



**Rocky Mountain Poison & Drug Center**

*50 Years of Saving  
Lives With Answers*





*Rocky Mountain  
Poison &  
Drug Center*



## *A message from the Director*



Dear friend:

Poison Centers have been saving lives for more than 50 years. In 2003, the poison center movement in the United States celebrated its 50th anniversary, and this year, the Rocky Mountain Poison & Drug Center celebrates its 50th year of saving lives with answers.

Once a heralded innovation, poison centers are now widely accepted and deeply appreciated. The growth and impact of this network has been inspiring and gratifying.

The name Rocky Mountain Poison & Drug Center can scarcely be uttered without simultaneously praising two extraordinary people, Dr. Winona Campbell, who created the poison center, and Dr. Barry Rumack, who greatly expanded it and ensured its pivotal role in the community through diversified funding.

It is rewarding to see that many other poison centers have pursued similar strategies, producing a stable mix of federal, state and private funding. Today, the RMPDC has well over 100 revenue sources, creating stability for all of its life saving activities.

The institution of Denver Health has also been critical to the development of the RMPDC. Denver Health has provided a home for the poison center since its inception. During my tenure, Dr. Patricia Gabow, CEO and medical director of Denver Health, has consistently supported our efforts and encouraged further development. Her counsel was pivotal during our efforts to gain funding from the state of Colorado.

Finally, it is important to acknowledge several individuals who have provided the RMPDC with extraordinary leadership and contributions for legendary periods of time. Kathy Wruk, Cheryl Montanio, Deb Scherger, and Judy Harrison have been top performers for more than 20 years. Any organization would be thrilled to have such gifted and committed colleagues.

In recent years, the Poison and Drug Center has expanded dramatically. It now includes new types of call centers, which perhaps should be more properly called contact centers. We are proud to provide the Denver Health NurseLine, the Denver Health Spanish Line and the Denver Health Appointment Center for Denver Health patients.

Last, but certainly not least, we have a remarkable and growing Research division, developing new antidotes, performing research on a wide variety of toxicological conditions and leading the development of contact centers in mass casualty incidents.

The following history of the RMPDC provides more detail into a remarkable institution. Like all institutions, its value far exceeds the contributions of any individual. Indeed, it is precisely the interaction of many committed and talented individuals that can create an institution in which the sum is greater than the parts. I can't think of a better description of Rocky Mountain Poison and Drug Center.

Sincerely,

*Richard C. Dart*

Richard C. Dart, M.D., Ph.D.

Director

## *A message from the Director Emeritus of the Poison Center*

Dear friend:

It is with great pride that I write to you on this very special occasion — the 50th anniversary of the Rocky Mountain Poison & Drug Center. As we celebrate this joyous occasion, please allow me a brief stroll down memory lane.

I had the privilege of becoming a Poison Center faculty member in January 1974. At the time, my salary was split by Denver Health and Hospitals and the University of Colorado School of Medicine where I was assistant professor of pediatrics, medicine and pharmacology.



In 1974, I negotiated with the other 12 poison centers in Colorado at the time, and encouraged them to designate just one poison control center for the state. They agreed, and the RMPDC was established as the place for worried parents to call. It was at this time when the first refrigerator magnets began to show up throughout the state. Newborns in nearly every hospital were sent home with a magnet that remained on the home's refrigerator for years.

By 1976, the poison center had outgrown its small office on the third floor of then-Denver General, and moved to the Robert W. Speer Memorial Hospital for Sick Children (still on the Denver Health campus).

Kathy Wruk became the fourth head nurse of the poison center in 1983, and has been in a management position for 23 years, the longest tenure of any nurse in such a position from any poison center. She negotiated contracts with four states for poison center services as well as numerous industrial contracts, leading to a growth in regional services that allowed the poison center to increase staff and provide uninterrupted 24 hour a day service, 365 days a year. From 1972 to 1985 the number of poison cases handled by the RMPDC increased more than 10-fold, from 7,545 to 77,526, with 13,308 drug information cases for a total of 90,834 cases.

In 1992 I retired from the center. Since then, under the direction of Dr. Dart, continuation and enhancement of programs, including new contracts, research and an endowed chair, have resulted in a financially stable organization.

National work in snake bites and acetaminophen as well as general toxicology has developed international recognition and strengthened relationships with those in the state and outside of the state.

It is with great joy that I look forward to this 50th anniversary of our Rocky Mountain Poison & Drug Center.

Throughout life, every one of us strives to leave some sort of legacy. I am extremely pleased with the progress that has occurred in the years since I retired. Everyone who has ever worked at the RMPDC in the past, or works there now, has done an extraordinary job of continuously moving it ahead and taking it to the next level.

I am proud to have been a director of the Rocky Mountain Poison & Drug Center and to continue my association as Director Emeritus.

Congratulations on 50 years of serving the citizens of Colorado and the world!

Sincerely,

*Barry H. Rumack*

Barry H. Rumack, M.D.

Director, 1974 — 1992



# Saving Lives with Answers

The year was 1956, and Dr. Winona Campbell realized that a crucial city service was missing from Denver: a place for worried parents to call when they thought a child may have ingested a poison. Dr. Campbell and the administration of then-Denver General established the Rocky Mountain Poison & Drug Center (RMPDC), which began answering calls from a small closet on the pediatrics ward.

Pediatricians on duty managed the calls using reference books and filing cards. With a budget of \$9,000, the center answered 1,194 calls during its first year of operation.

Today, the RMPDC has grown to a 24 hours a day, 365 days a year, call center managing nearly 400,000 cases each year. With a staff of 160 employees, the RMPDC is the primary resource for worried parents and others throughout all of Colorado, Montana, Idaho, Hawaii and Southern Nevada.

Specially trained health care staff, including registered nurses, pharmacists and medical toxicologists, provide medical information and cutting edge treatment recommendations to parents as well as other physicians, health care providers, organizations, corporations and manufacturers throughout the nation.

Reference books are still an essential tool for answering calls, but the old filing cards have been replaced by electronic databases that provide customized answers for callers, as well as trend analysis and surveillance reports for other clients.

The original closet has grown to a 30,000-square-foot state-of-the-art call center with the most advanced technology available.

The RMPDC may have grown and expanded over the years, but to worried parents, it has been the same reliable organization answering questions from the public regarding

## RMPDC Saving Lives With Answers

### Mission

To serve our communities and clients by providing medical expertise in a responsive, caring and cost-effective manner.

- Provide expert medical advice to our communities and clients regarding poisonings, adverse drug events, and triage for general health concerns through public and private sector alliances, and to
- Conduct vanguard research on the prevention and treatment of toxicity, injury and disease in partnership with public and private organizations.

### Vision

Be the preeminent medical information center for reducing toxicity, injury and disease by providing caring expertise to all.



medical concerns, and serving as a toxicology consulting service for many health care providers for the past 50 years.

Over the years, the RMPDC has evolved to take on many roles in the community:

- Public poison control and drug information center;
- Industry health and safety call center;
- Regional medical triage hotline;
- Research organization for prevention and treatment of toxicity, injury and disease; and,
- National resource helping coordinate health care responses for chemical and biological terrorist attacks and other disasters.

From Dr. Campbell, to Dr. Barry Rumack (1974 – 1992), to Dr. Rick Dart (1992 to present) and well into the future, the RMPDC magnet will remain a staple on refrigerators throughout the Rocky Mountain West reminding families that we are here to help whenever needed.



# A History of Saving Lives with Answers

Originally called The Accidental Poison Control Center, a division of Denver Department of Health and Hospitals, the RMPDC began taking calls from the public in 1956. The center was the brainchild of Dr. Winona Campbell, a professor of pediatrics at the University of Colorado School of Medicine, and the physician in charge of Pediatric Services at then-Denver General Hospital.

## The 1950s



Kathy Wruk, RN, left, and Dr. Winona Campbell

In 1955, Dr. Campbell was involved in a public health study collecting data on childhood poisonings. The study's findings brought to the forefront the need for a poison center in Colorado.

Dr. Campbell realized that a poison center couldn't be run by just one person, so she recruited Dr. David Cook, the chief resident of pediatrics at the time, as the first director of the program. Dr. Cook was able to recruit other physicians and residents and Colorado's first poison center found a home in a closet answering calls from worried parents.

## The 1960s

In 1961, Dr. John Connell became director of Pediatrics at then-Denver General Hospital, and with his new title he also assumed the role of poison center director. Dr. Connell had a great interest in the poison center because of his concern about accidental aspirin deaths.

Under Dr. Connell's leadership, the center formalized the service and hired designated poison center staff to manage calls during the day.

Also during the 1960s, as the Accidental Poison Control Center grew and expanded, so too did interest in an academic base for clinical toxicology. A group of physicians from then-Denver General banded together with others from developing poison centers across the country, and helped establish the American Academy of Clinical Toxicology. The organization would go on to develop a board certification for medical toxicology.

## *The 1970s*

The 1970s was a decade of expansion for the Poison Center, and poison information management in general. Under the guidance of Dr. Barry Rumack, the center became available to everyone in Colorado, 24 hours a day, 365 days a year. With the new 24 hour availability, nurses managed incoming calls, and on-call physicians provided back up services.

The nurses developed call management procedures and initiated patient callbacks to improve patient outcomes. They also began collecting data to further enhance future services.

In 1976, a fellowship in medical toxicology was established at the poison center, the first in the United States. The fellowship continues today and has trained 34 fellows in medical toxicology.

The need for a single point of contact in the state for both poison information services with research consultation services was recognized in 1972, at which time the University of Colorado Health Sciences Center's consultation program merged with the Poison Center. Shortly thereafter, the merged center began writing protocols in poison management to further enhance its ability to provide poison control prevention, education and management throughout Colorado.

In 1977, a name change occurred and the Rocky Mountain Poison & Drug Center was formally established. Under the new name, the center was able to provide health and safety information on the safe and effective use of medications. During this time, the RMPDC also began providing health and safety services to private industry clients such as pharmaceutical companies.

## *The 1980s*

During the 1980s, the RMPDC's service region and reputation continued to grow. The state of Montana was added to the Poison Center's client list. With the addition of Montana and Clark County (Las Vegas), Nevada, the RMPDC became one of the first poison centers in the nation to regionalize its call center service.

In 1982, the center was cast into the national spotlight when Dr. John Sullivan, an RMPDC fellow, identified cyanide as the cause of death following the ingestion of contaminated acetaminophen capsules. The center experienced its first major call volume surge, and dutifully responded to the public's need for medical information, during this time of national concern.

## *Timeline*

1956

Accidental Poison Control Center begins as a consultation service.

1972

Rocky Mountain Poison Center staff writes 30 protocols in poison management.

1973

Rocky Mountain Poison Center receives grant from national clearinghouse to computerize poison treatment cards on microfiche.

Poison center staff nurses initiate and develop call back procedure.

1974

Director Barry Rumack, M.D., organizes poison center delivery system in Colorado, streamlines 13 independent poison center providers into one statewide system. Rocky Mountain Poison Center established.

Dr. Rumack writes content that provides guidance on how to manage poisonings. This content ultimately developed into the international standard for poison management information.

1975

First client contracts with RMPDC to manage health and safety information calls from its workforce.

1976

RMPDC receives accreditation from AAPCC- (American Association of Poison Control Centers) the year of AAPCC's inception.

Medical Toxicology Fellowship started.

Officer Ugh poison prevention program inaugurated.

1977

A name change occurs and the Rocky Mountain Poison & Drug Center is established.



# A History of Saving Lives with Answers

## *The 1990s*

The 1990s saw the center add three more business units: Research, Medical Toxicology and the Denver Health NurseLine.

Research and medical toxicology were formally organized in 1995 to respond to the need to develop better forms of poison treatment and to provide toxicological consultation services.

The Denver Health NurseLine was added in 1997 at the request of Patricia A. Gabow, M.D., CEO and medical director of Denver Health, to aid Denver Health's vulnerable populations. In the words of Dr. Gabow, "Denver Health is meeting its mission of providing care for all, when it can ensure that the right care is provided in the right venue at the right time." The Denver Health NurseLine saves millions by providing 24/7 call center response and advice. The mom who awakens at midnight to a child with a fever, can call the NurseLine and obtain advice on care for her child, thereby saving a middle of the night trip to the Emergency Department.

In 1995, the RMPDC added the state of Idaho to its list of states outside of Colorado for which it provides poison emergency services.

Throughout the 1990s the RMPDC made numerous strategic decisions to invest heavily in technology and disaster recovery. The center implemented a state-of-the-art telephone switch that provided skills-based call routing, and specialized reporting. The center also implemented a case management database that transformed the paper charting system to a paperless, electronic environment.





To facilitate the technological upgrades and accommodate the continued growth of the operation, the RMPDC moved to a larger facility where it would be a neighbor

of Denver Health's Lowry Family Health Center in 1995.

## The 21st Century

With the new millennium came continued growth and enhancements for the RMPDC.



As the clock struck midnight, January 1, 2000, the RMPDC staff were celebrating at work determined to ensure that all their Y2K plans were in place should any system failures occur.

Preparedness paid off, and the RMPDC saw in the new millennium with all systems running smoothly.

In 2000, the Poison Center added the state of Hawaii as a client.

After the horrific events of September 11, 2001, it became obvious that Colorado needed a call center resource for information during times of crisis. Programs addressing mass casualty incidents and wellness messages for the public were added to the services offered by the RMPDC. The Colorado Helpline (COHELP) was activated several times since its inception in 2003, for health-related events including West Nile Virus, SARS and influenza.

Recognizing the amount of money Spanish translation services were costing Denver Health, the Center's NurseLine services were expanded in 2002, to include the Denver Health Spanish Line, an in-house translation service for health care providers throughout the Denver Health system. Compared to contracting with outside language services, this program has saved the institution hundreds of thousands of dollars.

To improve access to Denver Health's clinics, the call center developed the Denver Health Appointment Center in 2004. The center was able to increase access to care for patients, standardize processes and make pre-registration and insurance referrals for patients a reality.

The Research and Consulting division grew to include more than 30 active research projects totaling more than \$6 million. Research projects include acetaminophen and analgesics; antidote development and management of the poisoned patient; prescription and drug abuse surveillance; and disaster preparedness and response planning.

In the six years since the turn of the century, the poison center has continued to thrive. With the recent addition of the RADARS® system to perform surveillance of prescription drug abuse nationwide, the RMPDC continues its mission of serving the state and nation by providing medical expertise in a responsive, caring and cost-effective manner.

1980

State of Montana is added to RMPDC service, making RMPDC one of first centers to provide poison emergency services outside its home state.

1982

Director Barry Rumack begins serving as President of AAPCC. His role as president continued through 1984.

RMPDC physician identifies cyanide as poison in acetaminophen product tampering. RMPDC experiences related call volume surge event.

1983

First CSPI (certified specialist in poison information) test is given. RMPDC nurses pass.

1984

RMPDC Specialist in Poison Prevention presents first nurse platform at AAPCC national meeting.

1985

Dr. Kenneth Kulig, RMPDC physician and later director, publishes research clarifying when it is most effective to perform gastric emptying on acutely poisoned patients, changing the course of practice.

1988

Dr. Martin Smilkstein, RMPDC faculty, publishes landmark research on the effectiveness of oral N-acetylcysteine in the management of acetaminophen overdoses.

1992

Rick Dart, M.D., Ph.D., becomes director of the RMPDC.



# Rocky Mountain Poison Center

The Rocky Mountain Poison Center is one of the largest regional poison centers in the United States and has been certified by the American Association of Poison Control Centers (AAPCC) for 30 years, since the AAPCC's inception in 1976.

The Poison Center manages emergency poisoning calls 24 hours a day, for five states including Colorado, Montana, Idaho, Hawaii and Clark County, Nevada, which includes the Las Vegas area. Through these five states, the Center serves a population of more than 9 million people.

Nearly half of the calls received each year — 209,000 in 2005 — involve children under the age of five. In a matter of seconds, young children can ingest a potentially harmful product. That bottle of yellow cleanser under the kitchen sink may look like apple juice to a small child. Because children move fast, so do the nurses and specialists who answer the phones at the Poison Center. All who answer the calls are poison specialists. Nearly 90 percent of the calls received can be managed over the phone, avoiding unnecessary trips to the emergency department.

The specialists in poison information, who are registered nurses and pharmacists, and poison information providers, who are health care information providers are the professionals who answer the calls and provide understanding, calming advice, instructing the caller on necessary steps to ensure the well-being of their loved one. They are backed-up by board-certified physician toxicologists for case consultation 24 hours a day. The call center staff train continually to develop and maintain the skills necessary to provide this vital service. A detailed call review process is undertaken on all calls and responses to ensure the information provided is medically accurate.

It is because of these highly specialized professionals that 98 percent of callers rate the advice and care received as good or excellent.

The Poison Center is nationally recognized for its expertise in the prevention and treatment of poisonings. It is considered a center of excellence for the treatment of snakebite and acetaminophen poisoning, and national and international health care providers often contact the center to obtain advice on the latest treatment recommendations. The Center also offers a public education program that visits more than 100 community groups each year spreading poison prevention messages.

## Fact

*The Rocky Mountain Poison Center provides medical information to the public and health care professionals related to poisoning treatment, and manages a regional poison prevention program aimed at decreasing the number of poison accidents.*

Because of its experience and expertise in managing calls during emergency situations, the Center now manages several hotlines for various state departments of health during public health events. For example, the Poison Center recently managed hotlines for: the West Nile Virus outbreak — 16,749 calls; influenza vaccine shortage — 41,266 calls; as well as several recent localized outbreaks including hepatitis A and mumps. The Center also supports pandemic and avian flu information calls for Colorado and southern Nevada.

## Cheryl Montanio, RN



The RMPDC is fortunate to have a highly competent, dedicated staff. Many employees have spent their careers in the pursuit of delivering superior care. Cheryl Montanio, RN, MSN, personifies this dedication. With 27 years of service, Cheryl has been at the center longer than any other employee. She began as

a staff nurse, in 1978, managing calls on the poison emergency lines.

"The most rewarding part of my job is developing an immediate rapport over the telephone with a mother, and then hearing her voice turn from panic to relief," she said.

Cheryl has mastered how and when to reassure parents a poisoning is not life threatening, and how to aid them in helping their child.

Currently, Cheryl works as Clinical Nurse Educator for the RMPDC, wherein she is responsible for training new staff nurses.

"It is extremely gratifying when it all just clicks for a nurse, and they are able to help a patient using the telephone, computer, database and their medical toxicology knowledge."

1994

RMPDC contracts with a major pharmaceutical company with an extensive product line to provide medical information and adverse event services 24 hours per day.

1995

State of Idaho is added to poison emergency services. Research and Consulting division starts.

1996

RMPDC evaluates children and faculty in Pueblo, Colorado that were exposed to chemicals through school's air handling system.

1997

RMPDC discontinues paper charting and implements electronic case management system. Denver Health and Hospital Authority is formed. Clark County, Las Vegas added to poison emergency services. RMPDC is the first poison center to receive federal funding to develop plans for coordinating medical responses for weapons of mass destruction incidents in their community.

1999

RMPDC physicians are part of a team to study and treat arsenic exposures in China and Mongolia. Dr. Alvin Bronstein, RMPDC attending physician, helps implement first poison center in Odessa, Ukraine.

2000

Poison Center receives some funding for Health Resources and Services Administration (HRSA), further diversifying its funding base. State of Hawaii is added to poison emergency services.



# Rocky Mountain Drug Center

The RMPDC added the Rocky Mountain Drug Center in 1977 to provide information on the safe and effective use of medications, 24 hours a day, 365 days a year. The Drug Center manages calls from the public and medical professionals on drug interactions, and provides medical information, as well as adverse event and product complaint reporting services.

Drug Center health care professionals, including licensed pharmacists and nurses, undergo extensive training to develop the skills necessary to provide this specialized service.

The Center also manages a comprehensive quality assurance program that includes detailed review of cases to ensure 100 percent accuracy; recorded call review to ensure professionalism and courteous manners; and medical information review to ensure detection of all adverse events.

The Drug Center's success can be attributed to its dedicated staff — a health care professional turnover rate of less than 10 percent per year is outstanding and well below industry norms.

The Drug Center's utilizes well-developed processes that meet all regulatory requirements, as evidenced by a recent FDA audit that found no deficiencies.



Photo by Robert Ashe for the Denver Metro Convention & Visitors Bureau

## Kathleen Wruk, RN, BSN, MHS



Kathleen Wruk, RN, BSN, MHS, began her career at the Rocky Mountain Poison & Drug Center in 1980 as a nurse managing calls on the poison emergency hotline. By 1984, she was promoted to head nurse, and as the RMPDC grew, so too did Kathy's responsibilities.

Today, Kathy is the administrative director of the Poison Center, Drug Center, and Denver Health NurseLine, managing the operations and finances of each.

"When I accepted a staff nurse position with the Rocky Mountain Poison Center in 1980, the camaraderie of the nurses, physicians and pharmacists working at the Center was incredible. I knew after six months that this is where I wanted to be," said Kathy. "I am proud to have been able to participate in both the 30th and 50th anniversaries of the RMPDC. I know there are only good things to come."

Kathy has been a pioneer in the poison center movement. She was the first nurse to be named president of the American Association of Poison Control Centers, a position she currently holds. She has published 15 articles on poison and toxicology, and has made innumerable presentations in her field.

2001

Dr. Javier Waksman, RMPDC toxicology fellow treats patients with mercury poisonings in Peru. Former RMPDC Director Barry Rumack receives Ellenhorn award from American College of Medical Toxicology (AMCT) for his extraordinary contributions to the field of Medical Toxicology.

RMPDC coordinates RADARS (Researched Abuse Diversion and Addiction Related Surveillance) signal detection system for participating poison centers.

RMPDC Director, Richard Dart, M.D., Ph.D., receives FDA Commissioner's award for development of CroFab®, a snake antivenom.

2002

An in-house Spanish translation services for Denver Health is created.

2003

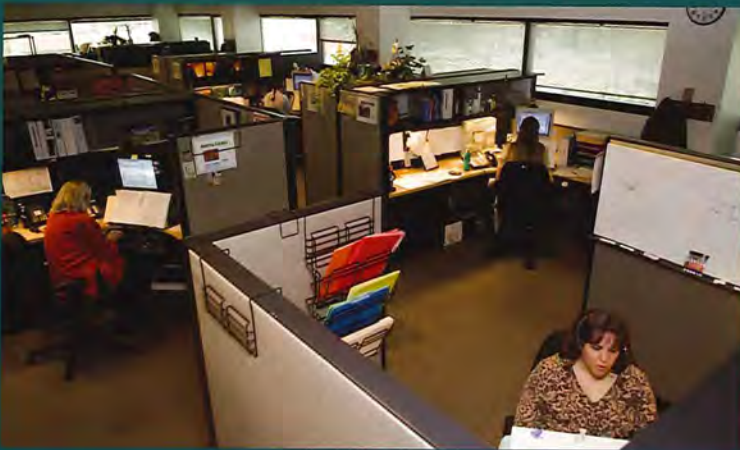
McNeil Endowed Chair in Clinical Analgesia, first such in the nation, is established at Denver Health. Richard Dart, M.D., Ph.D., is first to hold the chair. Denver Health Appointment Center is established as part of NurseLine Call Center.

2004

Kathleen Wruk, RN, MHS, managing director of RMPDC, becomes first registered nurse to be elected president of the American Association of Poison Control Centers. RMPDC Director Richard Dart receives Ellenhorn Award. RMPDC implements emergency hotline in less than 24 hours for a public health food borne exposure.

2006

RMPDC assumes ownership of RADARS (Researched Abuse Diversion and Addiction Related Surveillance) signal detection system.





# Denver Health NurseLine

Denver Health's NurseLine was added to the RMPDC's services in 1997 to provide medical triage services to the city's most vulnerable population, 24 hours per day, 365 days per year. Since that time, NurseLine has expanded to include providing telephone triage and health care information to public and private clients on how to manage illnesses and injuries that occur at home or on the job.

Highly trained and experienced registered nurses obtain initial information from the caller and perform an assessment using a computerized health care software system and database. Recommendations are then made to the patient for potential home health care, or referral to the appropriate medical facility.

Studies show that the use of the NurseLine shifts patient utilization to the home rather than emergency visits. A recent study showed that the majority of callers whose original inclination was to visit a health care facility, actually sought alternative options for care after speaking with a nurse at the NurseLine.

In 2002, Denver Health expanded its NurseLine services to include an in-house Spanish interpreting service for medical professionals throughout all Denver Health facilities. Specially trained, medically proficient interpreters are available during normal business hours, Monday through Friday, to assist medical staff conversing with patients. The service is also available for all Denver Health and RMPDC staff, including those in Admissions and Patient Billing trying to converse with patients over the telephone.

Realizing that the NurseLine has the ability to fulfill multiple needs throughout the organization, a Denver Health appointment center was established in 2004, to provide centralized scheduling for increased access to care for Denver Health patients. Housed within the NurseLine operation, patients call a centralized number where an appointment is scheduled in any Denver Health clinic, insurance is verified, and the patient is pre-registered for the visit.

Originally intended to provide Denver Health patients with the right level of care in the right venue at the right venue, NurseLine has expanded throughout the years to provide invaluable services to all Denver Health patients, as well as private sector callers, in multiple languages.

## Fact

*Denver Health Nurse Line provides information to the public and industry clients regarding medical triage of health concerns and recommends further medical evaluation as appropriate. The NurseLine also provides real-time telephonic nurse triage and support of occupational injuries throughout the United States.*

*It is estimated that Denver Health's NurseLine has saved the organization more than \$3 million in unnecessary emergency department and clinic visits.*

## Saving Lives With Answers

It's 2 a.m., the phone rings and the night shift nurse at the NurseLine answers the call. A woman is crying, upset that her nine-month-old baby has been crying continuously for the last two hours.

This is her first child, her mother (the baby's grandmother) is out of town, and new mom doesn't know what to do. The nurse reassures and calms Mom, and offers advice. After asking a few questions about the baby, the nurse explains that the child is in no apparent danger or distress.

She then proceeds to ask Mom a few additional questions, and Mom starts to describe that the baby was cranky throughout the day and not eating well, and then the baby suddenly woke up screaming.

The nurse goes on to ask more questions:

Has the baby been pulling at its ears?  
Does the baby have a fever?  
Has the baby been vomiting?  
When was the last the baby had a bottle?  
When was the last diaper change?  
Has the baby been given any medication?

Mom is able to answer all of the questions the nurse has asked and she seems calmer, knowing that she has someone who will listen and help.

The nurse determines that the baby will probably need to be evaluated by a physician the next day for a possible ear infection, but the situation does not necessitate a middle of the night visit to the emergency department. The nurse is able to offer the care advice to the new mom in the interim.

The nurse confirms that the new mom understands all of the instructions and assures her that she can call back if the advice is not working or the baby appears worse.

The NurseLine has, once again, been able to save a distressed mom from calling a cab and making an unnecessary trip to the emergency department. At Denver Health, it's all about providing the right care, in the right venue at the right time.





# Research and Consulting

The RMPDC's Research and Consulting (R&C) division was developed in 1995 to conduct vanguard research in the treatment of poisonings, and to provide toxicological consultation services.

The Research and Consulting division manages more than 30 research projects annually, including several multi-center clinical trials. The division specializes in research that benefits the medical community as well as the general public. Research projects have included use of acetaminophen, weapons of mass destruction, disaster preparedness, antidote development and availability, and drug abuse surveillance.

Through its research five poison antidotes have been developed, including:

- CroFab® — an antivenom for treatment of patients with North American crotalid (venomous) snake antivenom envenomation (snake bite);
- Acetadote® — an intravenous treatment for acetaminophen overdose;
- DigiFab® — treatment for life threatening digoxin (heart medication) toxicity;
- Antizol® — an antidote for ethylene glycol or methanol (found in antifreeze and windshield wiper fluid) ingestion; and
- Radiogardase® — treatment for known or suspected exposure to radioactive cesium-137 or radioactive or non-radioactive thallium (found in dirty bombs and poisons).

R&C also provides a wide range of consulting and research services to orphan drug companies (makers of drugs for rare medical conditions such as snake bites), biotechnology companies, local, state and federal governmental agencies, pharmaceutical companies and



other organizations. Services include:

- Medical toxicology research and development services;
- Clinical toxicology trial design and implementation, including multi-center study coordination and administration;
- Antidote and orphan drug development and testing;
- Toxicological evaluation of medical and scientific literature;
- Environmental hazard consultation;
- Occupational exposure consultation, including patient examinations;
- Chemical and biological terrorism preparedness planning and assessment; and,
- Surveillance strategies for monitoring misuse and abuse of prescription drugs.

R&C also provides expertise, guidance and consultation services to the RMPDC's call centers for case management, and improved health outcomes.

The Research and Consulting division of the Rocky Mountain Poison & Drug Center conducts vanguard research in the treatment of poisonings, and provides toxicological consultation services.

### *Richard C. Dart, MD, Ph.D.*



Richard C. Dart, MD, Ph.D., has served as the director of the Rocky Mountain Poison & Drug Center since 1992. Dr. Dart is trained as a research scientist (Ph.D.) and as a medical doctor and board-certified emergency physician, specializing in toxicology.

Dr. Dart is world renowned as the "snake man." Admitting a true love of snakes, Dr. Dart has done extensive research on rattle snake antivenom. He is currently involved in a clinical trial on the efficacy of a black widow spider antivenom.

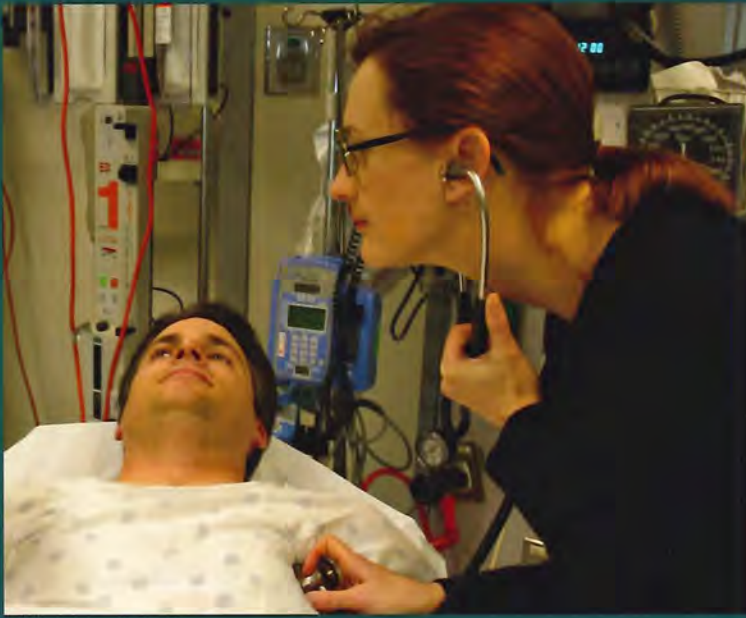
"With our research into orphan drugs and acetaminophen, the RMPDC, other call centers and emergency departments across the country have been able to save many lives," said Dr. Dart. "With new grants and other research funding, we look forward to continuing in our research endeavors for better outcomes for patients."

Dr. Dart has published more than 150 papers and chapters. He was editor of the first edition of "The 5-Minute Toxicology Consult," and the third edition of "Medical Toxicology," the industry's reference and textbook.

In 2003, Dr. Dart was named as the McNeil Endowed Chair in Clinical Analgesia at Denver Health, the first endowed chair to be established in a poison center in the United States.

He also serves on the editorial board of the medical journal *Annals of Emergency Medicine*, and is currently treasurer of the American Association of Poison Control Centers. He is also the chairman of Denver Health's Pharmacy and Therapeutics Committee.

Dr. Dart was the 2004 recipient of the American College of Medical Toxicology Matthew J. Ellenhorn Award for Excellence in Medical Toxicology. In 2002 he was recognized with a special citation, for special achievement that advances FDA goals for orphan product development from the Commissioner of the U.S. Food and Drug Administration.



# Medical Toxicology

The Medical Toxicology Fellowship program at the Rocky Mountain Poison and Drug Center has been training physicians since 1976. A two year, post-residency fellowship, the program provides advanced medical toxicology experience through clinical instruction and hands-on toxicology care of patients.

Under the guidance of RMPDC attending physicians, who are board certified in medical toxicology, fellows also conduct toxicology research, provide consultation services for the RMPDC's call centers, and perform on-site medical consults at local area hospitals.

RMPDC's Medical Toxicology program is world-renowned having 35 graduates, of whom, nearly half are working as directors of poison centers, or medical toxicology programs.

Residents from national physician training programs around the world, including Australia, China, Vietnam, Russia, and Italy, have completed toxicology rotations at RMPDC.

The Accreditation Council for Graduate Medical Education accredits medical Toxicology fellowships and approves RMPDC's program.

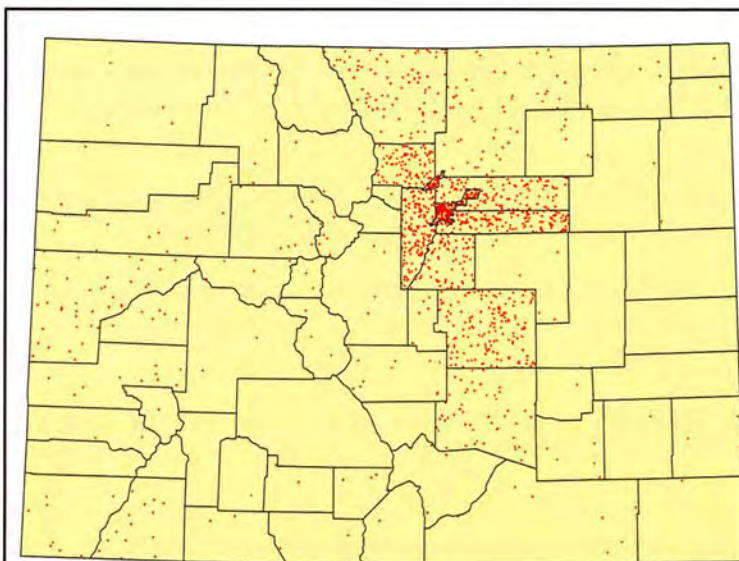
## Fact

*The Rocky Mountain Poison & Drug Center Medical Toxicology division provides physician consultation for RMPDC call centers, and is home to a world renowned, accredited fellowship training program in Medical Toxicology.*

# RMPDC

## 2005 Facts

Total Human Exposures .....	113,912
Exposures Involving Children 19 Years of Age and Under .....	68,326
Exposures Involving Children 5 Years of Age and Under .....	54,155
Exposures Managed Over the Phone, Not Requiring a Hospital Visit .....	83,976
Total RMPDC Calls .....	320,369
Total NurseLine Calls .....	76,262
Colorado Help Line (COHELP) Calls .....	7,671
Spanish Language Translation Calls .....	20,417
Appointment Center Calls .....	122,868
Research Dollars (Grant Funding) .....	\$2.7 million
RMPDC Total Staff .....	160
Outreach Education Presentations .....	148
Articles Published .....	10
Abstracts Published .....	12
Major Conference Presentations .....	24
Toxicology Fellows .....	3



**Calls from Coloradans  
to the Rocky Mountain  
Poison and Drug Center**

1 Dot = 50 Calls  
Total Calls: 68,841

**DENVER  
HEALTH**  
Level One Care for ALL



**HSR**  
Health Services Research

Scale = 1:3,250,000



# RMPDC

## Publications

Over the years, members of the RMPDC team have authored 14 textbooks in medical toxicology, and have made hundreds of presentations at national and international conferences and other medical and scientific forums. More than 300 articles from RMPDC faculty fellows and staff have been published in medical journals.

"Medical Toxicology", third edition, Richard Dart, M.D., Ph.D., 2004.

"A randomized multicenter trial of Crotalidae polyvalent immune Fab (ovine) antivenom for the treatment for Crotalid snakebite in the United States," *Archives of Internal Medicine* 2001; Dart RC, Bogdan GM, et. al.

"Affinity-purified, mixed monospecific crotalid antivenom (ovine) Fab for the treatment of crotalid venom poisoning," *Annals of Emergency Medicine*, 1997; Dart R.C., et. al.

"Effect of maximal daily doses of acetaminophen on the liver of alcoholic patients: A randomized, double-blind, placebo-controlled trial," *Archives of Internal Medicine*, 2001; Kuffner EK, Dart RC, Bogdan GM, Hill RE, Casper E, Darton L.

"Placental transfer of N-acetylcysteine following human maternal acetaminophen toxicity," *Journal of Toxicology - Clinical Toxicology*, 1997; Horowitz RS, Dart RC, Jarvie DR, Bearer CF, Gupta U.

"Insufficient stocking of poisoning antidotes in hospital pharmacies," *Journal of the American Medical Association*, 1996; Dart RC, Stark Y, Fulton B, Koziol-McLain J, Lowenstein SR

"The clinical spectrum of Jin Bu Huan toxicity," *Archives of Internal Medicine*, 1996; Horowitz RS, Feldhaus K, Dart RC, Stermitz FR, Beck JJ

"Acute pediatric warfarin (Coumadin) ingestion: Toxic effects despite early treatment," *American Journal of Disease of Children*, 1993; Montanio CD, Wruk KM, Kulig KW, Riggs BS, Rumack BH

"The rise in the total iron-binding capacity after iron overdose," *Annals of Emergency Medicine*, 1991; Burkhart KK, Kulig KW, Hammond KB, Pearson JR, Ambruso D, Rumack BH

"Acetaminophen overdose: A 48-hour intravenous N-acetylcysteine treatment protocol," *Annals of Emergency Medicine*, 1991; Smilkstein MJ, Bronstein AC, Linden C, Augenstein WL, Kulig KW, Rumack BH

"Acute acetaminophen overdose during pregnancy," *Obstetrics & Gynecology*, 1989; Riggs BS, Bronstein AC, Kulig K, Archer PG, Rumack BH

"Superwarfarin poisoning in children: A prospective study," *Pediatrics*, 1989; Smolinske SC, Scherger DL, Kearns PS, Wruk KM, Kulig KW, Rumack BH

"Efficacy of oral N-acetylcysteine in the treatment of acetaminophen overdose: Analysis of the national multicenter study (1976 to 1985)," *New England Journal of Medicine*, 1988; Smilkstein MJ, Knapp GL, Kulig KW, Rumack BH

"Management of acutely poisoned patients without gastric emptying," *Annals of Emergency Medicine*, 1985; Kulig K, Bar-Or D, Cantrill SV, Rosen P, Rumack BH

"Acetaminophen overdose in young children; Treatment and effects of alcohol and other additional ingestants in 417 cases," *American Journal of Diseases of Children*, 1984; Barry Rumack, M.D.

"Ethylene glycol intoxication," *Journal of Emergency Nursing*, 1983; Scherger DL, Wruk KM, Linden C, Rumack B

"Acetaminophen overdose: 662 cases with evaluation of oral acetylcysteine treatment," *Archives of Internal Medicine*, 1981; Rumack BH, Peterson RC, Koch GG, Amara IA

"Acetaminophen overdose: incidence, diagnosis, and management in 416 patients," *Pediatrics*, 1978; Rumack BH, Peterson RG

"Treating acute acetaminophen poisoning with acetylcysteine," *Journal of the American Medical Association*, 1977; Rumack BH, Peterson RG

"Unrecognized adult salicylate intoxication," *Annals of Internal Medicine*, 1976; Anderson RJ, Potts DE, Gabow PA, Rumack BH, Schrier RW

"Acetaminophen poisoning and toxicity," *Pediatrics*, 1975; Rumack BH, Matthew H



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Dear Friends of the Rocky Mountain Poison & Drug Center:

It is with pride and pleasure that we mark this important milestone in the history of the Rocky Mountain Poison & Drug Center at Denver Health: the

50th anniversary of its establishment.

This venerable organization has been a household name in Colorado for decades, serving many millions as its toxicologists, pharmacists and nurses respond to inquiries from worried parents, families and friends of those suffering accidental poisonings, drug reactions, insect bites or inhalation problems.

Begun in 1956, magnets with the Rocky Mountain Poison Center phone number have graced refrigerator doors and offered peace of mind to families for five decades. A small entity at first, this high quality operation has grown now to an organization with a much broader mission and a national presence. Its many clients today include national and international chemical and pharmaceutical companies and government agencies. It also serves as the poison center for five states, and works closely with the federal and state governments in handling public calls about concerns such as West Nile virus or the flu.

Its call center role has also benefited our patients, who have access to a 24-hour bilingual Nurseline where they can receive help with medical issues without making a trip to the hospital or clinic.

The revenue from this thriving arm of Denver Health has contributed to our bottom line, furthering our mission to vulnerable populations, while simultaneously serving many Colorado citizens and others from around the world. Please note the map on page 17, which depicts the extent to which the Rocky Mountain Poison Center serves Colorado.

On behalf of the Denver Health family, I extend hearty congratulations to the Rocky Mountain Poison and Drug Center and its employees as we join in celebrating its 50th anniversary.

Sincerely,

Patricia A. Gabow, M.D.  
Chief Executive Officer and Medical Director  
Denver Health

Denver Health Medical Center

911 Medical Response

Rocky Mountain Poison & Drug Center

Denver Public Health

Rocky Mountain Regional Trauma Center

Denver Health Medical Plan



Rocky Mountain Center for Medical Response to Terrorism

Denver CARES

Family Health Centers

School-based Health Centers

Denver Health Foundation

Correctional Care



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