Bio

Dr. Milstein is a Professor of Medicine and directs the Clinical Excellence Research Center at Stanford University. The Center discovers and demonstrates in multi-state locations scalable innovations in clinical process and in bedside applications of machine intelligence that lower the cost of high-quality healthcare.

Before joining Stanford's faculty, he created and globalized a healthcare performance improvement firm, co-founded three nationally influential public benefit initiatives including the Leapfrog Group, served as a Congressional MedPAC Commissioner and was elected to the National Academy of Medicine (NAM).

ACADEMIC APPOINTMENTS

• Professor, Medicine - Primary Care and Population Health

LINKS

• Clinical Excellence Research Center: http://cerc.stanford.edu

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Design and national demonstration of innovations in care delivery that provide more with less. Informed by research on AI-assisted clinical workflow, positive value outlier analysis and triggers of loss aversion bias among patients and clinicians.

Research on creation of a national index of health system productivity gain.

Teaching

COURSES

2018-19

• Leading Value Improvement in Health Care Delivery: SOMGEN 275 (Aut)
2017-18
• Leading Value Improvement in Health Care Delivery: SOMGEN 275 (Aut)

2016-17
• Leading Value Improvement in Health Care Delivery: SOMGEN 275 (Aut)

2015-16
• Leading Value Improvement in Health Care Delivery: SOMGEN 275 (Aut)

STANFORD ADVISEES
Postdoctoral Research Mentor
Clare Purvis, Courtenay Stewart

Publications

PUBLICATIONS

• Social isolation and all-cause mortality: a population-based cohort study in Denmark. *Scientific Reports*
  Laugesen, K., Baggesen, L., Schmidt, S., Glymour, M., Lasgaard, M., Milstein, A., Sorensen, H., Adler, N. E., Ehrenstein, V.
  2018; 8: 4731

• Critical Lessons From High-Value Oncology Practices. *JAMA Oncology*
  Blayney, D. W., Simon, M. K., Podtchakse, B., Ramsey, S., Shyu, M., Lindquist, C., Milstein, A.
  2018; 4 (2): 164–71

• Bedside Computer Vision - Moving Artificial Intelligence from Driver Assistance to Patient Safety. *The New England journal of medicine*
  Yeung, S., Downing, N. L., Fei-Fei, L., Milstein, A.
  2018; 378 (14): 1271–73

• Tool Detection and Operative Skill Assessment in Surgical Videos Using Region-Based Convolutional Neural Networks
  Jin, A., Yeung, S., Jopling, J., Krause, J., Azagury, D., Milstein, A., Li Fei-Fei, IEEE
  IEEE.2018: 691–99

• The Association of ICU Acuity With Outcomes of Patients at Low Risk of Dying. *Critical care medicine*
  2018; 46 (3): 347–53

• Possibilities Beyond Analyses of a Fee-for-Service Database and Clinician Mindset *Annals of Internal Medicine*
  Leff, B., Milstein, A.
  2017; 167 (10): 746+–

• Exploring Attributes of High-Value Primary Care *Annals of Family Medicine*
  Simon, M., Choudhry, N. K., Frankfort, J., Margolius, D., Murphy, J., Paita, L., Wang, T., Milstein, A.
  2017; 15 (6): 529–34

• Improving the Value of Medical Care for Patients with Back Pain. *Pain medicine (Malden, Mass.)*
  2017

• Redesigning Cancer Care Delivery: Views From Patients and Caregivers. *Journal of oncology practice*
  2017; 13 (4): e291-e302

• Reply to E.C. Winkler et al. *Journal of clinical oncology*
  Kaplan, R. M., Milstein, A.
  2017; 35 (4): 468–?
• Predicting patient 'cost blooms' in Denmark: a longitudinal population-based study. *BMJ open*
  Tamang, S., Milstein, A., Sørensen, H. T., Pedersen, L., Mackey, L., Betterton, J., Janson, L., Shah, N.
  2017; 7 (1)

• Identifying Distinct Subgroups of ICU Patients: A Machine Learning Approach. *Critical care medicine*
  2017; 45 (10): 1607–15

• Individualized Acute Medical Care for Cognitively Impaired Individuals: A Call Always to Pause Before Hospitalization. *Journal of the American Geriatrics Society*
  Sheckter, C. C., Bott, N. T., Milstein, A., Leff, B.
  2017

• Association Between the Birth of an Infant With Major Congenital Anomalies and Subsequent Risk of Mortality in Their Mothers *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*
  2016; 316 (23): 2515-2524

• Opportunities to Improve the Value of Outpatient Surgical Care *AMERICAN JOURNAL OF MANAGED CARE*
  Erhun, F., Malcolm, E., Kalani, M., Brayton, K., Nguyen, C., Asch, S. M., Platchek, T., Milstein, A.
  2016; 22 (9): E329-?

• Better health, less spending: Redesigning the transition from pediatric to adult healthcare for youth with chronic illness. *Healthcare (Amsterdam, Netherlands)*
  2016; 4 (1): 57-68

• The Financial Effect of Value-Based Purchasing and the Hospital Readmissions Reduction Program on Safety-Net Hospitals in 2014: A Cohort Study. *Annals of internal medicine*
  2015; 163 (6): 427-436

• ACO model should encourage efficient care delivery. *Healthcare (Amsterdam, Netherlands)*
  Toussaint, J., Krueger, D., Shortell, S. M., Milstein, A., Cutler, D. M.
  2015; 3 (3): 150-152

• The Effect of Moving Carpal Tunnel Releases Out of Hospitals on Reducing United States Health Care Charges. *journal of hand surgery*
  Nguyen, C., Milstein, A., Hernandez-Boussard, T., Curtin, C. M.
  2015; 40 (8): 1657-1662

• Posttraumatic stress disorder and cancer risk: a nationwide cohort study *EUROPEAN JOURNAL OF EPIDEMIOLOGY*
  2015; 30 (7): 563-568

• Redesigning Advanced Cancer Care Delivery: Three Ways to Create Higher Value Cancer Care. *Journal of oncology practice / American Society of Clinical Oncology*
  Patel, M. I., Moore, D., Milstein, A.
  2015; 11 (4): 280-284

• Body Mass Index and Cognitive Function: Birth Cohort Effects in Young Men *OBESITY*
  Ehrenstein, V., Muenster, A. B., Milstein, A., Adler, N. E., Sorensen, H. T.
  2015; 23 (5): 931-934

• Body mass index and cognitive function: birth cohort effects in young men. *Obesity*
  Ehrenstein, V., Münster, A. B., Milstein, A., Adler, N. E., Sørensen, H. T.
  2015; 23 (5): 931-934

• Safety-Net Hospitals More Likely Than Other Hospitals To Fare Poorly Under Medicare's Value-Based Purchasing *HEALTH AFFAIRS*
  2015; 34 (3): 398-405
- **Safety-Net Hospitals More Likely Than Other Hospitals To Fare Poorly Under Medicare’s Value-Based Purchasing** *Health Affairs*
  2015: 398-405

- **Time-driven activity-based costing of multivessel coronary artery bypass grafting across national boundaries to identify improvement opportunities: study protocol.** *BMJ open*
  Erhun, F., Mistry, B., Platchek, T., Milstein, A., Narayanan, V. G., Kaplan, R. S.
  2015; 5 (8): e008765

- **Associations between stress disorders and cardiovascular disease events in the Danish population.** *BMJ open*
  2015; 5 (12)

- **Time-driven activity-based costing of multivessel coronary artery bypass grafting across national boundaries to identify improvement opportunities: study protocol.** *BMJ open*
  Erhun, F., Mistry, B., Platchek, T., Milstein, A., Narayanan, V. G., Kaplan, R. S.
  2015; 5 (8)

- **Better Health, Less Spending Delivery Innovation for Ischemic Cerebrovascular Disease** *STROKE*
  Kalanithi, L., Tai, W., Conley, J., Platchek, T., Zulman, D., Milstein, A.
  2014; 45 (10): 3105-?

- **California Safety-Net Hospitals Likely To Be Penalized By ACA Value, Readmission, And Meaningful-Use Programs** *HEALTH AFFAIRS*
  2014; 33 (8): 1314-1322

- **Professional organizations’ role in supporting physicians to improve value in health care.** *JAMA*
  Marcotte, L., Moriates, C., Milstein, A.
  2014; 312 (3): 231-232

- **Safety in Numbers: The Development of Leapfrog's Composite Patient Safety Score for U.S. Hospitals.** *Journal of patient safety*
  2014; 10 (1): 64-71

- **Transforming cancer care: are transdisciplinary approaches using design-thinking, engineering, and business methodologies needed to improve value in cancer care delivery?** *Journal of oncology practice / American Society of Clinical Oncology*
  Patel, M. I., Moore, D., Blayney, D. W., Milstein, A.
  2014; 10 (2): e51-4

- **Widening Gaps in the Wall Obscuring Physician Performance Differences** *JAMA Internal Medicine*
  Milstein, A., Kocher, R.
  2014: 839-840

- **The Impact of Patient and Hospital Characteristics on Patients' Experience of Care: HCAHPS Evidence from California Hospitals (2009-2011)** *Patient Experience Journal*
  Becker, E., Hockenberry, J., Bae, J., Avgar, A., Lui, S., Wilson, I., Milstein, A.
  2014

- **Better Health, Less Spending: Stanford University’s Clinical Excellence Research Center** *Health Management, Policy and Innovation*
  Platchek, T., Rehitzer, R., Zulman, D., Milstein, A.
  2014; 2 (1): 10-17

- **Professional Organizations’ Role in Supporting Physicians to Improve Value in Health Care** *JAMA*
  Marcotte, L., Moriates, C., Milstein, A.
  2014

- **How the Pioneer ACO Model needs to change: lessons from its best-performing ACO.** *JAMA-the journal of the American Medical Association*
  Toussaint, J., Milstein, A., Shortell, S.
  2013; 310 (13): 1341-1342
Impact of participation in the California Healthcare-Associated Infection Prevention Initiative on adoption and implementation of evidence-based practices for patient safety and health care-associated infection rates in a cohort of acute care general hospitals

AMERICAN JOURNAL OF INFECTION CONTROL

2013; 41 (4): 307-311

Code Red and Blue - Safely Limiting Health Care's GDP Footprint

NEW ENGLAND JOURNAL OF MEDICINE

Milstein, A.
2013; 368 (1): 1-3

Our Failure to Curb Excessive Testing

ARCHIVES OF INTERNAL MEDICINE

Kassirer, J. P., Milstein, A.
2012; 172 (22): 1751-1753

Innovations in Care Delivery to Slow Growth of US Health Spending

JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Milstein, A., Shortell, S.
2012; 308 (14): 1439-1440

A Systemic Approach to Containing Health Care Spending

NEW ENGLAND JOURNAL OF MEDICINE

Emanuel, E., Tanden, N., Altman, S., Armstrong, S., Berwick, D., de Brantes, F., Calsyn, M., Chernew, M., Colmers, J., Cutler, D., Daschle, T., Egerman, P., Kocher, et al
2012; 367 (10): 949-954

Consumers' And Providers' Responses To Public Cost Reports, And How To Raise The Likelihood Of Achieving Desired Results

HEALTH AFFAIRS

Mehrotra, A., Hussey, P. S., Milstein, A., Hibbard, J. H.
2012; 31 (4): 843-851

Innovations in Care Delivery to Slow US Health Spending Growth

JAMA

Milstein, A., Shortell, S
2012

Our Failure to Curb Excessive Testing

Archives of Internal Medicine

Milstein, A., Kassirer, J
2012

The $640 Billion Question - Why Does Cost-Effective Care Diffuse So Slowly?

NEW ENGLAND JOURNAL OF MEDICINE

Fuchs, V. R., Milstein, A.

Hospital adoption of automated surveillance technology and the implementation of infection prevention and control programs

AMERICAN JOURNAL OF INFECTION CONTROL

Halpin, H., Shortell, S. M., Milstein, A., Vanneman, M.
2011; 39 (4): 270-276

Mandatory Public Reporting Of Hospital-Acquired Infection Rates: A Report From California

HEALTH AFFAIRS

Halpin, H. A., Milstein, A., Shortell, S. M., Vanneman, M., Rosenberg, J.
2011; 30 (4): 723-729

Hospital Adoption of Automated Surveillance Technology and the Implementation of Infection Prevention and Control Programs

American Journal of Infection Prevention

HA Halpin, SM Shortell, AS Milstein, M Vanneman
2011

Mandatory Public Reporting of Hospital Acquired Infection Rates

Health Affairs

HA Halpin, AS Milstein, SM Shortell
2011

Assessing The Evidence For Value-Based Insurance Design

HEALTH AFFAIRS

Choudhry, N. K., Rosenthal, M. B., Milstein, A.
• Do Patients Continue to See Physicians Who Are Removed from a PPO Network? *Health Affairs*
  NK Choudhry, MB Rosenthal, AS Milstein
  2010

• Quality Measurement in Orthopaedics: The Purchasers' View *ABJS Carl T Brighton Workshop on Health Policy Issues in Orthopaedic Surgery*
  Lansky, D., Milstein, A.
  SPRINGER.2009: 2548–55

• Do Patients Continue to See Physicians Who Are Removed From a PPO Network? *AMERICAN JOURNAL OF MANAGED CARE*
  Rosenthal, M. B., Li, Z., Milstein, A.
  2009; 15 (10): 713-719

• Impact of Financial Incentives for Prenatal Care on Birth Outcomes and Spending *HEALTH SERVICES RESEARCH*
  Rosenthal, M. B., Li, Z., Robertson, A. D., Milstein, A.
  2009; 44 (5): 1465-1479

• American Medical Home Runs *HEALTH AFFAIRS*
  Milstein, A., Gilbertson, E.
  2009; 28 (5): 1317-1326

• How Can We Make More Progress In Measuring Physicians' Performance To Improve The Value Of Care? *HEALTH AFFAIRS*
  Miller, T. P., Brennan, T. A., Milstein, A.
  2009; 28 (5): 1429-1437

• Ending Extra Payment for "Never Events" - Stronger Incentives for Patients' Safety *NEW ENGLAND JOURNAL OF MEDICINE*
  Milstein, A.
  2009; 360 (23): 2388-2390

• Financial and Clinical Impact of Team-Based Treatment for Medicaid Enrollees With Diabetes in a Federally Qualified Health Center *DIABETES CARE*
  2008; 31 (11): 2160-2165

• Reductions in mortality associated with intensive public reporting of hospital outcomes *AMERICAN JOURNAL OF MEDICAL QUALITY*
  Hollenbeak, C. S., Gorton, C. P., Tabak, Y. P., Jones, J. L., Milstein, A., Johannes, R. S.
  2008; 23 (4): 279-286

• Comparing physicians on efficiency *NEW ENGLAND JOURNAL OF MEDICINE*
  Milstein, A., Lee, T. H.
  2007; 357 (26): 2649-2652

• Distorted payment system undermines business case for health quality and efficiency gains. *Issue brief (Center for Studying Health System Change)*
  Ginsburg, P. B., Pham, H. H., McKenzie, K., Milstein, A.
  2007: 1-4

• Redesigning care delivery in response to a high-performance network: The Virginia Mason Medical Center *HEALTH AFFAIRS*
  Pham, H. H., Ginsburg, P. B., McKenzie, K., Milstein, A.
  2007; 26 (4): W532-W544

• Consumer tolerance for inaccuracy in physician performance ratings: one size fits none. *Issue brief (Center for Studying Health System Change)*
  Davis, M. M., Hibbard, J. H., Milstein, A.
  2007: 1-5

• Health information technology is a vehicle, not a destination: a conversation with David J. Brailer. Interview by Arnold Milstein. *Health affairs*
  Brailer, D. J.
  2007; 26 (2): w236-41

• Will the surgical world become flat? *HEALTH AFFAIRS*
  Milstein, A., Smith, M.
  2007; 26 (1): 137-141
• America's new refugees - Seeking affordable surgery offshore. *NEW ENGLAND JOURNAL OF MEDICINE*
  Milstein, A., Smith, M.
  2006; 355 (16): 1637-1640

• The efficiency equation. Determining how to measure healthcare performance--and other first steps. *Modern healthcare*
  Milstein, A., Burney, R.
  2006; 36 (11): 24-?

• A report card on the freshman class of consumer-directed health plans *HEALTH AFFAIRS*
  Rosenthal, M., Hsuan, C., Milstein, A.
  2005; 24 (6): 1592-1600

• Hospital referrals *HEALTH AFFAIRS*
  Milstein, A.
  2005; 24 (3): 887-887

• Has the leapfrog group had an impact on the health care market? *HEALTH AFFAIRS*
  Galvin, R. S., Delbanco, S., Milstein, A., Belden, G.
  2005; 24 (1): 228-233

• Hot potato endgame *HEALTH AFFAIRS*
  Milstein, A.
  2004; 23 (6): 32-34

• Awakening consumer stewardship of health benefits: Prevalence and differentiation of new health plan models *HEALTH SERVICES RESEARCH*
  Rosenthal, M., Milstein, A.
  2004; 39 (4): 1055-1070

• UK quality incentives *HEALTH AFFAIRS*
  Milstein, A., Ness, D.
  2004; 23 (4): 282-282

• Out of sight, out of mind: Why doesn't widespread clinical quality failure command our attention? *HEALTH AFFAIRS*
  Milstein, A., Adler, N. E.
  2003; 22 (2): 119-127

• Updating the Leapfrog Group Intensive Care Unit Physician Staffing Standard *J Clin Outcomes Manag*
  Rockeymoore, M. B., Holzmueller, C. G., Milstein, A., Dorman, T., Pronovost, P. J.
  2003; 10 (1): 31-37

• Large employers' new strategies in health care *NEW ENGLAND JOURNAL OF MEDICINE*
  Galvin, R., Milstein, A.
  2002; 347 (12): 939-942

• What does the Leapfrog Group portend for physicians? *Seminars in vascular surgery*
  Milstein, A.
  2002; 15 (3): 198-200

• Parsing Leapfrog Values *Jt Commission Perspect*
  Milstein, A.
  2002; 2 (2): 6-9

• Expanding health insurance coverage for smoking cessation treatments: Experience of the Pacific Business Group on Health *AMERICAN JOURNAL OF HEALTH PROMOTION*
  Harris, J. R., Schauflick, H. H., Milstein, A., Powers, P., Hopkins, D. P.

• Improving the safety of health care: the leapfrog initiative. *Effective clinical practice : ECP*
  Milstein, A., Galvin, R. S., Delbanco, S. F., Salber, P., Buc, C. R.
  2000; 3 (6): 313-316
• Selective referral to high-volume hospitals - Estimating potentially avoidable deaths. *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*
  2000; 283 (9): 1159-1166

• Taking a giant leap forward in promoting quality. *HEALTH AFFAIRS*
  Wetzel, S., Galvin, R., Buck, C. R., Cubbin, J., Bradley, B., Taylor, B., Powers, P., Milstein, A.
  2000; 19 (2): 275-276

• Raising the bar: The use of performance guarantees by the Pacific Business Group on Health. *HEALTH AFFAIRS*
  Schauffler, H. H., Brown, C., Milstein, A.
  1999; 18 (2): 134-142

• An employer's perspective on hospitalists as a source of improved health care value. *National Policy Conference on the Hospitalist Movement*
  Milstein, A.
  AMER COLL PHYSICIANS. 1999: 360-63

• Using employer purchasing power to improve the quality of perinatal care. *Pediatrics*
  Castles, A. G., Milstein, A., Dumberg, C. L.
  1999; 103 (1): 248-254

• Managing utilization management: A purchaser’s view. *HEALTH AFFAIRS*
  Milstein, A.
  1997; 16 (3): 87-90

• Health education and patient satisfaction. *JOURNAL OF FAMILY PRACTICE*
  Schauffler, H. H., Rodriguez, T., Milstein, A.
  1996; 42 (1): 62-68

• INCREASED COSTS AND RATES OF USE IN THE CALIFORNIA WORKERS COMPENSATION SYSTEM AS A RESULT OF SELF-REFERRAL BY PHYSICIANS. *NEW ENGLAND JOURNAL OF MEDICINE*
  SWEDLOW, A., Johnson, G., SMITHLINE, N., Milstein, A.
  1992; 327 (21): 1502-1506

• Enhancing utilization review program results. *Health cost management*
  Martin, M., Milstein, A., Loveland, D. V.
  1988; 5 (2): 10-16

• Gauging the performance of utilization review. *Business and health*
  Milstein, A., Oehm, M., Alpert, G.
  1987; 4 (4): 10-12

• Auditing quality of care: an employer based approach. *Business and health*
  Milstein, A., Nash, D., Sands, J.
  1986; 3 (8): 10-12

• EVALUATING THE IMPACT OF PHYSICIAN PEER-REVIEW - FACTORS ASSOCIATED WITH SUCCESSFUL PSROS. *AMERICAN JOURNAL OF PUBLIC HEALTH*
  Adler, N. E., Milstein, A.
  1983; 73 (10): 1182-1185

• ANTICIPATING IMPACT OF PUBLIC-LAW 93-641 ON MENTAL-HEALTH SERVICES. *AMERICAN JOURNAL OF PSYCHIATRY*
  Milstein, A.
  1976; 133 (6): 710-712