

Exponent®
Engineering & Scientific Consulting

Catherine Rogers Murray, M.P.H.

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Professional Profile

Catherine Rogers Murray, M.P.H., is a managing scientist in Exponent's Health Sciences practice with over a decade of experience in pharmacoepidemiology, health data infrastructure, and medical product safety. She advises pharmaceutical manufacturers, regulatory bodies, and legal teams on medical product safety surveillance, real-world evidence studies, clinical trials, and stakeholder engagement, with particular expertise in large-scale distributed data networks.

Health Data Infrastructure

Ms. Rogers Murray brings deep operational expertise in building and managing the data systems that power large-scale pharmacoepidemiologic research. Her work on the FDA's Sentinel Initiative — a national active surveillance network spanning hundreds of millions of patient records across multiple health care data partners — gave her firsthand experience designing data governance frameworks, standardizing distributed data models, and implementing transparency protocols that meet the highest standards of scientific rigor. She helps clients assess the fitness of data sources (administrative claims databases, electronic medical records, registries, surveys, etc.) for specific research questions, and she advises on data quality, completeness, and analytic reproducibility before a study begins.

Pharmacoepidemiology & Drug Safety

Ms. Rogers Murray designs and conducts pharmacoepidemiologic studies including cohort, case-control, and self-controlled designs; confounding control methods including propensity score approaches; and the application of causal inference frameworks such as target trial emulation. She advises pharmaceutical manufacturers, insurers, and regulatory agencies on interpreting safety signals, characterizing benefit-risk profiles, and communicating findings to non-technical audiences. When litigation arises over medical product safety, Ms. Rogers Murray provides consulting support to legal teams evaluating the totality of epidemiologic evidence, study methodology, and regulatory submissions.

Scientific Communications

Translating complex epidemiologic findings into clear, credible, and actionable communications is a core strength Ms. Rogers Murray brings to every engagement. She has developed communication strategies for regulatory programs, academic consortia, and public health initiatives and has written for audiences ranging from FDA decision-makers and medical product manufacturers to academic researchers and the general public. Her background includes professional copy editing, marketing communications, and publication support, giving her an unusually broad range of tools for making technical science accessible without sacrificing accuracy.

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Stakeholder Consensus Building

One of Ms. Rogers Murray's most distinctive capabilities is her ability to bring together diverse, sometimes competing stakeholders and build the shared understanding needed to move complex programs forward. She has served as a facilitative bridge across these communities throughout her career, designing and leading engagement processes that surface differing perspectives, establish common ground, and produce durable agreements. This skill is particularly valuable in multi-site research collaborations, regulatory negotiations, and public health initiatives where no single party controls the outcome.

Academic Credentials & Professional Honors

M.P.H., Epidemiology, Brown University, 2014

B.A., English and Spanish Literature, Skidmore College, 2005

Emerging Leader Award, International Society for Pharmacoepidemiology, 2025

Prior Experience

Senior Project Manager, Sentinel Initiative, 2013-2021

Marketing and Communication Design Manager, Public Responsibility in Medicine and Research (PRIM&R), 2008-2012

Copy Editor, Taunton Daily Gazette, 2006-2007

Professional Affiliations

Gerontology Society of America

International Society for Pharmacoepidemiology

Publications

Kissam SM, Hawk T, Recker A, et al. Characteristics of the long-term care data cooperative: a new resource for research on outcomes in long-term care. Journal of the American Geriatrics Society 2026; 74(5):1247–1254.

Dore DD, Kyle M, Burns D, Murray CR, Watson H, Swaney J, Spevack S, Leonhard M, Simon M, Moynihan E, Lapane KL, Wang SV, Longo CL, Ritchey ME. Cardiovascular safety of fixed-dose extended-release naltrexone/bupropion in clinical practice. Obesity Pillars. 2025;100169.

Dore DD, Myles L, Recker A, Burns D, Rogers Murray C, Gifford D, Mor V. The Long-Term Care Data Cooperative: The Next Generation of Data Integration. Journal of the American Medical Directors Association. 2022 Dec 1;23(12):2031–3.

Fireman B, Gruber S, Zhang Z, et al. Consequences of Depletion of Susceptibles for Hazard Ratio Estimators Based on Propensity Scores. Epidemiology. 2020 Nov;31(6):806–814.

Panozzo CA, Welch EC, Woodworth TS, et al. Assessing the impact of the new ICD-10-CM coding system on pharmacoepidemiologic studies. Pharmacoepidemiology and Drug Safety. 2018;27:829–838.

Panozzo CA, Woodworth TS, Welch EC, et al. Early impact of the ICD-10-CM transition on selected health outcomes in 13 electronic health care databases in the United States. Pharmacoepidemiology and

Drug Safety. 2018;27:839–847.

Chrischilles EA, Gagne JJ, Fireman B, et al. Prospective Surveillance Pilot of Rivaroxaban Safety Within the US Food and Drug Administration Sentinel System. Pharmacoepidemiology and Drug Safety. 2018 Mar;27:263–271.

Rogers, C. Parents' Vaccine Beliefs: A Study of Experiences and Attitudes Among Parents of Children in Private Pre-Schools. Rhode Island Medical Journal. 2014 Apr;97(4):27-30.

Presentations

Rogers Murray C, Burns D, Orzechowski A, Moynihan E. AI Failure Incidents and Implications for Pharmacoepidemiology and Drug Safety. Poster presented at: The 42nd Annual Meeting of the International Society for Pharmacoepidemiology. Milan, Italy.

Moynihan E, Fryzek J, Dowling A, Rogers Murray C, Burns D, Orzechowski A. Real-World Evidence for AI-Enabled Medical Devices: A Lifecycle Review of Regulatory Guidance and Gaps. Poster presented at: The 42nd Annual Meeting of the International Society for Pharmacoepidemiology. Milan, Italy.

Burns DR, Kyle ML, Rogers Murray C, Watson H, Swaney JR, Spevack S, Leonhard M, Simon MA, Moynihan E, Lapane KL, Wang S, Longo C, Ritchey ME, Dore D. Evaluating the Cardiovascular Safety of Naltrexone/Bupropion in the United States. Poster presented at: The 40th International Conference on Pharmacoepidemiology. 2024 August 24-28. Berlin, Germany.

Rogers Murray C, Kyle ML, Burns D, Watson H, Swaney JR, Spevack S, Leonhard M, Moynihan E, Lapane KL, Wang S, Longo C, Ritchey ME, Dore D. Emulating a Clinical Trial to Assess the Fitness of Real-World Data for Evaluating the Cardiovascular Safety of Fixed-Dose Combination Naltrexone/Bupropion in the United States. Poster presented at: The 41st Annual Meeting of the International Society for Pharmacoepidemiology. Washington, DC, USA.

Invited Talks

Presented at University of Delaware, College of Health Sciences (October 2026)

Presented at University of Massachusetts Boston, Manning College of Nursing and Health Sciences, Urban Public Health (February 2026)

Presented at the Contract Research Organizations Career Panel, UMass Chan Medical School, Population and Quantitative Health Sciences (virtual, June 2025)

Presented at the MPH Alumni Career Panel, Brown University School of Public Health (Providence, Rhode Island, April 2015)

Presented at the MPH Alumni Career Panel, Brown University School of Public Health (Providence, Rhode Island, March 2016)

Presented at Alumni Career Panels for Consulting, Industry, and Academia, Pharmacoepidemiology Student Chapter at Harvard T.H. Chan School of Public Health (Boston, Massachusetts, March 2025)

Project Experience

FDA Postmarket Surveillance & Regulatory Science

- **Built and led scientific communications and transparency operations for the FDA Sentinel Initiative**, helping establish sustainable systems for a national active medical product safety surveillance program. Designed and refined standardized processes for reviewing, revising, and publicly communicating more than 400 descriptive and inferential analyses involving drugs, vaccines, biologics, and medical devices, helping ensure the accuracy, rigor, consistency, and transparency of evidence used by regulatory decision-makers and other stakeholders.

Cardiovascular Safety of Weight Loss Drugs

- **Supported the scientific and operational execution of a real-world evidence program addressing an unresolved cardiovascular safety question for extended-release naltrexone/bupropion.** Applied an active-comparator cohort design to evaluate major adverse cardiovascular events and a target trial emulation to benchmark an observational analysis against a randomized clinical trial to assess whether the data were fit for purpose.

Long-Term Care Data Infrastructure, Governance & Research

- **Managed technical operations and helped develop the Long-Term Care Data Cooperative into a national real-world data resource for a population historically underrepresented in clinical research.** Coordinated the integration of heterogeneous skilled-nursing-facility electronic health records into a longitudinal, interoperable, privacy-protected research resource while preserving clinical meaning across source systems. Helped establish data-access and research-review processes that balanced scientific value, provider priorities, privacy requirements, and consent pathways.

Pharmaceutical Product Liability & Epidemiology Litigation Support

- **Directed the epidemiologic evidence-review workstream supporting a pharmaceutical product safety claim.** Designed and managed a process for identifying, screening, abstracting, quality-checking, and synthesizing evidence from epidemiologic studies, clinical trials, systematic reviews, meta-analyses, pharmacovigilance analyses, and FDA adverse event information. Evaluated methodological quality, potential bias, confounding, heterogeneity, causal inference, and the relative strength of different evidence sources. Stabilized the project at critical moments by clarifying expectations, consolidating systems, establishing quality-control checkpoints, assigning accountable owners, and separating confidential workstreams. Translated the findings into defensible materials supporting expert report development and evaluation of opposing expert analyses.