Stanford



Keith Morse

Clinical Professor, Pediatrics

CLINICAL OFFICE (PRIMARY)

- **Division of Pediatric Hospital Medicine**

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Bio

BIO

Keith Morse, MD, MBA, serves as the Chief Medical Informatics Officer (CMIO) for Stanford Medicine Children's Health. He practices clinically as a pediatric hospitalist and is the Program Director for Stanford's Clinical Informatics fellowship.

CLINICAL FOCUS

- Pediatric Hospital Medicine

ACADEMIC APPOINTMENTS

- Clinical Professor, Pediatrics

ADMINISTRATIVE APPOINTMENTS

- Chief Medical Informatics Officer, Stanford Medicine Children's Health, (2025- present)
- Program Director, Clinical Informatics Fellowship, Stanford Medicine, (2024- present)

PROFESSIONAL EDUCATION

- Board Certification: Clinical Informatics, American Board of Preventive Medicine (2021)
- Medical Education: Sidney Kimmel Medical College Thomas Jefferson University (2015) PA
- Fellowship: Stanford Hospital and Clinics (2020) CA
- Board Certification: Pediatrics, American Board of Pediatrics (2018)
- Residency: Phoenix Children's Hospital Pediatric Residency (2018) AZ
- Fellowship, Stanford University , Clinical Informatics (2020)
- Residency, Phoenix Children's Hospital , Pediatrics (2018)
- MD, Jefferson Medical College (2015)
- MBA, Washington University in St. Louis (2009)

Teaching

COURSES

2023-24

- Applied Clinical Informatics Seminar: BIOMEDIN 208 (Spr)

Publications

PUBLICATIONS

- **Increased Healthcare Utilization and Differential Outcomes for Pediatric Cancer Versus Non-Cancer Patients.** *Cancer medicine*
  Chen, Y., Yi, M., Aftandilian, C. C., Beauchemin, M. P., Cunningham, C., Larimer, E., Oberg, J., May, B. L., Morse, K., Natarajan, K., Noyd, D., Soucek, V., Khurana, et al
  2026; 15 (11)

- **Multi-Center Evaluation of Opioid Administration or Prescription in Pediatric Oncology Patients Using the OMOP CDM.** *Cancer medicine*
  Feng, Y., Yi, M., Aftandilian, C. C., Beauchemin, M. P., Cunningham, C., DeStephano, D., Khurana, R. K., Larimer, E., Oberg, J., May, B. L., Morse, K., Natarajan, K., Noyd, et al
  2026; 15 (10): e72310

- **Comparative Effectiveness of Antihypertensive Medications in Children With Chronic Kidney Disease.** *JAMA pediatrics*
  Denburg, M. R., Goodwin Davies, A. J., Maltenfort, M. G., Mitsnefes, M. M., Flynn, J. T., Neu, A. M., Dixon, B. P., Glenn, D. A., Gluck, C. A., Harshman, L. A., Katsoufis, C. P., Leonard, M. B., Modi, et al
  2026

- **Uses of generative AI by non-clinician staff at an academic medical center.** *npj health systems*
  Black, K. C., Haberkorn, W. J., Ma, S. P., Kiani, H., Bhasin, A., Chen, J. H., Shah, N. H., Morse, K.
  2026; 3 (1)

- **Bridging the Gap: Consensus-Based Considerations for AI Usefulness in Healthcare.** *The American journal of bioethics : AJOB*
  Salwei, M. E., Morse, K., Saria, S., Shah, N. H., Bedoya, A., Beyer, M., Munoz Del Rio, A., Chornenky, D., Lin, A., Ruparel, S., Kortsch, D., Barbarooah, P., Hanger, et al
  2026; 26 (2): 1-6

- **Holistic evaluation of large language models for medical tasks with MedHELM.** *Nature medicine*
  Bedi, S., Cui, H., Fuentes, M., Unell, A., Wornow, M., Banda, J. M., Kotecha, N., Keyes, T., Mai, Y., Oez, M., Qiu, H., Jain, S., Schettini, et al
  2026

- **Artificial intelligence-generated draft replies to patient messages in pediatrics.** *JAMIA open*
  Liang, A. S., Vedak, S., Dussaq, A., Yao, D., Villarreal, J. A., Thomas, S., Chen, N., Townsend, T., Pageler, N. M., Morse, K.
  2025; 8 (6): ooaf159

- **Incremental Healthcare Utilization and Outcomes for Pediatric Cancer VS. Non-Cancer Patients: Leveraging the Observational Medical Outcomes Partnership Common Data Model for Multi-Center Research**
  Chen, Y., Yi, M., Aftandilian, C., Beauchemin, M., Cunningham, C., Larimer, E., Oberg, J., May, B., Morse, K., Natarajan, K., Noyd, D., Soucek, V., Khurana, et al
  WILEY.2025: S472-S473

- **A multifaceted approach to advancing data quality and fitness standards in multi-institutional networks.** *Journal of the American Medical Informatics Association : JAMIA*
  Razzaghi, H., Dickinson, K., Wieand, K., Boss, S., Weidlich, H., Huang, Y., Morse, K., Mutyala, S. K., Nandagopal, J. P., Viswanathan, K., Forrest, C. B., Bailey, L. C.
  2025

- **A natural language processing pipeline for identifying pediatric long COVID symptoms and functional impacts in freeform clinical notes: a RECOVER study.** *JAMIA open*
  Bunnell, H. T., Reedy, C., Lorman, V., Jhaveri, R., Rivera-Sepulveda, A., Salamon, K. S., Patel, P. B., Morse, K. E., Davenport, M. A., Cowell, L. G., Utidjian, L., Christakis, D. A., Rao, et al
  2025; 8 (5): ooaf089

- **AI in Health Care: The Leadership Role of Board-Certified Clinical Informaticists.** *Applied clinical informatics*
  Morse, K. E., Pageler, N. M., Shah, N. H., Townsend, T., Sharp, C., Pfeffer, M. A.
  2025; 16 (3): 612-613

- **QUEST-AI: A System for Question Generation, Verification, and Refinement using AI for USMLE-Style Exams.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Bedi, S., Fleming, S. L., Chiang, C. C., Morse, K., Kumar, A., Patel, B., Jindal, J. A., Davenport, C., Yamaguchi, C., Shah, N. H.
  2025; 30: 54-69

- **Kidney Function Following COVID-19 in Children and Adolescents.** *JAMA network open*
  Li, L., Zhou, T., Lu, Y., Chen, J., Lei, Y., Wu, Q., Arnold, J., Becich, M. J., Bisyuk, Y., Blecker, S., Chrischilles, E., Christakis, D. A., Geary, et al
  2025; 8 (4): e254129

- **QUEST-AI: A System for Question Generation, Verification, and Refinement using AI for USMLE-Style Exams**
  Bedi, S., Fleming, S. L., Chiang, C., Morse, K., Kumar, A., Patel, B., Jindal, J. A., Davenport, C., Yamaguchi, C., Shah, N. H.
  edited by Altman, R. B., Hunter, L., Ritchie, M. D., Murray, T., Klein, T. E.
  WORLD SCIENTIFIC PUBL CO PTE LTD.2025: 54-69

- **Natural Language Processing: Set to Transform Pediatric Research.** *Hospital pediatrics*
  Bannett, Y., Bassett, H. K., Morse, K. E.
  2024

- **Large Language Model Responses to Adolescent Patient and Proxy Messages.** *JAMA pediatrics*
  Tse, G., Zahedivash, A., Anoshiravani, A., Carlson, J., Haberkorn, W., Morse, K. E.
  2024

- **Standing on FURM Ground: A Framework for Evaluating Fair, Useful, and Reliable AI Models in Health Care Systems** *NEJM CATALYST INNOVATIONS IN CARE DELIVERY*
  Callahan, A., McElfresh, D., Banda, J. M., Bunney, G., Char, D., Chen, J., Corbin, C. K., Dash, D., Downing, N. L., Jain, S. S., Kotecha, N., Masterson, J., Mello, et al
  2024; 5 (10)

- **Accuracy of a Proprietary Large Language Model in Labeling Obstetric Incident Reports.** *Joint Commission journal on quality and patient safety*
  Johnson, J., Brown, C., Lee, G., Morse, K.
  2024

- **A multi-center study on the adaptability of a shared foundation model for electronic health records.** *NPJ digital medicine*
  Guo, L. L., Fries, J., Steinberg, E., Fleming, S. L., Morse, K., Aftandilian, C., Posada, J., Shah, N., Sung, L.
  2024; 7 (1): 171

- **Using a Large Language Model to Identify Adolescent Patient Portal Account Access by Guardians.** *JAMA network open*
  Liang, A. S., Vedak, S., Dussaq, A., Yao, D. H., Morse, K., Ip, W., Pageler, N. M.
  2024; 7 (6): e2418454

- **Systematic data quality assessment of electronic health record data to evaluate study-specific fitness: Report from the PRESERVE research study.** *PLOS digital health*
  Razzaghi, H., Goodwin Davies, A., Boss, S., Bunnell, H. T., Chen, Y., Chrischilles, E. A., Dickinson, K., Hanauer, D., Huang, Y., Ilunga, K. T., Katsoufis, C., Lehmann, H., Lemas, et al
  2024; 3 (6): e0000527

- **MedAlign: A Clinician-Generated Dataset for Instruction Following with Electronic Medical Records.** *Proceedings of the ... AAAI Conference on Artificial Intelligence. AAAI Conference on Artificial Intelligence*
  Fleming, S. L., Lozano, A., Haberkorn, W. J., Jindal, J. A., Reis, E., Thapa, R., Blankemeier, L., Genkins, J. Z., Steinberg, E., Nayak, A., Patel, B., Chiang, C. C., Callahan, et al
  2024; 38 (20): 22021-22030

- **Learning competing risks across multiple hospitals: one-shot distributed algorithms.** *Journal of the American Medical Informatics Association : JAMIA*
  Zhang, D., Tong, J., Jing, N., Yang, Y., Luo, C., Lu, Y., Christakis, D. A., Güthe, D., Hornig, M., Kelleher, K. J., Morse, K. E., Rogerson, C. M., Divers, et al

2024

- **Characterizing the limitations of using diagnosis codes in the context of machine learning for healthcare.** *BMC medical informatics and decision making*
  Guo, L. L., Morse, K. E., Aftandilian, C., Steinberg, E., Fries, J., Posada, J., Fleming, S. L., Lemmon, J., Jessa, K., Shah, N., Sung, L.
  2024; 24 (1): 51

- **Evaluation of a Large Language Model to Identify Confidential Content in Adolescent Encounter Notes.** *JAMA pediatrics*
  Rabbani, N., Brown, C., Bedgood, M., Goldstein, R. L., Carlson, J. L., Pageler, N. M., Morse, K. E.
  2024

- **MEDALIGN: A Clinician-Generated Dataset for Instruction Following with Electronic Medical Records**
  Fleming, S. L., Lozano, A., Haberkorn, W. J., Jindal, J. A., Reis, E., Thapa, R., Blankemeier, L., Genkins, J. Z., Steinberg, E., Nayak, A., Patel, B., Chiang, C., Callahan, et al
  edited by Wooldridge, M., Dy, J., Natarajan, S.
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2024: 22021-22030

- **Self-supervised machine learning using adult inpatient data produces effective models for pediatric clinical prediction tasks.** *Journal of the American Medical Informatics Association : JAMIA*
  Lemmon, J., Guo, L. L., Steinberg, E., Morse, K. E., Fleming, S. L., Aftandilian, C., Pfohl, S. R., Posada, J. D., Shah, N., Fries, J., Sung, L.
  2023

- **Pseudo-randomized testing of a discharge medication alert to reduce free-text prescribing.** *Applied clinical informatics*
  Rabbani, N., Ho, M., Dash, D., Calway, T., Morse, K., Chadwick, W.
  2023

- **A Natural Language Processing Model to Identify Confidential Content in Adolescent Clinical Notes.** *Applied clinical informatics*
  Rabbani, N., Bedgood, M., Brown, C., Steinberg, E., Goldstein, R., Carlson, J., Pageler, N., Morse, K.
  2023

- **The Prevalence of Confidential Content in Adolescent Progress Notes Prior to the 21st Century Cures Act Information Blocking Mandate.** *Applied clinical informatics*
  Bedgood, M., Rabbani, N., Brown, C., Goldstein, R., Carlson, J. L., Steinberg, E., Powell, A., Pageler, N. M., Morse, K.
  2023; 14 (2): 337-344

- **A machine learning-based phenotype for long COVID in children: An EHR-based study from the RECOVER program.** *PloS one*
  Lorman, V., Razzaghi, H., Song, X., Morse, K., Utidjian, L., Allen, A. J., Rao, S., Rogerson, C., Bennett, T. D., Morizono, H., Eckrich, D., Jhaveri, R., Huang, et al
  2023; 18 (8): e0289774

- **User-centred design for machine learning in health care: a case study from care management.** *BMJ health & care informatics*
  Seneviratne, M. G., Li, R. C., Schreier, M., Lopez-Martinez, D., Patel, B. S., Yakubovich, A., Kemp, J. B., Loreaux, E., Gamble, P., El-Khoury, K., Vardoulakis, L., Wong, D., Desai, et al
  2022; 29 (1)

- **Assessment of Adherence to Reporting Guidelines by Commonly Used Clinical Prediction Models From a Single Vendor: A Systematic Review.** *JAMA network open*
  Lu, J. H., Callahan, A., Patel, B. S., Morse, K. E., Dash, D., Pfeffer, M. A., Shah, N. H.
  2022; 5 (8): e2227779

- **Monitoring Approaches for a Pediatric Chronic Kidney Disease Machine Learning Model.** *Applied clinical informatics*
  Morse, K. E., Brown, C., Fleming, S., Todd, I., Powell, A., Russell, A., Scheinker, D., Sutherland, S. M., Lu, J., Watkins, B., Shah, N. H., Pageler, N. M., Palma, et al
  2022; 13 (2): 431-438

- **Using aggregate patient data at the bedside via an on-demand consultation service** *NEJM Catalyst Innovations in Care Delivery*
  Callahan, A., Gombar, S., Cahan, E. M., Jung, K., Steinberg, E., Polony, V., Morse, K., Tibshirani, R., Hastie, T., Harrington, R., Shah, N. H.
  2022; 2 (10)

- **Instability in clinical risk stratification models using deep learning**

Lopez-Martinez, D., Yakubovich, A., Seneviratne, M., Lelkes, A. D., Tyagi, A., Kemp, J., Steinberg, E., Downing, N., Li, R. C., Morse, K. E., Shah, N. H., Chen, M.

edited by Parziale, A., Agrawal, M., Joshi, S., Chen, I. Y., Tang, S., Oala, L., Subbaswamy, A.

JMLR-JOURNAL MACHINE LEARNING RESEARCH.2022: 552-565

- **Ensuring Adolescent Patient Portal Confidentiality in the Age of the Cures Act Final Rule.** *The Journal of adolescent health : official publication of the Society for Adolescent Medicine*

  Xie, J., McPherson, T., Powell, A., Fong, P., Hogan, A., Ip, W., Morse, K., Carlson, J. L., Lee, T., Pageler, N.

  2021

- **Assessment of Prevalence of Adolescent Patient Portal Account Access by Guardians.** *JAMA network open*

  Ip, W., Yang, S., Parker, J., Powell, A., Xie, J., Morse, K., Aikens, R. C., Lee, J., Gill, M., Vundavalli, S., Huang, Y., Huang, J., Chen, et al

  2021; 4 (9): e2124733

- **A survey of extant organizational and computational setups for deploying predictive models in health systems.** *Journal of the American Medical Informatics Association : JAMIA*

  Kashyap, S., Morse, K. E., Patel, B., Shah, N. H.

  2021

- **Quantifying Discharge Medication Reconciliation Errors at 2 Pediatric Hospitals.** *Pediatric quality & safety*

  Morse, K. E., Chadwick, W. A., Paul, W., Haaland, W., Pageler, N. M., Tarrago, R.

  2021; 6 (4): e436

- **Digital Symptom Checker Usage and Triage: Population-Based Descriptive Study in a Large North American Integrated Health System.** *Journal of medical Internet research*

  Morse, K. E., Ostberg, N. P., Jones, V. G., Chan, A. S.

  2020

- **Estimate the hidden deployment cost of predictive models to improve patient care.** *Nature medicine*

  Morse, K. E., Bagely, S. C., Shah, N. H.

  2020; 26 (1): 18–19

- **Your Patient Has a New Health App? Start With Its Data Source.** *Journal of participatory medicine*

  Morse, K. E., Schremp, J., Pageler, N. M., Palma, J. P.

  2019; 11 (2): e14288

- **Hospital-Level Variation in Practice Patterns and Patient Outcomes for Pediatric Patients Hospitalized With Functional Constipation.** *Hospital pediatrics*

  Librizzi, J., Flores, S., Morse, K., Kelleher, K., Carter, J., Bode, R.

  2017; 7 (6): 320-327