

# Nate C. Apathy, PhD

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## Current Appointments

<b>Research Scientist</b> , National Center for Human Factors in Healthcare MedStar Health Research Institute, Washington, D.C.	Aug. 2022 – Present
<b>Affiliated Research Scientist</b> , Regenstrief Institute	2020 – Present

## Education

<b>PhD, Health Policy &amp; Management</b> Richard M. Fairbanks School of Public Health Dissertation: <i>Health information exchange use in primary care</i>	Indiana University, 2020 Indianapolis, IN
<b>BS, Business Administration</b> (summa cum laude) Economics, Behavioral and Cognitive Neuropsychology	Creighton University, 2011 Omaha, NE

## Prior Academic Appointments & Employment

<b>University of Pennsylvania Perelman School of Medicine</b> Postdoctoral Fellow, Health Services Research (AHRQ T32) Associate Fellow, Leonard Davis Institute of Health Economics	2020 – 2022
<b>Indiana University Fairbanks School of Public Health</b> <i>Department of Health Policy &amp; Management</i> Doctoral Student Fellowship, Health Informatics (NLM T15) Graduate Research Assistant to <i>Christopher A. Harle, PhD</i>	2016 – 2020 2017 – 2020 2016 – 2020
<b>Cerner Corporation</b> , Kansas City, MO	2011 – 2016

## Grants

Post-Doctoral Fellow, R33DA046085. (R21/R33). Nudging Primary Care Providers toward Guideline-Recommended Opioid Prescribing through Easier and More Convenient EHR Information Design. National Institute on Drug Abuse (NIDA). \$2,223,377. 2017-2022. PI: Christopher A. Harle, PhD

## Peer-Reviewed Publications

- Apathy, NC**; Rotenstein, LR; Bates, DW; Holmgren, AJ. [Documentation dynamics: Note composition, burden, and physician efficiency](#). *Health Services Research*. 2022.
- Holmgren, AJ; **Apathy, NC**. [Trends in US Hospital Electronic Health Record Vendor Market Concentration, 2012 – 2021](#). *Journal of General Internal Medicine*. 2022.
- Apathy, NC**; Hare, AJ; Fendrich, S; Cross DA. [I Had Not Time to Make it Shorter: An exploratory analysis of how physicians reduce note length and time in notes](#). *Journal of the American Medical Informatics Association*. 2022.
- Rotenstein, LR; **Apathy, NC**; Holmgren, AJ; Bates, DW. [Physician Note Composition Patterns and Time on the EHR Across Specialty Types: A National, Cross-Sectional Study](#). *Journal of General Internal Medicine*. 2022.
- Rule, A; Melnick, ER; **Apathy, NC**. [Using Event Logs to Observe Interactions with Electronic Health Records: An Updated Scoping Review Shows Increasing Use of Vendor-Derived Measures](#). *Journal of the American Medical Informatics Association*. 2022.

6. **Apathy, NC**; Howe, JL; Krevat, SA; Hettinger, AZ; Bates, DW; Classen, D; Ratwani, RM. [Federal Electronic Health Record Legal Settlements Since the HITECH Act](#). *JAMA Health Forum*. 2022.
7. **Apathy, NC**; Sanner, LM; Adams, MCB; Mamlin, B; Grout, R; Fortin, S; Hillstrom, J; Saha, A; Teal, E; Vest, JR; Menachemi, N; Hurley, RW; Harle, CA; Mazurenko, O. [Assessing the use of a clinical decision support tool for pain management in primary care](#). *JAMIA Open*. 2022;5(3).
8. Holmgren, AJ; **Apathy, NC**. [Assessing the Impact of Patient Access to Electronic Health Information on Clinician Electronic Health Record Documentation](#). *Journal of the American Medical Informatics Association*. 2022;29(10).
9. Rotenstein, LR; **Apathy, NC**; Bates, DW; Landon, B. [Variation in Support for Documentation Among Primary Care Physicians by Gender](#). *Journal of the American Board of Family Medicine*. 2022;35(4)
10. Mazurenko, O; Sanner, LM; **Apathy, NC**; Mamlin, BW; Menachemi, N; Adams, MCB; Hurley, RW; Fortin-Erazo, S; Harle, CA. [Evaluation of electronic recruitment efforts of primary care providers as research subjects during the COVID-19 pandemic](#). *BMC Primary Care*. 2022;23(95).
11. Rotenstein, LR; **Apathy, NC**; Landon, B; Bates, DW. [Assessment of Satisfaction With the Electronic Health Record Among Physicians in Physician-Owned vs Non-Physician-Owned Practices](#). *JAMA Network Open*. 2022;5(4).
12. **Apathy, NC**; Hare, AJ; Fendrich, S; Cross DA. [Early Changes in Billing and Notes after the Evaluation and Management Guideline Change](#). *Annals of Internal Medicine*. 2022;175(4).
13. **Apathy, NC**; Holmgren, AJ; Werner, RM. [Growth in health information exchange with ACO market penetration](#). *American Journal of Managed Care*. 2022;28(1).
14. Nguyen, OT; Turner, K; **Apathy, NC**; Magoc, T; Hanna, K; Merlo, LJ; Harle, CA; Thompson, LA; Berner, ES; Feldman, SS. [Primary care physicians' electronic health record proficiency and efficiency behaviors and time interacting with electronic health records](#). *Journal of the American Medical Informatics Association*. 2022;23(2).
15. Werner, RM; Templeton, Z; **Apathy, NC**; Skira, MM; Konetzka, RT. [Trends in post-acute care in US nursing homes: 2001 to 2017](#). *Journal of the American Medical Directors Association*. 2021;22(12).
16. **Apathy, NC**; Holmgren, AJ; Adler-Milstein, J. [A Decade Post-HITECH: Critical Access Hospitals have EHRs but Struggle to Keep Up with Other Advanced Functions](#). *Journal of the American Medical Informatics Association*. 2021;28(9).
17. **Apathy, NC**; Vest, JR; Adler-Milstein, J; Blackburn, J; Harle, CA. [Practice and market factors associated with provider volume of health information exchange](#). *Journal of the American Medical Informatics Association*. 2021;28(7).
18. Baxter, SL; **Apathy, NC**; Cross, DA; Sinsky, C; Hribar, ME. [Measures of electronic health record use in outpatient settings across vendors](#). *Journal of the American Medical Informatics Association*. 2021; 28(5).
19. Taylor, HL; **Apathy, NC**; Vest, JR. [Health information exchange use during dental visits](#). *AMIA Annual Symposium Proceedings*. 2020 Nov. *Student Paper Competition Finalist*
20. **Apathy, NC**; Everson, J. [High rates of partial participation in the first year of the Merit-Based Incentive Program](#). *Health Affairs*. 2020;39(9).
21. **Apathy, NC**; Harle, CA; Vest, JR; Morea, JG; Menachemi, N. [Use of electronic health records on days off: Comparing physicians to other EHR users](#). *Journal of General Internal Medicine*. 2020;36(4).
22. Holmgren, AJ; **Apathy, NC**. [Evaluation of Prescription Drug Monitoring Program Integration With Hospital Electronic Health Records by US County-Level Opioid Prescribing Rates](#). *JAMA Network Open*. 2020;3(6).
23. Holmgren, AJ; **Apathy, NC**; Adler-Milstein, J. [Barriers to Hospital Public Health Reporting and Implications for the COVID-19 Pandemic](#). *Journal of the American Medical Informatics Association*. 2020;27(8).

24. **Apathy, NC**; Holmgren, AJ. [Opt-in consent policies: potential barriers to hospital health information exchange](#). *American Journal of Managed Care*. 2020;26(1).
25. Comer, AR; **Apathy, NC**; Waite C; Bestmann Z; Bradshaw J; Burchfield E; Harmon B; Legg R; Meyer S; O'Brien P, Sabec M; Sayeed J; Weaver A; D'Cruz L; Bartlett S; Marchand M; Zepeda I; Finnell, JT; Grannis, S; Silverman, RD; Embi, PJ. [E-scooters: Assessing the Threat to Public Health and Safety in Setting Policies](#). *Chronicles of Health Impact Assessment*. 2020;5(1).
26. Holmgren, AJ; **Apathy, NC**. [Hospital adoption of API-enabled patient data access](#). *Healthcare: The Journal of Delivery Science and Innovation*. 2019;8.
27. Balio, CP; **Apathy, NC**; Danek, R. [Health information technology and accountable care organizations: synthesis of the literature and future directions](#). *eGEMs (Generating Evidence & Methods to improve patient outcomes)*. 2019;7(1):24.
28. **Apathy NC**; Yeager VA. [Examining Training Motivations Among Public Health Workers](#). *Journal of Public Health Management and Practice*. 2019;25(2), Public Health Workforce Interests and Needs Survey 2017: S157–65.
29. Harle, CA; **Apathy, NC**; Cook, RL; Danielson, EC; Dilulio, J; Downs, SM; Hurley, RW; Mamlin, BW; Militello, LG; Anders, S. [Information Needs and Requirements for Decision Support in Primary Care: An Analysis of Chronic Pain Care](#). *AMIA Annual Symposium Proceedings*. 2018 Nov.
30. **Apathy, NC**; Menser, T; Keeran, L; Ford, EW; Harle, CA; Huerta, TR. [Trends and gaps in awareness of direct-to-consumer genetic tests from 2007-2014](#). *American Journal of Preventive Medicine*. 2018 Jun 1;54(6).
31. Mosa, AS; Yoo, I; **Apathy, NC**; Ko, KJ; Parker, JC. [Secondary Use of Clinical Data to Enable Data-Driven Translational Science with Trustworthy Access Management](#). *Missouri Medicine*. 2015;112(6)

## Research in Progress

**Apathy, NC**; Holmgren, AJ. Value-based payment model participation and physician documentation burden. (Under Review)

**Apathy, NC**; Dixit, R; Boxley, C; Adams, K; Booker, E; Ratwani, RM. Variation Over Time in Physician Preferences for Telemedicine. (Under Review)

**Apathy, NC**; Holmgren, AJ; Cross, DA. The effects of physician documentation support. (In Preparation)

**Apathy, NC**; Holmgren, AJ; Greenstein, S. Innovation spillovers from government investment in information technology: evidence from the HITECH Act. (In Preparation)

**Apathy, NC**; Cross, DA; Holmgren, AJ. Clinical notes continue to expand despite federal policies to curb bloat. (In Preparation)

Rule, A; Holmgren, AJ; **Apathy, NC**. Differences in the Use of Voice Recognition in the Ambulatory Setting Across Primary Care, Medical, and Surgical Specialties. (Under Review)

Cross, DA; Holmgren, AJ; **Apathy, NC**. Variation in EHR Use Within and Across Organizations. (Under Review)

Templeton, ZS; **Apathy, NC**; Konetzka RT; Skira M; Werner RM. The Effects of Nursing Home Specialization in Post-Acute Care. (Revise & Resubmit)

Holmgren, AJ; Rotenstein, LR; **Apathy, NC**; Sinsky, C; Bates, DW; Adler-Milstein, J. National Trends in Physician-Patient Messaging Volume, 2019 – 2022. (In Preparation)

## Book Chapters

Dixon, BE; Rahrkar, S; & **Apathy, NC**. Health Information Exchange. In: Magnuson, JA; Dixon, BE, editors. *Public Health Informatics and Information Systems*, 3<sup>rd</sup> edition. Springer London. August 2020.

## Patents

Harle, CA; Mamlin, B; Hurley, RW; **Apathy, NC**; Downs, SM; Dilulio, J. *Methods and Systems for Risk Assessment and Risk Prediction in Opioid Prescriptions and Pain Management Treatment*. US Patent Appln. No. 2021/0050113A1. Pub. Date Feb 18, 2021.

## Invited Speaking

Yale University & American Medical Association EHR Use Measurement Consensus Conference, Nov. 2022  
National Academy of Medicine [Clinician Wellbeing Convening on Reducing Documentation Burden](#), Jan. 2022  
The Practice of Medicine: MIPS and the Social Determinants of Health, Oct. 2020 [Health Affairs Event](#)  
National Library of Medicine & Support for Health Services Research, Aug. 2020

## Research Interests

Health Information Technology	Health IT Policy	Population Health Informatics
Health Information Exchange	Health IT Use & Quality Measurement	Health Economics

## Honors & Awards

Delta Omega (Public Health Honors Society)	April 2020
Med About Data Hackathon (Haifa, Israel) – Second Place	March 2019
IUPUI University Fellowship	Aug. 2016 – Jul. 2017
Population Health Leadership Development Program	Jan. 2015 – Dec. 2015
Cerner Masters Award	Aug. 2014

## Professional Memberships

American Medical Informatics Association (AMIA)	2013 – Present
AcademyHealth	2016 – Present
American Society of Health Economists	2020 – Present
American Public Health Association	2019 – 2020
Health Information & Management Systems Society (HIMSS)	2016 – 2021

## Editorial Service

Peer Review: *Health Affairs*; *Milbank Quarterly*; *Health Services Research*; *American Journal of Managed Care*; *Journal of General Internal Medicine*; *JAMA Network Open*; *Journal of the American Medical Informatics Association*; *Applied Clinical Informatics*; *Journal of Medical Internet Research*; *Digital Health, Risk Management & Healthcare Policy*; *Health Policy & Technology*; *PLoS One*; *International Journal of Health Economics & Management*; *Medical Care*

International Conference on Information Systems, 2019 & 2021	Conference Submission Review
AcademyHealth Annual Research Meeting, 2019-2023	Theme Reviewer & Session Chair
<i>Digital Technologies, Data, and Data Science Theme</i>	
AMIA Annual Symposium	Conference Submission Review
AMIA Informatics Summits	Conference Submission Review

## Teaching

H320: Health Systems Administration	Guest Lecturer	Fall 2019
H325: Health Information Technology Management & Policy	Instructor ( <i>rating: 4.7/5</i> )	Fall 2018, Fall 2019
E335: Chronic Disease Epidemiology	Guest Lecturer	Spring 2018
H628: Healthcare Information Systems	Teaching Assistant	Spring 2017, Spring 2019

## Open Source Software & Web Applications

<a href="#">ncaMisc R package</a>	rvest, ggplot2, scholar, etc.	v0.1.0 released April 2022
<i>Set of R functions that I use in my research projects, available for others to install via GitHub: <a href="https://github.com/nateapathy/ncaMisc">github.com/nateapathy/ncaMisc</a>. Features Google Scholar scraping function &amp; ggplot2 theme</i>		
<a href="#">Economics Seminar Diversity</a>	RShiny Dashboard w/ ggplot2	v2.0.0 deployed August 2019
<i>Interactive visualizations of invited seminar speakers to examine representation of female and under-represented minority economists at university economics departments</i>		
<a href="#">CHF Risk Prediction Tool (Demo)</a>	RShiny, randomForest, & ggplot2	v1.2.1 deployed March 2019
<i>Interactive visualization of risk scores for CHF at the population level, with option to view individual level risk factors underlying low, rising, or high-risk prediction</i>		
<a href="#">Opioid Prescribing Rate Visualization Tool</a>	RShiny, ggplot2, & leaflet	v2.0.0 deployed August 2018
<i>Interactive mapping visualization of CDC prescribing rates and changes over time by county and state</i>		
EHR Survey Response Visualizer	RShiny & ggplot2	v2.0.0 released Dec 2018
<i>Interactive tool to analyze responses to a user satisfaction survey administered during an electronic health record transition at a large public safety net hospital</i>		

## Leadership & Service

National Research Network Audit Log Measures Workgroup, Co-Chair	Spring 2020 – Current
AMIA Advancing Health Equity & Antiracism in Healthcare Subcommittee, Member	Fall 2021 – Current
Leonard Davis Institute Associate Fellows Bootcamp: Intro to R, Instructor	November 2021
Summer Undergraduate Minority Research Scholars Program, R Tutor	Summer 2021
AMIA Annual Symposium, Session Moderator	Fall 2019
Collaborating Across Borders VII Conference, Session Moderator	Fall 2019
Indiana State Department of Health R Training Workshop, Instructor	July 2019
AMIA Policy Response Team, ONC Notices of Proposed Rulemaking	
<i>Draft Federal Health IT Strategic Plan</i>	Spring 2020
<i>21<sup>st</sup> Century Cures, Information Blocking</i>	Spring 2019
NLM Informatics Training Conference, 2018 & 2019	
<i>Student Planning Committee Co-Chair</i>	Nov. 2018 – June 2019
<i>Student Planning Committee Member</i>	Jan. 2018 – June 2018
AcademyHealth Student Competition: Identifying Gaps in HSR, Judge	April 2018
hsR: Using R for Health Services Research, Workshop Instructor	Spring 2018
AcademyHealth Student Chapter at IUPUI, President & Co-Founder	Feb. 2017 – March 2019

## Press Coverage

Physicians with their own practices are more satisfied with EHRs, [Becker's Hospital Review](#), May 2022

Clinicians at Physician-Owned Practices Have Greater EHR Satisfaction, [EHRIntelligence.com](#), Apr. 2022

Early Changes in Billing and Notes after the Evaluation and Management Guideline Change, *Annals of IM Annals on Call* (*Annals of Internal Medicine Podcast*), Apr 2022

[HealthDay News](#), Feb 2022 | [Medical Xpress](#), Feb 2022 | [Science Magazine](#), Feb 2022

To alleviate EHR burdens, teamwork makes the dream work, [HealthcareIT News](#), Dec. 2021

Care Team EHR Documentation Support May Alleviate Clinician Burden, [EHRIntelligence.com](#), Dec. 2021

Critical access hospitals lag behind in advanced EHR use functions, [Healthcare IT News](#), Jul. 2021

Half of Providers Don't Utilize Health Information Exchange, [EHRIntelligence.com](#), Mar. 2021

Barriers to Hospital Public Health Reporting and Implications for the COVID-19 Pandemic, *JAMIA*

[Healthcare IT News](#), Oct. 2020 | [Becker's Hospital Review](#), May 2020

[Healthcare IT News](#), May 2020 | [Healthcare Dive](#), May 2020

What the Fax? [Tradeoffs podcast episode](#), May 12, 2020

Opt-In Health Information Exchange Drive Administrative Burden, [EHRIntelligence.com](#), Jan. 2020

API growing pains. [POLITICO Morning eHealth](#), Sept. 2019

IUPUI PhD student unpacks the impact scooters are having on Indianapolis, [FOX59 Indianapolis](#), April 2019

Researcher's data shows how Indianapolis is using scooters. [IndyStar](#), Mar. 2019

Lyft warns it may never make any money. [Oversharing](#), Mar. 2019