

Muhammad Zia ul Haq, MD, MPH

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EDUCATION

PhD Candidate, Epidemiology *University of Michigan, Ann Arbor, USA* Aug 2024 – present

Rackham Merit Fellow. Grade point average 4.0. Preliminary examination passed May 2025; advanced to candidacy Fall 2025.

Methods concentration in causal inference: marginal structural models, inverse probability weighting, mixed-effects and survival analysis.

Master of Public Health, Epidemiology *Emory University, Rollins School of Public Health, Atlanta, USA* Dec 2021

Grade point average 3.98/4.00. Certificate in Genetic and Molecular Epidemiology. Fulbright Scholar.

Thesis: *Associations of phospholipid fatty acids with incidence of type 2 diabetes: a CARRS nested case-control study.*

Supervisor: Mohammed K. Ali.

MBBS (Doctor of Medicine) *Nishtar Medical University, Multan, Pakistan* Feb 2017

Graduated in the top quartile. Thesis: hospital waste management assessment in a tertiary care centre.

RESEARCH EXPERIENCE

Doctoral Researcher *Department of Epidemiology, University of Michigan* Aug 2024 – present

- Lead an analysis of longitudinal functional recovery after first-ever intracerebral hemorrhage by race, ethnicity and sex in the population-based Brain Attack Surveillance in Corpus Christi (BASIC) project.
- Derived average daily physical and occupational therapy minutes from Medicare revenue-centre claim lines linked to the Inpatient Rehabilitation Facility Patient Assessment Instrument, and modelled their relationship with discharge function using a penalised spline within a facility random-intercept mixed-effects model across 47,241 admissions at 1,517 facilities, with prespecified tests of modification by stroke severity, area deprivation, and race and ethnicity.

Research Strategy Advisor *Switchboard MD LLC, remote* Jul 2022 – present

Build data pipelines in R and Python for large-scale electronic health record and revenue-cycle datasets; contribute epidemiologic design and methodological writing to NIH and BARDA proposals on real-world data in clinical workflows.

Consultant, NCD Epidemiology and Policy *World Health Organization, Western Pacific and Eastern Mediterranean Regional Offices* Jan 2023 – Oct 2024

Technical lead for data analysis on noncommunicable disease country profiles for member states including Yemen, Tonga and Fiji, synthesising IHME Global Burden of Disease estimates, WHO country capacity survey data and national surveys; authored technical reports and evidence briefs on NCD management in emergency and fragile settings.

Senior Instructor *Department of Community Health Sciences, Aga Khan University, Karachi, Pakistan* Sep 2023 – Jul 2024

Led curriculum development and teaching in study protocol development, critical appraisal and data management; co-led acquisition of two NIH research grants through study design and protocol writing; supervised four master's students and two clinical residents.

Graduate Research Associate *Morningside Center for Innovative and Affordable Medicine, Emory University* Jul 2020 – Dec 2021

Built a curated database of FDA-approved drugs for potential oncology repurposing; systematically reviewed over 700 papers and wrote structured appraisals of more than 300; designed REDCap instruments for annotation and quality control.

Investigator *Emory Global Health Initiative, Atlanta, USA* Jun 2018 – Jul 2019

Supervised development of a prehospital assessment and transport smartphone application for trauma triage; established a trauma referral network and registry with Pakistani and US stakeholders.

HONOURS, AWARDS AND FELLOWSHIPS

- Francis E. Payne Fellowship, School of Public Health, University of Michigan, 2026
- Love of Learning Award, Honor Society of Phi Kappa Phi, national competition, 2026
- NIA-funded T32 traineeship, Interdisciplinary Research Training in Health and Aging, University of Michigan, 2026–2027
- Phi Kappa Phi Honor Society, Centennial Class, University of Michigan Chapter 39, April 2026 (top ten percent of graduate students)
- Ross Leaders Academy, Stephen M. Ross School of Business, 2025–26 cohort
- American Heart Association Genomic and Precision Medicine Early Career Engagement Award, 2025
- Rackham Conference Travel Grant, University of Michigan, awarded twice in 2025 (March and October)
- Gelman Global Scholars conference funding, Office of Global Public Health, University of Michigan, 2025
- Rackham Merit Fellowship, 2024 (one of two awarded in the Department of Epidemiology)
- Fulbright Scholarship, United States Department of State, 2019–2021
- REAL Financial Award, Emory University, 2020

PEER-REVIEWED PUBLICATIONS

Zia ul Haq M, Venkat Narayan KM, Patel SA, Sun YV, Ali MK, Ahmad S. Fatty-acid patterns and odds of incident type 2 diabetes in South Asians: a causal mediation analysis within the CARRS cohort. *Diabetes Research and Clinical Practice*. 2026;241:113572. doi:10.1016/j.diabres.2026.113572. *First author; open access; derived from MPH thesis.*

Zia Ul Haq M, Mansoor J, Lima Dos Santos CC, Perez Ramos AA, Pinzon Cueva E, Harzand A. Melatonin for blood pressure control in adults. *Cochrane Database of Systematic Reviews*. 2025;9(9):CD016159. doi:10.1002/14651858.CD016159. PMID 40955729; PMCID PMC12439326. *Protocol published; full review in preparation. First author and review lead.*

Anderson BJ, **Zia ul Haq M**, Zhu Y, Hornback A, Cowan T, Mott N, Gallaher B, Harzand A. Development and evaluation of a model to manage patient portal messages. *NEJM AI*. 2025;2(3). doi:10.1056/AIoa2400354. *Second author.*

Mansoor J, **Zia ul Haq M**, Ahsan Z, et al. Effect of high-efficiency particulate air filter on children with asthma: a systematic review protocol of randomised controlled trials. *BMJ Open*. 2024;14(12):e087493. doi:10.1136/bmjopen-2024-087493

Zia ul Haq M, Hornback A, Harzand A, Gutman DA, Gallaher B, Schoenberg ED, Zhu Y, Wang MD, Anderson B. Graph theoretic visualization of patient and health worker messaging in the EHR. *Frontiers in Artificial Intelligence*. 2024;7:1422208. doi:10.3389/frai.2024.1422208. *First author.*

Lima Dos Santos CC, Matharoo AS, Pinzón Cueva E, Amin U, Perez Ramos AA, Mann NK, Maheen S, Butchireddy J, Falki VB, Itrat A, Rajkumar N, **Zia ul Haq M**. The influence of sex, age, and race on coronary artery disease: a narrative review. *Cureus*. 2023;15(10):e47799. doi:10.7759/cureus.47799. *Last author.*

MANUSCRIPTS UNDER REVIEW AND IN PREPARATION

Zia ul Haq M, Kwicklis M, Zahuranec DB, Morgenstern LB, Lisabeth LD. Longitudinal recovery after first-ever intracerebral hemorrhage by race, ethnicity and sex: insights from the BASIC Study. Under revision, *Journal of the American Heart Association*.

Zia ul Haq M, Lisabeth LD, et al. Therapy intensity and discharge function after stroke: Medicare fee-for-service claims linked to the Inpatient Rehabilitation Facility Patient Assessment Instrument. In preparation.

CONFERENCE PRESENTATIONS

Presented

Zia ul Haq M, Kwicklis M, Zahuranec DB, Morgenstern LB, Lisabeth LD. Longitudinal recovery after first-ever intracerebral hemorrhage by race/ethnicity and sex: insights from the BASIC Study. Published conference abstract, *Circulation* 2025;151(Suppl 1):P3177. EPI|Lifestyle Scientific Sessions, American Heart Association, 2025. Presenting author.

Plasma fatty acids and incident type 2 diabetes in South Asians, CARRS cohort. American College of Epidemiology Annual Meeting, Pasadena, CA, 7–10 September 2025. Presenting author; supported by a Gelman Global Scholars award.

Combinations of fatty acids and type 2 diabetes mellitus risk in South Asians. 5th Annual Biological Sciences Conference, Aga Khan University, Karachi, 2025. Poster.

Society for Epidemiologic Research Annual Meeting, 2025.

Council of State and Territorial Epidemiologists Annual Conference, 2025.

Rollins School of Public Health Research Symposium, Emory University, 2021.

Accepted, forthcoming

Real-time natural language processing routing for patient portal messages reduces response time, resolution time and staff touches: prospective evaluation in outpatient EHR workflows. AMIA Annual Symposium, Dallas, TX, November 2026. Accepted poster (298).

Submitted, under review

Therapy intensity and discharge function after stroke. International Stroke Conference 2027, Houston, TX.

Plasma fatty-acid pattern, glycaemic mediation and incident type 2 diabetes in South Asians. CUGH 18th Annual Conference 2027, Lima, Peru.

TEACHING AND MENTORING

Engaged Learning Graduate Consultant *Ginsberg Center, University of Michigan* Jan 2026 – present
Trained facilitator for the community-engaged learning workshop series; co-facilitating from Fall 2026.

Graduate and resident supervision *Aga Khan University* 2023 – 2024
Supervised four master's students and two clinical residents on cardiovascular epidemiology and real-world data theses. A junior colleague mentored there is a named author on the Cochrane protocol and first author on the *BMJ Open* protocol.

SERVICE AND EXTRACURRICULAR ENGAGEMENT

Resident Advisor, Northwood graduate and family housing *University of Michigan* Aug 2026 – present
Transdisciplinary Fellow (Housing), 2026–2027. Programming and on-call support for a residential community of international graduate students and their families.

Students Welfare Association and Blood Donor Society *Nishtar Medical University* 2012 – 2017
Senior student leader. The association funded investigations and medicines for patients unable to pay and provided textbooks to classmates anonymously; it continues to operate and donated 88 books to the university library in 2020.

SKILLS AND CERTIFICATIONS

Methods. Cohort, case-control, pharmacovigilance and trial design; causal inference (marginal structural models, inverse probability weighting, g-formula); longitudinal and survival analysis; mixed-effects models; evidence synthesis and GRADE.

Software. R (tidyverse, nlme), Python (pandas, statsmodels), SAS 9.4, Stata, REDCap, Neo4j and Gephi. Familiar with EHR, administrative claims and revenue-cycle data structures.

Certifications. Good Clinical Practice; CITI Human Subjects Research.

Languages. English (fluent), Urdu and Hindi (native), Punjabi and Saraiki (fluent), Spanish (conversational), Arabic (basic).