



Annual Meeting

Networking to address global health challenges

September 30 - October 2, 2012

Public Health Institutes of the World
IANPHI

Innovative Approaches to Improve Health Outcomes in Mexico: Making NPHI's count, the Case of the Mexican National Institute of Public Health

Mauricio Hernandez-Avila

What is a National Public Health Institute (NPHI)



- Science-based Source of objective information and counsel
- Staff with wide range of skills and experience, resources for public health work force capacitation
- **Performs essential public health functions**
- Focal point to develop/strengthen national public health systems & Healthy Public Policies
- Usually part of national government (MOH) Links to other Ministries, provides stewardship to subnational agencies

Source: Modified from, Thomas R. Frieden **National Public Health Institutes and Health Systems**
Strengthening *IANPHI Annual Meeting November 1, 2010*

Roles for NPHI's: Public health and the Ten Essential Services

Health protection

Enforced regulation of human behavior to protect the health of the individual and populations.

Illness prevention

Interventions at individual or community level to reduce disease occurrence or injury

Health promotion

Enabling people to increase control over, and to improve, their health.

Infrastructure development

Information systems, public health workforce & policy and regulatory framework



Country context: Mexico, NIPH



- **Mexico is a middle-income country** with a population close to 112 million, with a median population age of 26 years
- Infant mortality of 14.7 deaths per 1 000 live births, and a life expectancy in 2010 of 76.6 years.
- **Epidemiological profile: double burden of ill health**
 - The unfinished agenda: poverty, use of non-potable water and poor sanitary conditions, infections, malnutrition, and reproductive health problems;
 - The already-emerged challenges: unhealthy life-styles (smoking, alcohol consumption, unsafe sex, inadequate diets and sedentary activity). non-communicable diseases and the increasing rates of injury and violence.
- **Mexico's income inequality**: is the second highest among OECD countries.
- In 2009, total health spending accounted for 6.4% of the GDP, with 48.3% of health spending paid from public sources.

The National Institute of Public Health of Mexico




- Was founded in January, 1987, as a strategic project to support the Mexican health reform.
- The INSP was created from the merger of three institutions:
 - The School of Public Health of Mexico (ESPM)
 - The Research Center on Population Health (CISP)
 - The Research Center of Infectious Diseases (CISEI)
- The objectives envisioned for INSP were to:
 - Generate high quality human resources in public health
 - Promote research directed towards the advancement of knowledge regarding health problems and health systems

Monitor Health Status: Measles elimination



Measles eradication program

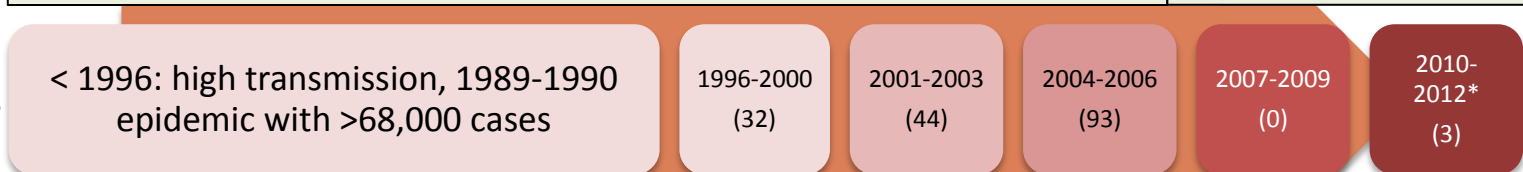
LOCAL	Public Health Services within State Secretary of Health	Surveillance- State Epidemiology Laboratory confirmation Public Health State Laboratory		
NATIONAL	Surveillance and risk assessment, link with IHR: General Directorate of Epidemiology Epidemiological Surveillance and National Referral Laboratory (InDRE).	Prevention and Control: National Center for Children and Adolescent Health (CENSIA).	Intersectoral coordination for emergencies: National Center for Health Prevention and Control (CENAPRECE). National Institute of Public Health: <ul style="list-style-type: none"> • Serosurveys • Vaccine coverage analysis. • EVALUATION of programs performance and outcomes 	Other Institutions: <ul style="list-style-type: none"> • Education (SEP) • Transportation and communication (SCT)
	Exanthematic diseases surveillance and control program: Secretary of Health Mexico			
GLOBAL AND REGIONAL	Exanthematic diseases surveillance and control program PAHO/WHO			

Monitor Health Status: Measles elimination

Measles eradication program

<ul style="list-style-type: none">• Universal and mass vaccination campaigns with monovalent measles and a second dose at 6 years old, 1990.• Introduction of triple viral vaccine, 1996.• Creation of National System of Epidemiological Surveillance System including a Public Health laboratory network (PHLN), 1989-1995.• Inclusion of measles as a priority for Epi and lab surveillance (serology based) since 1993.• Creation of National Center for Epidemiological Surveillance and Diseases Control, 1997.• Creation of National Council of Vaccination, 1998.• Increasing coverage vaccination to 97.6% among children aged 6-10 since 1999.• Indigenous measles virus was interrupted in 1997, since then, all cases detected are imported.• INSP producing information of measles serosurveys and vaccine coverage since 2000.	<ul style="list-style-type: none">• Continues Risk assessment and epidemiological alerts of measles re-introduction.• Laboratory diagnosis for epidemiological surveillance for measles in the 31 laboratories of the PHLN (EQA).• Introducing qRT-PCR and sequencing analysis.
---	---

Year
(No. of measles cases)



Research for New Insights and Innovative Solutions to Health Problems: Dengue Fever Control



- Nation-Wide, Web-based, Geographic Information System for the Integrated Surveillance and Control of Dengue Fever in Mexico.
 - Operational research in health information systems
 - A way to integrate inter-agency efforts

Integrated Surveillance and Control of Dengue Fever



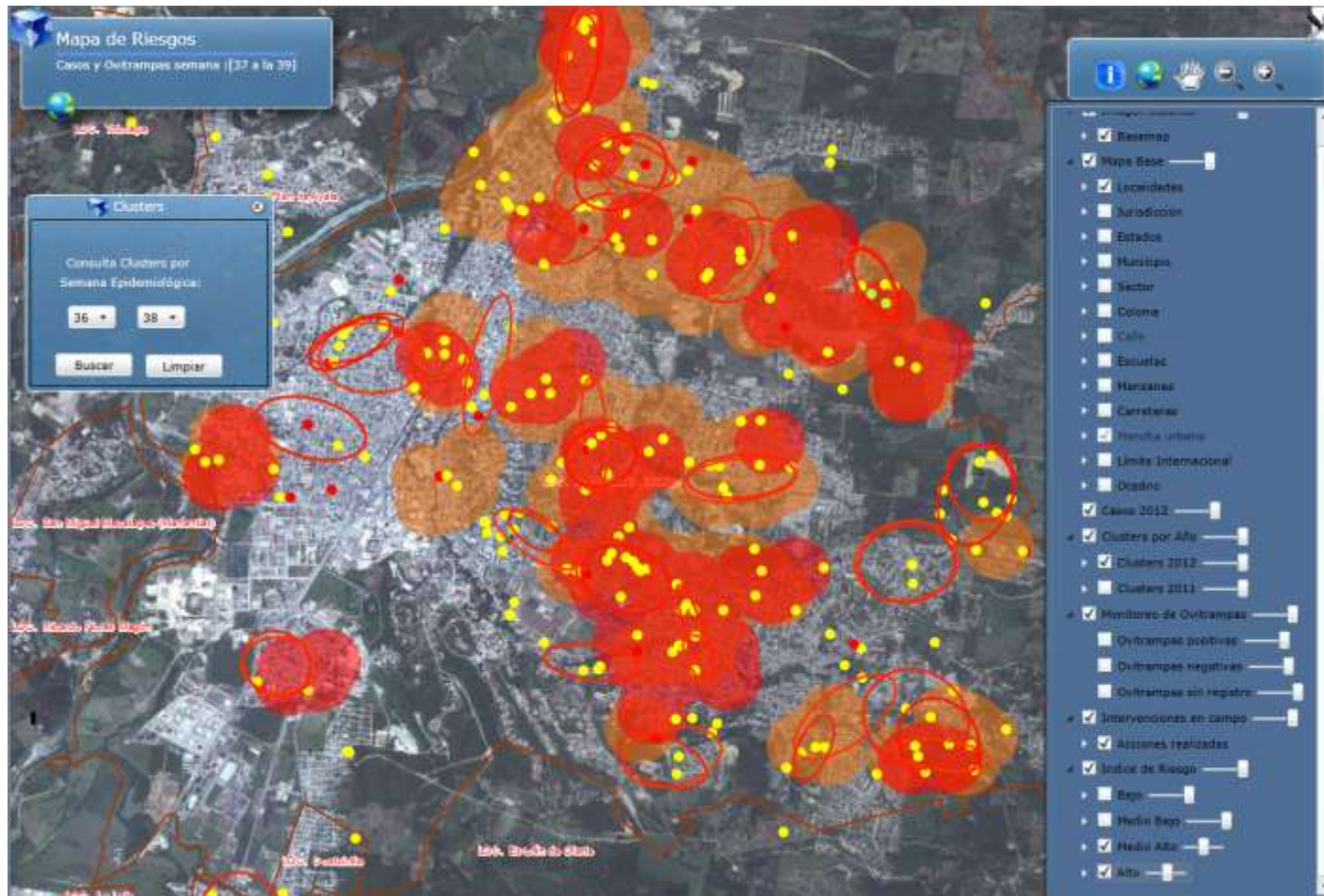
- A web based information system designed
 - To collect and analyze data on dengue incidence, vector and virus distribution, as well as dengue control operations
 - To disseminate information to support decision making in dengue control
 - To become a knowledge base to support further research in dengue prevention and control
 - Hypotheses generator
 - population based platform for testing vaccines

Poza Rica City, Veracruz

Cases of dengue

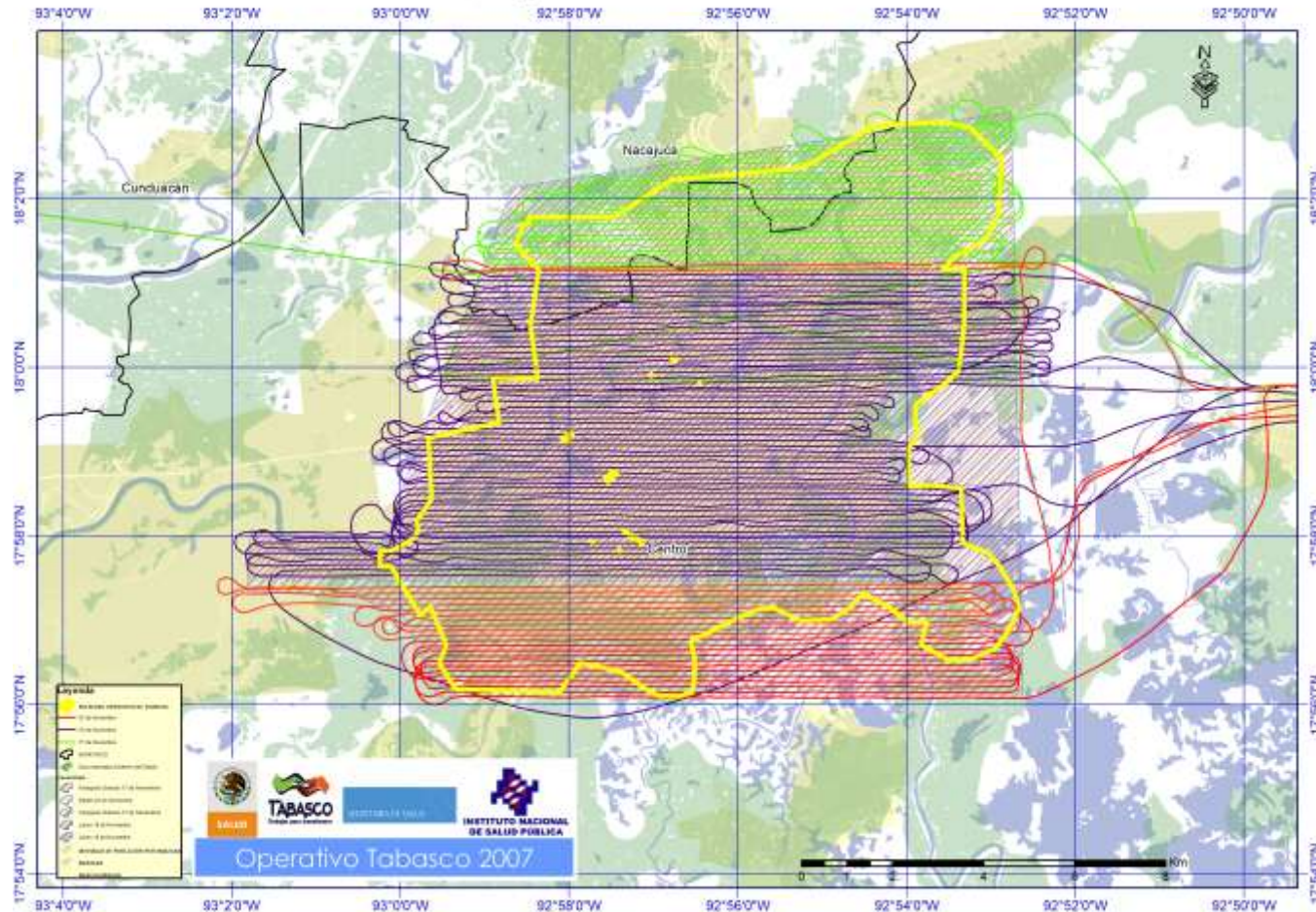
Risk index, (medium)

Risk index, (High)



Monitoring of aerial spraying for dengue control through GPS in Villahermosa Tabasco.

Nebulización para el control de Vectores en Villahermosa, Tabasco.
17, 19 y 20 de Noviembre de 2007



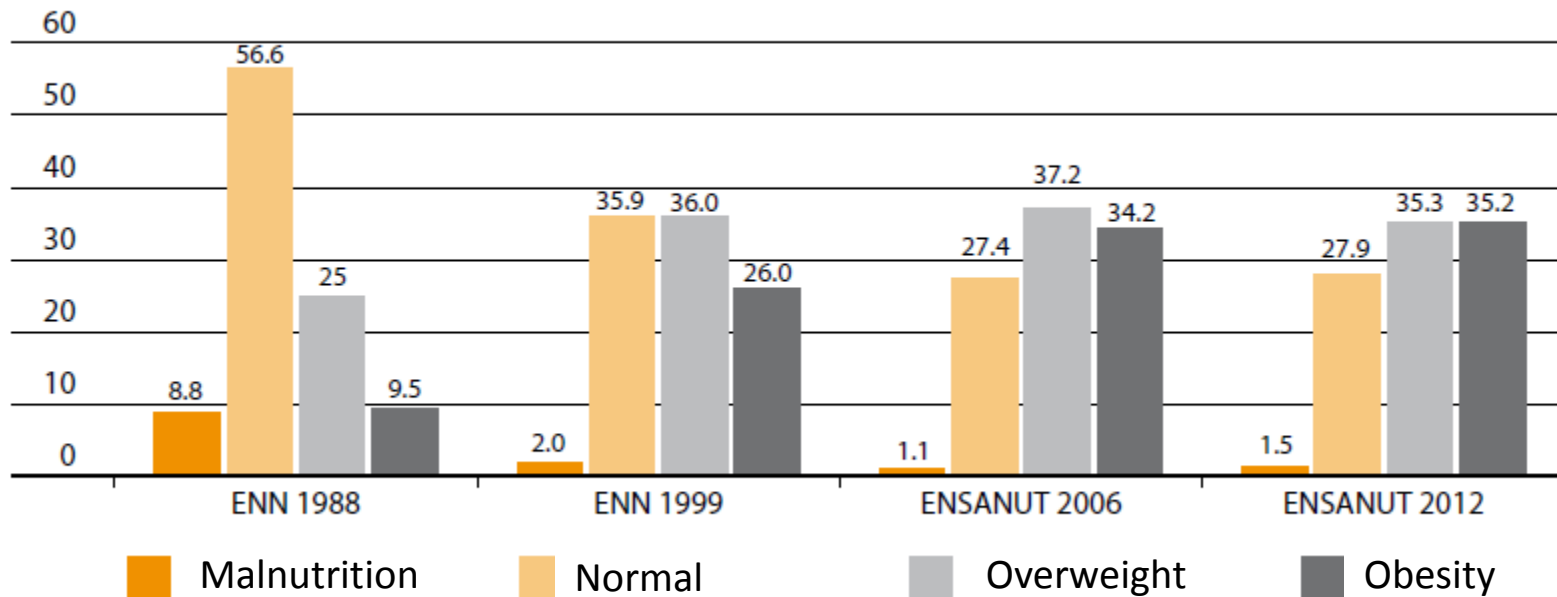
Monitor Health Status to Identify and Solve Community Health Problems



- The Mexican National Institute of Public Health has the mandate (Law of NIPH's) to conduct health surveys
- Since 2000, INSP has conducted the National Health Surveys, based in a probabilistic multistage stratified cluster sampling design. The survey is designed to update the prevalence of infectious and chronic diseases and their associated risk factors.
- An approximate of 50,000 households are studied in this survey

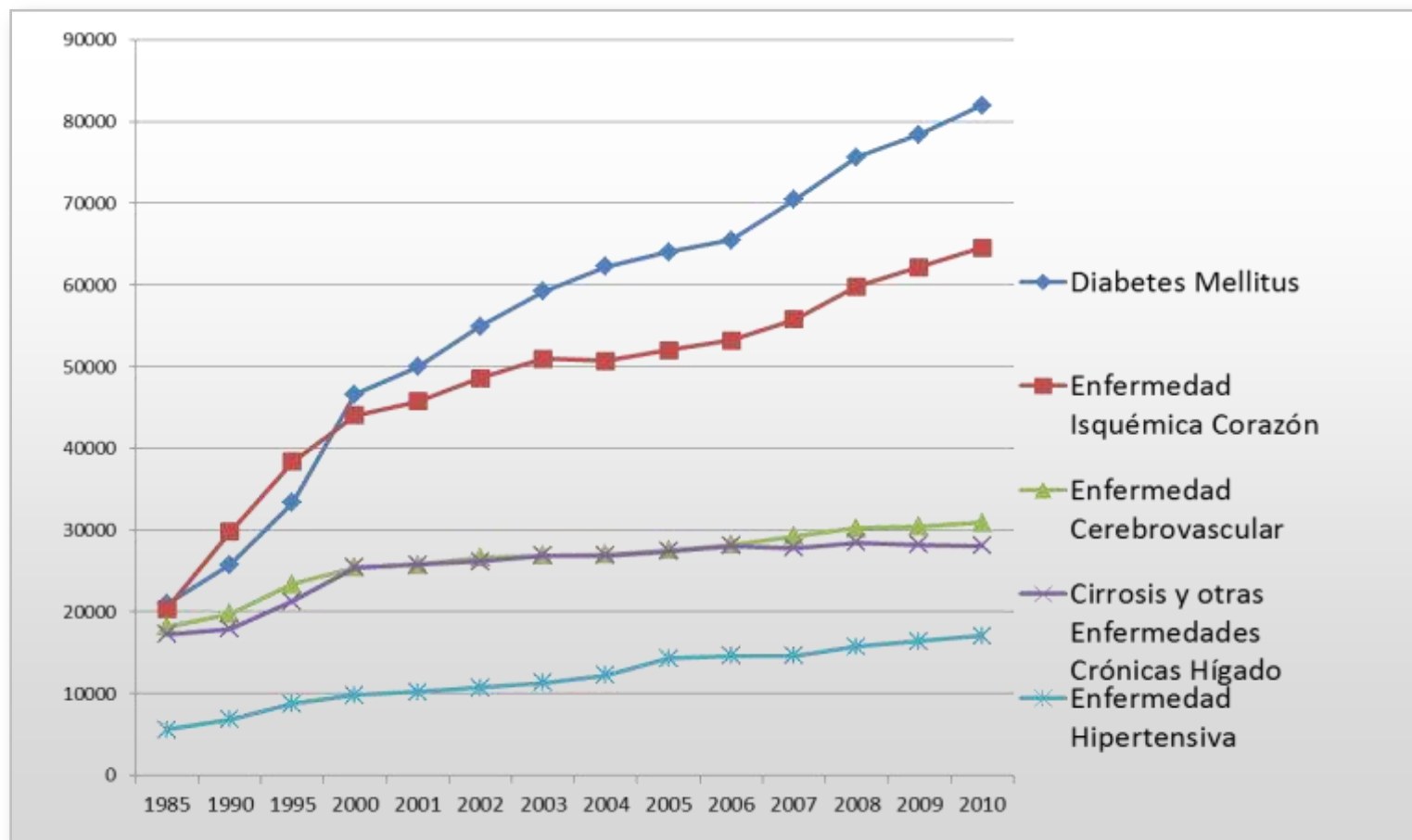
Monitor Health Status to Identify and Solve Community Health Problems

Body Mass Index among women 20 to 49 years old who participated in the Nutrition surveys (1988) and National Health and Nutrition Surveys (99, 2006 and 2012)



Monitor Health Status.....

Chronic Disease: mortality 1985-2010



Source: Mortality and Burden of Disease Attributable to Selected Major Risk Factors in Mexico: Preliminary National Estimates, SSA 2005.

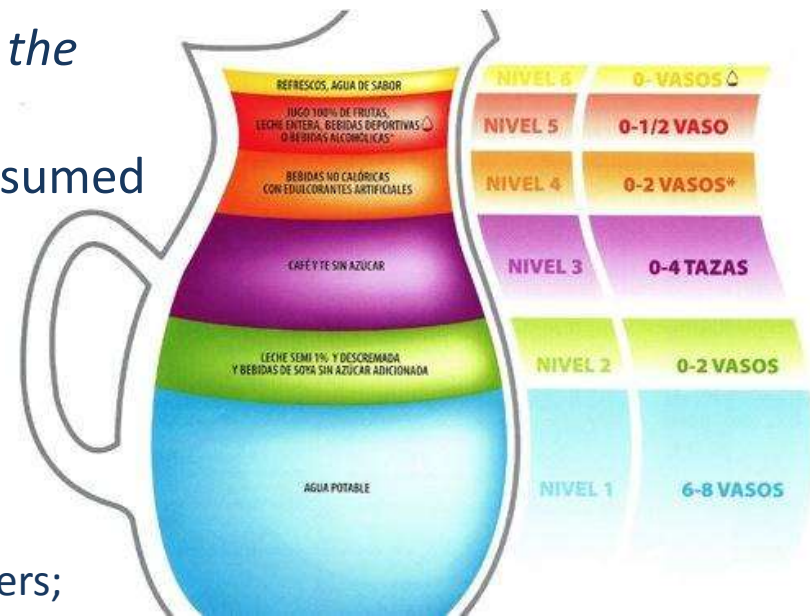
Research for New Insights and Innovative Solutions to Health Problems



- Obesity rates have increased in recent decades in all OECD countries
- Obesity and its consequences could be one of the worst and most costly health problems in Mexico:
 - The direct cost: \$42 billion pesos in 2008, equal to **0.5%** of GDP.
 - With productivity losses due to obesity & premature death: 67 billion pesos
 - This cost will increase to 150.8 billion pesos by year 2017

Inform, Educate and Empower People About Health Issues

- *Beverage Consumption Recommendations for the Mexican Population*
- Beverages contribute a fifth of all calories consumed
- Caloric beverages increase the risk of obesity.
- Classification:
 - **Level 1:** water;
 - **Level 2:** skim or low fat (1%) milk and sugar free soy beverages;
 - **Level 3:** coffee and tea without sugar;
 - **Level 4:** non-caloric beverages with artificial sweeteners;
 - **Level 5:** beverages with high caloric content and limited health benefits (fruit juices, whole milk, and fruit smoothies with sugar or honey; alcoholic and sports drinks),
 - **Level 6:** beverages high in sugar and with low nutritional value (soft drinks and other beverages with significant amounts of added sugar like juices, flavored waters, coffee and tea).



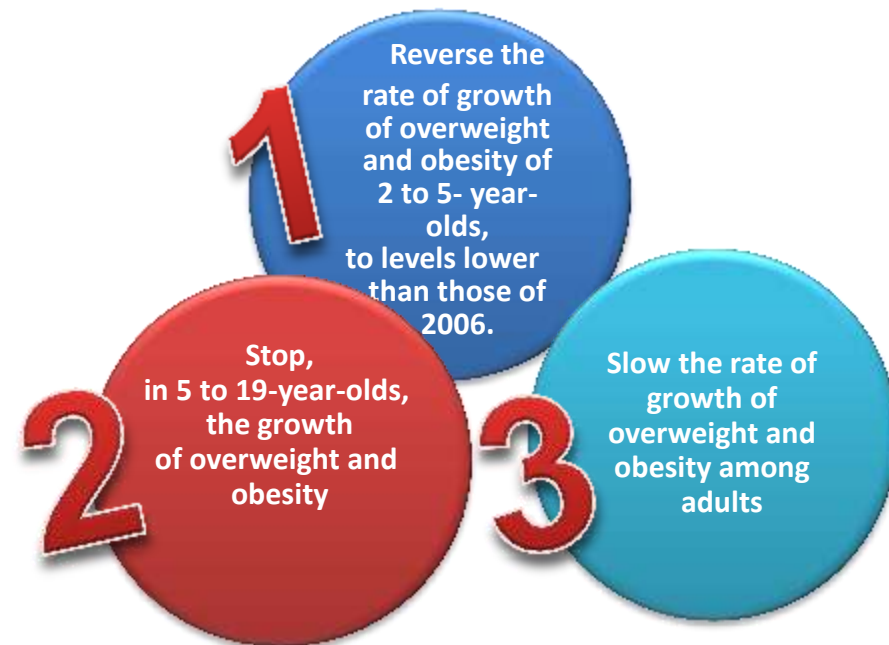
Develop Policies and Plans That Support Individual and Community Health Efforts

National Agreement for Alimentary Health: Strategy Against Obesity

1. **Physical activity** in all settings
2. Availability of drinking water
3. Less sugar and fat intake in beverages
4. Increase consumption of **vegetables, fruits, legumes, whole grains and dietary fiber**
5. Better decision-making through **simple labeling and nutrition literacy**
6. **Breastfeeding & appropriate nutrition** afterwards
7. Less sugar added in food
8. Less saturated fats and no industrial trans fats
9. Smaller portion sizes
10. Less sodium added

Over 100 actions involving all sectors and 15 governmental entities

Proposed Strategic Goals



Develop Policies and Plans: Tobacco control in Mexico



- In Feb 2008: Law was enacted, prohibit to smoke in public places as indoor public places, including restaurants, bars, discos, and commercial buildings.
 - **INSP: evaluated externalities and Health Outcomes**
- Ministry of Health Agreement for the addition of graphic warning labels on tobacco products, published in December, 2009
 - **INSP: evaluated and designed the best pictograms**
- October 2010: Healthy Fiscal Policy: Increase on tobacco taxation that resulted in average raise of \$ 7 Mexican Pesos per pack cigarettes was approved.
 - **INSP: provided evidence regarding [LOCAL] economical costs of tobacco related diseases and health IMPACT data to support legislation (ten pesos to save 1 million lives)**

Research for New Insights and Innovative Solutions to Health Problems: Evaluation of Oportunidades

Evidence-based decision-making:

15 years evaluating the Oportunidades Program in Mexico



Oportunidades coverage 2011 (millions)

Families	5.8
Persons	26
Children under nutritional control	1.5
Scholarship holders	5.8
Elementary	3.2
Secondary	1.8
High School	0.95
Municipalities	2,444
States	32

Research for New Insights and Innovative Solutions to Health Problems: Evaluation of Oportunidades

Co-responsability Scheme

AID	RESPONSABLE	CO-RESPONSABILITIES
Nutritional	All family members	Regularly attend sessions for the promotion of nutrition.
Health	Beneficiaries 15 yrs and older.	Attend all sessions for the promotion of health.
Education	All scholarship holders (8 to 21 years old)	Regular school attendance.
	Teenage scholarship holders in High School	Attend all sessions for the promotion of health and nutrition.
Jóvenes con Oportunidades	Teenage scholarship holders starting their freshman year and up	Finish High School before turning 22 years old and open up their bank account.
Senior Citizens	70 years and older adults	Assistance in health care biannual

Rigorous methods both quantitative and qualitative

Timely results in order to improve design and operation

Permanent interaction between stakeholders (evaluators, funding agencies, and decision makers

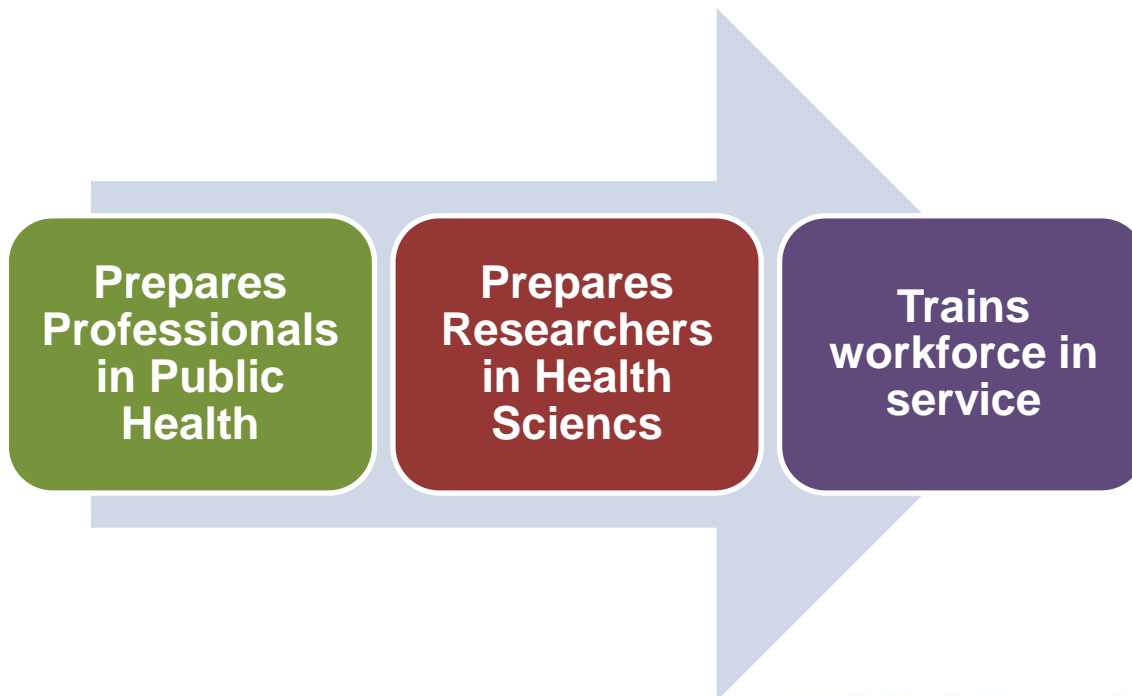
Scientific evidence supporting its effectiveness to survive government changes

Contribution to the general understanding of cash-transfer programs with beneficiary coresponsibility

Assure a Competent Public Health and Personal Health Care Workforce



- The INSP's positioning in Mexico accomplishing basic public health functions through its educational programs



Assure a Competent Public Health and Personal Health Care Workforce

Celebrating 90 years of continuous teaching, INSP has contributed through to the education and training of competent and compromised Public Health Work Force

INSP offers specializations, masters and doctorate degrees with 30 areas of concentration.

INSP offers competency-based full-time programs, a on-line MPH and an executive program during weekends

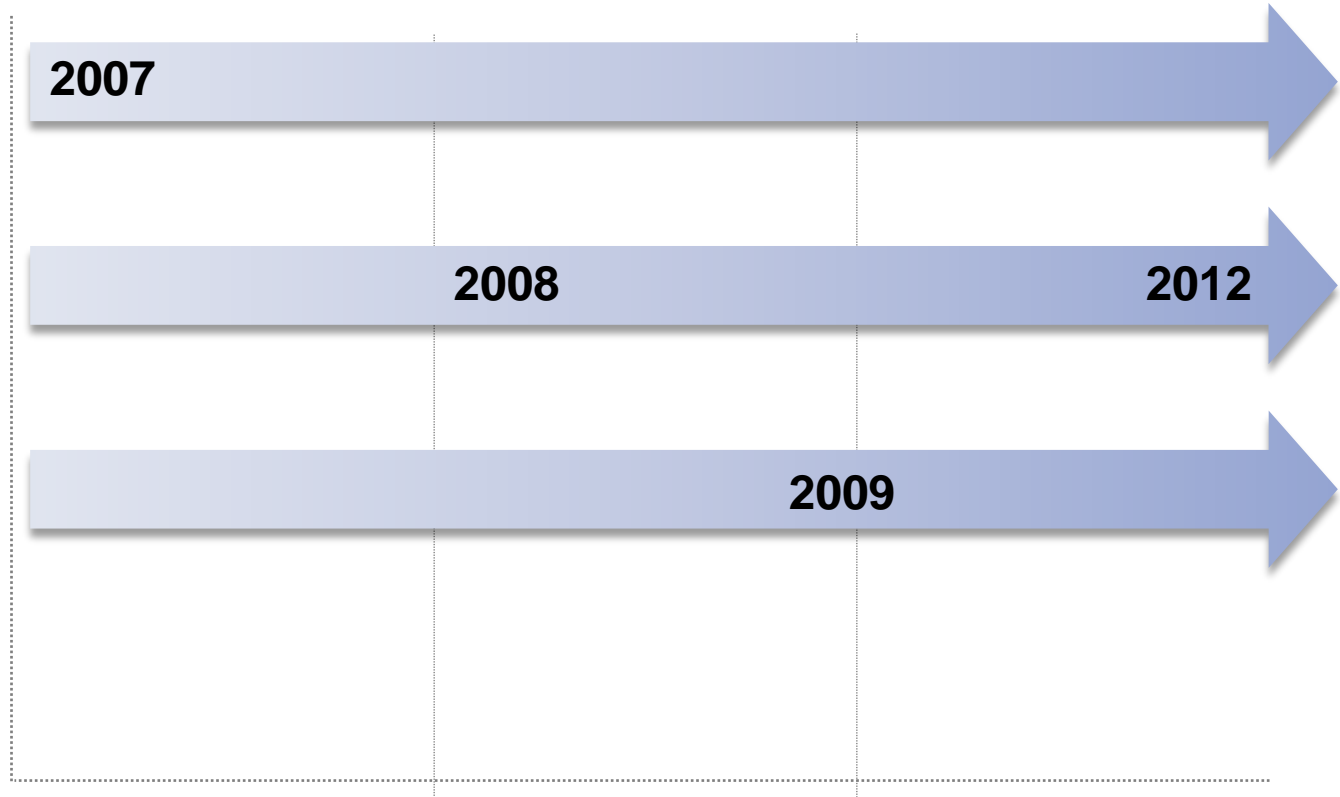


National and International Accreditations



CEPH

trop**Ed** ★ ★ ★



In summary



- The guiding principles derived from the Core Functions and Essential Services of Public Health, have provided a good framework to develop positive health outcomes
- Research, policy development support, and training remain in the center of Institute's activities.
- The National Institute of Public Health is recognized a source of objective information and a key player to develop/strengthen our public health system

Challenges for the National Institute of Public Health of Mexico



- Define a research agenda linked to public health problems
 - Dichotomy: Curiosity driven/social demand driven research
- Translation of research into decision making
- Degree of independence from Ministry of Health
- Funding for research and training programs
- Leadership to address important health challenges: Health reform evaluation
- Evolve over time to meet new challenges
 - Non-communicable diseases: for Mexico, Obesity & Diabetes
 - Violence