Noam Barda, MD, PhD

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Research interests

Causal inference, prediction and fairness for real-world health data (electronic health records, registries and claims), applied mainly to infectious diseases and vaccines.

Current positions

2025–present	**Associate Professor**, Institute for Interdisciplinary Computational Science, Faculty of Computer and Information Science, and Department of Epidemiology, Biostatistics and Community Health Sciences, Faculty of Health Sciences, Ben-Gurion University of the Negev
2022–present	**Chief Epidemiologist**, Sheba Pandemic Research Institute (SPRI), Sheba Medical Center, Ramat Gan

Previous positions

2023–2025	Associate Professor, Department of Software and Information Systems Engineering and Department of Epidemiology, Biostatistics and Community Health Sciences, Ben-Gurion University of the Negev
2021–2023	Lecturer, Department of Software and Information Systems Engineering (from 2022 also Department of Epidemiology, Biostatistics and Community Health Sciences), Ben-Gurion University of the Negev
2020–2021	Head of Epidemiology and Research, Clalit Research Institute, Clalit Health Services, Tel Aviv
2016–2019	Researcher, Clalit Research Institute, Clalit Health Services, Tel Aviv

Education and training

2023–2025	MBA (Finance and Insurance), Ben-Gurion University of the Negev. Summa cum laude.
2020–2021	Postdoctoral fellow, Department of Biomedical Informatics, Harvard Medical School. Advisors: Isaac Kohane and Ben Reis.
2019–2022	MSc in Biostatistics, Tel Aviv University. Summa cum laude. Advisor: Daniel Nevo.
2017–2020	PhD, Faculty of Health Sciences, Ben-Gurion University of the Negev. Thesis: Improving Cardiovascular Disease Prediction. Advisors: Nadav Davidovitch and Eitan Bachmat.
2016–2020	Residency in Public Health (epidemiology track), Clalit Health Services
2013–2016	BSc in Computer Science, Open University of Israel. Magna cum laude.
2005–2010	MD, Tel Aviv University. Magna cum laude.
2002–2005	B.Med.Sc., Tel Aviv University. Summa cum laude.

Selected publications

73 peer-reviewed articles; h-index 29 and about 10,000 citations (Google Scholar, November 2026). The full list is on Google Scholar. An asterisk marks equal contribution.

Causal inference

1. Regev-Yochay G, **Barda N**, Shusterman Y, et al., Yahav D. West Nile virus–neutralizing plasma for West Nile virus disease. *NEJM Evidence*, 2026. doi.org/10.1056/EVIDoa2500169
2. Gilboa M, Regev-Yochay G, Meltzer E, et al., **Barda N**. Antibiotic use and the risk of hospital-onset Clostridioides difficile infection. *JAMA Network Open*, 2025. doi.org/10.1001/jamanetworkopen.2025.25252

3. Hayek S, Shaham G, Ben-Shlomo Y, et al., **Barda N**. Indirect protection of children from SARS-CoV-2 infection through parental vaccination. *Science*, 2022. doi.org/10.1126/science.abm3087
4. Cohen-Stavi CJ, Magen O, **Barda N**, et al., Dagan N. BNT162b2 vaccine effectiveness against Omicron in children 5 to 11 years of age. *New England Journal of Medicine*, 2022. doi.org/10.1056/NEJMoa2205011
5. **Barda N***, Dagan N*, Cohen C, et al., Balicer RD. Effectiveness of a third dose of the BNT162b2 mRNA COVID-19 vaccine for preventing severe outcomes in Israel: an observational study. *The Lancet*, 2021. doi.org/10.1016/S0140-6736(21)02249-2
6. Witberg G*, **Barda N***, Hoss S, et al., Kornowski R. Myocarditis after Covid-19 vaccination in a large health care organization. *New England Journal of Medicine*, 2021. doi.org/10.1056/NEJMoa2110737
7. Dagan N*, **Barda N***, Biron-Shental T, et al., Balicer RD. Effectiveness of the BNT162b2 mRNA COVID-19 vaccine in pregnancy. *Nature Medicine*, 2021. doi.org/10.1038/s41591-021-01490-8
8. **Barda N***, Dagan N*, Ben-Shlomo Y, et al., Balicer RD. Safety of the BNT162b2 mRNA Covid-19 vaccine in a nationwide setting. *New England Journal of Medicine*, 2021. doi.org/10.1056/NEJMoa2110475
9. Dagan N*, **Barda N***, Kepten E, et al., Balicer RD. BNT162b2 mRNA Covid-19 vaccine in a nationwide mass vaccination setting. *New England Journal of Medicine*, 2021. doi.org/10.1056/NEJMoa2101765

Prediction

10. Ofri M, Azriel A, Kahati L, Paran N, Esbit S, Sufaro Y, **Barda N**. Predicting chronic subdural hematoma risk in elderly patients with mild traumatic brain injury. *Acta Neurochirurgica*, 2026. doi.org/10.1007/s00701-026-06788-5
11. Deichmann J, **Barda N**, Canetti M, et al., Lipsitch M. Predicting antibody kinetics and duration of protection against SARS-CoV-2 following vaccination from sparse serological data. *PLOS Computational Biology*, 2025. doi.org/10.1371/journal.pcbi.1013192
12. **Barda N**, Riesel D, Akriv A, et al., Dagan N. Developing a COVID-19 mortality risk prediction model when individual-level data are not available. *Nature Communications*, 2020. doi.org/10.1038/s41467-020-18297-9
13. Dagan N, Elnekave E, **Barda N**, et al., Balicer RD. Automated opportunistic osteoporotic fracture risk assessment using computed tomography scans to aid in FRAX underutilization. *Nature Medicine*, 2020. doi.org/10.1038/s41591-019-0720-z
14. Abelson S, Collord G, Ng SW, et al., **Barda N**, et al., Shlush LI. Prediction of acute myeloid leukaemia risk in healthy individuals. *Nature*, 2018. doi.org/10.1038/s41586-018-0317-6

Fairness

15. Stern N, Livni-Navon I, Reingold O, Bachmat E, **Barda N***, Dagan N*. A post-processing fairness mitigation method for medical prediction models. *IEEE Journal of Biomedical and Health Informatics*, 2026. doi.org/10.1109/JBHI.2026.3679625
16. Kapash D, Balicer RD, Reingold O, Dagan N, **Barda N**. Multiaccuracy for subpopulation calibration over distribution shift in medical prediction models. *Conference on Health, Inference, and Learning (PMLR 287)*, 2025. proceedings.mlr.press/v287/kapash25a.html
17. Fischer-Abaigar U, Kern C, **Barda N**, Kreuter F. Bridging the gap: towards an expanded toolkit for AI-driven decision-making in the public sector. *Government Information Quarterly*, 2024. doi.org/10.1016/j.giq.2024.101976
18. **Barda N**, Yona G, Rothblum GN, et al., Dagan N. Addressing bias in prediction models by improving subpopulation calibration. *Journal of the American Medical Informatics Association*, 2020. doi.org/10.1093/jamia/ocaa283

Research grants

2026–2029 Israel Science Foundation (MAVRI Biomedical Research). Immunologic correlates of protection and viral interference across respiratory viruses. Principal investigator (multi-PI grant). 3.2M NIS.

2025–2026	Israeli Ministry of Health (Innovative Solutions for Medical Technology Regulation). AI-based improvement of HIV infection diagnosis pathways in Israel. Principal investigator (multi-PI grant). 80K NIS.
2025–2026	Israel National Institute for Health Policy Research. The utility of routine blood work for early detection of metabolic abnormalities in healthy individuals. Principal investigator (multi-PI grant). 122K NIS.
2023–2024	National Cancer Institute (NIH), subaward under U01 CA261277. Causal, statistical and mathematical modeling with serologic data. Co-investigator. 177K USD.
2021–2025	Horizon Europe. VERDI Consortium: SARS-CoV-2 variants evaluation in pregnancy and pediatric cohorts. Principal investigator (multi-PI grant). 1M EUR.
2020–2021	Israel Innovation Authority. Food IoT / big data. Principal investigator (multi-PI grant). 1.1M NIS.
2018–2019	Israel Innovation Authority. Patient-facing predictive-causal calculators. Principal investigator (multi-PI grant). 1.6M NIS.

Honors and awards

2025	Excellence in Teaching Award, Faculty of Computer and Information Science, Ben-Gurion University of the Negev
2022–2026	Stanford/Elsevier database of top-cited scientists (career-long and single-year)
2021	Two papers in the Altmetric Top 100 of the year (ranked 15 and 34)
2021	Inaugural Fellow, Ivan and Francesca Berkowitz Family Living Laboratory Collaboration, Harvard Medical School and Clalit Research Institute
2018	Second place, American Medical Association and Google Health Care Interoperability and Innovation Challenge

Selected invited talks

2024	Designs for observational vaccine effectiveness studies. Symposium on Risks and Opportunities of AI in Pharmaceutical Medicine, Northeastern University, Boston.
2024	The Sheba healthcare worker cohort: past, present and future. ECDC annual meeting of the VEBIS healthcare worker vaccine effectiveness study, Stockholm.
2023	Waning immunity. WHO consultation on COVID-19 vaccines research: improving vaccine effectiveness studies.
2023	Tackling the Covid-19 pandemic with causal inference. Data-Powered Women's Health Research Day, Columbia University, New York.
2022	Tackling the Covid-19 pandemic with causal inference. Department of Computer Science seminar, Stanford University.
2022	Opportunities for the application of quantitative models in a fully integrated healthcare system. Theoretically Speaking lecture series, Simons Institute, Berkeley.
2022	Providing subgroup-relevant clinical information in causal inference and prediction. Simons Collaboration on the Theory of Algorithmic Fairness annual meeting, New York.
2022	Model explainability: the perspective of implementing prediction models for patient care. Interpretable Machine Learning in Healthcare workshop, ICML 2022.
2021	Causal inference to decipher Covid-19 vaccine effectiveness in a real-world setting. The Neglected Assumptions in Causal Inference workshop, ICML 2021.
2019	Addressing fairness in prediction models by improving subpopulation calibration. Keynote, Fair ML in Healthcare workshop, NeurIPS 2019, Vancouver.

Teaching and supervision

Courses at Ben-Gurion University of the Negev, all developed alone or jointly:

- Medical Prediction Models (Master's elective)
- Introduction to Biomedical Informatics (Master's core course)
- Advanced Topics in Epidemiology (Master's elective)
- Epidemiology 3: Data Analysis in Epidemiological Studies (Master's elective)
- Introduction to Epidemiology for Medical Students (undergraduate core course)
- Introduction to Effective Writing of Scientific Papers (Master's workshop)
- Health AI for Executives (executive course)

Supervision: 3 current PhD students; 10 current and 7 graduated Master's students (MSc, MPH and MD thesis).

Service

2026–present	Israeli Ministry of Health: Regulatory Sandbox for AI-based health studies; advisory committee on informed consent in AI-based health studies
2023–present	Israeli Ministry of Health: Central Advisory Committee for the Approval of Clinical Trials of Digital Medical Devices
2024–present	Managing committee member, Israel Association of Public Health Physicians
2023–present	Member, ethics committee for human subjects research, Ben-Gurion University of the Negev
2025–2026	Grant review: Israel Science Foundation (committee member, Health Sciences), US-Israel Binational Science Foundation, Israel National Institute for Health Policy Research
2024–2026	Examination committee member, national board examination for public health residents
2018–2019	Advisory committee to the Ministry of Health on regulations for the secondary use of medical data

Journal reviewing: Nature, New England Journal of Medicine, The Lancet, Lancet Infectious Diseases, Lancet Respiratory Medicine, Nature Medicine, Nature Communications, PLoS Medicine, BMC Medicine, Clinical Microbiology and Infection, Vaccine, and others.