

A Jay Holmgren, PhD

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ACADEMIC POSITIONS

Assistant Professor of Medicine

University of California, San Francisco

Division of Clinical Informatics and Digital Transformation (DoC-IT)

Department of Medicine

2021 - Current

Affiliated Faculty Member

UCSF Bakar Computational Health Sciences Institute

UCSF Philip R. Lee Institute for Health Policy Studies

UCSF and UC Berkely Joint Program in Computational Precision Health

2021 - Current

Senior Advisor

Stanford Clinical Excellence Research Center

Stanford University

2022 - Current

EDUCATION

PhD, Health Policy – Management

Harvard University; 2021

Master of Health Informatics

University of Michigan; 2017

BA, History

University of Michigan; 2011

AWARDS AND FELLOWSHIPS

Best Young Researcher Award, Conference on Health IT and Analytics (CHITA) 2023

NIH Loan Repayment Program Award (National Library of Medicine), 2022 - 2024

Best Paper Award, Medical Informatics Europe 2022 for “Patient Safety Informatics: Criteria Development for Assessing the Maturity of Digital Patient Safety in Hospitals.”

Best Student Paper Award, Conference on Health IT and Analytics (CHITA) 2020 for “The Impact of Quality Feedback on Hospital IT Safety Improvement.”

Brigham & Women’s Hospital *Partners in Excellence* Award for Research on “Building Safer Electronic Health Records.”

Harvard Barbara and Theodore P. Janulis Graduate Fellowship

Harvard University Derek Bok Center Certificate of Distinction and Excellence in Teaching

FUNDING SUPPORT AND GRANTS

Active

- **Assessing EHR Documentation Burden Across Payment Models** (\$300,000)
 - Role: Co-Principal Investigator (Co-PI: Apathy)
 - Sponsor: Office of the National Coordinator for Health IT
 - Dates: 11/2023 – 09/2024
- **CalAIM County Health IT Gap Assessment** (\$132,358)
 - Role: Co-Investigator (PI: Adler-Milstein)
 - Sponsor: California Health Care Foundation
 - Dates: 07/2023 – 05/2024
- **Trusted Exchange Framework and Common Agreement (TEFCA) Recognized Coordinating Entity Evaluation** (UCSF Subcontract: \$474,387)
 - Role: Co-Principal Investigator (Co-PI: Adler-Milstein)
 - Sponsor: Office of the National Coordinator for Health IT
 - Dates: 09/2023 – 08/2028
- **Evaluating the Impact of Billing Patient Messages as E-Visits on Clinician EHR Burden** (\$59,796)
 - Role: Principal Investigator

- Sponsor: American Medical Association
- Dates: 05/2023 – 04/2024

- **Assessing the Effect of Telemedicine on Physician EHR Work, Cognition, and Process Outcomes (ASPIRE)** (\$1,377,276)
 - Role: Co-Investigator (PI: Adler-Milstein & Kannampallil)
 - Sponsor: NIH National Library of Medicine R01LM013778
 - Dates: 07/2021 – 05/2025

- **Building a UCSF-Stanford Clinical Informatics Collaboration Strategy** (\$300,000)
 - Role: Principal Investigator
 - Sponsor: Stanford University
 - Dates: 10/2021 – 09/2025

Completed

- **Establishing National Benchmarks of Physician EHR Burden** (\$18,856)
 - Role: Principal Investigator
 - Sponsor: American Medical Association
 - Dates: 10/2023 – 01/2024

- **Understanding the Impact of Inbox Messages in Primary Care Clinician EHR Burden** (\$50,000)
 - Role: Co-Principal Investigator (Co-PI: Rotenstein)
 - Sponsor: American Medical Association
 - Dates: 01/2023 – 12/2023

- **Reviewing the Evidence on Payment Policy and EHR Documentation Burden** (\$47,029)
 - Role: Co-PI (Co-PI: Apathy)
 - Sponsor: Office of the National Coordinator for Health IT
 - Dates: 04/2023 – 09/2023

- **Managing the EHR Inbox: A National Conference** (\$20,000)
 - Role: Principal Investigator
 - Sponsor: American Medical Association
 - Dates: 05/2023

- **Measuring What Matters: Characterizing Practice Strategies for Inbox Management and Assessing Associated EHR Audit Log Measures** (\$50,000)
 - Role: Principal Investigator

- Sponsor: American Medical Association
- Dates: 05/2022 – 04/2023
- **Sustaining Digital Patient-Clinician Communication in the Post-COVID Period: Insights from National EHR Data** (\$37,000)
 - Role: Principal Investigator
 - Sponsor: UCSF Resource Allocation Grant Award
 - Dates: 01/2022 – 06/2023
- **Assessing the Impact of the COVID-19 Shift to Telemedicine on Physician Work via Electronic Health Record Audit Log Data** (\$50,000)
 - Role: Principal Investigator
 - Sponsor: American Medical Association
 - Dates: 06/2021 – 06/2022
- **Interoperability in US Health Care: How the Private Sector Can Supplement Measurement** (\$19,716)
 - Role: Co-PI (Co-PI: Adler-Milstein)
 - Sponsor: Healthcare Leadership Council
 - Dates: 07/2021 – 09/2021

PEER-REVIEWED PUBLICATIONS

1. Apathy, N. C., Patel, V. P., Rolle, T. L., & **Holmgren, A. J.** (In Press) Physicians in ACOs Report Greater Documentation Burden. *American Journal of Managed Care*.
2. Liu, T., Zhu, Z., **Holmgren, A. J.**, & Ellimoottil, C. (2024) National Trends in Billing Patient Portal Messages as E-Visit Services in Traditional Medicare. *Health Affairs Scholar*. Volume 2, Issue 4, April 2024, qxae040, doi:10.1093/haschl/qxae040
3. **Holmgren, A. J.**, Oakes, A. H., Miller, A., Adler-Milstein, J., & Mehrotra, A. (2024) National Trends in Billing Secure Messages as E-Visits. *JAMA: Journal of the American Medical Association*. Published online January 10, 2024. doi:10.1001/jama.2023.26584
4. Rotenstein, L. S., **Holmgren, A. J.**, Horn, D. M., Lipsitz, S., Phillips, R., Gitomer, R., & Bates, D. W. (2023) System-Level Factors and Time Spent on Electronic Health Records by Primary Care Physicians. *JAMA Network Open*. 2023;6(11):e2344713. doi:10.1001/jamanetworkopen.2023.44713
5. **Holmgren, A. J.**, Thombly, R., Sinsky, C., & Adler-Milstein, J. (2023) Changes in Physician Electronic Health Record Use With the Expansion of Telemedicine. *JAMA*

- Internal Medicine*. Published online October 30, 2023.
doi:10.1001/jamainternmed.2023.5738.
6. Sinha, S., **Holmgren, A. J.**, Hong, J. C., & Rotenstein, L. S. (2023) Ctrl-C: A Cross-Sectional Study of the EHR Usage Patterns of US Oncology Clinicians. *JNCI Cancer Spectrum*. 2023;, pkad066, doi:10.1093/jncics/pkad066
 7. Pantell, M. S., **Holmgren, A. J.**, Iott, B., Neuhas, J., Adler-Milstein, J., & Gottlieb, L. M. (2023) Social and Medical Care Integration Practices Among Children’s Hospitals. *Hospital Pediatrics*. October 2023; 13 (10): 886-894. doi:10.1542/hpeds.2023-007246
 8. Rotenstein, L. S.*, & **Holmgren, A. J.***. (2023) COVID Exacerbated the Gender Disparity in Physician Electronic Inbox Burden. *Journal of the American Medical Informatics Association*. Published online July 12, 2023:ocad141.
doi:10.1093/jamia/ocad141
 9. Cross, D. A., **Holmgren, A. J.**, & Apathy, N. C. (2023) The Role of Organizations in Shaping Physician Use of Electronic Health Records (EHRs). *Health Services Research*. doi:10.1111/1475-6773.14203.
 10. **Holmgren, A. J.**, Esdar, M., Hüsters, J., & Coutinho-Almeida, J. (2023) Health Information Exchange: Understanding the Policy Landscape and Future of Data Interoperability. *IMIA Yearbook of Medical Informatics*. Published online July 6, 2023. doi:10.1055/s-0043-1768719.
 11. Hendrix, N., Bazemore, A., **Holmgren, A. J.**, Rotenstein, L. S., Eden, A. R., Krist, A. H., Phillips, R. L. (2023) Variation in Family Physicians’ Experiences Across Different Electronic Health Record Platforms. *Journal of General Internal Medicine*.
doi:10.1007/s11606-023-08169-5
 12. **Holmgren, A. J.**, Byron, M. E., Grouse, C. K., & Adler-Milstein, J. (2023) Association Between Billing Patient Portal Messages as E-Visits and Patient Messaging Volume. *JAMA: Journal of the American Medical Association*. Published online January 06, 2023. doi:10.1001/jama.2022.24710
 13. Grouse, C. K., Waung, M. W., **Holmgren, A. J.**, Mongan, J., Neinstein, A., Josephson, A. S., & Khanna, R. R. (2022) Behavioral “Nudges” in the Electronic Health Record to Reduce Waste and Misuse: Three Interventions. *Journal of the American Medical Informatics Association*. ocac238, doi:10.1093/jamia/ocac238.
 14. Tang, M., **Holmgren, A. J.**, McElerath, E. E., Bhatt, A. S., Varshney, A. S., Lee, S. G., Vaduganathan, M, Adler, D. S., & Huckman, R. S. (2022) Investigating the Association Between Telemedicine Use and Timely Follow-up Care after Acute Cardiovascular Hospital Encounters. *JACC: Advances*. Dec, 1 (5) 1–12. oi:10.1016/j.jacadv.2022.100156

15. Cross, D. A., Adler-Milstein, J., & **Holmgren, A. J.** (2022) Management Opportunities and Challenges after Achieving Widespread Health System Digitization. *Advances in Health Care Management*. 2022;67-87. doi:10.1108/S1474-823120220000021004
16. Rotenstein, L. S., Apathy, N. C., **Holmgren, A. J.**, & Bates, D. W. (2022) EHR Documentation Patterns and Time on the EHR Across Specialties: A National, Cross-Sectional Study. *Journal of General Internal Medicine*. doi:10.1007/s11606-022-07834-5
17. Apathy, N.C., Rotenstein, L. S., Bates, D. W., & **Holmgren, A. J.** (2022) Documentation Dynamics: EHR note composition, burden, and physician efficiency. *Health Services Research*. doi:10.1111/1475-6773.14097.
18. **Holmgren, A. J.**, & Apathy, N. C. (2022) Trends in US Hospital Electronic Health Record Vendor Market Concentration, 2012 – 2021. *Journal of General Internal Medicine*. doi:10.1007/s11606-022-07917-3.
19. Rotenstein, L. S., **Holmgren, A. J.**, Healey, M. J., Horn, D., Ting, D. Y., Lipsitz, S., Salmasian, H., Gitomer, R., & Bates, D. W. (2022) The Relationship Between Electronic Health Record Time and Quality of Care Metrics in Primary Care. *JAMA Network Open*. 2022;5(10):e2237086. doi:10.1001/jamanetworkopen.2022.37086.
20. **Holmgren, A. J.**, & Apathy, N. C. (2022) Assessing the Impact of Patient Access to Electronic Health Information on Clinician Electronic Health Record Documentation. *Journal of the American Medical Informatics Association*. ocac120, doi:10.1093/jamia/ocac120
21. Kutza, J. O., Hubner, U, **Holmgren, A. J.**, & Esdar, M. (2022) Patient Safety Informatics: Criteria development for assessing the maturity of digital patient safety in hospitals. *Studies in Health Technology and Informatics*. IOS Press; 2022. doi:10.3233/SHTI220618. *Winner, Best Paper Award, Medical Informatics Europe 2022*.
22. **Holmgren, A. J.***, Rotenstein, L. S.*, Downing, N. L., Bates, D. W., & Schulman, K. (2022) Association Between State-level Medical Malpractice and Clinician Electronic Health Record Use. *Journal of the American Medical Informatics Association*. ocac034, doi:10.1093/jamia/ocac034
23. Arvisais-Anhalt, S., Lau, M., Lehmann, C. U., **Holmgren, A. J.**, Medford, R. J., Ramirez, C. M., & Chen, C. (2022) The 21st Century Cures Act and Multi-User Electronic Health Record Access. *JMIR*. 2022;24(2):e34085. doi:10.2196/34085
24. **Holmgren, A. J.**, Everson, J., & Adler-Milstein, J. (2022) Association of Hospital Interoperable Data Sharing and Alternative Payment Model Participation. *JAMA Health Forum*. 2022;3(2):e215199. doi:10.1001/jamahealthforum.2021.5199

25. Apathy, N. C., **Holmgren, A. J.**, & Werner, R. M. (2022) Growth in Health Information Exchange with ACO Market Penetration. *American Journal of Managed Care*. 2022;28(1):e7-e13. doi:10.37765/ajmc.2022.88815. *Health IT Special Issue*.
26. **Holmgren, A. J.***, Downing, N. L.*, Tang, M., Sharp, C., Longhurst, C., & Huckman, R. S. (2021) Assessing the Impact of the COVID-19 Pandemic on Clinician Ambulatory Electronic Health Record Use. *Journal of the American Medical Informatics Association*. ocab268, doi:10.1093/jamia/ocab268
27. **Holmgren, A. J.**, & Bates, D. W. (2021) The Association of Public Quality Reporting of Hospitals with Electronic Health Record Medication Safety Performance. *JAMA Network Open*. 2021;4(9):e2125173. doi:10.1001/jamanetworkopen.2021.25173
28. **Holmgren, A. J.**, Lindeman, B., & Ford, E. W. (2021) Resident Physician Experience and Duration of Electronic Health Record Use. *Applied Clinical Informatics*. 12(4):8. doi:10.1055/s-0041-1732403
29. **Holmgren, A. J.**, Kuznetsova, M, Classen, D. C., & Bates, D. W. (2021) Assessing Hospital Electronic Health Record Vendor Performance Across Publicly Reported Quality Measures. *Journal of the American Medical Informatics Association*. ocab120, doi.org/10.1093/jamia/ocab120
30. **Holmgren, A. J.**, Cutler, D., & Mehrotra, A. (2021) The Increasing Role of Physicians as Bill Collectors: Destined for Failure. *JAMA: Journal of the American Medical Association*. Published online July 30, 2021. doi:10.1001/jama.2021.12191
31. Rotenstein, L. S.*, **Holmgren, A. J.***, Downing, N. L., Longhurst, C. A., & Bates, D. W. (2021) Differences in EHR Use Between Adult and Pediatric Primary Care Ambulatory Clinicians. *JAMA Network Open*. 2021;4(7):e2116375. doi:10.1001/jamanetworkopen.2021.16375
32. Apathy, N. C., **Holmgren, A. J.**, & Adler-Milstein, J. (2021) 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*. ocab102, doi.org/10.1093/jamia/ocab102
33. **Holmgren, A. J.**, Phelan, J., Jha, A. K., & Adler-Milstein, J. (2021) Hospital Organizational Strategies to Enable Advanced EHR Adoption. *Health Services Research*. 2021;00:1–11. <https://doi.org/10.1111/1475-6773.13655>
34. Rotenstein, L. S., **Holmgren, A. J.**, Downing, N. L., & Bates, D. W. (2021) Differences in Total and After-Hours Electronic Health Record Time Across Ambulatory Specialties. *JAMA Internal Medicine*. doi:10.1001/jamainternmed.2021.0256

35. Co, Z., **Holmgren, A. J.**, Classen, D. C., Newmark, L. P., Seger, D., Cole, J. M., Zimmer, K. P., Pon, B., & Bates, D. W. (2021) The Development and Piloting of the Ambulatory Electronic Health Record (EHR) Evaluation Tool: Lessons Learned. *Applied Clinical Informatics*. 12(01): 153-163. doi: 10.1055/s-0041-1722917.
36. Thompson, S. C., **Holmgren, A. J.**, & Ford, E. W. (2021) Information System Use Antecedents of Nursing Employee Turnover in a Hospital Setting. *Health Care Management Review*.
37. **Holmgren, A. J.**,* Downing, N. L.,* Bates, D. W., Shanafelt, T., Milstein, A., Sharp, C., Cutler, D., Huckman, R. S., & Schulman, K. (2020) Assessment of Electronic Health Record Use Between US and Non-US Health Systems. *JAMA Internal Medicine*. doi:10.1001/jamainternmed.2020.7071
38. Co, Z., **Holmgren, A. J.**, Classen, D. C., Newmark, L. P., Seger, D., Danforth, M., & Bates, D. W. (2020) The Tradeoffs Between Safety and Alert Fatigue: Data from a National Evaluation of Hospital Medication-related Clinical Decision Support. *Journal of the American Medical Informatics Association*. ocaa098, <https://doi.org/10.1093/jamia/ocaa098>. *Highlighted in AMIA "Year in Review" Award Session at AMIA Annual Symposium 2020*.
39. **Holmgren, A. J.**, & Apathy, N. C. (2020) 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):e209085. doi:10.1001/jamanetworkopen.2020.9085
40. **Holmgren, A. J.**, Botelho, A., & Brandt, A. M. (2020) A History of Prescription Drug Monitoring Programs in the United States: Political Appeal and Public Health Efficacy. *American Journal of Public Health*. no.(): pp. e1-e7. doi:10.2105/AJPH.2020.305696
41. Classen, D. C., **Holmgren, A. J.**, Co, Z., Newmark, L. P., Seger, D., Danforth, M., & Bates, D. W. (2020) National Trends in the Safety Performance of Electronic Health Record Systems: 2009-2018. *JAMA Network Open*. 2020;3(5):e205547. doi:10.1001/jamanetworkopen.2020.5547
42. **Holmgren, A. J.**, Apathy, N. C., & Adler-Milstein, J. (2020) Barriers to Hospital Public Health Reporting and Implications for the COVID-19 Pandemic. *Journal of the American Medical Informatics Association*. ocaa112, doi:10.1093/jamia/ocaa12
43. Levine, D. M., Co, Z., Newmark, L.P., Groisser, A. R., **Holmgren, A. J.**, Haas, J.S., & Bates, D.W. (2020) Design and Testing of a Mobile Health Application Rating Tool. *npj Digital Medicine*. 3, 74 (2020). <https://doi.org/10.1038/s41746-020-0268-9>

44. Apathy, N. C., & **Holmgren, A. J.** (2020) State Laws and Health Information Exchange: Regulatory Barriers to Hospital Patient Data Sharing. *American Journal of Managed Care*. 26(1), e14-e20. *Health IT Special Issue*.
45. **Holmgren, A. J.**, & Apathy, N. C. (2019) Hospital Adoption of API-Enabled Patient Data Access. *Healthcare: The Journal of Delivery Science & Innovation*. doi:10.1016/j.hjdsi.2019.100377
46. **Holmgren, A. J.**, Co, Z., Newmark, L. P., Danforth, M., Classen, D. C., & Bates, D. W. (2019) Assessing the Safety of Electronic Health Records: A National Longitudinal Study of Medication-Related Decision Support. *BMJ Quality & Safety*, Published Online First: 18 July 2019. doi:10.1136/bmjqs-2019-009609
47. **Holmgren, A. J.**, Adler-Milstein, J., & Chen, L.M. (2018) Participation in a Voluntary Bundled Payment Program by Organizations Providing Care After an Acute Hospitalization. *JAMA: Journal of the American Medical Association*, 320(4), 402-404. doi:10.1001/jama.2018.8666
48. **Holmgren, A. J.**, & Ford, E.W. (2018) Assessing the Impact of Health System Organizational Structure on Hospital Electronic Data Sharing. *Journal of the American Medical Informatics Association*, 25(9), 1147-1152. doi:10.1093/jamia/ocy084
49. **Holmgren, A. J.**, Adler-Milstein, J., & McCullough, J. (2018). Are all certified EHRs created equal? Assessing the relationship between EHR vendor and hospital meaningful use performance. *Journal of the American Medical Informatics Association*, 25(6), 654-660. doi:10.1093/jamia/ocx135. Awarded *Editor's Choice*.
50. **Holmgren, A. J.**, Patel, V., & Adler-Milstein, J. (2017) Progress in Interoperability: Measuring US Hospital Engagement in Sharing Patient Data. *Health Affairs*, 36(10), 1820-1827.
51. Adler-Milstein, J., **Holmgren, A. J.**, Kralovec, P., Worzala, C., Searcy, T., & Patel, V. (2017) Electronic Health Record Adoption in US Hospitals: The Emergence of a Digital “Advanced Use” Divide. *Journal of the American Medical Informatics Association*. ocx080, doi: 10.1093/jamia/ocx080. Awarded *Editor's Choice*.
52. **Holmgren, A. J.**, & Adler-Milstein, J. (2017) Health Information Exchange in U.S. Hospitals: The Current Landscape and a Path to Improved Information Sharing. *Journal of Hospital Medicine*, 12(3), 193-198. doi:10.12788/jhm.2704
53. **Holmgren, A. J.**, Pfeifer, E., Manojlovich, M., & Adler-Milstein, J. (2016). A Novel Survey to Examine the Relationship between Health IT Adoption and Nurse-Physician Communication. *Applied Clinical Informatics*, 7(4), 1182-1201. doi:10.4338/ACI-2016-08-RA-0145

54. **Holmgren, A. J.**, Patel, V., Charles, D., & Adler-Milstein, J. (2016). US Hospital Engagement in Core Domains of Interoperability. *American Journal of Managed Care*, 22(12), e395-e402.

* Denotes co-first authorship

RESEARCH IN PROGRESS

1. **Holmgren, A. J.**, Adler-Milstein, J & Apathy, N. C. EHR Documentation Burden Crowds Out Health Information Exchange Use. Revise & Resubmit at *Health Affairs*.
2. Apathy, N. C., **Holmgren, A. J.**, & Cross, D. A. The Effects of Team-Based Documentation Support. Revise & Resubmit at *JAMA Internal Medicine*.
3. Apathy, N. C., Biro, J., & **Holmgren, A. J.** Consistency is Key: Documentation distribution and efficiency in primary care. Revise & Resubmit at *Journal of the American Medical Informatics Association*.
4. **Holmgren, A. J.**, Sinsky, C., Rotenstein, L. S., & Apathy, N. C. National Comparison of Ambulatory Physician Electronic Health Record Use Across Specialties. Revise & Resubmit at *Journal of General Internal Medicine*.
5. **Holmgren, A. J.**, Hendrix, N., Maisel, N., Everson, J. E., Bazemore, A., Rotenstein, L. S., Phillips, R. L., & Adler-Milstein, J. Assessing the Relationship Between EHR Usability, Satisfaction, and Burnout for Family Physicians. Revise & Resubmit at *JAMA Network Open*.
6. Hendrix, N., Maisel, N., Everson, J. E., Patel, V., Bazemore, A., Rotenstein, L. S., **Holmgren, A. J.**, Krist, A. H., Adler-Milstein, J., & Phillips, R. L. Impact of Response Bias in Three Surveys on Primary Care Providers' Experiences with Electronic Health Records. Revise & Resubmit at *Journal of the American Medical Informatics Association*.

BOOK CHAPTERS

Holmgren, A. J., Steitz, B. D., Lou, S. S., & Apathy, N. C. Using Electronic Health Record Metadata to Understand Clinician Work and Behavior. In: Zheng, K., Westbrook, J., Patel, V. L. Editors. *Cognitive Informatics in Biomedicine and Healthcare*. Springer Nature Press. In Press.

Dixon, B.E., **Holmgren, A. J.**, Adler-Milstein, J., & Grannis, S. J. Health Information Exchange and Interoperability. In: Finnell, J. T.; Dixon, B. E. Editors. *Clinical Informatics Study Guide*. Springer Nature Switzerland. 2022. doi:10.1007/978-3-030-93765-2_14, ISBN 978-3-030-93764-5

OTHER PUBLICATIONS

Gale, B., Mossburg, S., **Holmgren, A. J.**, & McBride, S. (2023) [Technology as a Tool for Improving Patient Safety](#). *AHRQ Patient Safety Network Annual Perspective*.

Holmgren, A. J. (2023) The Health Information Technology Special Issue: Tackling New Challenges to Digital Transformation. *American Journal of Managed Care*. 2023;29(1):17-18. doi:10.37765/ajmc.2023.89299

Holmgren, A. J. (2019) The Prescribing Panopticon: A History of Prescription Drug Monitoring Programs. *The Opioid Epidemic in Historical Perspective: An Anthology*. <https://projects.iq.harvard.edu/historyopioidepidemic/holmgren>

Holmgren, A. J. & Adler-Milstein, J. (2019) Does Electronic Health Record Consolidation Follow Hospital Consolidation? *Health Affairs Forefront*.

Holmgren, A. J., & Ford, E.W. (2018) Health System Organizational Structure and Hospital Electronic Data Sharing. *Proceedings of the Seventy-Eighth Annual Meeting of the Academy of Management*.

INVITED PRESENTATIONS

“Digital Tools for Transforming Health Care Value: Turning Data into Knowledge.” Value-Based Health Care (VBHC) Center Europe. Keynote Speaker. May 2024.

“Unraveling the Health IT Productivity Paradox.” University of Utah Division of Epidemiology. May 2024.

“Billing Patient-Initiated Secure Messages as E-Visits: Lessons from the UCSF Experience.” Center for Telehealth and e-Health Law. March 2024.

“Exploring the Relationship between Payment Models and Documentation Burden” Office of the National Coordinator for Health IT Annual Meeting. December 2023.

“Unraveling the Health IT Productivity Paradox.” University of Michigan School of Public Health, Department of Health Management and Policy. November 2023.

“Technology, Communication, and Care: Managing the EHR Inbox for Patients and Clinicians.” Baystate Health. May 2023.

“Signal in Research: Understanding Note Composition Effects” with Nate Apathy and Lisa Rotenstein. Epic Systems. March 2023.

“Differences in Physician EHR Use Between Virtual and In-Person Care Delivery” EHR Audit Log National Research Network. November 2022.

“Signal in Research: Evaluating MyChart Messaging Volume Changes in the Post-COVID World” Epic Systems. October 2022.

“Healthcare’s Digital Footprint: Developing a Research Agenda Grounded in Patient, Clinician, and Management Engagement with Data and Technology” Moderated Panel. Academy of Management HCM Micro-Conference. August 2022.

“Turning Digital Fumes into a Breath of Fresh Air” with Julia Adler-Milstein. UCSF Osher Mini Medical School. May 2022.

“Exploring the Next Chapter of Interoperability” with Tom Skelton, Judy Faulkner, and Mary Grealy. MedCity Webinar Sponsored by SureScripts. April 2022.

“Electronic Health Records: Moving Beyond Adoption to Evaluating Implementation, Use, and Impact.” UC Berkeley Health Services Research Colloquium. April 2022.

“Policy Insights from Clinician EHR Metadata During the COVID-19 Pandemic.” UCSF Philip R. Lee Institute for Health Policy Studies Grand Rounds. March 2022.

“Measuring Electronic Health Record Use with Audit Log Metadata.” University of Texas Southwestern Informatics Colloquium. February 2022.

“The Impact of Public Quality Reporting on EHR Clinical Decision Support Improvement.” Stanford Biomedical Informatics Research Colloquium. October 2021.

“Physician Burden, High Deductible Health Plans, & Physicians as Bill Collectors” with Ateev Mehrotra, MD. Connecticut State Medical Society Annual Meeting. October 2021.

“Clinician EHR Use During the COVID-19 Pandemic.” UCSF Health Informatics Grand Rounds. September 2021.

“The Use, Performance, and Evaluation of Electronic Health Records.” University of California San Francisco Informatics Core Seminar. November 2020.

“The Impact of Feedback on Hospital Quality Improvement: Evidence from a National Evaluation of Clinical Decision Support.” HBS Digital Workshop. October 2020.

“EMR Patient Safety Effectiveness Study: Medical Errors Still Persist” with David Classen, MD. The Scottsdale Institute. July 2020.

“Electronic Health Records in the Post-HITECH Era: Rethinking Vendor Performance and Certification.” Massachusetts Health Data Consortium. March 2018.

PEER-REVIEWED CONFERENCE PRESENTATIONS

2024: AMIA Clinical Informatics Conference, American Society of Health Economists, Academy of Management, Conference on Health IT and Analytics (CHITA), AcademyHealth Annual Research Meeting.

2023: AMIA Informatics Summit, AMIA Clinical Informatics Conference, AcademyHealth Annual Research Meeting, Conference on Health IT and Analytics (CHITA), American Society of Health Economists (declined due to schedule conflict), American Conference on Physician Health, AMIA Annual Symposium.

2022: American Medical Informatics Association Clinical Informatics Conference, Medical Informatics Europe, AcademyHealth Annual Research Meeting, American Medical Informatics Association Annual Symposium.

2021: AcademyHealth Annual Research Meeting, Annual Conference of the American Society of Health Economists (ASHEcon), American Medical Informatics Association Annual Symposium.

2020: Annual Conference of the American Society of Health Economists (ASHEcon), Conference on Health IT and Analytics (CHITA), American Medical Informatics Association Annual Symposium, AcademyHealth Annual Research Meeting (Several cancelled due to COVID-19).

2019: INFORMS Healthcare, Technical University of Munich Comparative Politics Conference, AcademyHealth Annual Research Meeting, Annual Conference of the American Society of Health Economists (ASHEcon), American Medical Informatics Association Annual Symposium.

2018: Academy of Management, AcademyHealth Annual Research Meeting, American Medical Informatics Association Annual Symposium.

2017: AcademyHealth Annual Research Meeting, American Medical Informatics Association Annual Symposium.

2016: WHITE: Workshop in Health IT and Economics, AcademyHealth Annual Research Meeting, American Medical Informatics Association Annual Symposium

TEACHING EXPERIENCE

University of California San Francisco

- Introduction to Data Science for Healthcare Professionals (Faculty Sponsor)
- Managing the EHR Inbox (Developed and Chaired CME-Accredited Course)

Harvard Business School

- Transforming Health Care Delivery (Teaching Fellow to Robert Huckman and Ariel Stern)

Harvard College

- American Health Care Policy (Teaching Fellow to Michael Chernew)

University of Michigan

- Introduction to Health Informatics for Executive Public Health Students (Teaching Assistant to Dori Cross)
- Critical Policy Issues in Health IT (Teaching Assistant to Julia Adler-Milstein)
- Managing Health Informatics (Teaching Assistant to Julia Adler-Milstein)

Guest Lectures

- Emory Rollins School of Public Health. “Health Information Technology: Policy, Evidence, & Management Strategies.” Guest Lecture on Health Information Exchange, Spring 2022.
- University of Alabama Birmingham School of Public Health. “Health Care Innovation.” Guest Lecture on EHR Use and Audit Log Research, Spring 2023.
- University of California San Francisco. “Epidemiology 231: Use of Electronic Health Records Data for Clinical Research” Guest Lecture on EHR Use and Audit Log Research, Spring 2023 & Spring 2024.

COURSE MATERIALS

Holmgren, A. J., & Adler-Milstein, J. *Case Study*. AlertWatch: Mapping a Path in the Regulatory Unknown.

DISSERTATION COMMITTEE ADVISING

Magdalene Kuznia (Dissertation Committee Member, UCSF School of Nursing. Expected Graduation: 2025.)

Masha Kuznetsova (Dissertation Committee Member, Harvard Business School, 2023. Placement: Devoted Health.)

SELECTED NATIONAL MEDIA COVERAGE AND APPEARANCES

The Wall Street Journal, *Your Doctor Replied to Your Email. That'll Cost \$25*. March, 2024.
<https://www.wsj.com/health/wellness/doctor-medical-bills-email-37005e32>

The Washington Post, *Drowning in patient emails, doctors start charging for their replies*.
November, 2023. <https://www.washingtonpost.com/health/2023/11/04/doctors-emails-patients-charges/>

NPR Morning Edition, *'Hi, Doc!' DM'ing the doctor could cost you (or your insurance plan)*. July,
2023. <https://www.npr.org/sections/health-shots/2023/07/21/1188739567/direct-message-doctor-patient-portal-charge>

STAT News, *More Hospitals are Billing Patients as Online Messages Surge*. July, 2023.
<https://www.statnews.com/2023/07/13/hospitals-patient-portal-message-bills-insurance/>

The Atlantic, *There's No Such Thing as a Casual Interaction With Your Doctor Anymore*. March,
2023. <https://www.theatlantic.com/health/archive/2023/03/telehealth-bill-online-messages-phone-call/673564/>

The New York Times, *Emailing Your Doctor May Carry a Fee*. January, 2023.
<https://www.nytimes.com/2023/01/24/health/emails-billing-doctors-patients.html>

The New York Times, *Physician Burnout Has Reached Distressing Levels, New Research Finds*.
September, 2022. <https://www.nytimes.com/2022/09/29/health/doctor-burnout-pandemic.html>

SERVICE AND PROFESSIONAL ACTIVITIES

Service to the Profession

- Guest Editor, American Journal of Managed Care *Health IT Special Issue*, 2022-2023.
- Scientific Program Committee, AMIA Clinical Informatics Conference 2024.
- Advisory Committee Member, American Academy of Family Physicians – Committee on Primary Care Physician Success in Value-Based Care.
- Ad-Hoc Reviewer: Management Science, Health Affairs, JAMA, JAMA Internal Medicine, Journal of Health Economics, Annals of Internal Medicine, Health Services Research, American Journal of Health Economics, Journal of the American Medical Informatics Association, JAMA Health Forum, JAMA Network Open, Journal of General Internal

Medicine, American Journal of Managed Care, Milbank Quarterly, Journal of the American Medical Directors Association, Health Care Management Review, npj Digital Medicine, Healthcare: The Journal of Delivery Science and Innovation, International Journal of Medical Informatics, BMJ Open, JMIR, Applied Clinical Informatics, MIS Quarterly, PLOS One, INQUIRY, Health Informatics Journal, Value in Healthcare, Journal of the American Board of Family Medicine, Mayo Clinic Proceedings, Learning Health Systems, Psychiatric Services, Applied Health Economics and Health Policy, International Journal of Human-Computer Interaction, Digital Health.

- Conference Abstract Reviewer: AMIA Annual Symposium, AMIA Clinical Informatics Conference, AcademyHealth Annual Research Meeting.
- *Applied Clinical Informatics* Most Prolific Reviewer, 2021.
- *Annals of Internal Medicine* Outstanding Reviewer, 2023.
- *JAMA Internal Medicine* Top Reviewer, 2023.
- *JAMA Network Open* Top Reviewer, 2023.
- *Health Affairs Scholar* Peer Review Board Member, 2023 – Present.

Service to UCSF

- UCSF IHPS Social Committee Faculty Representative, 2022 – 2024
- UCSF Division of Clinical Informatics and Digital Transformation (DoC-IT) Faculty Hiring Committee, 2023 – 2024.

Organizational Memberships

- AcademyHealth
- American Medical Informatics Association
- Academy of Management
- American Society of Health Economists

Personal

- U.S. citizen
- Languages: English