

CURRICULUM VITAE

March 1, 2023

PERSONAL DATA

Name: E. Martin Caravati, MD, MPH, FAACT

Citizenship: USA

Business address: Emergency Medicine
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Salt Lake City, UT 84132

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EDUCATION

Bachelor of Arts, Chemistry, August 1973-May 1977

University of Virginia, Charlottesville, VA

Doctor of Medicine, July 1977-June 1981

Medical College of Virginia, Virginia Commonwealth University Richmond, VA

Emergency Medicine Internship and Residency, July 1981- June 1984

University of North Carolina, Carolinas Medical Center Charlotte, NC

Medical Toxicology Preceptorship (ABMT approved), July 1987-June 1990

University of Utah Medical Center, Douglas Rollins, MD, PhD, Toxicology Faculty Preceptor

Master of Public Health, Sept 1992-May 1994

Department of Family and Preventive Medicine University of Utah School of Medicine, Salt Lake City, Utah

Medical Review Officer Course

Medical Review Officer Certification Council, San Antonio, TX, Sept. 26-27, 2009

CERTIFICATIONS

Medical Toxicology Subspecialty Re-certification: December 23, 2008

Medical Toxicology Subspecialty Certification, American Board of Medical Specialties, 2/5/99

Diplomat, American Board of Emergency Medicine (ABEM), 1985.

Emergency Medicine Re-certifications: 12-27-1995, 12-23-2005.

Instructor, Advanced HAZMAT Life Support (AHLS), 2003.

PROFESSIONAL EXPERIENCE**Current Appointment:**

Professor Emeritus, University of Utah School of Medicine, Department of Emergency Medicine (7/2018-present)

Previous Appointments/Positions (2000-2018):

Director and attending physician, Medical Toxicology Consult Service, University of Utah Hospital and Primary Children's Medical Center (Jan 1999-June 30, 2018): Inpatient and outpatient toxicology consultation and teaching concerning poisoned patients.

Professor (Clinical), Department of Surgery, Division of Emergency Medicine. Supervising faculty for toxicology education for emergency medicine residents and pediatric fellows. Research interest is medical toxicology with emphasis on acute poisonings, poisoning epidemiology, and public health. (1998-2018)

Adjunct Professor, Department of Pediatrics, University of Utah School of Medicine

Adjunct Professor, Department of Family and Preventive Medicine (Occupational and Environmental Health), University of Utah

Adjunct Professor, Department of Pharmacotherapy, College of Pharmacy, University of Utah (1992 – 2018): teaching clinical toxicology to PharmD candidates at UPCC.

Consultant, Utah Poison Control Center (July 2012-2018)

Clinical toxicology consultation, teaching and on-call service for the Utah Poison Control Center.

Medical Director, Utah Poison Control Center (UPCC) (Jan 2000- June 2012): Medical supervision, quality assurance and teaching of poison center staff, PharmD and medical students, medical residents, emergency medicine residents and fellows at the UPCC, which received 55,000 poison consultations per year.

Attending physician, Emergency Department, University of Utah Hospital (1985-2004).

EDITORIAL EXPERIENCE

Editor-in-Chief, *Clinical Toxicology* (2012-2016)

- Official journal of American Academy of Clinical Toxicology, European Association of Poison Centres and Clinical Toxicologists and the American Association of Poison Control Centers.

Associate Editor, *Clinical Toxicology* (March 2009- December 2011)

Associate Editor (Toxicology), *Annals of Emergency Medicine* (1999-Dec 2010)

Editorial Board, *Clinical Toxicology* (2007-2009)

Editorial Board, Poisindex® Information System, Micromedex, Inc., Denver, CO (1987-2004): Editorial reviews and revisions for various toxicology management topics.

ADMINISTRATIVE EXPERIENCE**Current/Active:**

Activated Charcoal Guideline Project, American Academy of Clinical Toxicology, European Association of Poison Centres and Clinical Toxicologists (2016-present)

Member, Utah Lead Coalition: consultant on lead poisoning (2018-present)

Medical Panel Toxicology Expert, Utah Labor Commission (2018-present)

Peer-review Journal Referee/Reviewer/Consultant:

-*Annals of Emergency Medicine* (1993-present). "Top Peer Reviewer" 2022.

-*Clinical Toxicology* (1990-present).

Previous Experience (2000-present):

Scientific Review Committee, American Academy of Clinical Toxicology (2014-2020).

Scientific Committee, European Association of Poison Centres and Clinical Toxicologists (2013- 2020).

Director, Toxicology Curriculum and Module, Division of Emergency Medicine (2005-2018).

Pharmacy and Therapeutics Committee, University of Utah Hospital (1986-2018). Evaluates and monitors all drugs on the hospital formulary.

Chair, Adverse Drug Reaction Subcommittee, Pharmacy and Therapeutics Committee, University of Utah (2002-2018). Evaluates and monitors adverse drug reactions for the hospital.

Abstract Review Committee, American Academy of Clinical Toxicology (1989, 1995, 2006- 2018).

Occupational Medicine Residency Advisory Committee: Evaluate residency curriculum and resident performance for occupational medicine, Rocky Mountain Center for Occupational and Environmental Health (2001-2018).

Expert panel member, Critical Pharmaceutical Product Availability Project, Healthcare and Public Health Sector, Department of Homeland Security (2018).

Expert Judge Panel, Best Scientific Presentation, European Association of Poison Centres and Clinical Toxicologists (EAPCCT) Scientific Meeting, Madrid, Spain, May 24-28, 2016.

Member, Expert Guideline Panel, Wilderness Medicine Society, evidenced-based guideline on pit viper envenomation in the wilderness. (2013-2015)

Chair, Task Force on AACT/EAPCCT Decontamination Guidance Papers, American Academy of Clinical Toxicology (2010-2015).

Council of Medical Directors, AAPCC (1998-2012): Biannual national meeting of Poison Center Medical Directors.

Expert Judge Panel, Young Investigators Research Award, European Association of Poison Centres and Clinical Toxicologists (EAPCCT) Scientific Meeting, London, UK. June 1, 2012

Curriculum Committee, HazMedic Program, Unified Fire Authority, Salt Lake City (2009-2010).

Prescription Pain Medication Steering Committee, Utah Department of Health (2007-2010) Evaluate an action plan for the increased deaths in Utah associated with methadone and other opiate prescription drugs and guides the Advisory Committee on policy and procedures for this epidemic.

Expert Judge Panel, Best Scientific Presentation, European Association of Poison Centres and Clinical Toxicologists (EAPCCT) Scientific Meeting, Bordeaux, France, May 12-14, 2010.

Secretary-Treasurer/Treasurer, Board of Trustees, American Academy of Clinical Toxicology (AACT) (2006-2010).

National Poison Center Guidelines Consensus Panel. Maternal Child Health Bureau, Health Resources and

Services Administration (HRSA), U.S. Department of Health & Human Services. (6/2003-2007)

Prescription Medication Death Task Force, Utah Department of Health (2005-7): Evaluate the causes and action plan for the increased deaths in Utah associated with methadone and other opiate prescription drugs.

Expert Panel, Unconventional Weapons of Mass Destruction-Binary Poisons Study, Department of Defense, December 17-18, 2002.

Board of Directors, American Association of Poison Control Centers (AAPCC) (1999-2002).

- Board liaison to the AAPCC Council of Medical Directors.

Hazmat Working Group, University of Utah Hospital (1998-2001). Develop and implement emergency response procedures for patients exposed to hazardous materials presenting to University Hospital.

Citizens Advisory Commission for Chemical Demilitarization, Governor's Office of Planning and Budget, State of Utah (1995-1999). Appointed by Governor Leavitt to provide advice on medical, toxic, and disaster issues regarding the destruction of chemical weapons at Tooele Army Depot.

PROFESSIONAL SOCIETY MEMBERSHIPS

Fellow, American College of Medical Toxicology (FACMT)

Fellow, American Academy of Clinical Toxicology (FAACT)

HONORS

- Outstanding Faculty Contribution Award, Division of Emergency Medicine, 2018
- Distinguished Service Award, American Academy of Clinical Toxicology, 2016
- Delta Omega, Public Health Honor Society (2002) Who's Who in Medicine and Healthcare
- "Outstanding Consultant Award", Annals of Emergency Medicine: 1995, 1996, 1997, 1998, 2022.
- "Teacher of the Year" Award, 1996-1997, Division of Emergency medicine.

TEACHING RESPONSIBILITIES (1985-2018)

Resident/Fellow teaching: Director of Toxicology Training Programs: Emergency Medicine Residency Program and Pediatric Emergency Medicine Fellowship. Inpatient housestaff teaching on toxicology consult service patients. Monthly lectures on toxicology to emergency medicine residents. Guest lectures at various residency program conferences. (1985-2018).

Utah Poison Control Center (2012-2018): review of hospitalized toxicology cases with students, residents, fellows and UPCC staff.

Utah Poison Control Center (2000-2012): Daily morning rounds, Poison Management Weekly Case Conference, student in-services, toxicology journal club, bedside hospital rounds: review of hospitalized toxicology cases with students, residents, fellows and UPCC staff.

Pharmacy Practice/Pharmacotherapy 5312/7312/7315: Clinical Toxicology (1999-2010): Toxicology lectures on various poisoning topics to senior PharmD students, College of Pharmacy, 50 students/semester.

FPMD 6703: Occupational Diseases Seminar: Occupational Toxicology monthly seminar between the Utah Poison Center, Occupational Medicine and Masters of Public Health Program, University of Utah, Department of Family and Preventive Medicine. 10-15 students/residents per session. (1999-2000). Co-instructor.

BIBLIOGRAPHY

Peer Reviewed Journal Articles

Cohen N, et al. Severe outcomes following pediatric cannabis intoxication: A prospective cohort study of an international toxicology surveillance registry. (Submitted for publ JOct 2022, J Pediatrics)

Gosselin S, et al. Recommendations on the use of activated charcoal for gastrointestinal decontamination following acute oral overdose. (Submitted for publ Jan 2023, Clin Toxicol)

Cohen N, Mathew M, Davis A, Brent J, et al. Predictors of Severe Outcome Following Opioid Intoxication in Children. Clin Toxicol 2022;60(6):702-707.

Hoegberg LC, Shepherd G, Wood DM, Johnson J, Hoffman RS, **Caravati EM**, et al. Systematic review on the use of activated charcoal for gastrointestinal decontamination following acute oral overdose. Clin Toxicol 2021; 59(12):1196–1227.

Greene S, Ruha AM, Campleman S, Brent J, Wax P, and **ToxIC Snakebite Study Group**. Epidemiology, clinical features, and management of Texas Coral Snake (*Micrurus tener*) envenomations reported to the North American Snakebite Registry. J Med Toxicol 2021; 17(1):51-56.

Levine M Ruha AM, Wolk B, **Caravati M**, et al. When it comes to snakebites, kids are little adults: a comparison of adults and children with rattlesnake bites. J Med Toxicol 2020;16(4):444-451.

Drapkin Z, Plumb J, Szadkowski MA, **Caravati EM**: Acute cerebellitis in a 5-year-old child. Pediatric Emerg Care 2018;34(9):e175-e177.

Bowman N, **Caravati EM**, Horowitz BZ, Crouch BI. Acute Pneumonitis Associated with Nickel Carbonyl Exposure in the Workplace. Clin Toxicol 2018 Mar;56(3):223-225.

Dart RC, Goldfrank LR, Erstad BL, Huang DT, Todd KH, Weitz J, Bebartha VS, **Caravati EM**, Henretig FM, Delbridge TR, Banner W, Schneider SM, Anderson VE. Expert Consensus Guidelines for Stocking of Antidotes in Hospitals That Provide Emergency Care. Ann Emerg Med. 2017 Jun 29. [Epub ahead of print]; Ann Emerg Med. 2018 Mar;71(3):314-325.[print]

Szadkowski M, Drapkin Z, Hewes H, **Caravati EM**, Plumb J. A Teenager With Seizures and Cardiac Arrest After Drug Overdose: Are We Numb to the Danger? Pediatr Emerg Care. 2017 Sep;33(9):657-659.

Farrugia LA, Rhyee SH, Campleman SL, Ruha AM, Weigand T, Wax PM, Brent J; **Toxicology Investigators Consortium**. The Toxicology Investigators Consortium Case Registry-the 2015 Experience. J Med Toxicol. 2016 Sep;12(3):224-47. (Consortium Collaborator)

Galovic G, Fair J, **Caravati EM**. The echoes of intoxication. Clin Toxicol (Phila). 2016;54(6):469-470. Epub 2016 Mar 23. (Commentary)

Kanaan NC, Ray J, Stewart M, Russell KW, Fuller M, Bush SP, **Caravati EM**, Cardwell MD, Norris RL, Weinstein SA. Wilderness Medical Society Practice Guidelines for the Treatment of Pitviper Envenomations in the United States and Canada. Wilderness Environ Med. 2015 Dec;26(4):472-87.

Dayton J, **Caravati EM**, Smith S. A case report of non-beverage alcohol abuse by cooking extract. J Child Adoles Substance Abuse 2015; ePub online

Thanacoody R, **Caravati EM**, Troutman B, Höjer J, Benson B, Hoppu K, Erdman A, Bedry R, Mégarbane B. Position paper update: whole bowel irrigation for gastrointestinal decontamination of overdose patients. Clin Toxicol (Phila). 2015;53(1):5-12.

Rhyee SH, Farrugia L, Wiegand T, Smith EA, Wax PM, Brent J; **Toxicology Investigators Consortium**. The toxicology investigators consortium case registry-the 2013 experience. *J Med Toxicol*. 2014 Dec;10(4):342-59. (Consortium Collaborator)

Williams BT, Schlein SM, **Caravati EM**, Ledyard H, Fix ML. Emergency Department Identification and Critical Care Management of a Utah Prison Botulism Outbreak. *Ann Emerg Med*. 2014;64(1):26-31.

Benson BE, Hoppu K, Troutman WG, Bedry R, Erdman A, Höjer J, Mégarbane B, Thanacoody R, **Caravati EM**. Position paper update: gastric lavage for gastrointestinal decontamination. *Clin Toxicol (Phila)*. 2013;51(3):140-6.

Höjer J, Troutman WG, Hoppu K, Erdman A, Benson BE, Mégarbane B, Thanacoody R, Bedry R, **Caravati EM**. Position paper update: ipecac syrup for gastrointestinal decontamination. *Clin Toxicol (Phila)*. 2013;51(3):134-9

Caravati EM, Megarbane B. Update of position papers on gastrointestinal decontamination for acute overdose. *Clin Toxicol* 2013;51(3):127. (Editorial)

Caravati EM, Latimer S, Reblin, Bennett HK, Cummins MR, Crouch MB, Ellington L. High call volume at poison control centers: identification and implications for communication. *Clin Toxicol* 2012;50(8):781-7.

Caravati EM. The future of Clinical Toxicology. *Clin Toxicol* 2012;50(3):161-2.

Ellington L, Poynton MR, Reblin M, Latimer S, Bennett HKW, Crouch BI, **Caravati EM**. Communication patterns for the most serious poison center calls. *Clin Toxicol* 2011;49:316-23.

Wolfe MD, Myers O, **Caravati EM**, Rayburn WF, Seifert SA. Black widow spider envenomation in pregnancy. *J Maternal-Fetal and Neonatal Med* 2011;24(1):122-6.

Rogers SC, Pruitt CW, Crouch DJ, **Caravati EM**. Rapid urine drug screens: diphenhydramine and methadone cross-reactivity. *Pediatr Emerg Care* 2010;26(9):665-6

Wilson C, Canning P, **Caravati EM**. The abuse potential of propofol. *Clin Toxicol* 2010;48(3):165-70.

Caravati EM, Anderson KT. Breath Alcohol Analyzer Mistakes Methanol Poisoning for Alcohol Intoxication. *Ann Emerg Med* 2010;55:198-200.

Poynton MR, Ellington L, **Caravati EM**, Crouch BI, Bennett H. Building knowledge for poison control: the novel pairing of communication analysis with data mining methods. *Stud Health Technol Inform*. 2009;146:207-13.

Poynton MR Bennett HKW, Ellington L, Crouch BI, **Caravati EM**, Jasti S. Specialist discrimination of toxic exposure severity at a poison control center. *Clin Toxicol* 2009;47:678- 682.

Dart RC, Borron SW, **Caravati EM**, Cobaugh DJ, Curry SC, Falk JL, Goldfrank L, Gorman SE, Groft S, Heard K, Miller K, Olson KR, O'Malley G, Seger D, Seifert SA, Sivilotti ML, Schaeffer T, Tomassoni AJ, Wise R, Bogdan GM, Alhelail M, Buchanan J, Hoppe J, Lavonas E, Mlynarchek S, Phua DH, Rhyee S, Varney S, Zosel A; Antidote Summit Authorship Group. Expert consensus guidelines for stocking of antidotes in hospitals that provide emergency care. *Ann Emerg Med* 2009;54(3):386-394.

Milne M, Crouch BI, **Caravati EM**. Buprenorphine for opioid dependence. *J Pain Palliative Care Pharmacotherapy* 2009;23(2):153-5.

Crouch BI, **Caravati EM**, Moltz E. Tenfold therapeutic dosing errors in young children reported to U.S.

poison control centers. *Am J Health-Syst Pharm* 2009;66:1292-6.

Yarris JP, **Caravati EM**, Horowitz ZB, Stromness JR, Crouch BI, McKeown NJ. Acute arsenic trioxide ant bait ingestion by toddlers. *Clin Toxicol (Phila)*. 2008;46(9):785-789.

Manoguerra AS, Erdman AR, Woolf AD, Chyka PA, **Caravati EM**, Scharman EJ, Booze LL, Christianson G, Nelson LS, Cobaugh DJ, Troutman WG. Valproic acid poisoning: An evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)* 2008;46(7):661-676.

Ellington L, Kennedy SL, Matwin, S, Smith JA, Poynton M, Crouch BI, **Caravati EM**. An Examination of Adherence Strategies and Challenges in Poison Control Communication. *J Emerg Nursing* 2009;35:186-190.

Ellington L, Matwin S, Jasti S, Williamson J, Crouch BI, **Caravati EM**, Dudley WN. Poison Control Center Communication and Impact on Caller Adherence. *Clin Toxicol (Phila)* 2008;46:105-109.

Caravati EM, Erdman AR, Christianson G, Nelson LS, Woolf AD, Booze LL, Cobaugh DJ, Chyka PA, Scharman EJ, Manoguerra AS, Troutman WG. Elemental mercury exposure: An evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)* 2008;46(1):1-21.

Taylor J, Fosnocht D, **Caravati EM**. Emergency department patient knowledge concerning acetaminophen in OTC and prescription analgesics. *Emerg Med J* 2008; 25:213-216.

Scharman EJ, Erdman AR, Cobaugh DJ, Woolf AD, **Caravati EM**, Chyka PA, Booze LL, Manoguerra AS, Nelson LS, Christianson G, Troutman WG. Methylphenidate poisoning: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2007;45:737-52.

Cobaugh DJ, Erdman AR, Booze LL, Scharman EJ, Christianson G, Manoguerra AS, **Caravati EM**, Chyka PA, Woolf AD, Nelson LS, Troutman WG. Atypical antipsychotic medication poisoning: An evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2007;45(8):918-42.

Chyka PA, Erdman AR, Manoguerra AS, Christianson G, Booze LL, Nelson LS, Woolf AD, Cobaugh DJ, **Caravati EM**, Scharman EJ, Troutman WG. Dextromethorphan poisoning: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)* 2007;45(6):662-77.

Nelson LS, Erdman AR, Booze LL, Cobaugh DJ, Chyka PA, Woolf AD, Scharman EJ, Wax PM, Manoguerra AS, Christianson G, **Caravati EM**, Troutman WG. Selective serotonin reuptake inhibitor poisoning: An evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)* 2007;45(4):315-32.

Caravati EM, Erdman AR, Scharman EJ, Woolf AD, Chyka PA, Cobaugh DJ, Wax PM, Manoguerra AS, Christianson G, Nelson LS, Olson KR, Booze LL, Troutman WG. Long-acting anticoagulant rodenticide poisoning: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2007;45:1-22.

Chyka PA, Erdman AR, Christianson G, Wax PM, Booze LL, Manoguerra AS, **Caravati EM**, Nelson LS, Olson KR, Cobaugh DJ, Scharman EJ, Woolf AD, Troutman WG. Salicylate poisoning: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2007;45:95-131.

Woolf AD, Erdman AR, Nelson LS, **Caravati EM**, Cobaugh DJ, Booze LL, Wax PM, Manoguerra AS, Scharman EJ, Olson KR, Chyka PA, Christianson G, Troutman WG. Tricyclic antidepressant poisoning: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)* 2007;45:203-33.

Crouch BI, **Caravati EM**, Dandoy C. Effect of dilution with beverages on the smell and taste of oral acetylcysteine. *Am J Health-Syst Pharm* 2007; 64:1965-8.

Majersik J, **Caravati EM**, Steffens J. Severe Neurotoxicity Associated with Exposure to the Solvent 1-Bromopropane (n-Propyl Bromide). *Clin Toxicol (Phil)* 2007;45(3):270-276.

Poynton M, Jasti S, Ellington L, Dudley W, Crouch B, **Caravati M**, Williamson J. Matching waveform audio files with toxicall data: Record linkage in a poison control center. *Stud Health Technol Inform* 2006;122:849.

Manoguerra AS, Erdman AR, Wax PM, Nelson LS, **Caravati EM**, Cobaugh DJ, Chyka PA, Olson KR, Booze LL, Woolf AD, Keyes DC, Christianson G, Scharman EJ, Troutman WG; American Association of Poison Control Centers. Camphor Poisoning: an evidence-based practice guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2006;44(4):357-70.

Scharman EJ, Erdman AR, Wax PM, Chyka PA, **Caravati EM**, Nelson LS, Manoguerra AS, Christianson G, Olson KR, Woolf AD, Keyes DC, Booze LL, Troutman WG. Diphenhydramine and dimenhydrinate poisoning: an evidence-based consensus guideline for out of-hospital management. *Clin Toxicol (Phila)* 2006;44(3):205-23.

Dart RC, Erdman AR, Olson KR, Christianson G, Manoguerra AS, Chyka PA, **Caravati EM**, Wax PM, et al; American Association of Poison Control Centers. Acetaminophen poisoning: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2006;44(1):1-18.

Olson KR, Erdman AR, Woolf AD, Scharman EJ, Christianson C, **Caravati EM**, Wax PM, Booze LL, Manoguerra AS, Keyes DC, Chyka PA, Troutman WG. Calcium channel blocker ingestion: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2005;43:797-821.

Caravati EM, Erdman AR, Christianson G, Manoguerra AS, Booze LL, Woolf AD, Olson KR, Chyka PA, Scharman EJ, Wax PM, Keyes DC, Troutman WG. Ethylene glycol exposure: an evidence-based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2005;43:327-45.

Manoguerra AS, Erdman AR, Booze LL, Christianson G, Wax PM, Scharman EJ, Woolf AD, Chyka PA, Keyes DC, Olson KR, **Caravati EM**, Troutman WG. Iron ingestion: an evidence- based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2005;43:553- 570.

Caravati EM, Juenke JM, Crouch BI, Anderson KT. Quetiapine cross-reactivity with plasma tricyclic antidepressant immunoassays. *Ann Pharmacother* 2005;39:1446-9.

Wax PM, Erdman AR, Chyka PA, Keyes DC, **Caravati EM**, Booze L, Christianson G, Woolf A, Olson KR, Manoguerra AS, Scharman EJ, Troutman WG. β -Blocker ingestion: an evidence- based consensus guideline for out-of-hospital management. *Clin Toxicol (Phila)*. 2005;43:131- 146.

Manoguerra AS, Cobaugh DJ, Members of the Guidelines for the Management of Poisons Consensus Panel. Guideline on the use of ipecac syrup in the out-of-hospital management of ingested poisons. *J Toxicol Clin Toxicol* 2005;1:1-10.

Caravati EM. Reconsidering the safety of over-the-counter decongestants. *Ann Emerg Med*. 2005;45:217-8. (Editorial)

Centers for Disease Control and Prevention (CDC) [**Caravati EM**, Grey T, Nangle B, Rolfs RT, Peterson-Porucznik CA]. Increase in Poisoning Deaths Caused by Non-Illicit Drugs --- Utah, 1991--2003. *MMWR Morb Mortal Wkly Rep*. 2005 Jan 21;54(2):33-36.

Crouch BI, **Caravati EM**, Mitchell A, Martin AC. Poisoning in older adults: A 5-year experience of US poison control centers. *Ann Pharmacother* 2004;38:2005-2011.

Crouch BI, **Caravati EM**, Booth J. Trends in Child and Teen Nonprescription Drug Abuse Reported a Regional Poison Control Center. *Am J Health Syst Pharm* 2004;61:1252-1257.

Caravati EM, Heilesen H, Jones M. Treatment of Severe Pediatric Ethylene Glycol Intoxication Without Hemodialysis. *J Toxicol Clin Toxicol* 2004;42:255-259.

Caravati EM. Copperhead Bites and Crotalidae Polyvalent Immune Fab (Ovine): Routine Use Requires Evidence of Improved Outcomes. *Ann Emerg Med* 2004;43:207-208. (editorial)

Cannon G, **Caravati EM**, Filloux FM. Hydrogen peroxide neurotoxicity in childhood: case report with unique magnetic resonance imaging features. *J Child Neurol* 2003 Nov; 18(11): 805- 808.

Tyler L, Fox E, **Caravati EM**. The Challenge of Drug Shortages for Emergency Medicine. *Ann Emerg Med* 2002; 40:598-602.

Caravati EM, Knight HH, Linscott MS, Stringham JC: Esophageal laceration and charcoal mediastinum complicating gastric lavage. *J Emerg Med* 2001; 273-276.

Crouch BI , **Caravati EM**, Summers EH: Jimsonweed Toxicity and Treatment. *J Pharmaceutical Care in Pain and Symptom Control* 2001;9(2):25-30. (Review)

Caravati EM: Unintentional pediatric acetaminophen ingestion in children and the risk of hepatotoxicity. *J Toxicol Clin Toxicol* 2000;38(3):291-296.

Litovitz TL, Klein-Schwartz W, **Caravati EM**, Youniss J, Crouch B, Lee S: 1998 Annual Report of the American Association of Poison Control Centers Toxic Exposure Surveillance System. *Am J Emerg Med* 1999;17:435-487.

Caravati EM: The electrocardiogram as a diagnostic discriminator in tricyclic antidepressant toxicity. *J Toxicol: Clin Toxicol* 1999;37:113-115 (editorial).

Wolfe TR, **Caravati EM**: Massive dextromethorphan ingestion and abuse. *Am J Emerg Med* 1995;13:174-176.

Apfelbaum JD, **Caravati EM**, Kerns WP, Bossart PJ, Larsen G: Cardiovascular effects of carbamazepine toxicity. *Ann Emerg Med* 1995; 25:631-635.

Dickson K, **Caravati EM**: Hydrogen peroxide exposure – 325 cases reported to a regional poison control center. *J Toxicol: Clin Toxicol* 1994;32:705-714.

Ryan KC, **Caravati EM**: Life-threatening anaphylaxis following envenomation by two different species of crotalidae. *J Wilderness Med* 1994; 5:263-268.

Hooker KR, **Caravati EM**: Gila monster envenomation. *Ann Emerg Med* 1994; 24:731-735.

Bernstein E, Goldfrank L, Kellerman AL, Hargarten SW, Jonathon J, Fish SS, Herbert BH, Flores C, **Caravati EM**, Krishel S, Stevens CD, Kirsch TD, Lowe RA, Lowenstein SR, Baraff LJ, Mueller-Orsay EJ, Ling L, Sklar DP: A public health approach to emergency medicine: preparing for the twenty-first century. *Acad Emerg Med* 1994; 1:277-286.

Herr RD, **Caravati EM**, Tyler LS, Iorg E, Linscott MS: Prospective evaluation of adverse drug interactions in the emergency department. *Ann Emerg Med* 1992; 21:237-242.

Runge JW, Martinez JC, **Caravati EM**, Williamson SG, Hartsell SC: Histamine antagonists in the treatment of acute allergic reactions. *Ann Emerg Med* 1992;21:1331-1336.

Herr RD, **Caravati EM**: Acute transient ischemic colitis after oral methamphetamine ingestion. Am J Emerg Med 1991;8:406-409.

Caravati EM, Bossart PJ: Demographic and electrocardiographic factors associated with severe tricyclic antidepressant toxicity. J Toxicol: Clin Toxicol 1991; 29:31-43.

Caravati EM, McElwee NE: Use of clinical toxicology resources by emergency physicians and its impact on poison control centers. Ann Emerg Med 1991; 20:147-150.

Wolfe TR, **Caravati EM**, Rollins DE: The terminal 40 ms frontal plane QRS axis as a marker for tricyclic antidepressant overdose. Ann Emerg Med 1989; 18:348-351.

Caravati EM, Bennett DL, McElwee NE: Coin ingestion: A prospective study on the utility of routine roentgenograms. Am J Dis Child 1989; 143: 549-551.

Caravati EM, Litovitz TB: Pediatric cyanide intoxication and death from an acetonitrile- containing cosmetic. JAMA 1988; 260:3470-3473.

Caravati EM, Adams CJ, Joyce SM, Schafer NC: Fetal toxicity associated with maternal carbon monoxide poisoning. Ann Emerg Med 1988; 27:714-717.

Caravati EM, Bennett DL: Clonidine transdermal patch poisoning. Ann Emerg Med 1988; 17:175-176.

Caravati EM: Acute hydrofluoric acid exposure. Am J Emerg Med 1988; 6:143-150. (Review)

Caravati EM: Metabolic abnormalities associated with phosphoric acid ingestion. Ann Emerg Med 1987; 16:904-906.

Sawyer WT, **Caravati EM**, Ellison MJ, Krueger KA: Hypokalemia, hyperglycemia, and acidosis after intentional theophylline overdose. Am J Emerg Med 1985; 3:408-411.

Textbook Authorship

Dart RC, **Caravati EM**, McGuigan MA, et al: Medical Toxicology, 3rd edition, Lippincott, Williams and Wilkins, 2004.

Book Chapters

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Green D, **Caravati EM**. Coma in a Toddler from Low-dose carisoprodol. J Tox Clin Toxicol 2001;39:503. North American Congress of Clinical Toxicology, Montreal, Canada, Oct. 7, 2001. (poster)

Dahl B, **Caravati EM**. Surreptitious Brodifacoum Poisoning. J Tox Clin Toxicol 2001;39: 475-476. North American Congress of Clinical Toxicology, Montreal, Canada, Oct. 6, 2001. (poster)

Crouch BI, **Caravati EM**, Comes P: Trends in child and teen OTC drug abuse in Utah. 2000 American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting, Las Vegas, NV, Dec. 6, 2000.

Caravati EM, Grover J: Arsine poisoning from recycling of computer chips. J Toxicol: Clin Toxicol 2000;38:543-544. North American Congress of Clinical Toxicology, Tucson, AZ, Sept. 17, 2000. (poster)

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Stromness J, Crouch BI, **Caravati EM**: Lead exposures from indoor firing ranges. J Toxicol: Clin Toxicol 2000;38:547. North American Congress of Clinical Toxicology, Tucson, AZ, Sept 17, 2000. (poster)

Grover J, Dahl B, Caravati M: Death Camus: Mistaken identity at an herb farm. J Toxicol: Clin Toxicol 1999;37:618-619. North American Congress of Clinical Toxicology, La Jolla, CA, Oct. 2, 1999.(poster)

Caravati EM, Dahl B, Crouch BI: Severe anaphylaxis from gila monster envenomation. J Toxicol: Clin Toxicol 1999;37:613. North American Congress of Clinical Toxicology, La Jolla, CA, Oct. 2, 1999.(poster)

Diller EM, Crouch BI, Martin AC, **Caravati EM**: Clinical manifestations of poisonings in the elderly. J Toxicol: Clin Toxicol 1999;37:594. North American Congress of Clinical Toxicology, La Jolla, CA, Oct. 1, 1999.(poster)

Martin AC, **Caravati EM**, Crouch BI, Diller EM: Poison exposures in the elderly: A five-year descriptive study. J Toxicol: Clin Toxicol 1999;37:593. North American Congress of Clinical Toxicology, La Jolla, CA, Oct. 1, 1999. (poster)

Crouch BI, Cook L, **Caravati EM**, Dean JM: Probabilistic linking of poison center data to other healthcare databases. J Toxicol: Clin Toxicol 1998;36:500. North American Congress of Clinical Toxicology, Orlando, FL, Sept. 1998 (platform).

Bjerk PJ, **Caravati EM**: Severe diarrhea, gastritis, and metabolic acidosis secondary to toluene ingestion. J Toxicol: Clin Toxicol 1996; 34:573-574. North American Congress of Clinical Toxicology, Portland, OR, Oct.

1996 (poster).

Yerman B, Tseng J, **Caravati EM**: Pediatric acetaminophen ingestion: Prospective study of referral criteria. J Toxicol: Clin Toxicol 1995;33:530. North American Congress of Clinical Toxicology, Rochester, NY, Sept. 17, 1995 (poster).

Apfelbaum JD, **Caravati EM**, Kerns WP, Bossart PJ, Larsen G. Cardiovascular effects of carbamazepine toxicity. Ann Emerg Med 1994; 23:631. 1994 ACEP Research Forum, San Diego, CA, March 20, 1994.

Herr RD, **Caravati EM**, Tyler LS, Iorg E: Prospective evaluation of adverse drug interactions in the emergency department. Ann Emerg Med 1992; 21:660. SAEM Annual Scientific Meeting, Toronto, Ontario, May 28, 1992 (poster).

Larsen G, **Caravati EM**. Electrocardiographic effects of carbamazepine toxicity. Vet Hum Toxicol 1991; 33:365. AACT/AAPCC/ABMT/CAPCC* Annual Meeting, Toronto, Ontario, Oct. 2, 1991 (platform).

Caravati EM, Herr R. Use of simultaneous arterial and venous blood gases to detect elevated cyanide levels in burn patients. Vet Hum Toxicol 1991; 33:361. AACT/AAPCC/ABMT/ CAPCC Annual Meeting, Toronto, Ontario, Oct. 1, 1991 (poster).

Caravati EM, Bossart PJ: Initial electrocardiographic findings associated with major tricyclic antidepressant toxicity. Vet Hum Toxicol 1990; 32:342. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Tucson, AZ, Sept. 17, 1990 (poster)

Caravati EM, Wallace DE: Anaphylactic reactions to snake venom. Vet Hum Toxicol 1990; 32:366. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Tucson, AZ, Sept. 17, 1990 (poster)

Taylor CL, **Caravati EM**, Rollins DE: Pediatric poisoning from elemental mercury in the home. Vet Hum Toxicol 1989; 31:351. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Atlanta, GA, Oct. 1989 (poster).

Taylor CL, Rollins DE, **Caravati EM**: Severe prolonged coagulopathy following snake envenomation. Vet Hum Toxicol 1989; 31:361. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Atlanta, GA, Oct. 1989 (poster).

Caravati EM, McElwee NE: Toxicology resource utilization by emergency physicians. Vet Hum Toxicol 1989; 31:366, Ann Emerg Med 1990; 19:629-630. AAPCC/AACT/ABMT/ CAPCC Annual Meeting, Atlanta, GA, Oct. 1989 (poster).

Hartsell SC, **Caravati EM**, Glenn J: Gila monster bites: Three cases of envenomation. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Atlanta, GA, Oct. 1989 (poster).

Runge JW, Martinez JC, **Caravati EM**, et al: Cimetidine in the treatment of acute allergic reactions. Ann Emerg Med 1989; 18:475. Society for Academic Emergency Medicine Annual Scientific Meeting, San Diego, CA, May 1989 (oral).

Bennett DL, **Caravati EM**: Coin ingestion: A prospective study on the use of routine radiographs. Vet Hum Toxicol 1988; 30:354. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Baltimore, MD, Oct. 1988 (oral).

Wolfe TR, **Caravati EM**, Rollins D: The terminal 40 ms frontal plane QRS axis as a marker for tricyclic antidepressant overdose. Ann Emerg Med 1988;17:404. University Association for Emergency Medicine Annual Scientific Meeting, Cincinnati, OH, May 1988 (oral).

Bennett DL, **Caravati EM**, Veltri JC: Long-acting anticoagulant ingestion: A prospective study. Vet Hum Toxicol 1987; 29:472. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Vancouver, BC, Sept. 1987 (poster).

Caravati EM, McElwee NE, VanTrigt M, et al: Carbon monoxide fetotoxicity. *Vet Hum Toxicol* 1987; 29:460. AAPCC/AACT/ABMT/CAPCC Annual Meeting, Vancouver, BC, Sept. 1987 (poster).

*AACT/AAPCC/ABMT/CAPCC – American Academy of Clinical Toxicology, American Association of Poison Control Centers, American Board of Medical Toxicology, Canadian Association of Poison Control Centers.

INVITED LECTURES (2000—2018)

“The Poisoned Patient in the Pediatric Intensive Care Unit”. Pediatric Critical Care Program, Primary Children’s Hospital, Salt Lake City, UT. May 1, 2017 (25 attendees)

“Toxicokinetics of Vitamin K Antagonists in Overdose: Optimizing Vitamin K Therapy”, International Congress of the European Association of Poison Centres and Clinical Toxicologists, Madrid, Spain, May 24, 2016. (175 attendees)

“Pat McKinney Memorial Lecture – The Pendulum of GI Decontamination: Is There a Baby in the Bath Water”, Department of Emergency Medicine Grand Rounds, University of New Mexico, Albuquerque, NM. March 31, 2016 (110 attendees)

Expert Panel Discussant, Acute and Intensive Care Symposium, 2015 North American Congress of Clinical Toxicology, San Francisco, CA, US, October 11, 2015. (350 attendees)

"Toxidromes and Antidotes", Veterans Administration Hospital, Internal Medicine Residency Program, Sept 17, 2015 (25 attendees)

Session Chair, Medicine abuse symposium, International Congress of the European Association of Poison Centres and Clinical Toxicologists, Malta,. May 29, 2015 (200 attendees)

“Visual Diagnosis in Poisoning”, Hospital Authority Toxicology Services Scientific Conference 2014, Hong Kong, China, November 7, 2014 (250 attendees)

“Gastrointestinal Decontamination for Acute Poisoning: What is the Evidence?”, Hospital Authority Toxicology Services Scientific Conference 2014, Hong Kong, China, November 7, 2014 (250 attendees)

Moderator, “Challenges and Opportunities at the Bedside: Adequately treating pain while avoiding adverse outcomes.” Prescription Drugs and Poisoning Symposium, College of Pharmacy, Salt Lake City, Utah, October 2, 2014. (150 attendees)

“What Makes a High Quality Case Report Describing an Adverse Drug Event?” North American Congress of Clinical Toxicology, AACT Pre-Meeting Symposium: Adverse Drug Events – From Public Health to Molecular Mechanisms. Atlanta, GA, US. September 27, 2013, (250 attendees).

“How to publish in Clinical Toxicology”, IV Brazilian Congress of Clinical Toxicology and 1st Symposium on Analytical Toxicology for Poison Control Centers, Águas de Lindóia, São Paulo, Brazil, August 22 to 24, 2012.

“Toxic exposure to elemental mercury: when and how to treat”, IV Brazilian Congress of Clinical Toxicology and 1st Symposium on Analytical Toxicology for Poison Control Centers, Águas de Lindóia, São Paulo, Brazil, August 22 to 24, 2012.

“Evidence-based guidelines for the management of intoxicated patients”, IV Brazilian Congress of Clinical Toxicology and 1st Symposium on Analytical Toxicology for Poison Control Centers, Águas de Lindóia, São Paulo, Brazil, August 22 to 24, 2012.

“Specialist discrimination of toxic exposure severity at a Poison Control Center”

IV Brazilian Congress of Clinical Toxicology and 1st Symposium on Analytical Toxicology for Poison Control Centers, Águas de Lindóia, São Paulo, Brazil, August 22 to 24, 2012.

“Gastrointestinal Decontamination Position Statements Update.” International Congress of the European Association of Poison Centres and Clinical Toxicologists. London, UK. May 30, 2012

Session Chair, Poster Discussion Session, International Congress of the European Association of Poison Centres and Clinical Toxicologists, Dubrovnik, Croatia, May 27, 2011. (250 attendees)

“The Role of the Poison Center in Hazardous Materials Incidents-A Research Source.” Advanced Life Support Response to Hazardous Materials Incidents, Salt Lake Metropolitan Medical Response System, August 9, 2010. (30 attendees)

“HazMat Toxidromes”, Advanced Life Support Response to Hazardous Materials Incidents, Salt Lake Metropolitan Medical Response System, August 9, 2010. (30 attendees)

“HazMat Antidotes Review”, Advanced Life Support Response to Hazardous Materials Incidents, Salt Lake Metropolitan Medical Response System, August 9, 2010. (30 attendees)

“Toxic Vapors and Gasses”, Advanced Life Support Response to Hazardous Materials Incidents, Salt Lake Metropolitan Medical Response System, August 10, 2010. (30 attendees)

“Clandestine Methamphetamine Laboratories: Dangers and Occupational Hazards”, Advanced Life Support Response to Hazardous Materials Incidents, Salt Lake Metropolitan Medical Response System, August 10, 2010. (30 attendees)

Session Chair, Young Investigator Award Platform Session, International Congress of the European Association of Poison Centres and Clinical Toxicologists, Bordeaux, France, May 13, 2010.

Moderator, European Association of Poison Centers and Clinical Toxicologists Symposium: “Antidotes for Poisoning: An Update on the Evidence” at the North American Congress of Clinical Toxicology, Toronto, Canada, September 13, 2008. (250+ attendees)

“Poisons in the News: Arsenic, Lead, Mercury”, Utah Poison Control Update Conference, Salt Lake City, UT, May 29, 2008. (65 attendees)

“Insecticide Toxicology” Advanced Topics in Occupational Medicine Course, Division of Occupational Medicine, University of Utah, June 1, 2007 (8 attendees)

“Case Presentation: Arsenic Poisoning”, Internal Medicine Residency Conference, Univ of Utah, February 14, 2007 (20 attendees).

Moderator, “Drug Abuse and Addiction: Getting High, Getting Hooked and Getting Help”, AACT Symposium at NACCT, San Francisco, October 5, 2006.

“Neurotoxicity of 1-Bromopropane in the Workplace”, Occupational Medicine Residency Program, University of Utah, March 24, 2006 (10 attendees)

“Toxicology Case Presentations for Neurologists”, Department of Neurology Resident Conference, University of Utah, January 20, 2006 (15 attendees)

“Chronic Exposure to 1-Bromopropane Associated with Spastic Paraparesis and Distal Neuropathy”, North American Congress Clinical Toxicology, Orlando, FL, September 14, 2005, (75 attendees)

“Medical Emergencies: The Poisoned Patient”, Internal Medicine Residents Lecture Series, UUMC, LDS Hospital and VA Hospitals, July 2005. (3 lectures, 75 attendees total)

“Chemical Agents of Mass Destruction”, Emergency Preparedness in the Healthcare Setting: Bioterrorism and other WMD conference, Utah Department of Health, Price, Utah, May 30, 2003. (30 attendees)

“Health Risks Associated with Investigating Methamphetamine Labs”, First Annual Drug Endangered Children Conference, Sheraton Hotel, Salt Lake City, UT, March 28, 2003. (100 attendees).

“Methamphetamine Toxicologic Risk for Public Safety and Decontamination Workers”, Occupational Medicine Grand Rounds, LDS Hospital, Salt Lake City, Utah, November 1, 2001.

“Bioterrorism II”, Conference Panel Member, Division of Infectious Disease, University Hospital, October 29, 2001.

“Hemolysis and elevated serum arsenic from arsine gas poisoning”. Occupational Disease Seminar, MPH Program, University of Utah, April 7, 2000.