should be used with caution because a possible cumulative irritant effect may occur, especially with the use of peeling, desquamating, or irritant agents. Prolonged use of erythromycin, particularly in the absence of local adverse reactions.

**REACTIOns**

**Topical Gel**

There was no evidence of teratogenicity or any other adverse effect on reproduction in female rats fed erythromycin (up to 12.5% diet). No data are available on the effects of topically applied erythromycin on reproduction in female rats and on the foetus. In rats fed erythromycin (10% diet) levels up to 0.5%, 0.3% and 0.1% of the diet, there were no adverse effects on the reproductive organs of the male and female rats or on fertility. However, it is known that perinatal and postnatal administration of erythromycin to rats fed erythromycin (25% diet) levels up to 0.8% diet affected the expression of sex and fertility in rats fed erythromycin (3% diet).

**Pregnancy: Therapeutic Effects**

**Pregnancy CATEGORY C**

Animal reproduction studies have not been conducted with Benzamycin® Topical Gel or benzoyl peroxide.

**ADVERSE REACTIONS**

In controlled clinical trials, the incidence of adverse reactions associated with the use of Benzamycin® Topical Gel was approximately 3%. These were drug-like and irritant reactions.

**WARNINGS**

The following additional local adverse reactions have been reported occasionally: irritation of the skin including peeling, itching, burn, sensation, erythema, inflammation of the face, eyes, nose, and irritation of the eyes. Skin discolouration, skin and sensations of the area have also been reported.

**DOSE AND ADMINISTRATION**

Benzamycin® Topical Gel should be applied twice daily, morning and evening, or as directed by a physician, to affected areas. Avoid the eyes, nose, and mouth. Apply an amount of gel sufficient to cover the affected area with a thin film. Benzamycin® Topical Gel should not be used on mucous membranes. Do not chew. Place a 2-month supply in the box.

**References**


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**GREAT AMERICAN FOOD FIGHT AGAINST CANCER**

**TIPS FOR GROCERY SHOPPING**

- Don’t try to change eating and shopping habits overnight. Think of it as an ongoing process of good health for life. It’s just not possible to learn everything about healthier life-styles at once, so don’t set an impossible task for yourself.

- Try to plan shopping as carefully as possible. Sometimes, shopping has to be done in a hurry, but try to give some thought to it ahead of time in order to minimize or eliminate impulse purchases. Besides, even a few moments of planning saves a lot of time and aggravation at the store. Spend some time in advance thinking about healthy substitutions and additions to make.

- Don’t shop on an empty stomach.

- You don’t have to avoid treats or rewards. Just try to think of healthy foods as special treats.

- Explore the produce section. Be adventurous and try a new kind of fruit or vegetable every once in a while, so they won’t seem as overwhelming. Think of new ways to try produce, and remember that it is usually low in fat and high in fiber.

- Look for fresh herbs to season foods, instead of fats, sauces, and gravies.

- A variety of foods is important to healthy eating and will also keep shopping from seeming so routine.

- Read labels carefully. Ingredients are listed in order of quantity. Choose products that have no fats or oils, or in which fats are listed last.

- Beware of so-called “healthy” or “lite” foods. Read the labels carefully for fat, fiber, and vitamin content. Remember that you don’t need to buy any special foods to improve your diet.

- Avoid processed, salt-cured, smoked, and nitrate-cured meats and foods. Always buy fresh when you can.

- Select low-fat, non-fat, and skim milk dairy products.

- Buy tuna packed in water, not in oil.

- Brace yourself for a barrage of impulse items, such as candy bars, at the checkout. Prepare in advance to resist this assault by reading a magazine, balancing your checkout, or engaging in conversation.

- Contact your local American Cancer Society for more tips.
Clinical Pearls in Pediatric Toxicology: A Systematic Approach to the Poisoned Child

Alson S. Inaba MD*

Toxic ingestions in children can present various clinical dilemmas. This brief article will focus on some of the key clinical pearls that will enhance the physician’s ability to approach any poisoning case in a more systematic and organized fashion.

Epidemiology of Poisonings

Each year there are approximately two million poisoning cases that are reported to poison control centers throughout the United States. In 1996 there were 2,155,952 human exposure cases reported to American Association of Poison Control Centers (AAPCC). This reflected a 6.6% increase in the number of cases reported as compared to 1995. The majority of all poisonings that occur throughout the country each year involve young children as victims. In fact, 52.8% (1,137,295) of the cases reported to the AAPCC in 1996 involved children less than six years of age. Therefore, physicians and other health care providers who provide medical care for infants and children must possess a very solid clinical knowledge base in the assessment and management of pediatric poisonings. The peak age of pediatric poisoning cases involve children between the ages of 18 months to 3 years of age. In 1996, 47% of all poisonings reported to the AAPCC involved children 3 years of age and younger.

During the 1996-1997 fiscal year, the Hawaii Poison Center (HPC) received a total of 11,963 calls; 8,666 (72.4%) of these calls involved actual human exposure cases. The epidemiology of poisonings here in Hawaii is not very different from that of the rest of the United States. Last year 45% (3,442) of the human exposure cases involved children 5 years of age and younger.

Seventy-five percent of all poisonings both here in Hawaii and on the mainland involve ingestions as the primary mode of exposure. The other routes of exposure include dermal contact, inhalations, ocular exposures and envenomations. Therefore, because oral exposure is by far the most common route of poisoning, this article will focus primarily on the initial assessment, stabilization and management of toxic ingestions.

Initial Assessment and Stabilization of Poisoning Cases

The priorities in the initial assessment and stabilization of any poisoning case involves the standard “A-B-C’s” of emergency medicine. Regardless of the substance that was ingested, the initial priorities in the management of any poisoned child involves the assessment and stabilization of the child’s Airway, Breathing and Circulation. Along with the stabilization of these three key physiologic elements, one must also stabilize any Seizures that may be an associated symptom caused by the ingested toxin or medication. Once the child has been stabilized from the standpoint of airway, breathing, circulation and seizure control, then one can address the specific toxicologic issues involved in the individual case;

a) History of the poisoning
b) Toxicologic physical examination
c) Laboratory studies
d) Gastrointestinal decontamination options

History of the Poisoning

The three essential questions which must be addressed in all poisoning cases are WHAT, WHEN and HOW MUCH:

a) What substance(s) was ingested?
b) How much of each substance(s) was ingested?
c) When did the ingestion take place?

The answers to these three questions will help you to address other clinical issues such as: a) the severity of the ingestion, b) the potential benefits of gastrointestinal decontamination, c) whether or not other therapeutic interventions will be necessary, d) interpretation of specific drug levels and e) disposition of the patient.

Perhaps the most difficult question for parents to answer regarding their child’s ingestion is exactly how much their child may have ingested. Being able to estimate how much of a liquid a child drank or how many pills were ingested is extremely important in determining the potential severity of the ingestion. Determining the potential severity of a given ingestion will then determine how aggressive one should be in the further management of a poisoned child. However children who present with severe signs and symptoms will obviously require aggressive stabilization, decontamination and man-

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Pediatric Emergency Medicine Fellowship Director
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at the Kapiohani Medical Center for Women and Children
Associate Professor of Pediatrics at the University of Hawaii
John A. Burns School of Medicine
agement. Children who present asymptomatic or with fairly mild symptoms may still also require an aggressive management approach if the amount (in terms of mg/kg) ingested is calculated to be a potentially toxic quantity. It is always safer to assume the worse clinical scenario in any given case rather than to make the mistake of guessing that a child probably didn't ingest very much of a given substance or medication.

For example, if a mother states that she just discovered her two children (ages 2 and 3-years-old) playing with an empty bottle of Tylenol children’s chewable tablets, what specific questions should you ask to determine if a potentially toxic amount of the Tylenol was ingested? How do you estimate the potential toxicity for each child (especially when children rarely will give you an accurate account of exactly how many tablets each of them ingested)?

a) WHAT? Exactly which Tylenol product did these children ingest? Because there are several types of Tylenol tablets that are available for children, one must determine exactly which product the children ingested.

Answer: 80 mg grape-flavored Tylenol chewable tablets.

b) HOW MUCH? Determining exactly how many tablets were ingested in a case such as this can be some what tricky. Parents very rarely know exactly how many tablets were in the bottle when a child gets a hold of a medication. Therefore specific questions which should be asked in order to determine the worse possible case scenario include: When did the parents purchase the Tylenol? How many tablets where in the bottle at the time they purchased the Tylenol? How many tablets did they use since they purchased the product? How many remaining tablets did they find either in the bottle or around the children?

Answers: The bottle originally contained 30 tablets when the parents purchased the Tylenol 2 weeks ago. They remember using 2 tablets to treat a fever in their 2-year-old child approximately 2 weeks ago. There are no tablets remaining in the bottle and the parents did not find any tablets around the area in which they discovered the children playing with the Tylenol bottle. Therefore, if we assume the worse case scenario, there are 28 tablets (a total of 2,240 mg) that are unaccounted for in this case. Although an acute ingestion of more than 6 grams is the potentially toxic amount in an adult, ingestions of more than 140 mg/kg are potentially toxic in children. Whenever there is more than one child involved in a possible ingestion case, the physician should assume that one child ingested the entire amount of tablets that are unaccounted for. Thus, one needs a method to estimate the weight of a child based on the child’s age. A very simple and easy to remember formula that I have published which has become referred to as, “Dr Al’s weights based on age formula,” is as follows:2 (see Table 1)

According to this formula, start with a 1-year-old at 10 kg, then for every odd-numbered year simply increase the child’s weight by 5 kg. After age 11 years, increase the weight by 10 kg for every odd numbered year (to take into account the growth spurt that occurs during the adolescent years). Therefore if we use 12 kg as the estimated weight for a 2-year-old and 15 kg as the estimated weight for a 3-year-old, the potential amount of Tylenol ingested by the 2-year-old child would be 187 mg/kg (assuming that this child ate all 28 of the Tylenol tablets). Similarly, the amount of Tylenol that the 3-year-old child may have ingested would be 149 mg/kg (assuming that the 3-year-old child ate all 28 of the Tylenol tablets). Therefore, based on these calculations both children may have ingested a potentially toxic amount of Tylenol and will therefore require further action.

c) WHEN? Knowing the exact time that the children may have ingested the Tylenol tablets will help the clinician decide whether or not too much time has already elapsed for any attempts at gastrointestinal decontamination to be effective. The time of the ingestion is also essential in knowing where to plot the measured serum Tylenol levels on the Rumack-Matthew nomogram. For example, is a serum acetaminophen level of 100 mcg/ml potentially hepatotoxic? Without knowing the exact time of the ingestion, this serum level in itself may be absolutely meaningless. If this level was obtained 4 hours post-ingestion, a 100 mcg/ml is not a potentially hepatotoxic amount. However, if this level was obtained 8 hours post-ingestion, then this exact same value of 100 mcg/ml would be a potentially toxic level which would require N-acetylcysteine therapy.

The Toxicologic Physical Examination

Toxic ingestions in children present as one of two possible scenarios. The first scenario is that of a child who presents with a history of a witnessed or suspected ingestion. The second scenario

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Table 1.—Dr Al’s Weights based on Age Formula

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>→ 10</td>
</tr>
<tr>
<td>3</td>
<td>→ 15</td>
</tr>
<tr>
<td>5</td>
<td>→ 20</td>
</tr>
<tr>
<td>7</td>
<td>→ 25</td>
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<td>9</td>
<td>→ 30</td>
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<td>11</td>
<td>→ 35</td>
</tr>
<tr>
<td>13</td>
<td>→ 45</td>
</tr>
<tr>
<td>15</td>
<td>→ 55</td>
</tr>
<tr>
<td>17</td>
<td>→ 65</td>
</tr>
</tbody>
</table>

Table 2.—Key Elements of The Physical Exam

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Pupillary size, symmetry and response to light</td>
</tr>
<tr>
<td></td>
<td>Presence of any nystagmus (vertical and/or horizontal)</td>
</tr>
<tr>
<td></td>
<td>Oropharynx; Moist or dry mucus membranes</td>
</tr>
<tr>
<td></td>
<td>Presence or absence of gag reflex</td>
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<tr>
<td></td>
<td>Presence of any peculiar odors to the patient’s breath</td>
</tr>
<tr>
<td></td>
<td>Abdomen; Presence of absence, and quality of bowel sounds</td>
</tr>
<tr>
<td></td>
<td>Neurologic; Level of consciousness and mental status</td>
</tr>
<tr>
<td></td>
<td>Presence of tremors, seizures or other movement disorders</td>
</tr>
<tr>
<td></td>
<td>Deep tendon reflexes (normal reflexes, hyperreflexia or hyporeflexia)</td>
</tr>
<tr>
<td></td>
<td>Skin; Warm and dry, warm and moist, or cool</td>
</tr>
</tbody>
</table>

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Table 3.—Five Distinct Toxidromal Cases

<table>
<thead>
<tr>
<th>Case</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anticholinergics (e.g., atropine, antihistamines, tricyclic antidepressants, etc...)</td>
<td>Tachycardia, hypertension, mydriasis, agitation, hallucinations/delirium, seizures, hypotensive bowel sounds, warm/dry skin and dry mucous membranes</td>
</tr>
<tr>
<td>2. sympathomimetics (e.g., amphetamines, cocaine, theophylline, phenytoin/propanolone, PCP, etc...)</td>
<td>Tachycardia, hypertension, mydriasis, agitation, hallucinations/delirium, seizures, hypotensive bowel sounds, warm/dry skin</td>
</tr>
<tr>
<td>3. Cholinergics (e.g., organophosphates and carbamates)</td>
<td>&quot;DUBBLES:&quot; D = Delirium U = Urinary incontinence B = Bronchospasm, bronchorrhea &amp; bradycardia M = Miosis S = Salivation</td>
</tr>
<tr>
<td>4. Opioids (e.g., codeine, morphine, meperidine, heroin, etc...)</td>
<td>Bradyarrhythmia, hypotension, bradypnea, pinpoint pupils, euphoria, hyporeflexia and hypothermia</td>
</tr>
<tr>
<td>5. Sedative hypnotics (e.g., ethanol, benzodiazepines, barbiturates, etc...)</td>
<td>Bradyarrhythmia, hypotension, bradypnea, ataxia, miosis and hypothermia</td>
</tr>
</tbody>
</table>

Table 4.—"MUDPILES"

<table>
<thead>
<tr>
<th>M</th>
<th>U</th>
<th>D</th>
<th>P</th>
<th>I</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Uremia</td>
<td>DKA</td>
<td>Paraldehyde</td>
<td>Iron, iodide &amp; ibuprofen</td>
<td>Lactic acidosis (e.g., carbon monoxide, cyanide, and various other causes of lactic acidosis)</td>
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<tr>
<td>E</td>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol &amp; ethylene glycol</td>
<td>Salicylates</td>
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</table>

is that of a child who presents with a constellation of signs or symptoms which may include a possible toxic ingestion within the differential diagnosis. For example, a previously healthy 2-year-old child who presents to the emergency department after experiencing an afebrile seizure should have the possibility of a toxic ingestion included in his differential diagnosis, along with the possibility of head trauma and various other causes of seizures.

Every element of a patient’s vital signs should be closely analyzed in all poisoning cases. When confronted with a poisoning victim, although many clinicians usually remember to look for any derangements in a patient’s heart rate, respiratory rate and blood pressure, many physicians forget to consider whether the toxic ingestion may have affected the patient’s body temperature. Closely analyzing a patient’s vital signs may also give the clinician a clue of what the ingested substance might be in the case of an unknown ingestion.

Although a complete physical examination is necessary in all children who have ingested a toxic substance, there are some key elements of the physical examination which may provide valuable clues in the case of an unknown ingestion (See Table 2).

In cases when an unknown substance was ingested or if the possibility of a toxic ingestion is included in the differential diagnosis, strict attention to the presenting vital signs and the key elements of the toxicologic physical examination as listed above, may provide the clinician with valuable clues as to what class (or type) of medication may have been ingested. The term “toxidrome,” refers to a specific constellation of signs and symptoms which may be suggestive of a specific class (or type) of toxic substance. There are five distinct toxidromal classes (See Table 3).

Laboratory Studies

The laboratory studies that are ordered will of course vary depending on the type and severity of the ingestion. Although toxicologic screens of blood and urine and specific drug levels may be obtained, the results of these studies will be of no value in the initial stabilization and management of each poisoning case. In cases where a patient presents after an intentional overdose some of the standard recommended laboratory studies include: toxicologic screens, serum acetaminophen level, serum salicylate level, EKG rhythm strip and a pregnancy test.

In cases of an unknown or suspected poisoning, the anion gap may be useful in determining the possible toxicologic substance. The anion gap is determined by the formula:

\[ \text{Na} - [\text{Cl} + \text{CO}_2] \]

The normal anion gap in pediatrics is equal to 8-12 mEq/Liter. If a patient exhibits metabolic acidosis, the anion gap may provide clues as to the etiology of the metabolic acidosis. The differential diagnosis of an increased anion gap metabolic acidosis can be remembered by the mnemonic of "MUDPILES" (See Table 4).

Another very useful laboratory value is the measured serum osmolality and the serum osmolar gap. The patient’s serum osmolality can be calculated via the formula:

\[ 2 \times [\text{Na}] + [\text{BUN} / 2.8] + [\text{glucose} / 18] \]

Based on this calculated formula the only three elements in the serum which are taken into account in calculating the serum osmolality are the patient’s serum sodium, BUN and glucose. In contrast to this calculated formula, when the laboratory actually measures the patient’s serum osmolality, other substances in the patient’s blood which could potentially elevate the serum osmolality are also taken into account. Substances that typically elevate the measured serum osmolality include the alcohols (i.e; ethanol, ethylene glycol, isopropyl alcohol and methanol).

The serum osmolar gap (which is normally <5-10 mosm/Liter) is determined by the formula:

\[ \text{[measured serum osmolality]} - \text{[calculated serum osmolality]} \]

The value of the serum osmolar gap can be used to predict a patient’s blood ethanol level via the formula:

\[ \text{[serum osmolar gap]} \times [4.6] = \text{ethanol level (mg/dL)} \]

Continued on Next Page
Gastrointestinal Decontamination Recommendations

Currently there are five gastrointestinal decontamination (GID) options available to clinicians:

- Syrup of ipecac
- Gastric lavage
- Activate charcoal
- Cathartics
- Whole bowel irrigation

Based on data from the AAPCC, there has been a decreasing trend in the use of syrup of ipecac. Nationally, ipecac was used in only 1.8% of all exposure cases in 1996, as compared to ten years ago when ipecac was utilized in 13.3% of the exposure cases. Here in Hawaii (especially in and around the Honolulu area) poisoning victims are usually only within 30 minutes from the nearest emergency department. Therefore because of this unique proximity to emergency departments and more efficient, quicker methods of gastrointestinal decontamination, currently ipecac is very rarely used as a decontamination method. The only place where ipecac would have a clear cut benefit is for patients who live in remote areas who would have long transportation times to the nearest emergency department.

Gastric lavage has several major advantages over ipecac as an option for gastric evacuation. Lavage allows for a quicker and more controlled method to remove toxins from a patient’s stomach as compared to ipecac. Patients who undergo gastric lavage are less likely to vomit activated charcoal as compared to those patient’s who may have protracted bouts of emesis after ipecac administration. Under the conventional method of performing lavage, the physician would perform lavage “until clear,” and then activated charcoal would be administered down the lavage tube. A newer method of gastric lavage which can be utilized in more severe ingestion cases calls for a sequence of “charcoal-lavage-charcoal.” The major rationale for this alternative method of lavage is that the first dose of plain activated charcoal is administered (5-10 minutes prior to starting the lavage procedure) to rapidly start adsorbing the toxins throughout the gastrointestinal tract (especially those toxins that are already distal to the stomach and therefore would not be able to be evacuated by the lavage procedure).

Gastric lavage’s main limitation (especially in the pediatric patient) is that the internal diameter of the lavage tube must be large enough to accommodate pill fragments. A Tylenol gelcap will barely fit through a 32 French lavage tube. A whole tablet of either a regular strength Tylenol tablet or an Advil tablet will not fit through the narrow lumen of a 32 French tube. Another limitation of both gastric lavage and syrup of ipecac is that both of these methods of gastric decontamination will only remove toxins and substances from the stomach. Toxins that are distal to the stomach cannot be evacuated with either of these two methods of gastrointestinal decontamination.

Activated charcoal is extremely effective in adsorbing a wide variety of substances throughout the gastrointestinal tract. The majority of the charcoal preparations on the market today (ex; Actidose, Liquichar, etc...) have adsorptive surface areas of 1,000 square meters per gram of charcoal. Some of the newer “super” adsorptive preparations (ex; CharcoAid 2000) reportedly have up to 2,000 square meters of adsorptive surface area per gram of charcoal.

Table 5.—CHEMICAL CamP

| C | = Cyanide                  |
| H | = Hydrocarbons             |
| E | = Ethanol & other alcohols |
| M | = Metals                  |
| I | = Iron                    |
| Ca | = Caustics               |
| L | = Lithium                 |
| Cam | = Camphor                |
| P | = Potassium               |

Activated charcoal is able to prevent systemic toxicity by effectively binding so many different toxins, many poison control centers throughout the country, have recently been recommending administration of activated charcoal alone (without first performing gastric lavage) in ingestion cases of moderate severity.

Because activated charcoal is so effective in adsorbing such a wide variety of toxins it has often times been referred to as the “universal antidote.” However there are several instances where activated charcoal will not be very effective in preventing systemic toxicity. The nine ingestion scenarios in which activated charcoal may not be useful can be remembered by my mnemonic of “CHEMICAL CamP:’’

Activated charcoal is not very effective in adsorbing ethanol (and the other alcohols), metals, iron, caustics, lithium and potassium. Even though charcoal has a very low affinity for cyanide, it may still be effective in preventing systemic toxicity if the amount of cyanide ingested is within the 100-500 mg range. Although activated charcoal is not necessary for ingestions of plain hydrocarbons, it should be considered if the ingested hydrocarbon contains systemic toxins (ie: aromatic and halogenated compounds). Although activated charcoal is very effective at adsorbing camphor, charcoal administration may not be very effective by the time that the patient arrives in the emergency department. Because the majority of camphor-containing products are of a liquid preparation, the ingested camphor is typically very quickly and completely absorbed. Therefore by the time that the patient arrives in the emergency department there may not be any camphor remaining in the gastrointestinal tract to be adsorbed by the activated charcoal.

Multiple doses of activated charcoal (without cathartics) may be used as a method of “intestinal dialysis” for certain drugs that undergo enterohepatic circulation (ie; theophylline, carbamazepine, tricyclic antidepressants, phenobarbital and digoxin).

Cathartic agents by themselves are not a very effective means of gastrointestinal decontamination. The major role of cathartics is to more quickly eliminate the charcoal-bound toxins from the gastrointestinal tract before the toxins have the opportunity to dissociate from the activated charcoal. Sorbitol is probably the most utilized of the cathartics because of it’s rapid GI transit time and the convenient fact that it comes in combination with activated charcoal in premixed amounts ranging from 27-48 grams per 120 cc bottle of charcoal. Sorbitol can be safely used in children as long as it is administered only once per 24 hours and stool output in very closely monitored.

Whole bowel irrigation (WBI) is a method of utilizing high
volumes of iso-osmotic fluids to eliminate toxins from the GI tract. The major advantages of WBI include its ability to eliminate toxins from the GI tract that are not effectively adsorbed by activated charcoal. Because of this advantage WBI has become the GI decontamination method of choice for significant iron and lithium overdoses. Unlike the limitations of ipecac and gastric lavage, WBI has the advantage of being able to eliminate toxins that are distal to the stomach. The two iso-osmotic solutions that are currently recommended for WBI are GoLytely and CoLyteL. Adults and teenagers are given 1-2 liters/hour of either solution via a nasogastric tube until the rectal effluent is clear. The recommended rate for WBI in children is 25 cc/kg/hour (up to 500 cc/hour). Typically WBI requires approximately 4-6 hours to achieve a clear rectal effluent.

References:
Hawaii Emergency Physicians Associated, Inc. HEPA

Serving:
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Wahiawa General Hospital
Hilo Medical Center
North Hawaii Community Hospital

Established: 1971

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Benefits of the Hawaii Poison Center (HPC) to the public, providers, and third party payers are enumerated. Financial advantages to third party payers during 1996-7 were quantified by comparing costs for the home management of poisonings with alternative sources of care reported by callers, if the HPC were closed. The value for third party payers exceeded $2.5 million, greater than eight times the investment in operating the HPC, similar to national data. Since third party payers are the most visible beneficiary of cost savings, a case is made for their financial support of the HPC.

Introduction

The Hawaii Poison Center (HPC), like all of the Nation’s poison control centers (PCCs), saves lives and money by providing 24-hour telephone hotline services, provider consultations, community education, professional education, and community surveillance.\(^1\)\(^,\)\(^2\)\(^,\)\(^3\) These activities offer health and/or economic benefits to the general public, health care providers, and especially to third party payers of health services.\(^4\)\(^,\)\(^5\) Figure 1 specifies HPC services and their advantages for each beneficiary.

After a cutback in State funds at the end of 1995, the HPC also shares with most PCCs the lack of a permanent source of financing for its operation. While everyone benefits from economic public goods, like this community service offered free of charge, no one individual entity bears the responsibility nor assumes its costs. If PCCs were closed, according to the literature, both private and public third party payers would experience a substantial financial impact.\(^5\)\(^,\)\(^6\) The purpose of this article, therefore, is to review what the HPC is worth to all of us, and to specifically calculate its cost savings for the major third party payers in the State.

| Figure 1.—PCC Services and Benefits by Beneficiary |
|-----------------|-----------------|-----------------|
| **Beneficiary** | **Services** | **Benefits** |
| Public | 24-hour free telephone hotline for immediate assessment, triage, referrals, treatment, monitoring, information; prevention, community education, epidemiologic surveillance | Reduced poisoning morbidity, disability, and mortality; reduced poisoning incidence; reduced unnecessary medical spending; reduced time and transportation costs; reduced lost work days |
| Providers | 24-hour free telephone hotline consultation for diagnostic, treatment, and referral advice; professional education, toxicology databases | Improved patient care; decreased burden on emergency medical system and emergency departments; reduced practice costs |
| Payers | Home management of non-toxic or low toxic human exposures through counseling, first aid advice, and follow-up; early diagnosis and treatment of serious exposures | Reduced unnecessary or inappropriate emergency department visits; physician office visits; hospital admissions; laboratory testing; ambulance transport; decreased length of hospital stays and fewer complications; reduced claims processing costs and claims payout |

Literature Review

PCCs are said to decrease injury, illness, and death due to poisoning, as well as reduce the number of new poisonings.\(^7\) The focus in the literature, however, has been on their economic benefit in terms of health care cost savings. The reason for this emphasis, in addition to the technical difficulties of measuring poisoning outcomes, has been the critical financial condition of PCCs and the threat of their closure.\(^8\) As a result, studies have provided evidence on the cost-effectiveness of PCCs, in terms of health care cost savings, to advocate for funding by continuing or new sources.\(^8\)\(^-\)\(^11\) The most recent research, by Miller and Lestina, analyzed costs and benefits from a comprehensive, societal perspective.\(^10\)\(^,\)\(^11\) They estimated that lifetime losses from 1992 poisonings were about $30 billion in the U.S., which includes $3 billion in medical spending, $12 billion in lost wages and housework, and $35 billion in lost quality of life. Their research also demonstrated that every $1 spent on a PCC saves almost $6.50 in health care spending—comparable to the savings from immunizations.

Three earlier studies focused on the payer’s perspective and
contrasted differences in health services utilization and related health care expenses between PCCs and alternative sources of care.\(^4\) The economic impact documented in these studies is primarily derived from the ability of PCC staff to manage nearly 75 percent of poisoning cases entirely by telephone, substituting for the use of more costly resources, such as emergency department visits and ambulances.\(^2\) 3, 6, 8, 10

In King and Palmisano's study, the State of Louisiana was compared with Alabama, which had similar triage patterns before the closing of the Louisiana PCC.\(^8\) After closure, their results showed that Louisiana had less than half the rate of home management and four times the rate of self-referrals to more expensive health services than Alabama, costing more than three times the annual PCC Louisiana appropriation.

Mvros et al. surveyed PCC callers about their health insurance coverage and hospitals about their emergency department costs.\(^3\) They concluded that the State government and private payers are the financial beneficiaries of PCCs, which saved several times their operating costs.

Kearney et al. compared the operating costs of a regional PCC with hypothetical alternative sources of advice and care by surveying recent callers.\(^5\) After discovering that the majority of respondents would have sought assistance from emergency department or emergency medical systems, their results showed that direct public access to PCCs lowers health care costs by reducing the use of these emergency resources.

### Methods

This descriptive study adopted the research strategy of Kearney et al. Costs were compared between home management of suspected and actual poisonings by HPC staff and hypothetical alternative sources of care reported by callers. Unlike the special data collection required for the Kearney et al. study, callers to the HPC are routinely asked about hypothetical alternative sources of care during a follow-up call to monitor their home management.

Direct health care cost savings were then estimated for each alternative source of care to determine the financial value of the HPC. Finally, total health care cost savings for each major third party payer that has beneficiaries who use HPC services, were calculated, similar to Mvros et al.

The study population included all incoming calls to the HPC about human exposures from July 1, 1996 to June 30, 1997. The major data sources on caller utilization, hypothetical alternative sources of care, and health insurance coverage are the 1996-7 annual report and the HPC database.

### Results

#### Caller Analysis

The HPC received 11,963 incoming calls during 1996-7, of which 8,666 were for human exposures. (The HPC also receives calls about animal exposures and general information calls that are counted into the total call volume). The recorded number of incoming calls received by HPC is only an estimate of the actual number of poisoning events occurring annually throughout the state. The actual number of poisonings in the U.S. and in the state is unknown, but the literature does suggest that fatal cases, in particular, are underreported to PCCs.\(^12\)

Seventy-five percent of calls to the HPC for human exposures (6,500) were managed over the telephone in the callers’ own homes. These poisoning cases were either non-toxic or low toxic exposures.\(^1\) The rate of home management for calls to the HPC was identical to the estimates reported about other PCCs in the litera-

<table>
<thead>
<tr>
<th>Table 1.— Alternative Sources of Care to HPC by Frequency and Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative Sources of Care</td>
</tr>
<tr>
<td>Go to Emergency Room</td>
</tr>
<tr>
<td>Call Emergency Room</td>
</tr>
<tr>
<td>Call 911</td>
</tr>
<tr>
<td>Call Physician</td>
</tr>
<tr>
<td>Call Another Advice Line</td>
</tr>
<tr>
<td>Watch and Wait at Home</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

With Priory pride, we congratulate 1993 graduate Cheryl Ezra, a finalist for the FBI Honors Internship Program. Cheryl, a law student at Vanderbilt University is a Phi Beta Kappa graduate of Baylor University. Cheryl is a “Daughter of the Priory” — first grade through high school — so we take special pride in her accomplishments. She’s the daughter of Judy Ezra, Priory elementary school teacher, and The Honorable David Ezra, a federal court judge. Have your daughter become a part of our proud 130-year Priory tradition of excellence.

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Table 2.— Frequency of Alternative Sources of Care and Their Costs

<table>
<thead>
<tr>
<th>Alternative Sources of Care</th>
<th>Number</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Room</td>
<td>3,790</td>
<td>$2,274,000</td>
</tr>
<tr>
<td>Emergency Medical Service</td>
<td>402</td>
<td>180,900</td>
</tr>
<tr>
<td>Physician Visits</td>
<td>1,020</td>
<td>122,400</td>
</tr>
<tr>
<td>Total</td>
<td>5,212</td>
<td>$2,577,300</td>
</tr>
</tbody>
</table>

Estimates were calculated for the 1,421 callers from whom no actual data on alternative sources of care were collected, because there had not been any follow-up calls, and the 1,871 callers who didn’t know what they would do if the HPC closed. It was assumed that each of these groups of callers would have selected the same alternatives as those reported above. It was also assumed that the 951 callers who reported pharmacists as an alternative source of care would have been referred to a different source by pharmacists, because of liability concerns. As a result, this category was also eliminated and distributed according to the percentages of answers in the remaining classes of answers. The final adjusted figures are displayed in Table 1.

Table 3.— Percentage of HPC Callers by Major Payer Category (Ranked by Cost Savings)

<table>
<thead>
<tr>
<th>Major Payer Ranked by Cost Savings</th>
<th>Percentage of Callers</th>
<th>Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMSA</td>
<td>27.0%</td>
<td>$695,871</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>18.0</td>
<td>463,914</td>
</tr>
<tr>
<td>Kaiser Permanente</td>
<td>16.0</td>
<td>412,368</td>
</tr>
<tr>
<td>Other Private Payers*</td>
<td>14.0</td>
<td>360,822</td>
</tr>
<tr>
<td>Uninsured Indigent (including Visitors)</td>
<td>13.0</td>
<td>335,049</td>
</tr>
<tr>
<td>Medicaid (Federal Share)</td>
<td>5.5</td>
<td>141,752</td>
</tr>
<tr>
<td>Quest (State)</td>
<td>5.5</td>
<td>141,751</td>
</tr>
<tr>
<td>Medicare</td>
<td>1.0</td>
<td>25,773</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>$2,577,300</td>
</tr>
</tbody>
</table>

*Other private payers includes the following categories of insurance: Other insurance (5%); Queen’s (2%); PGMA (2%); HMAA (1%); Straub (1%); HDS (1%); Kapoholani (1%); Island Care (>1%); Pacific Health Care (>1%); Travellers (>1%); Aetna (>1%)

Cost Savings Analysis

The 1996-7 financial report indicates that total expenses for the HPC were $293,122. The HPC spends 90 percent of all dollars on direct services, compared with 70 percent by all PCCs, reported in a 1993 survey by the American Association of Poison Control Centers. Labor represents almost 90% of these direct costs, a more efficient use of expenditures by the HPC, than the Nation’s PCCs as a whole.

The cost per home-managed case was estimated by dividing the total number of incoming calls into operating expenses for 1996-7, similar to the methods used by Miller & Lestina and Kearney et al. The cost per case at the HPC was $24.50, similar to other published rates. The total cost for all human exposures managed at home by the HPC was $159,250.

Table 2 examines the frequency of alternative sources of care if the HPC were closed and their costs. The table further consolidates the frequency data from Table 1 into emergency room visits, 911 calls, and physician office visits, alternative sources of care for which there would be charges. It was assumed that there would be no charge for using another advice line.

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of all callers to emergency rooms, who are requested to come into the emergency room, actually show up. Also, 30% of 911 callers, based on the experience of the City and County of Honolulu, refuse treatment and transportation to emergency rooms. The conservative assumption is made here that personal transportation is not used and those cases do not result in an emergency room visit.

Based on HPC data, it is assumed that 11% of all cases managed by physicians are non-toxic exposures, for which there are no office visits. It is also assumed, from HPC data, that approximately 55% of all poisoning calls are after physician office hours and callers would be referred to the emergency room.

The costs of alternative services were based on actual local 1997 charge data for an emergency room visit, ambulance transportation, and a physician office visit. Emergency room visits ranged between $500 and $700 and a mean of $600 was used in this analysis. The charge by the City and County of Honolulu for ambulance transportation is currently $450 and an emergency room visit fee was added to transportation for the total cost of 911 calls. A fee of $60 was used for physician office visits.

The total cost for the hypothetical alternative sources of care was $2,577,300. Over 95% of these costs were for emergency room visits and emergency medical services utilization. According to the literature, PCCs save money by avoiding use of these services. For every dollar spent, the HPC returns over $8 in cost savings to third party payers, at the higher end of the $4 to $9 range reported by national studies.

Table 3 presents third party payers by the reported insurance of HPC callers and cost savings. Costs savings are greatest for the largest payers—HMSA, the Department of Defense, and Kaiser Permanente. The costs of care for the uninsured indigent, including visitors, if the HPC closed, would be borne by hospitals with emergency rooms.

Discussion and Conclusions

Third party payers, as shown here, avoid a significant amount of cost through the operation of a PCC, such as the HPC. Specifically, the HPC saves 8-9 times the amount of dollars invested in its operation, similar to national studies. Prompt telephone advice from a PCC and home management of non- or low toxic cases can often obviate the need for an emergency room, physician visit, or an ambulance run, all of which result in expense to third party payers.

Even when additional care is advised through the PCC telephone consultation, third party payers are reasonably assured that the care recommended will be at the most appropriate, and consequently, most cost-effective level. Immediate referral to the most appropriate entry point to the health care system should also result in advantages to the patient that mutually benefit third party payers in the form of fewer hospital admissions, shortened hospital stays, and fewer complications. Because PCCs do not bill third party payers for their services, the payers are once again the fiscal beneficiaries, avoiding claims processing and record-keeping costs.

The HPC potentially serves all the people in the State of Hawaii, regardless of their role in the health care system. A regional poison center has been justified on the basis of the importance of expertise about indigenous marine, animal, and plant species, knowledge of local emergency resources, and the ability to interact with a multicultural population. These features enable the general public and their health care providers to have ready access to resources that are responsive to local needs. The HPC also educates the public to prevent poisonings and collects data to identify patterns of poisonings that require public health interventions. These activities and their obvious benefits have not been converted into monetary value, but are as compelling as the financial ones focused on here.

More enlightened third party payers have supported PCCs financially in the form of community service grants or outright operations funding, but it is puzzling that given the significant savings derived from a PCC, all third party payers have not rushed to their aid. That third party payers have stood by while some PCCs have closed due to lack of funding, leaving parts of the country underserved or unserved, makes no sense even considered on purely economic terms. Since losing State funding in 1995, the HPC has been working on developing private funding sources, which comprised about 23% of its revenues during 1996-7. It is hoped that awareness of the multiple benefits shared by the public, providers, and third party payers will encourage ownership, especially by direct fiscal beneficiaries, to ensure that this valuable asset remains available to all in our community.

References
The Selected Information Sources on Poisoning and Toxicology

Christine Sato, RRA, MLIS*

The third leading cause of unintentional injury death in 1993 was poisoning by solids and liquids, just behind motor vehicle accidents and falls.1 Poisoning and toxicology impacts all health care professionals. Physicians and emergency medicine professionals manage acute care, health educators address prevention and public education, and researchers focus on advancements.

This article is an introduction to selected basic through advanced print and electronic information sources for anyone interested in poisoning and toxicology. All sources are available through the Hawaii Medical Library.

Print Sources

Books
The following titles are listed in the “Selected List of Books and Journals for the Small Medical Library,”2 commonly referred to as the Brandon-Hill List. The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has designated this list as an authoritative resource3 for establishing a core library collection. For toxicology, there are five titles:


The focus is principles of poison management, drugs, home, chemicals, and natural toxins. Information is presented in a readable, easy to find format.


The emphasis is managing emergencies: ingestion, preventing absorption, enhancing elimination.


This edition contains additional chapters on: toxicokinetics, mechanisms of toxicity, toxic responses of the endocrine system, and recommended limits for exposure to chemicals.


This is an introductory text in the fundamentals of toxicology.

Olson, Kent R. [and others], eds. Poisoning & Drug Overdose. 2nd ed. Norwalk, Conn.: Appleton & Lange, c1994.

Presented in an outline format, practical, ready-reference information is given for diagnosis, management, and treatment.

Journals

Annual Review of Pharmacology and Toxicology
The focus is on research advances.

Environmental Health Perspectives: EHP.
This is a journal of the National Institute of Health, National Institute of Environmental Health Sciences (NIH/NIHES).

Journal of Toxicology: Clinical Toxicology.
This is the official publication of the American Academy of Clinical Toxicology and European Association of Poisons Centres and Clinical Toxicologists.

NeuroToxicology
The focus is on the effects of toxic substances on the nervous system.

Electronic Sources

Databases
Two comprehensive databases on toxicology are MICROMEDEX® Healthcare Series and TOXLINE. The Hawaii Medical Library subscribes to the MICROMEDEX® Healthcare Series and offers this on its CD-ROM network. TOXLINE is available through a mediated literature search by the Reference Staff.

MICROMEDEX® Healthcare Series provides current and in-depth information on toxicology, pharmacology, emergency care, patient education, and environmental health and safety. MICROMEDEX® Healthcare Series databases useful for medical and emergency

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management of toxicologic conditions are:

POISINDEX® System: Commercial, pharmaceutical, and biological substance management.
TOMES® System: Industrial, environmental, and chemical substance management/
IDENTIDEX® System: Tablet and capsule identification
TOXICITY NOMOGRAMS AND CALCULATORS
MSDS from the United States Pharmacopeia Convention
USPC
REPRORISK® System: Reproductive risk information system
DRUG-REAX® System: Interactive drug reactions
DRUGDEX® System: Drug evaluation monographs and adverse reactions
EMERGINDEX® System: Disease and trauma information

On a practice level, the Hawaii Poison Center operates a 24-hour telephone hotline and has immediate access to their MICROMEDEX® Healthcare Series databases. The Hawaii Poison Center cites the POISINDEX® System as their most frequently used database in the MICROMEDEX® Healthcare Series. Detailed information is provided on clinical effects, laboratory monitoring, treatment, range of toxicity, kinetics, pharmacology/toxicology, animal toxicology, references, and author information.

TOXLINE (Toxicology Information Online), maintained by the National Library of Medicine, is a bibliographic database covering published material and research on toxicology. International in its scope, subject areas include pharmaceutical, biochemical, physiological, and toxicological effects of drugs and chemicals. Almost all citations include abstracts. TOXLINE may also be accessed through subscription Grateful Med.

Internet

The following Web-sites provide a wide selection of poisoning/toxicology information for the health professional. Many of these sites are United States government sponsored projects, have an affiliation with the American Association of Poison Control Centers, or an affiliation with a university. All sites are in the United States.

General information sites for the health care professional and public:

Agency for Toxic Substances and Disease Registry (ATSDR)
This site links to Public Health Statements, the HazDat database, and ToxFAQs.

Maryland Poison Center
http://www.pharmacy.ab.umd.edu/~mpc/index.html
This is a good site for poison information and prevention resource materials.

The National Lead Information Center (NLIC)
http://www.nsc.org/ehc/lead.htm
The NLIC, managed by the National Safety Council, provides information on environmental lead poisoning and prevention.

National Pesticide Telecommunications Network
http://ace.orst.edu/info/nptn/
This site is a cooperative effort of Oregon State University and the US Environmental Protection Agency.

UC Davis Poison Center Answer Book
This site is maintained by the University of California, Davis, Medical Center Regional Poison Control Center.

Technical sites for the health care / toxicology specialist:
Material Safety Data Sheets (MSDS)
http://www.chem.uky.edu/resources/msds.html
Maintained by the University of Kentucky, Department of Chemistry, this site provides links to organizations providing MSDS information.

Medical Management Guidelines for Acute Chemical Exposures
ATSDR provides guidelines on the management of acute chemical exposure. These fact sheets also contain patient information handouts.

National Toxicology Program (NTP)
http://ntp-server.niehs.nih.gov/
This program reports on activities of the National Institute of Environmental Health Sciences (NIH/NIEHS), the National Institute for Occupational Safety and Health (CDC/NIOSH), and the National Center for Toxicological Research (FDA/NCTR).

Toxicology and Environmental Health Information Program (TEHIP) http://sis.nlm.nih.gov/tehip1.htm
Maintained by the National Library of Medicine (NLM), this site provides links to NLM databases. Especially useful is Toxicology Tutor, a college level tutorial on the principles of toxicology.

For information about other resources at The Hawaii Medical Library, call the Reference Staff or visit our Web site (http://hml.org).

The meeting was called to order by Dr Leonard Howard, President at 5:45 p.m.


**HMA Staff:** J. Won, N. Jones, H. Singh, J. Asato, P. Kawamoto and A. Rogness-recording secretary.

**HMSA Physician Agreement:** Dr Howard introduced representatives from the consortium (Drs. Arlene Joukson-Meyers, Malcolm Ing and Mrs. Susan Wong) who have been meeting regarding the HMSA Physician Agreement. The consortium put together a list of points that they would like to see changed in the proposed contract. Dr Howard reported that meetings with HMSA and the consortium would continue and that the HMA Economics/MCO Committee would be given the responsibility to review various contracts on behalf of physicians with input from the AMA and legal resources.

**Secretary’s Report:** Dr Kimura reported an increase of 66 active full pay members, an increase of 22 members from November 1997.

**Treasurer’s Report:** Financial statements for August - November 1997 were distributed and reviewed.

- Dr Howard reported: 1) that the Executive Committee (HMA Officers) are meeting every Wednesday afternoon at 1 p.m.; 2) Council will meet every other month at 5:30 p.m. and on the alternate months the Executive Committee will meet with the Component Society Presidents. 3) The committees have been consolidated/decreased to a total of 17 committees. 4) that he and Mr. Won will be visiting the neighbor island county societies at least twice this year; 5) A bulletin board will be maintained and an action officer appointed in order to keep track of motions that were made at the Council. 6) that he and Heidi attended the Coordinated Care Task Force Workshop. 7) HMA is also represented on the Tort Reform Task Force. A final draft of legislation will be available in a month. The focus of the group will be the elimination of the law on joint and several liability.

- The HMA Alliance presented a written report which was distributed to the Council members and will be kept on file.

**Component Society Reports**

**Honolulu.**—Dr C. Goto reported that the HCMS annual meeting in November was well attended and the speaker was Richard Miller, attorney for the Hawaii Coalition who had interesting comments on Physician Insurance Contracts. The HCMS will be holding general membership meetings every other month.

**Maui.**—Dr Betwee reported that he is having a difficult time getting physicians together to have a meeting. Prior to setting up a meeting, he would like to get a small group of member and nonmember physicians to meet and discuss membership goals.

**Kauai.**—Dr Magoun reported that he is planning a membership drive. A large medical group on Kauai will pay HMA dues if a physician wants to join. He thanked Becky Kendro for arranging the Evaluation Management meeting on December 4.

**West Hawaii.**—Dr Leeloy reported that a meeting is planned for January 13 and Dr Bernard Fong will be the speaker.

**Council Action**

- A motion was passed to appoint a Staff Action Coordinator who would be responsible to track and follow-up on actions taken by HMA’s governing bodies.
- Approved the Nominating Committees policy recommendations for elections by mail in 1998. Information will be sent to the membership in the newsletter.
- Approved the Finance Committee’s recommendation for a mandatory $50 fee for entities outside of the HMA using the Conference Rooms with a $25 cleaning deposit.
- Approved a Finance Committee’s recommendation to include a surcharge on dues paid in increments which exceeded the dues deadlines.
- Approved a membership survey to get feedback on what they like or dislike about the HMA.
- A motion was passed that Council members sign a disclosure statement indicating all their organizational affiliations which may cause conflict of interest.

**For Information**

**AMA Interim Meeting Report.**—Dr Kunimoto distributed a written report summarizing the AMA interim meeting. He announced that the AMA Executive Vice-President resigned prior to the meeting and Dr Len Jennings will serve as the acting EVP. The AMA Board of Trustees will conduct a formal search to fill the position.

**Long Range Planning Committee.**—The committee met on November 12 in response to Resolution No. 3 of the HMA 1997 House of Delegates. Drs G. McKenna and P. Heilreich were elected Co-chairs of the committee. The Co-chairs are going to meet before the next committee meeting to work on 5 to 6 key goals to present to the committee and Council.

**Medicare Carrier Advisory Committee.**—Some physicians who sit on the Medicare Advisory committee discussed concerns about cuts in reimbursements and the operations of the new Medicare carrier. Dr Howard asked that concerns about this issue be put in writing for submission to the next advisory committee meeting.

**Board of Medical Examiners.**—Dr J. McDonnell reported that the Board of Medical Examiners continues to meet after a two-year lull regarding nurse prescriptive authority. Dr McDonnell suggested an exclusionary formulary and the Board agreed to 4 of the 5 exclusions recommended — all narcotics, anesthetics, all experimental drugs and off labeled uses. The nurses would not accept the 5th exclusion recommended which would have permitted an agreement with two consenting parties that could exclude any drug. The Board meets again in January to discuss the issue.

Meeting was adjourned at 7:35 p.m.
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Life in These Parts
The 25th Honolulu Marathon
(The Story of Two Doctors with Egos)

Cardiologist Jack Scaff, 62, doesn’t run anymore, but he walks the marathon. Out of the 300,000 people who have run in the last 24 Honolulu Marathons, Jack is one of only eight to participate in all of them. A bad right leg and a spinal condition reduce him to walking the 26 plus miles. (Jack originated the Honolulu Marathon).

Jim Barahal, 45, hasn’t entered a race since 1986, but he is president and CEO of the Honolulu Marathon and responsible for the popularity of the event. Back in 1987, Jim had a blunt and simple approach: “In order to survive, it has to thrive.” Under his guidance, the Honolulu Marathon hooked up with the 4th largest advertising agency in Japan and also started to recruit elite runners esp from Kenya. It grew from a local run of 10,000 participants to its present 30,000 participants. An estimated 93.5 million dollars will be spent and it is the biggest marathon in the world. The race generates more money each year than any other single event according to the state Department of Business, Economic Development and Tourism.

All of this happened because Jack was at a Boston meeting of the American Medical Joggers Association which wanted to hold a meeting in Honolulu around a marathon. Jack got the then Mayor Frank Fasi and the Mid Pac Road Runners Club involved and launched the first Honolulu Marathon on December 16, 1973. The rest is history...

Music Medicine
(Excerpts from Mid Week, Jan. 28)

“A CD a day keeps the doctor away.” Don Purcell, internist, psychiatrist, and pain management specialist says, “Music creates an environment where healing is more likely to occur.”

Honolulu Symphony conductor and physician Samuel Wong is promoting the idea of music as medium in local hospitals. In January, Sam presented a piano recital and talk “Music is the Medicine of the Mind” for physicians and staff at Queen’s Medical Center.

PhD Arthur Harvey, adjunct professor of music at UH-Manoa is a foremost authority on music therapy. He feels that “music can enhance every aspect of our lives. Music is nourishment for our bodies, as surely as food. It should be part of our daily diet.” Harvey and Wong are working to set up a music program for the terminally ill at Hospice Hawaii.

Medical Tid Bits
(Condensed form “Dr Fitness” by Chet Nierenberg)

Q: What’s the best treatment for Achilles Tendinitis?
A: Unfortunately there is no great treatment. As soon as you get heel pain, get it treated by a physician. After you’ve had the problem for several months or a year, the problem becomes extremely difficult, if not impossible. The doctor will try long term anti-inflammatory medication, possibly heat lifts or ice after playing. In extreme cases, surgery can be considered, but not always successful. A definite thing not to do is cortisone injections.

Physician Moves
November:
ENT man Ronald Peroff relocated to Queen’s POB I, Ste 910. OB-Gyn physicians Cheryl Lynn Tunguigil, Leticia Diniego and Cheryl Leialoha opened their new practice at Kapiolani Medical Center, Ste 520; (A Waipahu office will be opened in February).

January:
FP Thomas T.C. Van (from Arkansas Pass, Texas) joined the Straub Manoa Family Health Center.
Gastroenterologists Glenn Pang and Stephen Buto relocated to the new St. Francis Out-Patient building, 2226 Lilia St., Ste 405.
Internist Moni Suzuki opened her office at Newtown Square, 98-1247 Kuhumanu St., Ste. 322.

Hors De Combat
HMSA 2-Year Contract
(Gleaned from a Dec. 18 News Article)
Hawaii’s 1800 participating HMSA physicians reached a satisfactory 2-year contract late December 17 night.

Arlene Meyers, Wahiawa pediatrician and Hawaii Coalition for Health spokesperson said, “Some of the remaining provisions have great potential to adversely affect healthcare delivery. They chiefly revolve around who makes the final decision about what medical services are covered—the insurer or the doctor.”

HMSA spokesman Fred Fortin maintains the new contract supports “physicians/patient control of medical care decisions.”

HMA president Len Howard says, “The 2 years will be spent building trust between physicians and HMSA over continuing issues.” The physician groups will submit lists of recommended doctors they would like to see on advisory committees to make the final medical care decisions.

Medical Data Private? No!
HMSA told a state judge earlier this year that HMSA employees have a legal right to look through confidential medical records of any past or present subscriber for any reason with or without specific authorization. HMSA maintains that it’s members waived their right to privacy when signing up for coverage. Circuit Judge Kevin Chang agreed and in September ordered Honolulu physician Elsie Blossom Wang to turn over the requested records.

HMSA was fishing through medical records in this case because of an unverified allegation of possible billing fraud.

Wang went to court last year to block the HMSA request for 15 medical files, when HMSA refused to produce authorizations signed by the patients. Wang maintained, “I don’t think copies of medical records should be given lightly to anyone and certainly not without the patient’s consent.”

HMSA argued in court that Wang’s objections were frivolous.
The AMA and the Massachusetts Medical Society (which publishes the New England Journal of Medicine) say patients have a fundamental right to privacy that should be honored unless they consent to disclosure.

Joseph Heyman, former MMS president says, “Privacy issues directly affect medical care. Because of privacy concerns, patients don’t tell us things that we need to know to treat them or we don’t record the information to protect them from disclosure. It’s a terrible problem and something needs to be done about it.”

Miscellany
(From Reader’s Digest Jan. ’98 issue)

Waiter to customers: “I’m sorry, but your managed care organization required me to substitute the fish for prime rib.”

(Funny Times)

Overheard: “It’s so cold this winter that I saw a lawyer with his hands in his own pockets.”

(Late Night with Conan O’Brien” NBC)

Definition of a true music lover: “A man who, if he hears a woman singing in a shower, puts his ear to the keyhole.”

(General Features)

Proverbs
• The “Lawyer’s Creed”: A man is innocent until proven broke.
• Why do we sing “Take me out to the ball game” when we are already there.
• Why do “tug” boats push their barges?
• If you can’t drink and drive, why do bars have parking lots?
• Remember: If you think you can - or you think you can’t, you’re right.
• When they ship Styrofoam, what do they pack it in?
• If love is blind, why is lingerie so popular?
• When the draft of your boat exceeds the depth of the water, you are definitely aground.
• There are 40 kinds of lunacy, but one kind of common sense.

(Contributed by old MIS buddy, Hakobu Kumagai)

Conference Notes
Calcium Channel Blockers for Treatment of Cardiovascular Disease
QMC, Friday a.m., February 6, 1998. V. P. John Schroeder from Stanford Medical School

Angina = myocardial oxygen demand is greater
than myocardial oxygen supply. Phenomenon of **paradoxical vasoconstriction** to stimuli of arteriosclerotic arteries.

**Spectrum of Ischemia**
- Increased demand and further reduction of blood flow results
- from paradoxical vasoconstriction

Beta Blockers have adverse effect (respond to acetylcholine in patients with chronic stable angina) whereas Calcium Channel Blockers reverse this phenomenon of paradoxical vasoconstriction, i.e. **BB makes worse and CCB improves**

- EDRF (Nitrous oxide): inhibits platelet adhesiveness and promotes vasodilation

Abnormalities in endothelial function are related to hypertension
**"It is a myth that BB reduces mortality in CAD, angina & HTN**
**My view point:**
- I object to diuretics and BB in treating HTN
- We focus too much on the BP cuff
- HTN is a syndrome: High BP; lipid abnormalities; high insulin levels etc.
- Insulin per se causes vascular damage. BB causes further insulin resistance.
- HTN is a triad: i.e. **hypertension, insulin resistance and hyperlipidemia**

**Quality of Life** (Schroeder’s List) 
(Important in patient drug compliance)
- Gustation
- Defecation
- Cerebration
- Ambulation
- Fornication

Treatment of HTN: ACE and CCB

Ace I:
- antihypertensive
- normalize endothelial factor

CCB:
- Normalize endothelial factor
- Prevent accelerated coronary disease in transplanted hearts (Diltiazem [Cardizem] & freedom from atherosclerosis in transplanted hearts)
- Amlodipine for older hypertensives

Systemic Hypertension (170/70) in Elderly Program: Target 140 - 150 mg systole

PRAISE Trail: CCB use in CHF: no adverse effect.

re Calcium Channel Blockers (CCB): **“Never let the truth get in the way of a good story.”**

**Approach to Hypertension Therapy**
(Schroeder approach)
- Start with one a day CCB or ACE
- Add 12.5 mg HCTZ
- Add alpha Blocker if BPH
- Continue with higher dose of CCB or ACE

**Avoid BB for quality of life issues etc, etc...**

**Avoid sublingual Nifedipine and tid Nifedipine**

**Variant Angina**: Use once a day CCB

Angina: Once a day CCB viz Long-acting diltiazem/verapamil or Amlodipine/Felodipine

Post MI:
- ACE or BB for Q wave MI
- Diltiazem for non Q MI
- CCB for angina/HBP

CHF (congestive heart failure):
- ACE or A2 (Angiotensin II Blocker)
- Amlodipine/Felodipine only
- If Angina/HBP: continue BB/alpha blocker

**Evaluation of Cardiac Valves in Patients who Use Fen-Phen**

VP Jae Oh, Associate Professor of Medicine, Mayo Clinic, QMC, Friday a.m., Jan. 30, 1998.

**Evaluation of CV Disease**
- History
- Exam
- ECG
- CRX
- ECHO

2D/M Mode (Mostly ventricular function)

↓

Doppler VP → Valvular Disease ← Color Flow (Regurgitation Jet reg vol)
↑

TEE (Improved visualization)

re Fen-Phen: **“As the patient gets thinner, the valves get thicker”**

William Edwards (cardiac pathologist)

**Summary Cardiac Study:**

n = 4,532 Random selection; healthy adults;
Ages 23 - 35
2D & Doppler Electrocardiography Results:
Aortic Regurgitation: 1.2% (normal incidence)
Mitral Regurgitation: 1.0% (normal incidence)

**Relative Risk of Valvulopathy with Fen-Phen & Dextafen c Phen: 5 to 12%**

**Prevalence Data:** 28.7 to 38.7% prevalence

**Prevalence Data:** Time dependent
16% - 5 mos (of use)
22% - 3 to 6 mos
34% - 6 mos

**Reported Cases: 108 patients c defects**
95% women
Median age: 44
Incidence n/c drug:
2% Fen only, 15%c Dextafen only, 81%c Fen-Phen
4%c Fen, Phen, Dextafen

**Conclusions:**
- Fen & Dextafen cause valvulopathy
- Six million Americans took the drugs
- The largest drug-induced adverse risk

**Recommendations of the American College of Cardiology** (Oct. 18, 1997):
- Stop taking the drugs
- Get a cardiovascular exam
- Echo cardiology if: Murmurs or symptoms present
- Screening ECHO not recommended
- Repeat cardiovascular exam in 6 to 8 mos

**Recommendation of DHHS:**

Do ECHO on patients who had taken the drugs

**Is Insulin a Cardiovascular Risk Factor?**


**Insulin & Atherosclerosis**
- Glycation/oxidation lipids;
- Smooth muscle proliferation/migration;
- Increases growth factors (cytokines);
- Prothrombic (PAI-1, wF1 fibrinogen, Lp[a]);
- Enhances androgen hormone effects

Hyperinsulin States:
- NIDDM; IDDM; Syndrome X

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New Location.—Dr M. Pierre Pang, Pacific Eye Surgery Center, Inc., St. Francis Out Patient Bldg, 2226 Liliha St., #305, Honolulu, HI 96817, Phone 533-7400, Fax: 521-7798.

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HDL)                     Proliferation
(A)                     (Growth Factors)
Atherosclerosis

Prevalence of Hyperinsulinemia. Is proinsulin atherosogenic?

Conclusions:
- High prevalence of CAD risk and obesity rather than premature CAD may be a/c hyperinsulinemia
- Insulin is a necessary, but not causal factor for hyperinsulinemia
- Hyperinsulinemia and hyperproinsulinemia are common in men and women non-diabetics with premature CAD
- Hyperinsulinemia may be marker for other metabolic and homeostatic abnormalities.

<table>
<thead>
<tr>
<th>Risk Factor (determining marker)</th>
<th>Risk Marker (Surrogate for risk factor)</th>
<th>Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking Dyslipidemia</td>
<td>Hypertension</td>
<td>CAD</td>
</tr>
<tr>
<td></td>
<td>Hyperglycemia</td>
<td>FH of CAD</td>
</tr>
</tbody>
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* Of the traditional CAD Risk Factors in whites & blacks, hypertension is the only significant risk factor.
Deception, misrepresentation, evasion, obfuscation, duplicity, outright lies—a White House Richard Nixon would be proud of.

After almost five years and many thousands of dollars in attorneys’ fees, the wheels of justice at last rolled over the Clinton administration for sins of the failed health reform task force, headed by first lady Hillary Rodham Clinton and her aide, Ira Magaziner. A federal judge ordered the government to pay sanctions of $285,864 because of White House and Justice Department’s “dishonest and reprehensible” conduct in failing to reveal key information to the court. In blasting the Administration, Judge Royce C. Lambeth said, “It is clear that the decisions here were made at the highest levels of government...” Additionally, the Judge stated he is convinced that Ira Magaziner deliberately misled him with a sworn statement that the task force was comprised of government employees only. It has been revealed that the task force included special interest groups and many others not on the federal payroll. Is anyone surprised?

No longer drink just water, but use a little wine for the sake of your stomach and your frequent ailments. Timothy I, 5:23

For some time it has been known that taking a glass or two of wine each day provides a beneficial stimulus to the human heart and mind. Now a report in the Journal of the American Geriatrics Society found that moderate wine drinking was associated with lower rates of age-related macular degeneration (AMD) also. Beer and liquor did not show a significant effect on the condition. As is known, AMD impairs the eyesight in about 1.7 million Americans over age 65, with loss of the ability to read or operate a motor vehicle. The design of the study does not actually prove that wine consumption lowers the risk of AMD, and there is not specific definition as to how wine would reduce the risk of the disorder. Still, the study of these data from 3,077 participants contributes additional motivation for moderate imbibition.

There is no well defined boundary between honesty and dishonesty.

A 37-year-old aide to George Bush drank wine with dinner on a Saturday night. Over the next four days he took ten extra strength Tylenol tablets. He went into hepatic coma. He ultimately survived, but only after a liver transplant. He sued Johnson & Johnson and won eight million dollars. What is not known by many, and not adequately disclosed by J & J, is that acetaminophen can be very toxic to the liver and has a narrow range between therapy and toxicity. Children, drinkers and the undernourished are at risk at much lower doses. Acetaminophen is an old compound, but J & J has done a masterful job of marketing it with a budget estimated at $250 million, more than Coca Cola spends on Coke. Tylenol holds an overwhelming share of the product market, so the campaign pays off. The dark side is that over 100 lawsuits have been filed against J & J over Tylenol poisonings, most of these in the last three years. J & J has paid out millions of dollars in legal settlements, but you don’t hear about them, because many of the settlements require plaintiffs to not reveal the terms. Acetaminophen accounts for more drug deaths each year than cocaine, prescription narcotics, or benzodiazepines, and twice as many as aspirin. Meanwhile the Food and Drug Administration is muddling around over saccharin and silicone, neither of which have been proved to hurt anybody, but has yet to recommend that J & J provide suitable warnings of toxicity of Tylenol.

When a man is doing something he is ashamed of, he will claim it’s his duty.

The American Association of Retired People (AARP) which purports to represent more than 30 million people is pulling back from its plan to endorse HMOs for older Americans. The presumptuous, pretentious pedants in charge of AARP (who elected them?) have denied that the change was due to any criticism. Rather, AARP is “trying to figure how it can best help its members navigate managed care in light of recent changes.” Oh really? Then please kindly explain the failure to mention that AARP was requiring HMOs to pay a royalty of $20 a month to the AARP for each member they enrolled under the program? Any wonder that AARP members and HMOs were indignant? If the AARP were truly representative of older citizens, leaders would advise their members to seek a thoughtful, intelligent family doctor, and steer clear of the disinterested, insensitive corporate practice of medicine typified by the “health maintenance organization.”

To whom you tell your secrets, to him you resign your liberty.

A survey of 1020 adults was designed to determine who people trust to keep their medical information confidential. Physicians topped the list with 78% trusting their doctor, while confidence in insurers was only 39% and employers 46%. The federal government was at the bottom with only 29% trusting the feds. Now the Clinton administration is proposing to broaden law enforcements access to private medical records and allow researchers to obtain such information without the patient’s consent. Most respondents to the survey would have no quarrel with the creation of a national repository of medical information, but wanted the data to be anonymous and more than 70% said the repository should be controlled by physicians.

Why are doctors and nurses accountable for their health care decisions, but managed care companies are not?

A woman was in trouble with her pregnancy, and her doctor recommended hospitalization. Her employer-sponsored health plan denied hospitalization and instead authorized a visiting nurse. While the nurse was off duty, the fetus went into distress and died. A federal court ruled that the injured party could not sue the HMO for damages because of the federal ERISA (Employee Retirement Income Security Act). Under this law a damaged party can only sue for the cost of the benefit denied, and cannot claim lost wages, pain and suffering or punitive damages. But those creative people, the trial attorneys, were lobbying hard at a recent National Conference of State Legislatures. Now, some members of Congress are already pushing for a federal law to crack down on managed care. Some pointed remarks were, “Health plans are making decisions but not being held accountable in court.” “Health plans claim to save money through utilization review, but when something goes wrong, say, ‘It has nothing to do with us.’ You can’t have it both ways.” Employers and managed care plans are terrified by these and similar questions which are forcing legislators to act on behalf of injured patients.

According to life’s pleasures, food is second only to sex—except for salami and eggs, they’re even better than sex.

The Framingham study evaluated the association of stroke with intake of fat and type of fat among middle-aged males during 20 years of follow up, and who would have guessed? We are told by a recent JAMA article that intakes of fat, saturated fat and monoun saturated fat (all that really bad fat) were associated with a reduced risk of ischemic stroke in men! Take it easy, but go greasy!

To go where no man has gone before.

Apollo 16 space mission was enroute, but the astronauts did not realize the microphone was open when the following dialogue between John Young and Charles Duke took place:

Young: I got the farts again. I got ‘em again, Charlie. I don’t know what the hell give ‘em to me. I think it’s the acid in the stomach, I really do.

Duke: It probably is.

Young: I mean, I haven’t eaten this much citrus fruit in 20 years. But I’ll tell you one thing—in another 12 f____ days, I ain’t ever eating any more. And if they offer to serve me potassium with my breakfast, I’m going to throw up. I like an occasional orange, I really do. But I’ll be damned if I’m going to be buried in oranges.

Addenda—

❖ There are 550 hairs in the average eyebrow.
❖ 15% of U.S. women admit they send flowers to themselves on Valentine’s Day.
❖ I’m having daydreams about night things in the middle of the afternoon.

Aloha and Keep the faith.—ns

HAWAII MEDICAL JOURNAL, VOL 57, MARCH 1998 462
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