

Alejandra Paniagua-Ávila, MD, MPH
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EDUCATION

Doctor of Public Health in Epidemiology <i>Mailman School of Public Health, Columbia University, New York, NY</i>	2019-Present
Master of Public Health <i>Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA</i>	2015-2016
Doctorate of Medicine, <i>cum laude</i> <i>School of Medicine, Universidad Francisco Marroquín, Guatemala, Guatemala</i>	2008-2015
Bachelor of Science, <i>cum laude</i> <i>School of Medicine, Universidad Francisco Marroquín, Guatemala, Guatemala</i>	2008-2010

AWARDS AND FELLOWSHIPS

Epidemiology Merit Scholarship \$ 43,864 <i>Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY</i> Full tuition scholarship awarded to Epidemiology doctoral students based on academic merit	2019-Present
Allan Rosenfield Scholarship \$20,000 <i>Mailman School of Public Health, Columbia University, New York, NY</i> Scholarship awarded to outstanding students pursuing a doctoral degree in the field of public health.	2019-Present
Innovative Healthcare Leaders Fellowship \$20,000 <i>Central American Healthcare Initiative (CAHI), INCAE Business School, Nicaragua and Costa Rica</i> Competitive grant awarded to 15 Central American leaders whose projects would positively impact the health status of underserved Central American communities. Developed the first Motivational Interviewing training program for community nurses working in rural Guatemala.	2017-2018
Public Health and Epidemiology Research Training \$130,000 <i>NIH Fogarty International Center's training grant to the University of Pennsylvania, Philadelphia, PA</i> Grant awarded annually to two promising Guatemalan health professionals whose training would result in the development of research projects focused on chronic diseases. (Grant: NIH Fogarty International Center D43TW008317)	2015-2016
Penn Social Impact Fellowship \$3,000 <i>School of Social Policy and Practice, University of Pennsylvania, Philadelphia, PA</i> Full scholarship awarded to University of Pennsylvania students with experience and interest in Social Entrepreneurship and a proven record of leadership.	2016

Doctor Rafael Minondo's Academic Excellence Scholarship 2012-2015
 \$24,000
School of Medicine, Universidad Francisco Marroquín, Guatemala City, Guatemala
 Half tuition scholarship awarded based on academic excellence and service.

Academic Excellence Awards 2008-2015
School of Medicine, Universidad Francisco Marroquín, Guatemala City, Guatemala
 Awarded annually to the top 3% medical students.

PROFESSIONAL POSITIONS

Graduate Research Assistantship with Dr. Jeremy Kane 2020
Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY
 Responsibilities include collaborating with a multidisciplinary team of researchers and practitioners in global mental health on conducting a range of research projects, including qualitative, measurement validation, intervention (randomized controlled trials), and implementation studies. Specific tasks include literature and desk reviews, mixed methods data analysis, manuscript preparation, monitoring and evaluation of ongoing global mental health programs, regulatory submission and maintenance, training of partner staff in human subjects research and research methods, and dissemination activities.

Graduate Research Assistantship with Lauren Houghton 2019-2020
Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY
 Responsibilities include collaborating in the design and analysis of qualitative, quantitative and mixed-methods studies, and writing scientific manuscripts on bio-cultural determinants of puberty and mixed-methods in epidemiological research.

Project Director and Co-Investigator 2018-2019
Centro de Investigación de INCAP para Prevención de Enfermedades Crónicas (CIIPEC, INCAP), Guatemala City, Guatemala
 Set-up an effectiveness-implementation cluster randomized trial of a hypertension control intervention to be implemented in five Guatemalan states. Established partnerships with stakeholders, including Ministry of Health authorities. Adapted the intervention based on mixed-methods data and adaptation workshops. Validated educational materials for healthcare providers. Staffed and trained the research team. Designed the data management plan (PIs: J. He MD PhD, M. Ramírez MD PhD; Grant: NIH NHLBI 1U01HL138647-01).

Research Director and Co-Investigator 2017-2019
Fundación para la Salud Integral de los Guatemaltecos (FUNSALUD), Quetzaltenango, Guatemala
 Set-up, staffed, trained and led a research team of 35 nurses, psychologists, physicians, data managers, laboratory technicians and 30 community health workers. Led the implementation of a prospective cohort study looking at the influence of infectious diseases, nutritional status and maternal health status on the neurodevelopmental outcomes of infants living in rural Guatemala (PIs: E. Asturias MD, F. Munoz MD; Grant: NIH NIAID 16-0057).

Clinical Research Coordinator 2015
FUNSALUD, Quetzaltenango, Guatemala
 Coordinated the implementation of a new research site in rural Guatemala. Coordinated a mobile health fever and diarrhea surveillance research project, overseeing data collection and data management processes. Trained and supervised a team of local nurses and laboratory technicians (PI: E Asturias MD; Grant: IISR-2014-100647).

RESEARCH EXPERIENCE

The COVID-19 Health Care Workers (HEROES) study (Co-Investigator) 2020-Present
Mailman School of Public Health, Columbia University, New York, New York

Leading the Guatemalan implementation of a multi-site prospective cohort study evaluating the impact of COVID-19 on mental health and psycho/social factors among workers at health services of 22 countries.

Mental Health Services in Rural Guatemala (Local Principal Investigator) 2019-Present
Stanford School of Medicine, Stanford, California

Designed a qualitative study to evaluate the barriers and facilitators for providing mental health services in two rural municipalities in Guatemala following the six building blocks of a health system framework.

Workers' Health Survey Analysis 2018-2019
FUNSALUD, Quetzaltenango, Guatemala

Analyzed the outcomes from a Health Survey focused on depression, anxiety and cardiovascular diseases. Presented the preliminary results to the Board of Directors of a banana plantation with more than 5,000 workers.

Qualitative study on diabetes self-management 2015-2016
University of Pennsylvania's Guatemala Health Initiative, Santiago Atitlan, Guatemala

Designed, conducted and analyzed a qualitative study to understand the social, emotional, economic and physical factors that influence type 2 diabetes mellitus self-management in a Guatemalan Tz'utujil Maya community. Results are informing an existing diabetes program by guiding patient-provider communication (Grant: NIH Fogarty International Center D43TW008317). MPH Capstone project.

Community health needs assessment 2016
Sayre Health Center, Philadelphia, PA

Designed, implemented and coordinated a mixed-methods community health needs assessment, the results of which are guiding the clinical and community outreach activities of Sayre, a health center in a socioeconomically distressed neighborhood in West Philadelphia.

Community-based participatory research (CBPR) 2013
Comprehensive Health Program, Universidad Francisco Marroquin, Guatemala City, Guatemala

Designed and initiated a series of formative qualitative studies and CPBR projects that are guiding a community-oriented maternal and child health program in rural Guatemala.

PEER-REVIEWED PUBLICATIONS

Ocampo JM, Lavery A, Huang Y, Paul D, **Paniagua-Avila A**, Punjani N (2021). Student Perspectives From a COVID-19 Epicenter: Bridging Educational Training and Public Health Practice. *American Journal of Public Health*. 111(1):71-73. doi: 10.2105/AJPH.2020.306003

Paniagua-Avila A, Fort MP, Glasgow RE, et al (2020). Evaluating a multicomponent program to improve hypertension control in Guatemala: study protocol for an effectiveness-implementation cluster randomized trial. *Trials*. 21(1):509. doi:10.1186/s13063-020-04345-8

Paniagua-Avila A, Olson D, Connery A, Calvimontes M, et al. Investigating the natural history of postnatal Zika virus infection and its impact on neurodevelopment during an outbreak: implementation of a prospective cohort study in rural Guatemala. *Neglected Tropical Diseases*. (Submitted)

Colbert AM, Lamb MM, Asturias EJ, Munoz FM, Arroyave P, Bauer D, Hernandez S, Martinez MA, **Paniagua-Avila A**, Olson D, Calvimontes M, Bolanos G, El Sahly H, Connery AK (2020). Reliability and Validity of an Adapted and Translated Version of the Mullen Scales of Early Learning (AT-MSEL) in Rural Guatemala. *Child Care Health and Development*. 1– 9. doi: 10.1111/cch.12748

Fort M, **Paniagua-Avila A**, Beraterrechea A, Cardona S, Figueroa JC, Martinez K, Moyano D, Irazola V, He J, Barrios E, Mazariegos BE, Palacios E, Ramírez-Zea M (2019). Stakeholder Engagement in the Translation of a Hypertension Control Program to Guatemala’s Public Primary Health Care System: Lessons Learned, Challenges, and Opportunities. *Global Heart*. 14(2):155–163. doi: 10.1016/J.GHEART.2019.05.005.

Connery AK, Colbert A, Lamb MM, Hernandez S, Martinez MA, Bauer D, Arroyave P, El Sahly H, **Paniagua-Avila A**, Calvimontes M, Bolanos GA, Olson D, Asturias EJ, Munoz F (2019). Receptive language skills among young children in rural Guatemala: The relationship between the Test de Vocabulario en Imagenes Peabody and a translated and adapted version of the Mullen Scales of Early Learning. *Child: Care, Health and Development*. 45(5):702–708. doi: 10.1111/cch.12702.

Connery AK, Berrios-Siervo G, Arroyave P, Bauer D, Hernandez S, **Paniagua-Avila A**, Bolanos GA, Bunge-Montes S, El Sahly HM, Calvimontes M, Olson D, Munoz FM, Asturias EJ (2019). Responding to the Zika Epidemic: Preparation of a Neurodevelopmental Testing Protocol to Evaluate Young Children in Rural Guatemala (2019). *American Journal of Tropical Medicine and Hygiene*. 100(2): 438–444. doi: 10.4269/ajtmh.18-0713.

Olson D, Lamb M, Lopez MR, Colborn K, **Paniagua-Avila A**, Zacarias A, Zambrano R, Rodriguez-Castro S, Cordon-Rosales C, Asturias E (2017). Performance of a Mobile Phone App-Based Participatory Syndromic Surveillance System for Acute Febrile Illness and Acute Gastroenteritis in Rural Guatemala. *Journal of Medical Internet Research*, 19(11):e368. doi: 10.2196/jmir.8041.

Olson D, Lamb M, Lopez MR, **Paniagua-Avila A**, Zacarias A, Samayoa-Reyes G, Cordon-Rosales C, Asturias E (2017). Rapid Active Sampling (RAS) Surveys as a Tool to Evaluate Factors Associated with Acute Gastroenteritis and Norovirus Infection among Children in Rural Guatemala. *American Journal of Tropical Medicine and Hygiene*. 97(3): 944–948. doi 10.4269/ajtmh.16-1003.

Paniagua-Avila A, Messenger E, Nelson CA, Calgua E, Barg FK, Bream KW, et al (2017). The Guatemala-Penn Partners: An Innovative Inter-Institutional Model for Scientific Capacity-Building, Healthcare Education, and Public Health. *Frontiers of Public Health*, 5, 7. doi: 10.3389/fpubh.2017.00070

Olson D, Lamb M, Lopez MR, **Paniagua-Avila A**, Zacarias A, Samayoa-Reyes G, et al (2017). A rapid Epidemiological Tool to Measure the Burden of Norovirus Infection and Disease in Resource-Limited Settings. *Open Forum Infectious Diseases*, 4(2). doi: 10.1093/ofid/ofx049

CONFERENCE PRESENTATIONS – ORAL

Paniagua-Avila A, Guzman AL, Shelton R, Fort MP (2021). Adapting a multi-component hypertension program in a Guatemalan under-resourced dynamic context: An application of the RE-AIM/PRISM framework with a focus on health equity and sustainability. *Dissemination and Implementation Science in a Dynamic, Diverse, and Interconnected World: Meeting the Urgent Challenges of our Time*. Online.

Kohrt B, **Paniagua-Avila A**, Martinez D (2018). A Motivational Interviewing Training Program Tailored to the Needs of Community Nurses Working in Rural Guatemala. *Global Alliance for Behavioral Health and Social Justice Conference*. Denver, Colorado.

Paniagua-Avila A, Burrone MS, Alvarado R (2018). Saqirsan: Providing Mental Health Services to Maya Communities in Guatemala. *Redeamericas Annual Meeting*. Neuquen, Argentina.

Paniagua-Avila A, Bream K, Frasso R, Calderon T, Frances B (2017). Social, Emotional, Economic and Physical Factors that Influence Type 2 Diabetes Mellitus Self-Management in a T'zutujil Maya Community of Guatemala. *American Public Health Association Conference*. Atlanta, Georgia.

Olson D, Lamb ML, Zacarias A, López MR, **Paniagua-Avila A**, Samayoa-Reyes G, Cordon-Rosales C, Asturias EJ (2016). Rapid Active Sampling (RAS) Surveys: A Tool for Estimating Norovirus Disease Burden in Resource-Limited Settings. *6th International Calicivirus Conference*. Savannah, GA.

Asturias G, **Paniagua-Avila A**, Khan C (2019). Assessment of Guatemala's Current Health System Capacity to Provide Mental Health Services in Two Rural Municipalities. *Center for Innovation in Global Health*. Stanford, California.

Paniagua-Avila A, Delgado H. Perceptions, Attitudes and Behaviors Related to Prenatal Care in San Juan Sacatepéquez (2014). *Clinical seminars at Universidad Francisco Marroquín School of Medicine*. Guatemala City, Guatemala.

CONFERENCE PRESENTATIONS – POSTER

Juan Carlos Figueroa, **Alejandra Paniagua-Avila**, Ingrid Sub Cuc, Jiang He, Vilma Irazola, Manuel Ramírez-Zea, Meredith P. Fort (2021). Explanatory models of hypertension in Guatemala: Recognizing the perspectives of patients, family members, health care providers and central-level stakeholders. Consortium of Universities for Global Health Annual Conference (CUGH). Online.

Alejandra Paniagua-Avila, Rachel Shelton, Meredith P. Fort (2021). Adapting a multi-component hypertension program in a Guatemalan under-resourced dynamic context: An application of the RE-AIM/PRISM framework with a focus on health equity and sustainability. Dissemination and Implementation Science Annual Conference. Online.

Peralta A, **Paniagua-Avila A**, Fort M, Gulayin P, He J, Irazola V, Mansilla K, Hernandez D, Ramirez-Zea M (2020). Translating and validating questionnaires in Mayan languages for a hypertension T4 study in Guatemala. World Congress on Public Health. Online.

Paniagua-Avila A, Chavez-Manth C, Puac-Polanco V, Lopez A, Ramírez D, Asturias G, Burrone MS, Alvarado R, Figueroa C (2018). Providing Culturally-Appropriate Mental Health Services to Maya Communities in Guatemala. *5th World Congress of the World Association of Cultural Psychiatry*. New York, New York.

O'Rourke A, **Paniagua-Avila A**, Frasso R (2017). Diabetic Alert Dogs: A Qualitative Study Assessing the Perceived Impact on Owner Quality of Life. *American Public Health Association Conference*. Atlanta, Georgia.

Ochoa DP, **Paniagua-Avila A**, Lin E, Sneed S, Tatad A (2017). The Need for Scientific Collaborations Across Latin American Policy Makers to Reduce Chronic Illnesses. *Science and Diplomacy Conference of the American Association for the Advancement of Science*. Washington DC.

Olson D, Lamb ML, Lopez MR, Colborn KC, **Paniagua-Avila A**, Zacarias A, Zambrano-Perilla R, Rodriguez-Castro SR, Asturias EJ (2017). Performance of a Smartphone Application-Based Participatory Syndromic

Surveillance System for Acute Febrile Illness and Acute Gastroenteritis in Rural Guatemala. *ID Week*. San Diego, CA.

Paniagua-Avila A, Frasso R, Bream K, Barg F (2016). Diabetes-Related Emotional Distress in Santiago Atitlan: A Tz'utujil Maya community of Guatemala. *Student Public Health Poster Session at the Philadelphia College of Physicians*. Philadelphia, PA. Best Global Health Poster Award.

Paniagua-Avila A, Ochoa DP, Lin E, Sneed S, Kim S, Tatad A (2016). Reducing the Burden of Non-Communicable Diseases through Regional Collaborations. *Science and Diplomacy Conference of the American Association for the Advancement of Science*. Washington DC. Travel Award.

Olson D, Lamb ML, Zacarias A, López MR, **Paniagua-Avila A**, Samayoa-Reyes G, Cordon-Rosales C, Asturias EJ (2016). Rapid Active Sampling (RAS) Surveys as a Tool to Evaluate Factors Associated with Acute Gastroenteritis and Norovirus Infection among Children in Rural Guatemala. *ID Week*. New Orleans, LA.

Olson D, Lamb ML, Zacarias A, López MR, **Paniagua-Avila A**, Samayoa-Reyes G, Cordon-Rosales C, Asturias EJ (2016). Rapid Active Seroprevalence Surveys as a Tool to Measure Dengue Virus Disease Burden in Resource-Limited Settings. *ASTMH Conference*. Atlanta, GA. Nov 2016.

INVITED LECTURES AND WEBINARS

Paniagua-Avila A (2020). Mental health in healthcare providers responding to COVID-19 in Guatemala. *Invited speaker for "Se tenia que decir" dialogue*. Guatemala City, Guatemala.

Paniagua-Avila A (2018). Health research careers in Guatemala: Why Mentorship Matters? *Invited lecture for Scientific Society of Guatemala's Seminar*. Universidad de San Carlos de Guatemala, Guatemala City, Guatemala.

Paniagua-Avila A (2018). Developing a Motivational Interviewing Training Program for Community Nurses in Rural Guatemala. *Invited lecture for Dr. Brienne Kohrt's International Public Health Class (CPSY 4557)*. University of Denver, Denver, Colorado.

Paniagua-Avila A (2017). Building Research Capacity in a Rural, Medically Underserved Community of Guatemala. *Invited lecture for University of Pennsylvania's Global Health Society*. University of Pennsylvania, Philadelphia, Pennsylvania.

Paniagua-Avila A (2017). Guatemala Health Initiative. *Invited lecturer for University of Pennsylvania's Guatemala Health Initiative's summer field school*. University of Pennsylvania, Guatemala.

VOLUNTEER WORK

Director of Evidence and Implementation

2018-2019

Saqirsán, Chimaltenango, Guatemala

Designing an evidence-based mental health program conducted by a Guatemalan nonprofit organization that seeks to provide mental health services to Maya populations. Establishing a network of collaborators including mental health researchers, psychiatrists, and local stakeholders. Conducting the formative research that will guide the development of future community-based mental health initiatives.

Community mental health and art program in rural Guatemala

2017-2018

FUNSALUD, Quetzaltenango, Guatemala

Designed and directed a creative arts program for children and adolescents with limited access to art education, living in rural Guatemala.

Community activities in Philadelphia

2016

Puentes de Salud, Philadelphia, PA

Participated in multiple health promotion activities led by community health workers and volunteered as an English-Spanish translator at a non-profit that promotes the health and wellbeing of Latino immigrants living in Philadelphia.

TEACHING AND MENTORSHIP

Community health research mentor

2018-2019

FUNSALUD, Quetzaltenango, Guatemala

Established a partnership between the Guatemala-Penn-Partners and FUNSALUD, the University of Colorado Denver's Global Health site in Guatemala. Mentored one Public Health student from the University of Pennsylvania who conducted a community-based qualitative study on mental health during the summer of 2018.

Clinical Instructor, Volunteer Clinical Faculty

2017-2019

Department of Pediatrics, School of Medicine, University of Colorado Denver, CO

Providing clinical and cultural guidance to medical residents during a Global Health clinical rotation at the University of Colorado Denver's Global Health site in rural Guatemala.

CLINICAL EXPERIENCE

Primary Care Physician

2017-2019

FUNSALUD, Quetzaltenango, Guatemala

Evaluated infants and adults and developed diagnostic and treatment plans under the guidance of attending physicians; coordinated tele-medicine clinics linking patients from rural Guatemala to psychiatrists and neurologists from the University of Colorado Denver.

Clerkship in Internal Medicine, Endocrinology, Diabetes and Metabolism

2014

Hospital of the University of Pennsylvania, Philadelphia, PA

Evaluated patients and developed diagnostic and treatment plans under the guidance of attending physicians.

Clinical internship

2014

Universidad Francisco Marroquin, Public hospitals in Guatemala City

Rotated through the departments of Pediatrics, Internal Medicine, Surgery and Obstetrics, developing diagnostic and treatment plans under the guidance of physicians; coordinated teams of medical students.

ADDITIONAL COURSEWORK

Intensive Course in Fundamentals of Implementation Science in Global Health

Aug, 2018

University of Washington, Seattle, WA

Received financial support (\$999) to participate in a one-week course attended by researchers, healthcare providers and public health professionals working in low- and middle-income countries.

PROFESSIONAL MEMBERSHIPS

Member, Global Implementation Society

2018-Present

Adjunct Fellow, Center for Public Health Initiatives, University of Pennsylvania

2017-Present

International Scholar, Center for Global Health, University of Pennsylvania

2017-Present

Member, American Public Health Association

LANGUAGES

Spanish, native language
English, fluent

OTHER SKILLS

Qualitative Data Analysis Software: NVivo11; Dedoose
Statistical Packages: STATA; SAS
Geographic Information Systems: ArcGIS
Data Management Software: REDCap