The ALTO-Cohort Project

Swiss - Peruvian Health Research Platform

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Cohorts and Long-term Partnerships
Virtual events
8.9.2022
ALTO - The Peruvian Andes Multigenerational High Altitude Cohort

- Multi-generational birth cohort located in the Northern Peruvian Andes
- Pregnancies and family members
- Enrolment mid-Feb 2020 until mid-Aug 2022
Study Design

- Provincia de San Marcos, Región Cajamarca
- Cohort Study
- Pregnant women, 2000 births expected
- Family members, up to 4 generations
- Currently enrolled: (2022, wk36)
  - 1884 pregnancies
  - 2490 family members
Peruvian Andes Multi-Generational High Altitude Cohort (ALTO)

To establish a birth- & multigenerational cohort in the entire province of San Marcos (2020-2022)

**Elderly Health Outcomes**
- Chronic conditions
- Quality of Life
- Lifestyles

**Pregnancy and child birth outcomes:**
- Preeclampsia, gestational diabetes
- Foetal and perinatal health

**Adult Health Outcomes**
- Hypertension
- Diabetes
- Overweight
- Mental health
- Degenerative diseases

**Early child development & Health**
- Burden of disease, Diarrhoea
- Respiratory infections, AMR

Swiss TPH
Study Design

Eligibility
Enrolment
Evaluations, biomarkers
Birth
Future

Life Course Etiology & Progression

Policy
Institutions
Community
Inter-Personal
Intra-Personal

Ministry of Health (MoH) level – Weekly reports from “Pregnant women repository” (SIVIGYP)

Peripheral health service level / Community level

Household- Social Networks
Study Design

Eligibility

Enrolment

Evaluations, biomarkers

Birth

Future

Life Course Etiology & Progression

Swiss TPH
Study Design

Life Course Etiology & Progression

Key Topics

Environmental Expo.
- Air Pollution
- WASH/Water
- Chemicals
- AMR

Household Environments
- AMR
- HAP
- Noise

Life Style
- Nutrition
- Physical Activity
- Smoking
- Alcohol & Drug

Phenotype
- Mental Health
- NCDs
- Infections
- Pain
- Eyes

Biomarkers
- Epigenetics
- Genetics
- Microbiomes

Social Determinants
- Poverty
- Social mobility
- In/out migration
- Spatial Mobility

Policy Evaluation (JUNTOS, CUNAMAS, FISE, PENSION-65)
Study Design

Life Course Etiology & Progression

**Key Topics**

**Environmental Expo.**
- Air Pollution
- WASH/Water
- Chemicals
- AMR
- Heat & weather

**Household Environments**
- AMR
- HAP
- Noise

**Life Style**
- Nutrition
- Physical Activity
- Smoking
- Alcohol & Drug

**Phenotype**
- Mental Health
- NCDs
- Infections
- Pain
- Eyes

**Biomarkers**
- Epigenetics
- Genetics
- Microbiomes

**Climate change socio-ecology**
- Extreme events
- Livelihoods, resilience & vulnerability
- Food security
- Energy poverty
- Migration
- Urban ecology
- Heat waves

Policy Evaluation (JUNTOS, CUNAMAS, FISE, PENSION-65)

Swiss TPH
Understanding NCDs in the ALTO cohort

To understand the epidemiology of NCDs in the rural high altitude setting and contribute to health system strengthening in NCDs prevention and control.

- **Hypertension** and **diabetes** in adults
- **Gestational diabetes** and **preeclampsia**
- Performance of the **Finnish Diabetes Risk Score** for Peruvian Andean population.
- **Perceptions of NCDs** in the general population and among health professionals.
The Swiss – Peruvian Health Research Platform

MoU Cayetano Heredia since 2012

- Promote joint projects to **strengthen research capability** in Infectious diseases, NCDs, Environmental public health, Epidemiology, Health systems and Policy analysis

- Strengthen collaboration in the field of **teaching and training** related to the joint research project

- Promote **staff and student exchange** between UPCH and Swiss TPH

- **Exchange faculty** members for teaching /training in each other’s training and teaching programmes.

**Areas of Research**

- **Foster child health**
  - Early Child Development
  - Mother, New-born Child Health

- **Environmental Exposures**
  - WASH, Household Air Pollution
  - AMR, One Health

- **Adaptation to Climate Change**
  - Integrated Home-based Approaches

- **Interventions & new technologies**
  - m-Health & Access to Care
  - Behavioural Sciences

- **NCDs & Infectious diseases**
  - Adult health
Research with SPHR? – We have your expert team!
Hygiene and One Health

Non-communicable disease, environmental exposures & HAP

Integrated Household-based Approaches Livelihoods and HH economics

Water quality and HWT

Child development and health

Adaptation to Climate Change and Health
Swiss - Peruvian Health Research Partnership

Partners

Funding

UBS

wellcome

Concytec

SSPH+

The Novartis Foundation

National Institutes of Health Fogarty International Center

World Health Organization

UCL

Tulane University

Emory Rollins School of Public Health

Université de Genève

Mountain Research Initiative

Instituto de Investigación Nutricional

Universidad Peruana Cayetano Heredia

Ministerio de Desarrollo e Inclusión Social

CUNAMAS

Sencico

Grand Challenges Canada

Global Alliance for Clean Cookstoves

Botnar Foundation

Global Network of Public Health Schools
Non Communicable Diseases Andean cohort

Participants:

- 500 pregnant/post partum women
- 2450 family members (500*4.9 HH)

Data collection

- Socioeconomic questionnaire
- Personal questionnaire (physical activity, smoking, diet, disease history)
- KAP questionnaire of hypertension and type II diabetes
- Physical examination: SpO2, blood pressure, anthropometrics, Hemoglobin, fasting glucose and lipids, urine dipstick analysis*.