

Darwin Del Castillo, MD, MPH

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EDUCATION

Master of Public Health (MPH) – Epidemiology
UNIVERSITY OF WASHINGTON

Sep 2023 – Jun 2025
SEATTLE - USA

Medical Doctor (MD)
UNIVERSIDAD NACIONAL MAYOR DE SAN MARCOS

Mar 2014 – Dec 2020
LIMA - PERU

SKILLS

Programming: SQL (MySQL/PostgreSQL), Python, R, Stata

Cloud Computing: Slurm HPC, Docker, Linux environments (bash)

Tools: VS Code, Jupyter, Quarto, L^AT_EX, Shiny (R), Git version control (GitHub, Bitbucket)

Data Standards: HIPAA, HL7 FHIR, GDPR, UK GDPR, DPA 2018

Packages: tidyverse, Pandas, ggplot2, lme4, mice, survival, geepack, gam, rJAGS, rstan, metafor, did, NumPy, Matplotlib, Seaborn, MR-BRT (GBD Study estimation)

Languages: English (fluent), Spanish (native)

Statistical methods: Survival models, mixed models/GEE, multiple imputation, bootstrapping, interrupted time-series analysis, crosswalking, difference-in-differences analysis, joinpoint regression

Core Competencies: Data analysis, teamwork, problem solving, science communication, mentorship

PROFESSIONAL EXPERIENCE

Graduate Research Assistant
INSTITUTE FOR HEALTH METRICS AND EVALUATION

Jul 2024 – Jun 2025
SEATTLE - USA

- Led the development of hyperparameters for a Bayesian hierarchical meta-regression model to estimate prevalence, incidence, and clinical outcomes of lower-respiratory-tract infections across 80 countries.
- Executed an MCMC algorithm with data-driven priors and uncertainty propagation to estimate the overlap among inclusion health populations in 22 high-income countries to compute population-attributable fractions and standardized mortality ratios.
- Performed ML algorithms on EHR data extraction from 2 countries with 60+ million records to build population-level summaries per age and sex groups, including simulation-based scenario testing.

Graduate Research Assistant
DEPARTMENT OF GLOBAL HEALTH – UNIVERSITY OF WASHINGTON

Sep 2023 – Jun 2024
SEATTLE - USA

- Designed the study protocol and coordinated a mixed-methods evaluation of implementation strategies for pediatric burn care across >10 low-resource Peruvian hospitals.
- Co-developed communication strategies with 2 stakeholder organizations to translate complex findings for healthcare policymakers.
- Conducted a systematic review to assess mental health policy implementation indicators in low-and middle-income countries as part of a consultancy for an international NGO.

Real-World Evidence Consultant
SOCIAL SECURITY SYSTEM (ESSALUD)

Jan 2023 – Jan 2024
LIMA – PERU

- Harmonized claims and inpatient EHR data from +50 hospitals to provide comprehensive insights into healthcare outcomes.
- Executed budget impact and cost-effectiveness models that prioritized oncological interventions worth \$1 M+.
- Synthesised systematic review/evidence synthesis and statistical estimates from clinical data into executive reports, guiding reimbursement policy for Peru's Social Security System.

Research Assistant
CRONICAS CENTER OF EXCELLENCE IN CHRONIC DISEASES

Mar 2019 – Aug 2023
LIMA – PERU

- Analyzed longitudinal data from observational studies and RCTs using generalised linear methods and survival curves in cardiometabolic disease epidemiology.
- Conducted preliminary data analysis on clinical, demographic, and biological biomarkers to support research grant proposals.
- Co-authored 5 scientific manuscripts, which included longitudinal data analyses and machine learning models.

ADDITIONAL EDUCATION

Professional Certificate in Clinical Research
UNIVERSIDAD PERUANA CAYETANO HEREDIA

Sep 2021 – Apr 2022
LIMA - PERU

RESEARCH SUPPORT AND TEACHING ACTIVITIES

Research Support

Concluded Research Support

Funder: National Institutes of Health (NIH), Fogarty International Center (FIC)
Project Code: D43TW001140
Title: Training in Infectious Diseases in Peru - Time for Implementation Research
Investigators: Garcia, HH., Gilman, RH., Gimbel, S.
Period: 09/2021 – 08/2022
Budget: \$294,960
Role: Fellow

Teaching

Lecturer

SCHOOL OF MEDICINE – UNIVERSIDAD CIENTÍFICA DEL SUR

INTRODUCTION TO EPIDEMIOLOGY: I teach three sections of ~15 fourth-year medical students each, focusing on basic clinical epidemiology concepts, including study designs, bias identification, & basic epidemiological surveillance concepts.

Mar 2025 – Current

LIMA – PERU

Teaching Assistant

COLLEGE OF ARTS & SCIENCES – UNIVERSITY OF WASHINGTON

INTRODUCTION TO MOLECULAR AND CELLULAR BIOLOGY: Led two laboratory practice sessions with ~25 undergraduate students each, covering fundamental molecular and cellular biology experiments.

Mar 2024 – Jun 2024

SEATTLE – USA

Mentoring

Undergraduate thesis

- Fátima Sánchez Diaz and Nicole Ravines Layza, “Barriers and facilitators for the integrated provision of mental health and family planning services in patients with severe mental illness from low-and middle-income countries. A Rapid Review Assessment”, Universidad Científica del Sur (2024 to Current).

LICENSURE AND CERTIFICATION

2024	National Registry of Investigators, RENACYT-CONCYTEC, Investigator Level VII (P0160977)
2023	CITI Program, Good Clinical Practice and ICH, Credential ID 65079238
2023	CITI Program, Human Subjects Learners, Credential ID 65079240
2023	CITI Program, Biomedical Responsible Conduct of Research, Credential ID 65079239
2021	Peruvian College of Physicians, Membership No. 94534

PUBLICATIONS ORCID: 0000-0002-8609-0312

Peer-reviewed publications

- Del Castillo, D.**, Bernabe-Ortiz, A., Gilman, R.H., Sharma, M., Nugent, R., Miranda J.J. (2025) “Cost-effectiveness analysis of a household salt substitute intervention on reducing community-wide blood pressure in Northern Peru” **Lancet Reg Health Am.** Submitted under consideration
- Vidyasagaran, AL., Ayesha, R., Boehnke, JR., [...], **Del Castillo Fernández, D.**, [...], Zavala, GA., Zhao, YW., Siddiqi, N. (2024) “Core outcome sets for trials of interventions to prevent and to treat multimorbidity in adults in low and middle-income countries: the COSMOS study” **BMJ Glob Health.** 9(8):e015120. Available at: [10.1136/bmjgh-2024-015120](https://doi.org/10.1136/bmjgh-2024-015120)
- Bazo-Alvarez, J.C., **Del Castillo, D.**, Piza, L., Bernabe-Ortiz, A., Carrillo-Larco, R.M., Smeeth, L., Gilman, R.H., Checkley, W., Miranda, J.J. (2024) “Multimorbidity patterns, sociodemographic characteristics, and mortality: Data science insights from low-resource settings” **Am J Epidemiol.** kwae466: Online ahead of print. Available at: [10.1093/aje/kwae466](https://doi.org/10.1093/aje/kwae466)
- Lapidaire, W., Proaño, A., Blumenberg, C., Loret de Mola, C., Delgado, CA., **Del Castillo, D.**, Wehrmeister, FC., Gonçalves, H., Gilman, RH., Oberhelman, RA., Lewandowski, AJ., Wells, JCK., Miranda, JJ. (2023) “Effect of preterm birth on growth and blood pressure in adulthood in the Pelotas 1993 cohort” **Int J Epidemiol.** 25;52(6):1870-1877. Available at: [10.1093/ije/dyad084](https://doi.org/10.1093/ije/dyad084)

- **Del Castillo-Fernández, D.**, Brañez-Condorena, A., Villacorta-Landeo, P., Saavedra-García, L., Bernabé-Ortiz, A., Miranda, JJ. (2021) “[Advances in the investigation of chronic non-communicable diseases in Peru] (in Spanish)” **An Fac med.** 81(4): 444-452. Available at: [10.15381/anales.v81i4.18798](https://doi.org/10.15381/anales.v81i4.18798)

Conference abstracts

- Valverde, N., Santivañez, M., Tello, M., and **Del Castillo, D.** (2025) “[Beyond abortion: A mixed methods study on the factors that condition access and use of post-abortion contraceptives in Peruvian women] (in Spanish)” **VII International Conference on Family Planning** The William H. Gates Sr. Institute for Population and Reproductive Health., Bogota, Colombia