



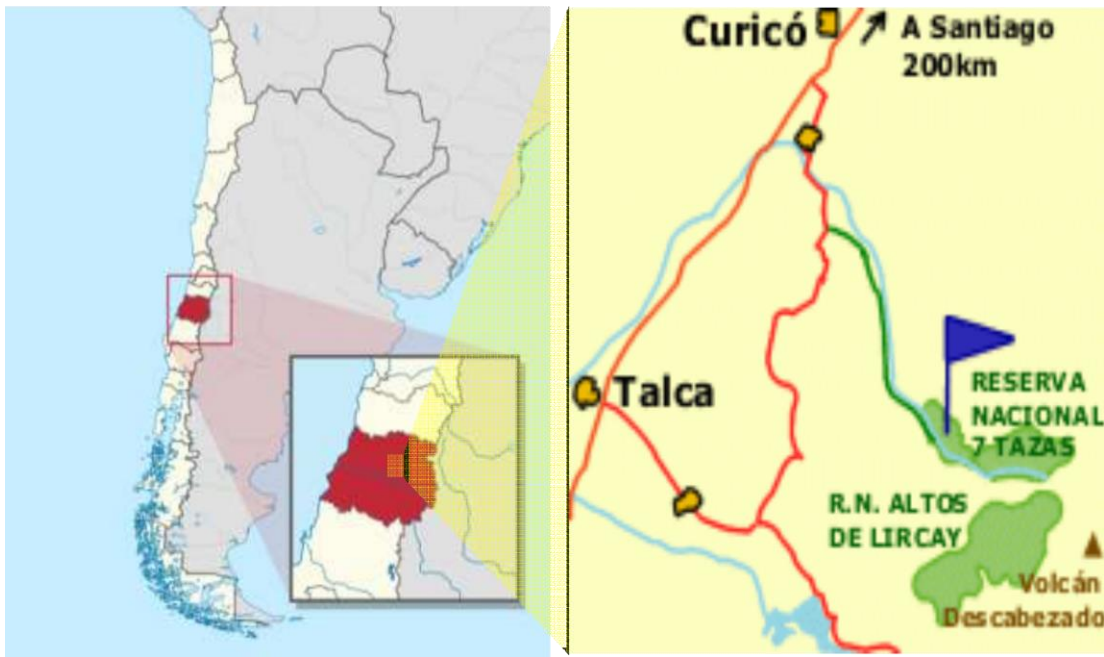
Core Project MAUCO 2014-2024

Catterina Ferreccio, Andrea Huidobro



MAUCO objectives:

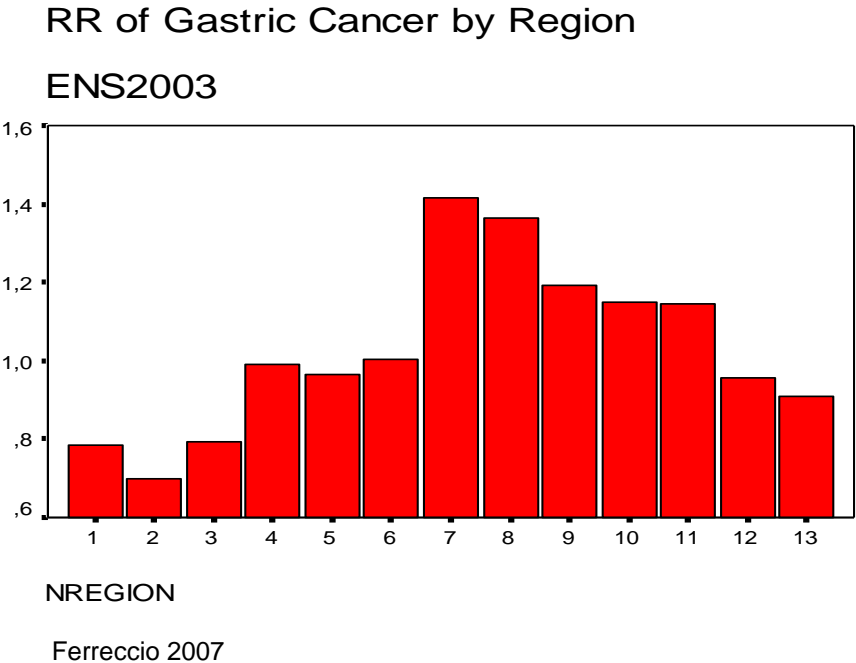
1. Assess **physical and mental health** at baseline, measure a wide range of **exposures associated with health and healthy aging**
2. Measure risk factors and **biomarkers**
3. Evaluate **changes in exposures, health conditions and biomarkers**



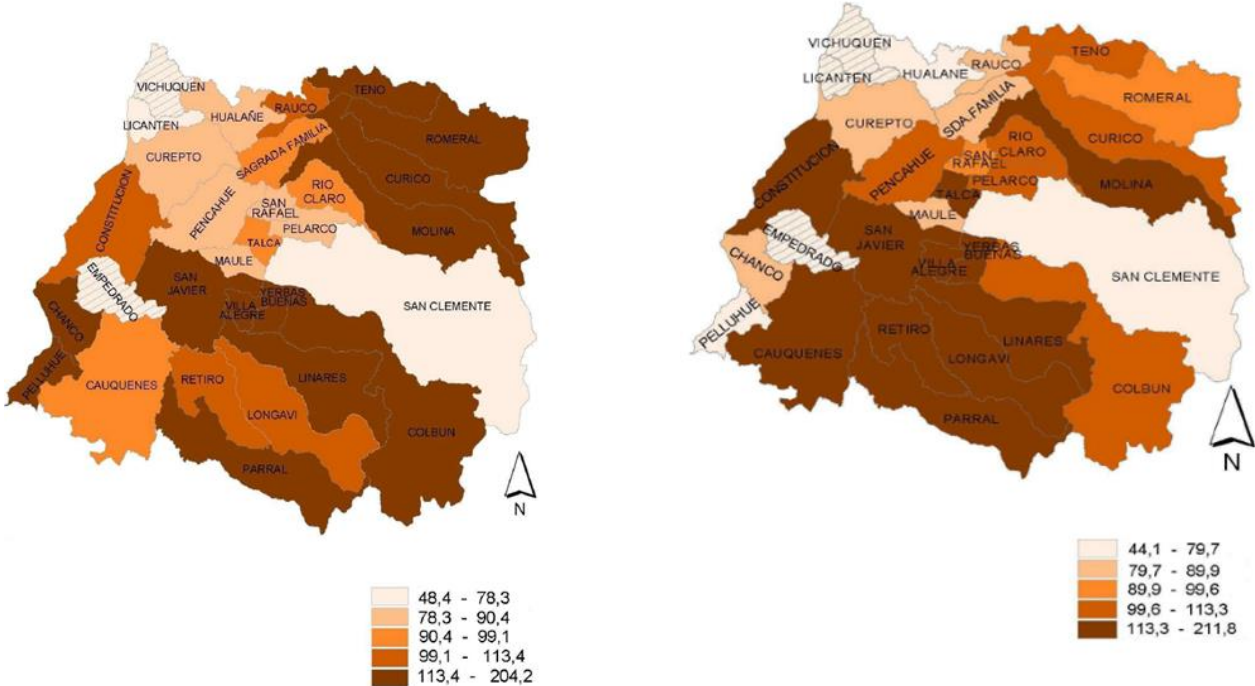
Why Molina?

- **High risk of Cardiovascular disease and cancer**
- Represents population of **small agricultural counties** (40% of Chilean counties)
- Previous **successful cross-sectional gastric cancer** study
- **Low migration**
- **High potential for public health demonstration projects**

Study region: Highest national gastric cancer deaths rates for more than 30 years



Highest national mortality of cardiovascular diseases
Molina 1997-2003



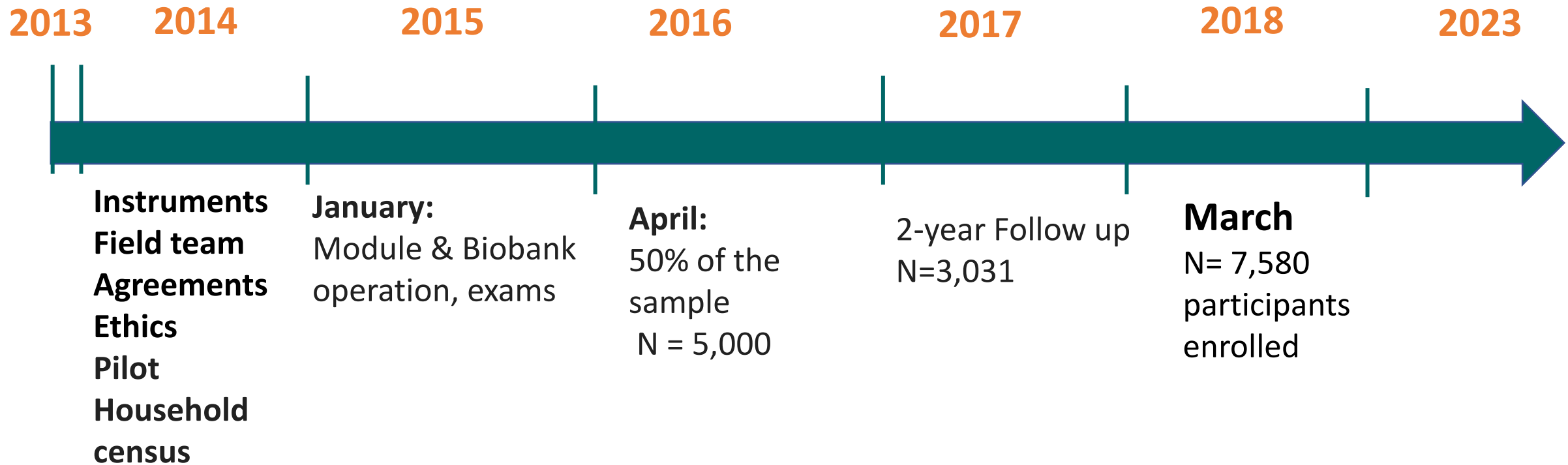
Design & Methods



1. Baseline measurement 2014-2019
2. Follow-up: every 2 years
3. Health event surveillance: since enrollment
4. Biobanking

MAUCO project timeline

Grant
Begins



Phase 0: Training

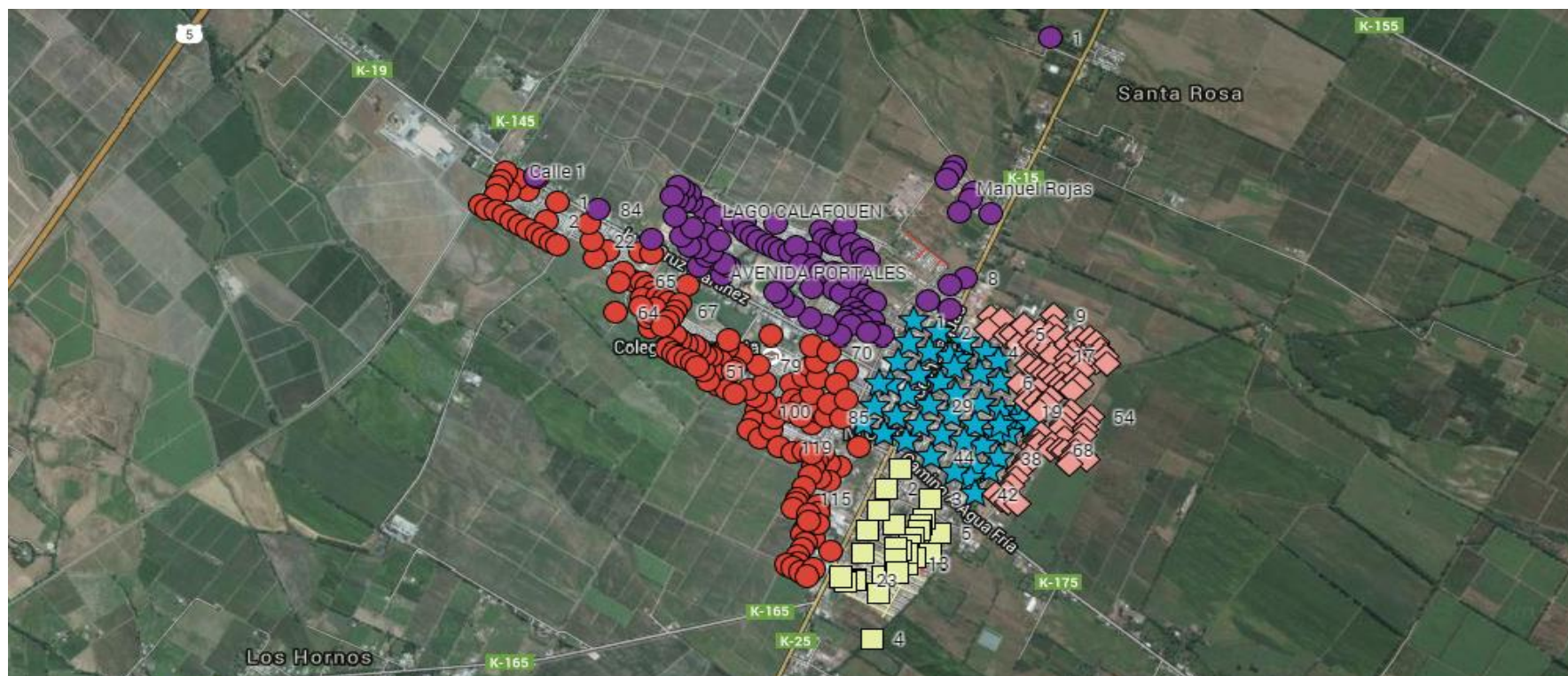


Phase 1: Census of households, geocoding & Enrollment





Field work enrollment by December 2015



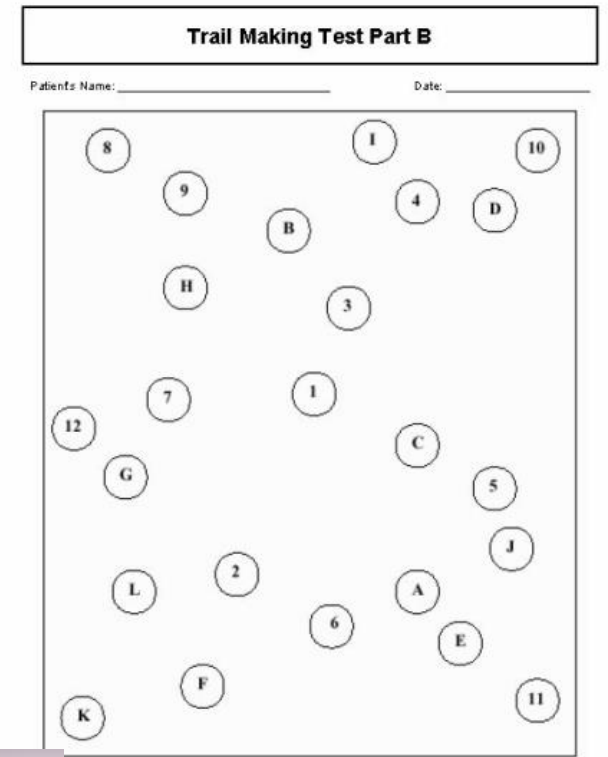
2015-2016: Soil samples in Molina (metals)



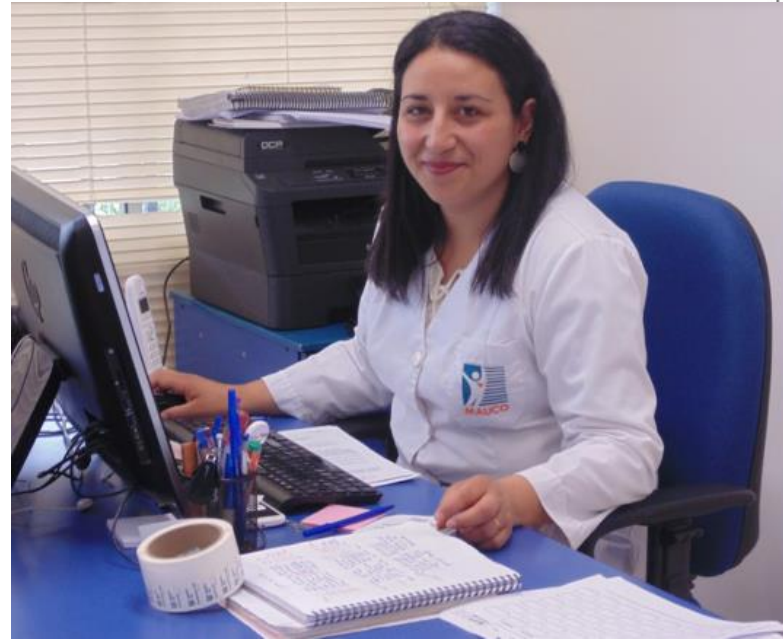
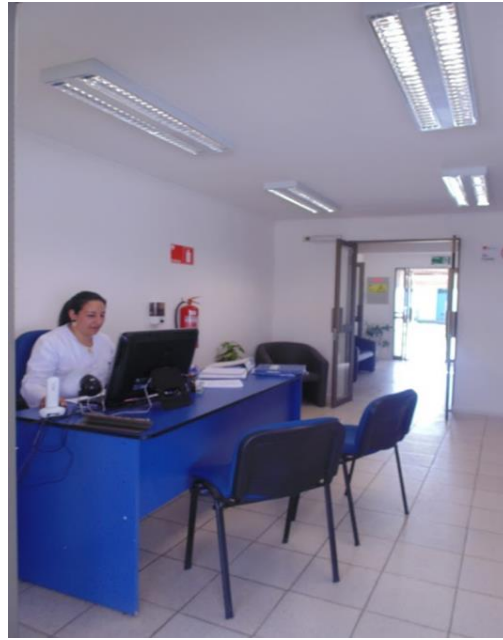
2015-2016: Passive air samplers for pesticides and organic chemicals



Phase 2: Questionnaire & Cognitive Evaluation



Phase 3. Health measurements: MAUCO clinical module



Phase 3. Health measurements



Samples management



Phase 4: Results delivery and closure of baseline measurements

Feedback to Participants:

- Authomated report
 - Analysis of blood samples results
 - Normal values
 - Recomendation according individual results
 - Recomendations of healthy life styles to every participant
- Medical Conclusions, Reference and Advise: Dr. Andrea Huidobro

Phase 5. Longitudinal Prospective Follow-up

- Active follow-up every 2-years
 - **BRIEF CONTACT**, short interview to update data on
 - Risk factors
 - Contact data (address, phone number)
 - Events of interest
 - **FULL RE-EXAMINATION** OF PARTICIPANTS OF SPECIAL INTEREST
 - Diseases
 - Agricultural workers
- Surveillance of deaths, surgeries, hospitalizations since enrollment

Interactions with social, economic and cultural environment.



Annual public MAUCO report & other activities in Molina and surroundings

Social Representation of MAUCO study



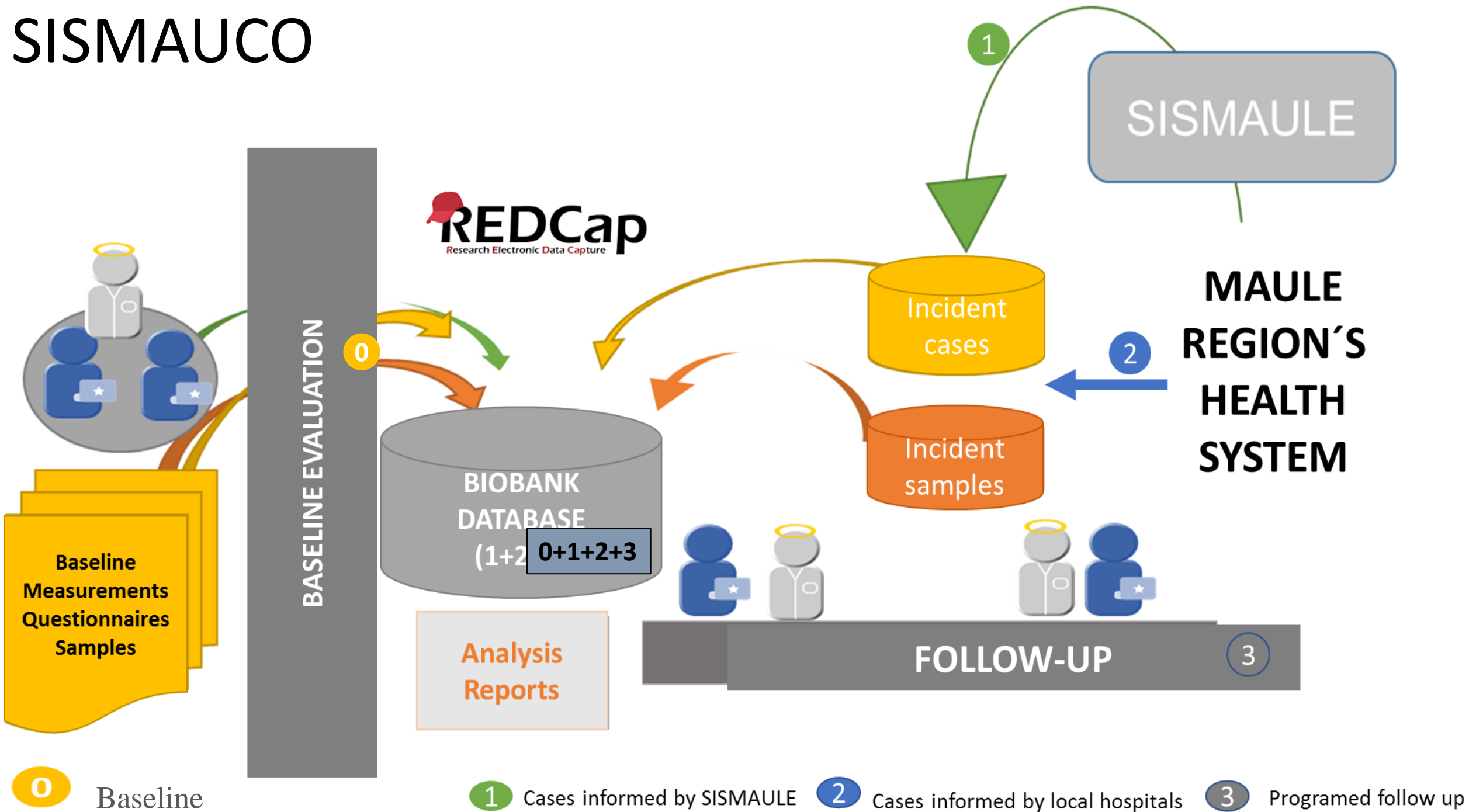
Continuous training



Academic activities



SISMAUCO



In Depth Analysis of Selected Topics

Themes	PI
Pre-diabetes & Healthy obesity	A.Huidobro
EKG in an agricultural population	C. Vargas
Pesticide exposure in MAUCO	S. Cortés
Environmental risk assessment,	S. Cortés
Management of DATA loss	F. Paredes
Depression & CDs	C. Caneo
Cardiovascular Health	C. Bambs

Nested Studies

Cardiovascular study:

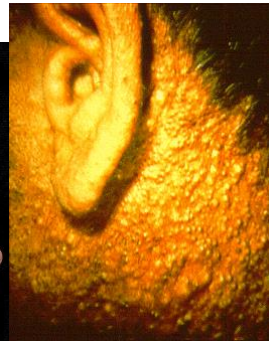
Left atrial dysfunction in non-healthy cardiovascular health status population



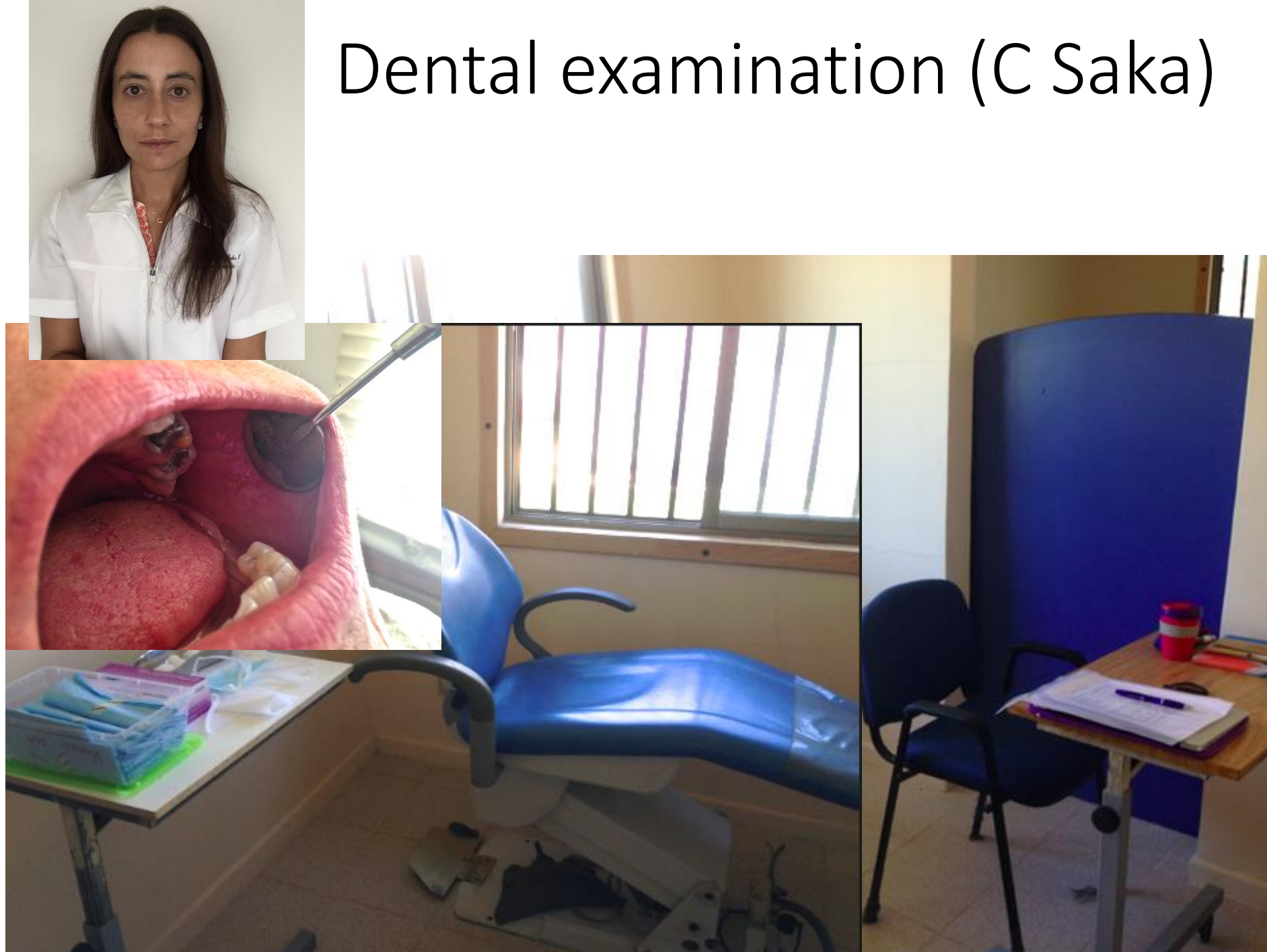
SKIN EXAMINATION (N. Sabatini)



Sun exposure lesions



Dental examination (C Saka)



FUNDS MOBILIZATION FOR STUDIES NESTED IN MAUCO

TOPIC	PI	START	FUND
Gallstones:natural history	C. Ferreccio	2014	NCI/NIH
FRAILTY	N. Bustamante	2015	FONDECYT
Echocardiographic c	C. Matamala	2016	PUC
Sphingolipid Metabolic Pathway & ADHD	M.Henriquez	2016	FONDECYT
GWAS Mapping	R Verdugo	2017	FONDEF
Cholecystectomy and NAFLD	C. Ferreccio	2017	FONDECYT
Fecal-oral microbiome and biliary diseases	C. Ferreccio	2017	NCI/NIH

MAUCO PROFILE MANUSCRIPT IN PREPARATION FOR THE IJE

ENROLLMENT & FOLLOW UP 2014-2017

Baseline examination

All 7.580;

Women = 4.291 (56,6);

Men= 3.289 (43,4)

2-years follow-up

All 3,031 (40% of enrolled)

Full Re-examination: 2,042

Follow-up survey, BP and BMI : 989

Socio-demographic characteristics MAUCO participants 2014-2017.

	All N=7,350 100 %	Women N=4,285 58.3 %	Men N=3,065 41.7%	p-value sex difference
Age mean±SD	53.5±9.6	53.3±9.5	53.9±9.7	0.005
Chilean/Hispanic	97.3	97.7	96.8	0.038
Widowed	6.1	9.6	2.6	<0.001
School years (mean SD)	8.8±4.1	8.6±4.1	8.9±4.1	0.002
Public Health insurance	86.3	86.4	86.1	0.74
Currently Employed	61.9	41.8	81.9	<0.001
Agricultural Work (ever)	48.6	38.8	58.4	<0.001

Health profile of the MAUCO participants

Health Conditions		All N=7,350 (%)
Self Reported Health status*	Fair and bad	56.4
Chronic Conditions	Diabetes	13.5
	Hypertension (Treatment/abnormal exam)	43.3
	Cardiovascular disease All	7.2
	Cancer	7.5
	Non-Infectious Digestive diseases	33.8
Metabolic syndrome		46.6

Health profile of the MAUCO participants

Health Condition	%
Depression symptoms (PHQ-2) %	16.9
BMI\geq30kg/m²	39.6
Remaining teeth	18.8\pm9.1
Peak expiratory flow (PEF) < 80%	48.7
Low muscle strength	10.1
Abnormal EKG (N:6426)	5.4
Fatty Liver (any degree)	48.3
Cholecystectomized	18.7
Gallstones	11.1

Lifestyle factors among MAUCO participants

Factor	%
Binge drinking	29.5
Sugary drinks consumption > twice/day	22.2
Eat processed meat >4 times/week	9.3
Healthy vegetable consumption	1.8
Healthy fruit consumption	2.0
Low leisure time physical activity	92.3
Current Smoker	30.5

Causes of First Hospitalization in MAUCO participants 2014-2017

(ICD 10) Main Causes	N= 532	%
(K) Digestive system	119	23,2
(N) Genitourinary system	73	14,2
(I) Circulatory system	62	12,0
(S,T,W,X) Injury, poisoning and external causes	35	6,8
(C) Cancer + D008-48 neoplasm	31	6.1
(J) Diseases of the respiratory system	31	6,1
(E,M) Musculoskeletal/ Endocr, nutr, metabolic	42	8,1
(F, G) Mental, behavioral disorders /Nervous	19	3.8
Data not available	28	5,5

Causes of Death

MAUCO participants 2014-2017

(ICD-10) Deaths	N = 66	%
(C D) Neoplasms	22	33.3
(I) Circulatory system	17	25.8
(J) Respiratory system	8	12.1
(S T) Injury, Poison external causes	6	9.1
(K) Digestive System	4	6.1
(N) Genitourinary system	3	4.5
Other with 1-2 cases	6	9.1

The Central Team



The Field Team



MUCHAS GRACIAS POR SU PRESENCIA BIENVENIDOS A COPLAS:

Cohortes Poblacionales Latinoamericanas. Quinamávida, abril 2018.



Conocernos, colaborar, y sumar por nuestra América Latina