



# Hepatitis A prevention in Chile

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Global hepatitis A Meeting,  
Miami, December 1st, 2007

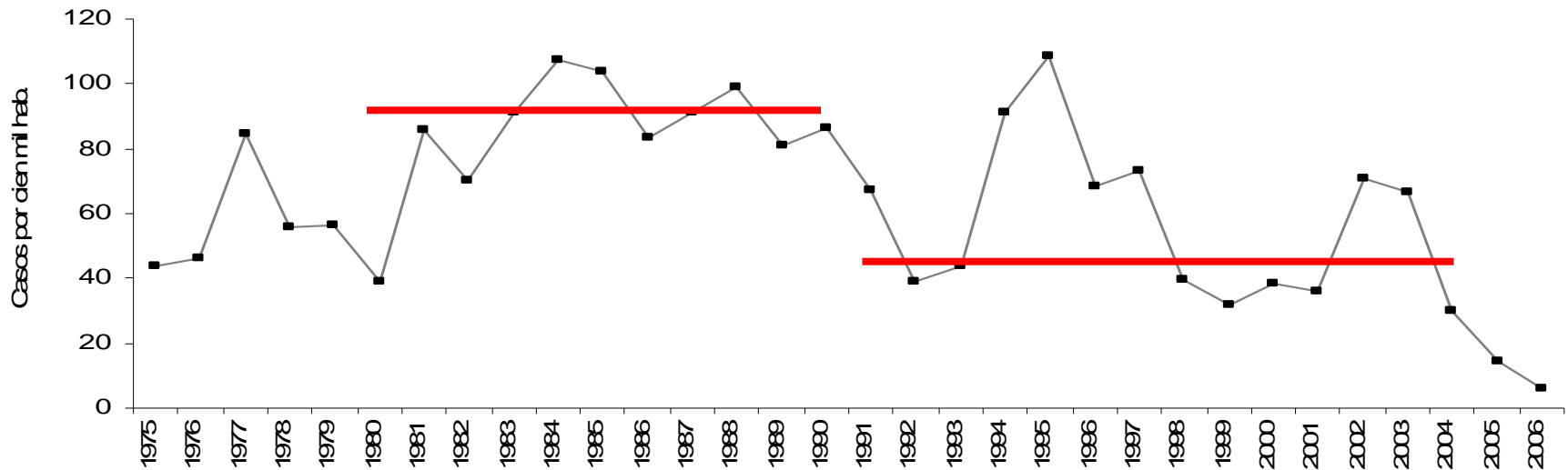
# Chile, general context

- Population: 15 millions inhabitants
- Per capita income:
  - USD 4,346 (2006)
- Alphabetization rate (older than 10): 98.5%
- Population under poverty line:
  - 38.6% in 1990
  - 18.8% in 2003
- Coverage of drinkable water:
  - Urban areas: almost 100%
  - Rural areas: over 90%



# Chilean hepatitis A rates, 1975-2006

Tasas de Incidencia Hepatitis A (\*). Chile, 1975 -2006.



Epidemiology Unit, Ministry of Health

## 80s: high endemicity

- High incidence rates
- High seroprevalence in children
- Low numbers of outbreaks
- Low number of cases in adolescents/adults

## 90s: intermediate endemicity

- Intermediate incidence rates
- Reduction in seroprevalence
- Increase of numbers of outbreaks
- Increase of cases in adolescents/adults

# 80s: high endemicity

## Endemicity indicators:

- Rates 80-100 /100,000
- High seroprevalence in children (School age children 8 years old low SEL 97% sero(+), 1980, Zacharías et al)
- Low numbers of outbreaks
- Low % of cases in adolescents and adults (20% 10-24 years old, v/s 40% 2002)

## Control policy:

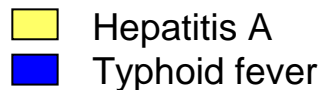
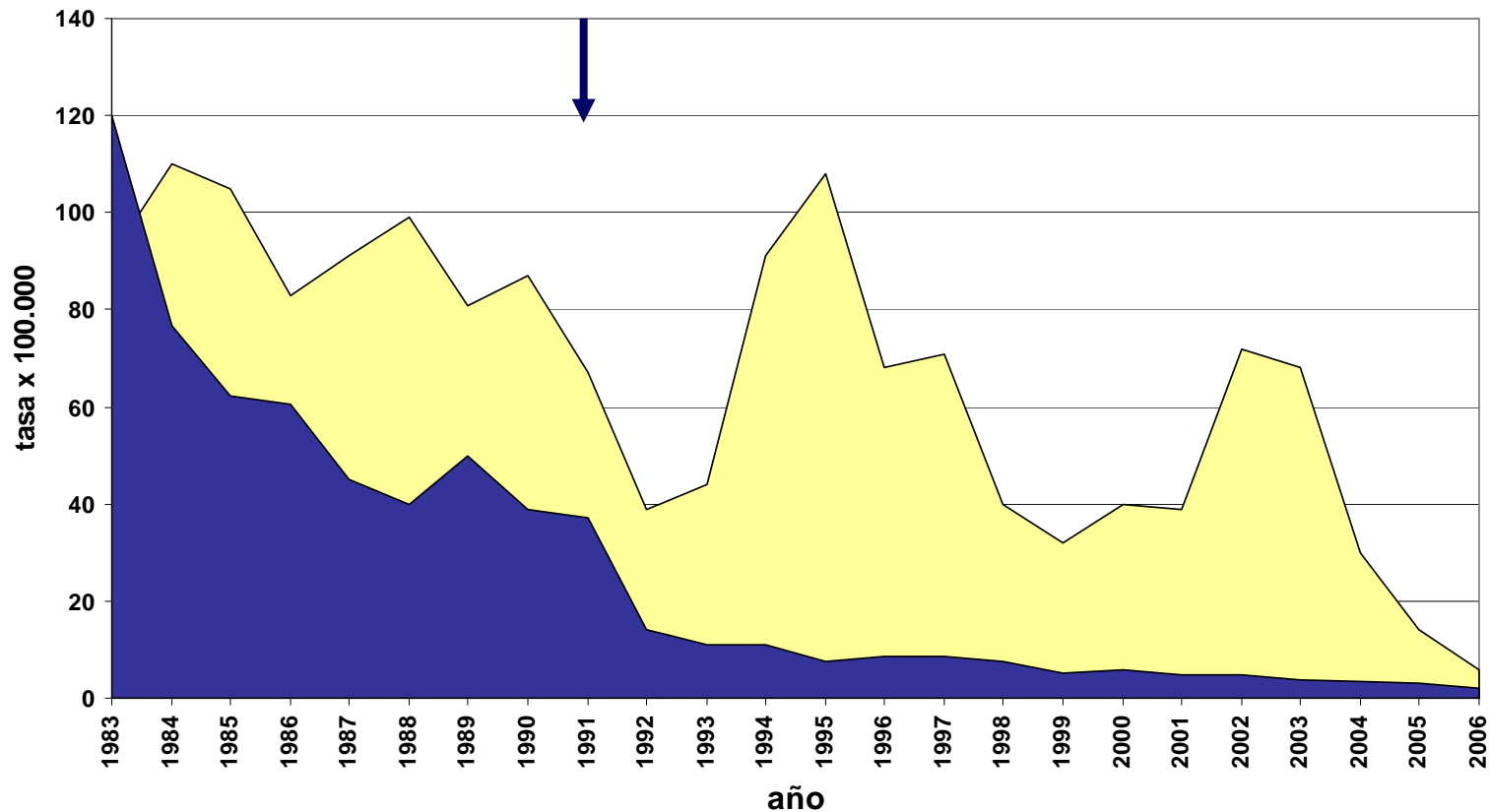
- Surveillance system: notification of cases
- Secondary prophylaxis: immunoglobulin (not provided by MOH)

# 1991: Cholera campaign

- Substitution of ground fruits and vegetables fields watered with contaminated water
- Community education
- Prohibition of consumption of both raw sea food and vegetables
- Water chlorine content surveillance

# Achievements of cholera campaign on enteric diseases

Cholera prevention campaign



# 90s: changing to intermediate endemicity

## Endemicity indicators:

- Rates 40/100,000
- Reduction in seroprevalence School age children 8 years old low SEL 50% sero (+) (1990, Vial et al), 30% (1996, Lagos et al)
- Increase of numbers of outbreaks
- Increase of cases in adolescents/adults (40% 10-24 years old 2002)

## Control measures:

- Safe food and water
- Basic sanitation improvements (water treatment plants)
- Immunoglobulin in outbreaks

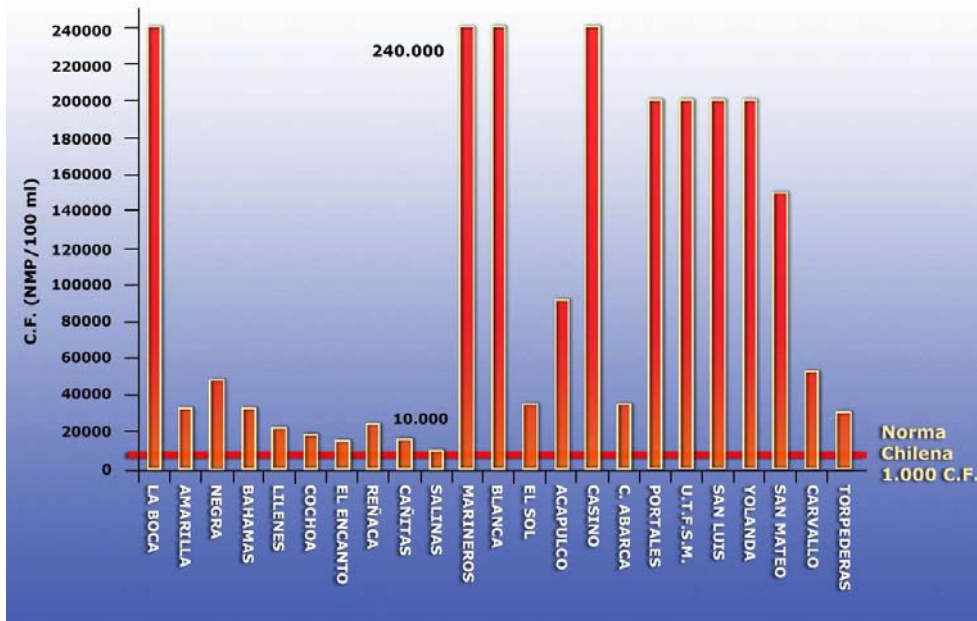
# Sewage water treatment, Chile

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# Fecal coliforms in Valparaíso sea water



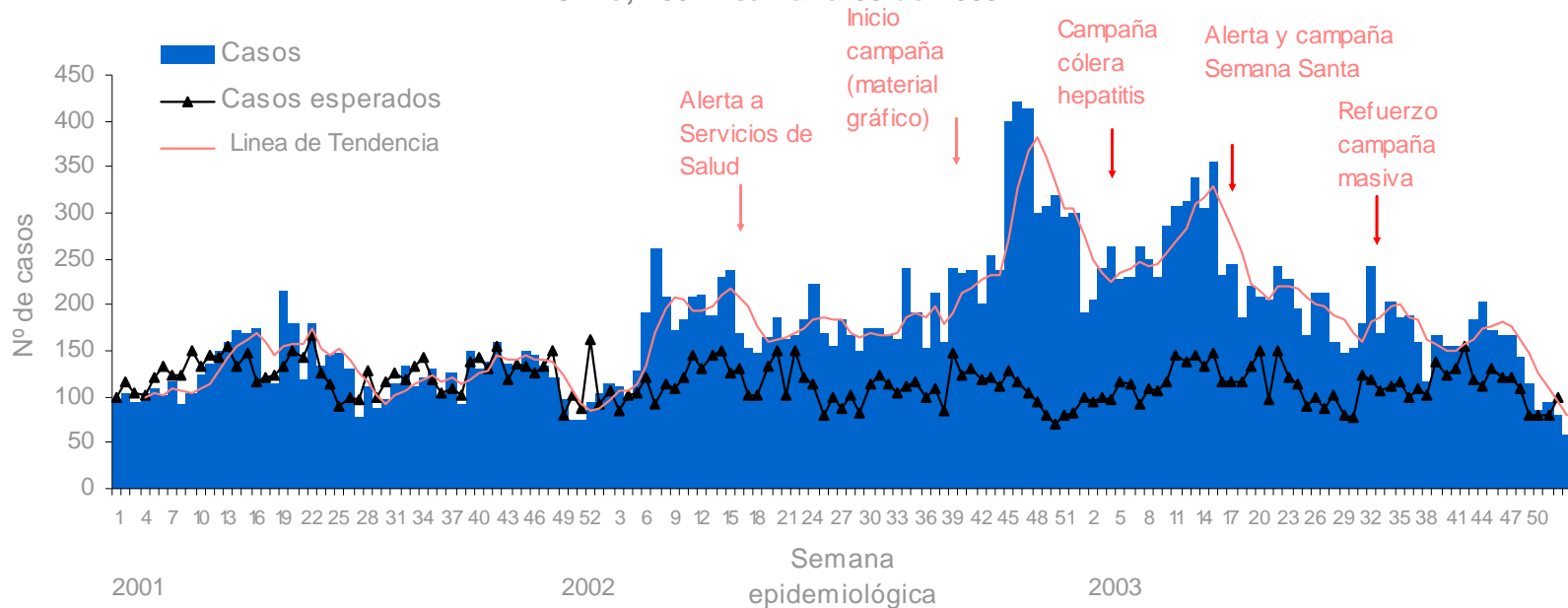
1996



Environmental National Commission, Chile, 2002

# 2002-2003: last national outbreak

Curva Epidémica de Hepatitis A Según Semana de Notificación.  
Chile, 2001 - semana 53 de 2003.



- More than 20,000 notified cases
- National hepatitis A rate 70/100,000
- Working group recruited by MoH

# Last outbreak: 2 policy positions confronted

## **Hygiene – environmental intervention**

### Advocacy arguments:

- Broad effect on enteric diseases
- Long term effect
- Only initial investment
- Recurrent benefits

## **Universal vaccination intervention**

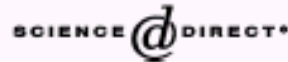
### Advocacy arguments:

- High efficacy and rapid effect on rates
- High safety profile
- Herd protection
- Good cost-effectiveness ratio
- Reduction on social inequities
  
- No broad effect on enteric diseases
- Recurrent cost (annual budget)

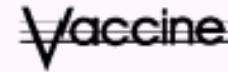
# Pharmaco-economic studies



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)



Vaccine xxx (2005) xxx–xxx



[www.elsevier.com/locate/vaccine](http://www.elsevier.com/locate/vaccine)

## Cost-effectiveness of universal childhood hepatitis A vaccination in Chile

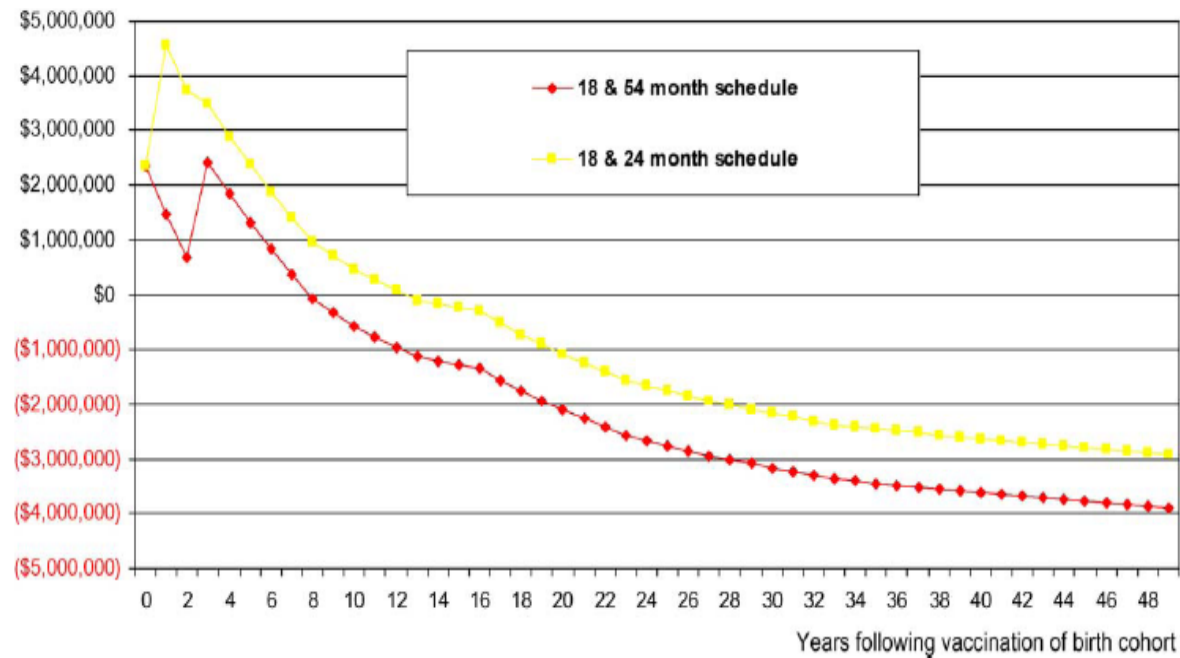



Fig. 1. Net societal cost of vaccination over time (a) costs expressed as present values in 2004 US\$.

Valenzuela et al.  
*Vaccine* 2005;  
23: 4110-9

# 2002-03 national outbreak: Policy adopted on hepatitis A control

- Hygiene campaign
- No universal immunization program implemented
- Outbreak control:
  - Compulsory notification of outbreaks
  - In field epidemiologic and environmental evaluation from health service team
  - Vaccine for contacts
  - Education
  - Guidelines for solving detected problems



**Todos en Acción Contra la**  
**Hepatitis**

**La solución está en tus manos**

- **Lávate muy bien las manos con agua y con jabón:**
  - Cada vez que uses el baño
  - Al preparar alimentos y al consumirlos.
- **Bebe siempre agua potable. Si no dispones de ella, hiévela.**
- **Consume bien cocidos los pescados, mariscos, verduras y hortalizas.**

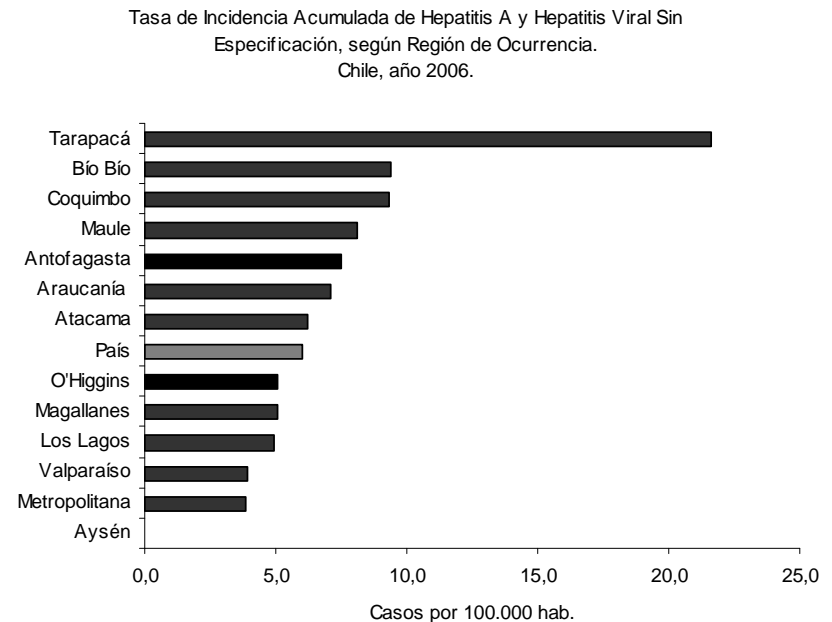
**Recuerda:**  
El virus de la Hepatitis A se elimina en las deposiciones y puede contaminar tus manos, el agua y los alimentos.

GOBIERNO DE CHILE  
MINISTERIO DE SALUD

Porque la Salud es un Derecho, Chile quiere la Reforma.

# 2007 situation

- After outbreak low rates:  
2006: 5,9/100,000  
2007: 4,0/100,000
- Reduction in outbreaks:  
2005 (31), 2006 (6), 2007 (10)
- Some local outbreaks in poor areas Northern Chile
  - Tarapacá: Rate 39/100.000
  - Pozo Almonte (6% poverty)
  - Alto Hospicio (22% poverty)



# Summary, hepatitis A Chile

- Intermediate endemicity 90s
- Progress in water and food safety
- 2006-07:
  - Very low rates (after national outbreak 2002-03)
  - Outbreaks persists in very poor localities
- No universal immunization incorporated
- Policy focused on hygiene education and outbreak control





*Thank  
you  
for  
your  
attention*

