

Stanford



David Scheinker

Clinical Associate Professor, Pediatrics - Endocrinology and Diabetes

Bio

BIO

David Scheinker is the Executive Director of Systems Design and Collaborative Research at the Stanford Lucile Packard Children's Hospital. He is the Founder and Director of SURF Stanford Medicine, a group that brings together students and faculty from the university with physicians, nurses, and administrators from the hospitals. SURF has implemented and published dozens of projects demonstrating improvements to the quality and efficiency of care. His areas of focus include clinical care delivery, technical improvements to hospital operations, sensor-based and algorithm-enabled telemedicine, and the socioeconomic factors that shape healthcare cost and quality.

Before coming to Stanford, he was a Joint Research Fellow at The MIT Sloan School of Management and Massachusetts General Hospital. He received a PhD in theoretical math from The University of California San Diego under Jim Agler. His current areas of research include applications of operations research in healthcare, type 1 diabetes management with continuous glucose monitor data, and healthcare policy. He advises Carta Healthcare, a healthcare analytics company started by former students.

ACADEMIC APPOINTMENTS

- Clinical Associate Professor, Pediatrics - Endocrinology and Diabetes

ADMINISTRATIVE APPOINTMENTS

- Executive Director of Systems Design and Collaborative Research, Lucile Packard Children's Hospital Stanford, (2015- present)
- Founder and Director, SURF Stanford Medicine, (2015- present)
- Faculty, Clinical Excellence Research Center (CERC), (2018- present)
- Faculty, Master of Science in Clinical Informatics Management (MCiM), (2020- present)
- Faculty, Clinical Excellence Leadership Training (CELT), (2016- present)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Advisor, Carta Healthcare (2017 - present)

LINKS

- My Research Group: <https://surf.stanford.edu/>

Teaching

COURSES

2021-22

- Healthcare Operations Management: MS&E 263, PEDS 263 (Win)
- Healthcare Systems Design: MS&E 463 (Spr)

2020-21

- Healthcare Operations Management: MS&E 263 (Win)
- Healthcare Systems Design: MS&E 463 (Spr)

2019-20

- Healthcare Operations Management: MS&E 263 (Win)
- Healthcare Systems Design: MS&E 463 (Spr)

2018-19

- Healthcare Operations Management: MS&E 263 (Win)
- Healthcare Systems Design: MS&E 463 (Spr)

Publications

PUBLICATIONS

- **Reducing administrative costs in US health care: Assessing single payer and its alternatives.** *Health services research*
Scheinker, D., Richman, B. D., Milstein, A., Schulman, K. A.
2021
- **The development and deployment of a model for hospital-level COVID-19 associated patient demand intervals from consistent estimators (DICE).** *Health care management science*
Yang, L., Zhang, T., Glynn, P., Scheinker, D.
2021
- **The design and evaluation of a novel algorithm for automated preference card optimization.** *Journal of the American Medical Informatics Association : JAMIA*
Scheinker, D., Hollingsworth, M., Brody, A., Phelps, C., Bryant, W., Pei, F., Petersen, K., Reddy, A., Wall, J.
2021
- **Differences in Central Line-Associated Bloodstream Infection Rates Based on the Criteria Used to Count Central Line Days.** *JAMA*
Scheinker, D., Ward, A., Shin, A. Y., Lee, G. M., Mathew, R., Donnelly, L. F.
2020; 323 (2): 183–85
- **Identification of Factors Associated With Variation in US County-Level Obesity Prevalence Rates Using Epidemiologic vs Machine Learning Models** *JAMA NETWORK OPEN*
Scheinker, D., Valencia, A., Rodriguez, F.
2019; 2 (4)
- **Development and Implementation of a Real-time Bundle-adherence Dashboard for Central Line-associated Bloodstream Infections.** *Pediatric quality & safety*
Chemparathy, A., Seneviratne, M. G., Ward, A., Mirchandani, S., Li, R., Mathew, R., Wood, M., Shin, A. Y., Donnelly, L. F., Scheinker, D., Lee, G. M.
2021; 6 (4): e431
- **Improved individual and population-level HbA1c estimation using CGM data and patient characteristics.** *Journal of diabetes and its complications*
Grossman, J., Ward, A., Crandell, J. L., Prahald, P., Maahs, D. M., Scheinker, D.
2021: 107950
- **Prediction of Prolonged Opioid Use After Surgery in Adolescents: Insights From Machine Learning.** *Anesthesia and analgesia*
Ward, A., Jani, T., De Souza, E., Scheinker, D., Bambos, N., Anderson, T. A.
2021
- **Quantifying Pediatric Intensive Care Unit Staffing Levels at a Pediatric Academic Medical Center: A Mixed Methods Approach.** *Journal of nursing management*
Ostberg, N., Ling, J., Winter, S. G., Som, S., Vasilakis, C., Shin, A. Y., Cornell, T. T., Scheinker, D.

2021

- **Racial and Ethnic Disparities in Household Contact with Individuals at Higher Risk of Exposure to COVID-19.** *Journal of general internal medicine*
Kong, S. T., Lee, R. Y., Rodriguez, F., Scheinker, D.
2021
- **County-Level Factors Associated With Cardiovascular Mortality by Race/Ethnicity.** *Journal of the American Heart Association*
Zuma, B. Z., Parizo, J. T., Valencia, A., Spencer-Bonilla, G., Blum, M. R., Scheinker, D., Rodriguez, F.
2021: e018835
- **Quantifying Electronic Health Record Data: A Potential Risk for Cognitive Overload.** *Hospital pediatrics*
Gal, D. B., Han, B., Longhurst, C., Scheinker, D., Shin, A. Y.
2021
- **The Hispanic paradox in the prevalence of obesity at the county-level.** *Obesity science & practice*
Valencia, A. n., Zuma, B. Z., Spencer-Bonilla, G. n., López, L. n., Scheinker, D. n., Rodriguez, F. n.
2021; 7 (1): 14–24
- **Clinically serious hypoglycemia is rare and not associated with time-in-range in youth with new-onset type 1 diabetes.** *The Journal of clinical endocrinology and metabolism*
Addala, A., Zaharieva, D. P., Gu, A. J., Prahalad, P., Scheinker, D., Buckingham, B., Hood, K. K., Maahs, D. M.
2021
- **Multimethod, multidataset analysis reveals paradoxical relationships between sociodemographic factors, Hispanic ethnicity and diabetes.** *BMJ open diabetes research & care*
Knight, G. M., Spencer-Bonilla, G., Maahs, D. M., Blum, M. R., Valencia, A., Zuma, B. Z., Prahalad, P., Sarraju, A., Rodriguez, F., Scheinker, D.
2020; 8 (2)
- **The Hispanic paradox in the prevalence of obesity at the county-level** *OBESITY SCIENCE & PRACTICE*
Valencia, A., Zuma, B. Z., Spencer-Bonilla, G., Lopez, L., Scheinker, D., Rodriguez, F.
2020
- **Target Based Care: An Intervention to Reduce Variation in Postoperative Length of Stay.** *The Journal of pediatrics*
Shin, A. Y., Rao, I. J., Bassett, H. K., Chadwick, W., Kim, J., Kipps, A. K., Komra, K., Loh, L., Maeda, K., Mafla, M., Presnell, L., Sharek, P. J., Steffen, et al
2020
- **Uninterrupted Continuous Glucose Monitoring Access is Associated with a Decrease in HbA1c in Youth with Type 1 Diabetes and Public Insurance.** *Pediatric diabetes*
Addala, A., Maahs, D. M., Scheinker, D., Chertow, S., Leverenz, B., Prahalad, P.
2020
- **Clinically Significant Hypoglycemia Is Rare in Youth with T1D during Partial Clinical Remission**
Addala, A., Gu, A., Zaharieva, D., Prahalad, P., Buckingham, B. A., Scheinker, D., Maahs, D. M.
AMER DIABETES ASSOC.2020
- **The Association between Time-in-Range, Mean Glucose, and Incidence of Hypoglycemia in Youth with Newly Diagnosed T1D**
Gu, A., Prahalad, P., Maahs, D. M., Addala, A., Scheinker, D.
AMER DIABETES ASSOC.2020
- **A Telemedicine-CGM Recommendation System for Personalized Population Health Management**
Vallon, J., Ward, A. T., Prahalad, P., Hood, K. K., Maahs, D. M., Scheinker, D.
AMER DIABETES ASSOC.2020
- **Newly Diagnosed Pediatric Patients with Type 1 Diabetes Show Steady Decline in Glucose Time-in-Range (TIR) over 1 Year: Pilot Study**
Zaharieva, D., Prahalad, P., Addala, A., Scheinker, D., Desai, M., Hood, K. K., Leverenz, B., Maahs, D. M.
AMER DIABETES ASSOC.2020
- **Early CGM Initiation Improves HbA1c in T1D Youth over the First 15 Months**
Prahalad, P., Ding, V., Addala, A., New, C., Conrad, B. P., Chmielewski, A., Geels, E., Leverenz, J., Martinez-Singh, A., Sagan, P., Senaldi, J., Freeman, A., Scheinker, et al
AMER DIABETES ASSOC.2020

- **Implementing Analytics Projects in a Hospital: Successes, Failures, and Opportunities** *INTERFACES*
Scheinker, D., Brandeau, M. L.
2020; 50 (3): 176–89
- **COUNTY-LEVEL FACTORS ASSOCIATED WITH CARDIOVASCULAR MORTALITY DISAGGREGATED BY RACE/ETHNICITY**
Zuma, B., Valencia, A., Spencer-Bonilla, G., Blum, M. R., Knight, G., Scheinker, D., Rodriguez, F.
ELSEVIER SCIENCE INC.2020: 1884
- **PERSONALIZED INTER-DONATION INTERVALS TO MANAGE RISK OF IRON-RELATED ADVERSE EVENTS IN REPEAT BLOOD DONORS**
Russell, W., Scheinker, D., Custer, B.
SAGE PUBLICATIONS INC.2020: E111–E112
- **Extremum Seeking for Creating Optimal Feedback Controls of Unknown Systems by Tuning Basis Functions**
Scheinker, A., Scheinker, D., IEEE
IEEE.2020: 44–49
- **Baseline creatinine determination method impacts association between acute kidney injury and clinical outcomes.** *Pediatric nephrology (Berlin, Germany)*
Russell, W. A., Scheinker, D. n., Sutherland, S. M.
2020
- **Machine learning and atherosclerotic cardiovascular disease risk prediction in a multi-ethnic population.** *NPJ digital medicine*
Ward, A. n., Sarraju, A. n., Chung, S. n., Li, J. n., Harrington, R. n., Heidenreich, P. n., Palaniappan, L. n., Scheinker, D. n., Rodriguez, F. n.
2020; 3: 125
- **Improving Clinical Outcomes in Newly Diagnosed Pediatric Type 1 Diabetes: Teamwork, Targets, Technology, and Tight Control-The 4T Study.** *Frontiers in endocrinology*
Prahalad, P. n., Zaharieva, D. P., Addala, A. n., New, C. n., Scheinker, D. n., Desai, M. n., Hood, K. K., Maahs, D. M.
2020; 11: 360
- **Improving the efficiency of the operating room environment with an optimization and machine learning model** *HEALTH CARE MANAGEMENT SCIENCE*
Fairley, M., Scheinker, D., Brandeau, M. L.
2019; 22 (4): 756–67
- **Practice Characteristics of Board-certified Pediatric Anesthesiologists in the US: A Nationwide Survey** *CUREUS*
Muffly, M., Scheinker, D., Muffly, T., Singleton, M., Agarwal, R., Honkanen, A.
2019; 11 (9)
- **Personalized Diabetes Management Using Data from Continuous Glucose Monitors**
Miller, D. R., Ward, A. T., Maahs, D. M., Scheinker, D.
AMER DIABETES ASSOC.2019
- **Non-clinical delays in transfer out of the surgical ICU are associated with increased hospital length of stay and delayed progress of care** *JOURNAL OF CRITICAL CARE*
Safavi, K., Furtado, J., Langle, A., Scheinker, D., Schmidt, U., Daily, B., Levi, R., Dunn, P.
2019; 50: 126–31
- **Identification of Factors Associated With Variation in US County-Level Obesity Prevalence Rates Using Epidemiologic vs Machine Learning Models.** *JAMA network open*
Scheinker, D. n., Valencia, A. n., Rodriguez, F. n.
2019; 2 (4): e192884
- **Hospitalization Patterns for Inpatient Surgery and Procedures in California:2000 – 2016** *Anesthesia and Analgesia*
Muffly, M. K., Honkanen, A., Scheinker, D., Wang, T., Saynina, O., Singleton, M. A., Wang, C. J., Sanders, L. M.
2019
- **Practice Characteristics of Board-certified Pediatric Anesthesiologists in the US: A Nationwide Survey.** *Cureus*
Muffly, M. n., Scheinker, D. n., Muffly, T. n., Singleton, M. n., Agarwal, R. n., Honkanen, A. n.
2019; 11 (9): e5745
- **Anesthesiologist Surgery Assignments Using Policy Learning**

Ward, A., Zhou, Z., Bambos, N., Scheinker, D., Wang, E., IEEE
IEEE.2019

- **CGM Initiation Soon After Type 1 Diabetes Diagnosis Results in Sustained CGM Use and Wear Time.** *Diabetes care*
Pralhad, P. n., Addala, A. n., Scheinker, D. n., Hood, K. K., Maahs, D. M.
2019
- **Hemoglobin A1c Trajectory in Pediatric Patients with Newly Diagnosed Type 1 Diabetes.** *Diabetes technology & therapeutics*
Pralhad, P. n., Yang, J. n., Scheinker, D. n., Desai, M. n., Hood, K. n., Maahs, D. M.
2019
- **A Retrospective Review of a Bed-mounted Projection System for Managing Pediatric Preoperative Anxiety.** *Pediatric quality & safety*
Caruso, T. J., Tsui, J. H., Wang, E., Scheinker, D., Sharek, P. J., Cunningham, C., Rodriguez, S. T.
2018; 3 (4): e087
- **The Pediatric Anesthesiology Workforce: Projecting Supply and Trends 2015-2035** *ANESTHESIA AND ANALGESIA*
Muffly, M. K., Singleton, M., Agarwal, R., Scheinker, D., Miller, D., Muffly, T. M., Honkanen, A.
2018; 126 (2): 568–78
- **Constrained extremum seeking stabilization of systems not affine in control** *INTERNATIONAL JOURNAL OF ROBUST AND NONLINEAR CONTROL*
Scheinker, A., Scheinker, D.
2018; 28 (2): 568–81
- **Promise and Perils of Big Data and Artificial Intelligence in Clinical Medicine and Biomedical Research.** *Circulation research*
Rodriguez, F. n., Scheinker, D. n., Harrington, R. A.
2018; 123 (12): 1282–84
- **A quality improvement initiative to optimize dosing of surgical antimicrobial prophylaxis.** *Paediatric anaesthesia*
Caruso, T. J., Wang, E., Schwenk, H. T., Scheinker, D., Yeverino, C., Tweedy, M., Maheru, M., Sharek, P. J.
2017; 27 (7): 702-710
- **Detecting Inaccurate Predictions of Pediatric Surgical Durations**
Zhou, Z., Miller, D., Master, N., Scheinker, D., Bambos, N., Glynn, P., IEEE
IEEE.2016: 452–57