

Flour Fortification Efforts and Impact: A Global Update



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Flour Fortification Initiative
A Public-Private-Civic Investment in Each Nation

What is Flour Fortification?

The process of fortification adds essential vitamins and minerals to flour during the milling process, so staple foods made with the flour are more nutritious



Modern mill with three feeder lines



An Effective Intervention

Flour fortification is viewed as an effective public health measure by the following internationally-recognized entities:

- World Health Organization
- UNICEF
- Copenhagen Consensus Center
- Centers for Disease Control and Prevention
- World Food Program
- Numerous civic and nongovernmental organizations



Part of a Comprehensive Strategy

Dietary
Diversity



Supplements



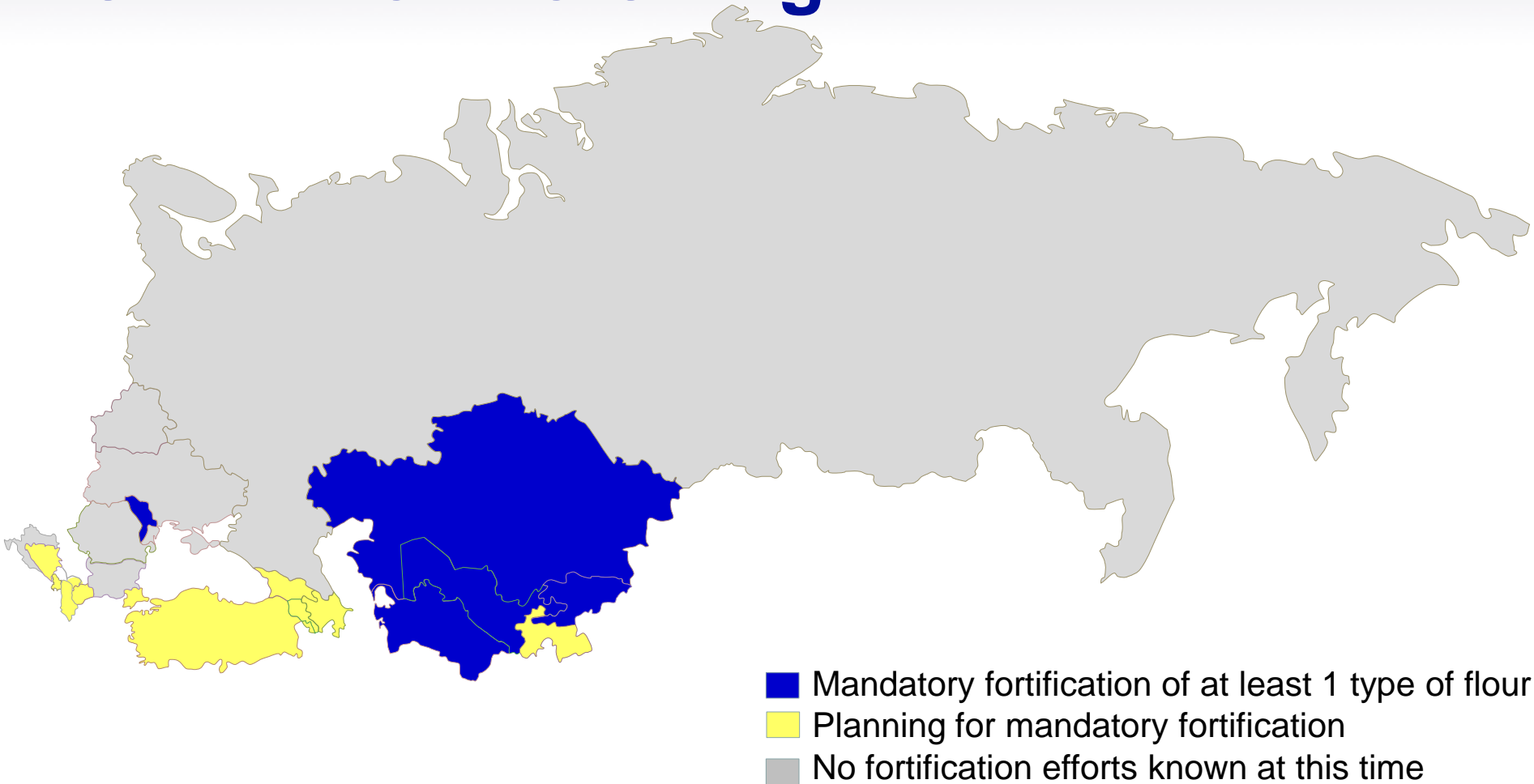
Flour Fortification



Flour fortification is recommended as part of comprehensive public health nutrition strategies, which may also include dietary diversification, supplementation and other fortification interventions.



Wheat Flour Fortification Legislation Status: CEECIS Region



Mandatory Wheat Flour Fortification Legislation: CEECIS Region

Uzbekistan (2005)

Turkmenistan (2006)

Kazakhstan (2009)

Kyrgyzstan (2009)

Moldova (2012)



Planning for Flour Fortification Programs: CEECIS Region

- Conducting national nutrition surveys
- Advocating to key stakeholders
- Forming active national fortification alliances
- Drafting legislation and standards
- Obtaining necessary milling equipment
- Providing technical training to industry
- Planning for effective monitoring systems



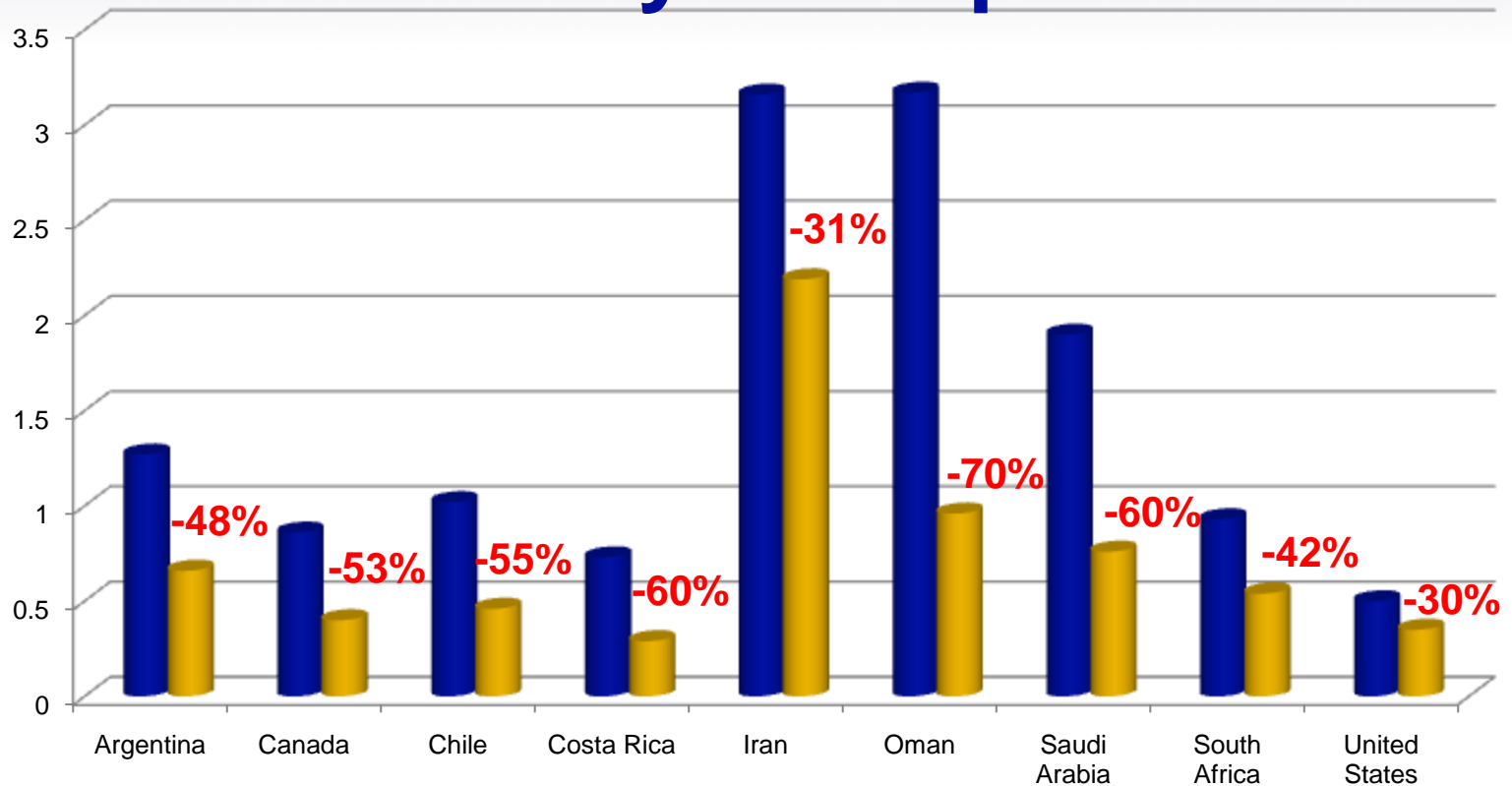
Positive Impacts of Flour Fortification Programs

- Reduced incidence of neural tube defects, such as spina bifida
- Reduced prevalence of iron-deficiency among the population and prevention of future cases of iron-deficiency anemia
- Provision of essential nutrients necessary for the proper physical and cognitive growth and development in children
- Cost savings for public health care expenditure



Impact of Flour Fortification with Folic Acid: Country Examples

Neural tube defects per 1,000 births

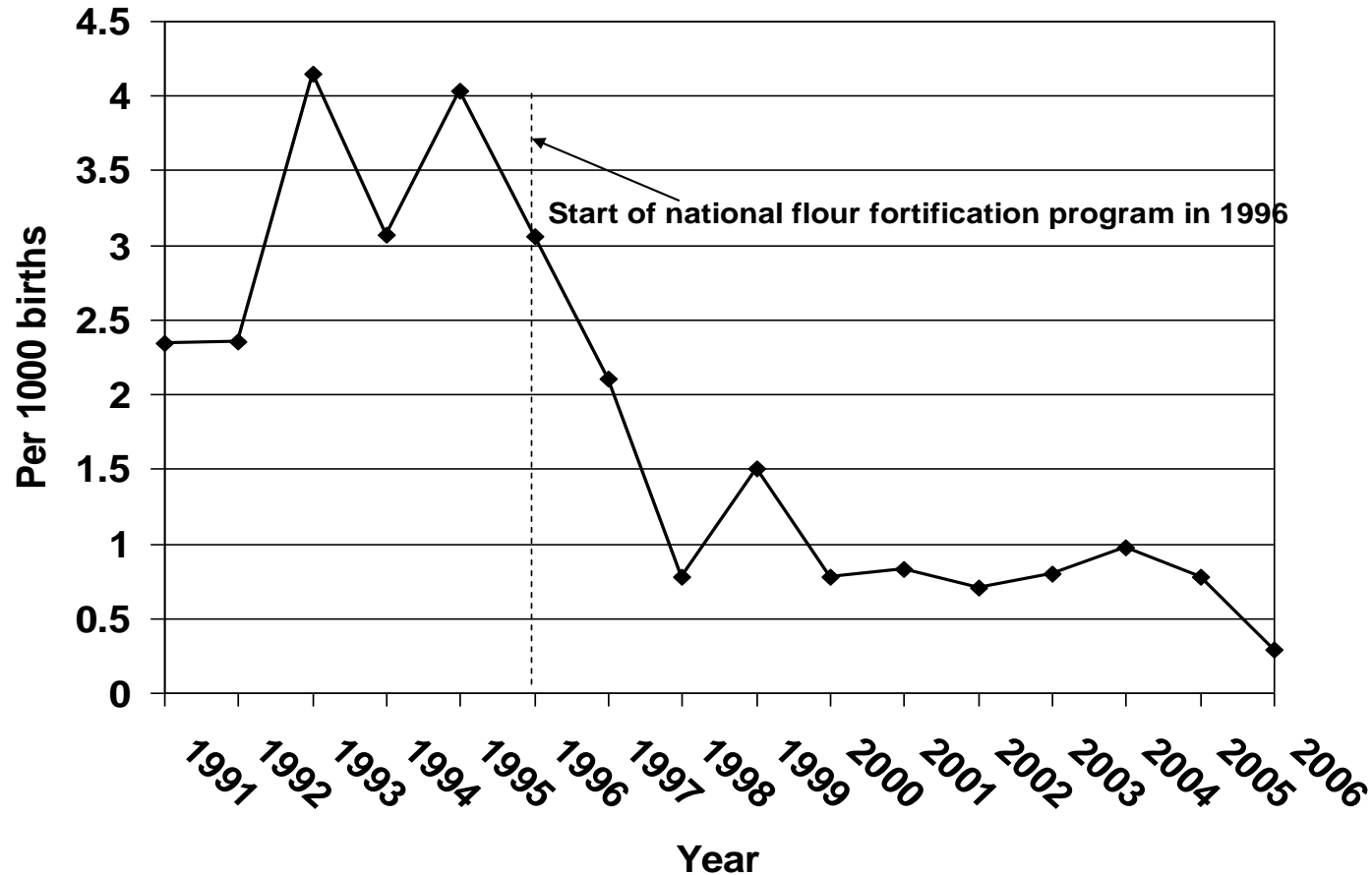


■ Before fortification ■ After fortification



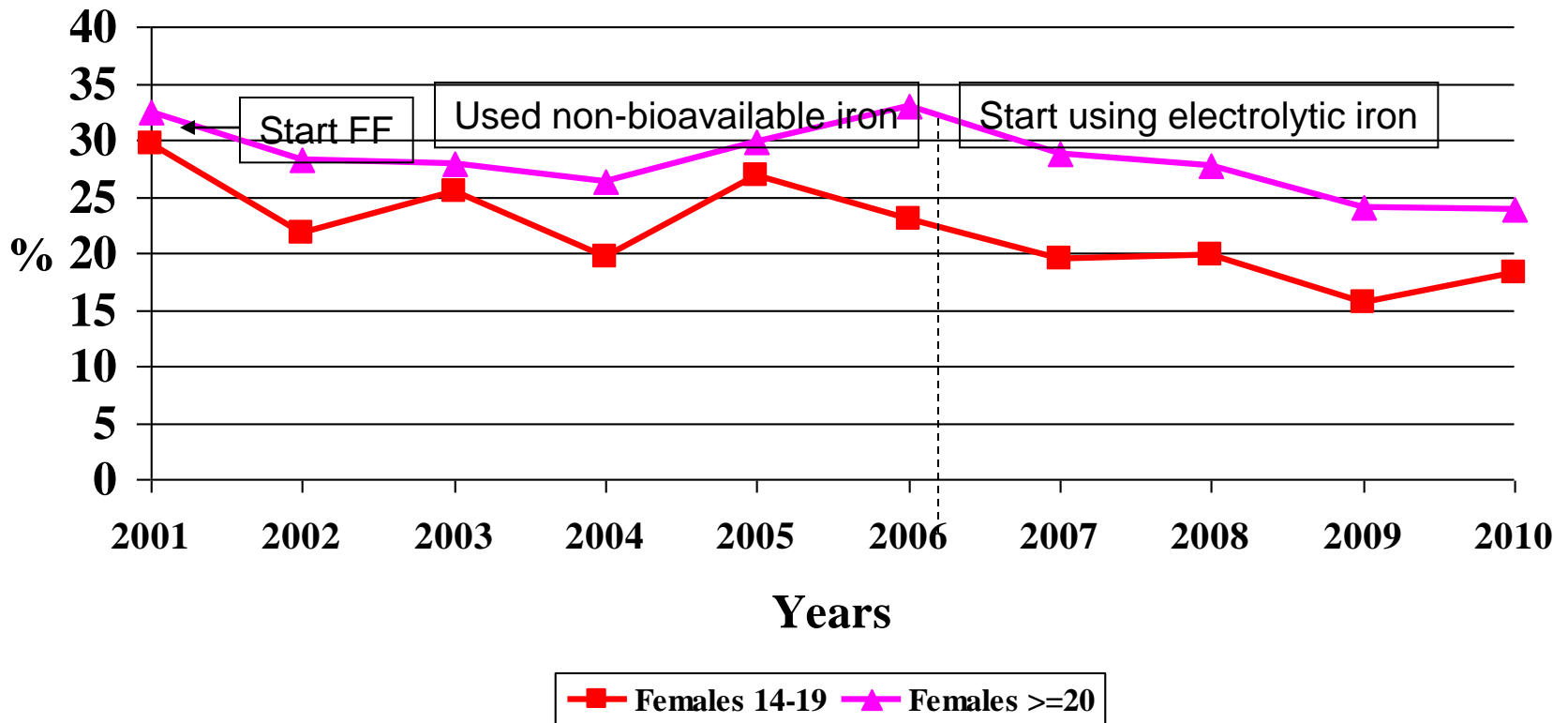
All rates are for spina bifida except Iran and Saudi Arabia which are for all neural tube defects.
All data from published sources.

Spina Bifida Incidence: Oman Ministry of Health Reporting System

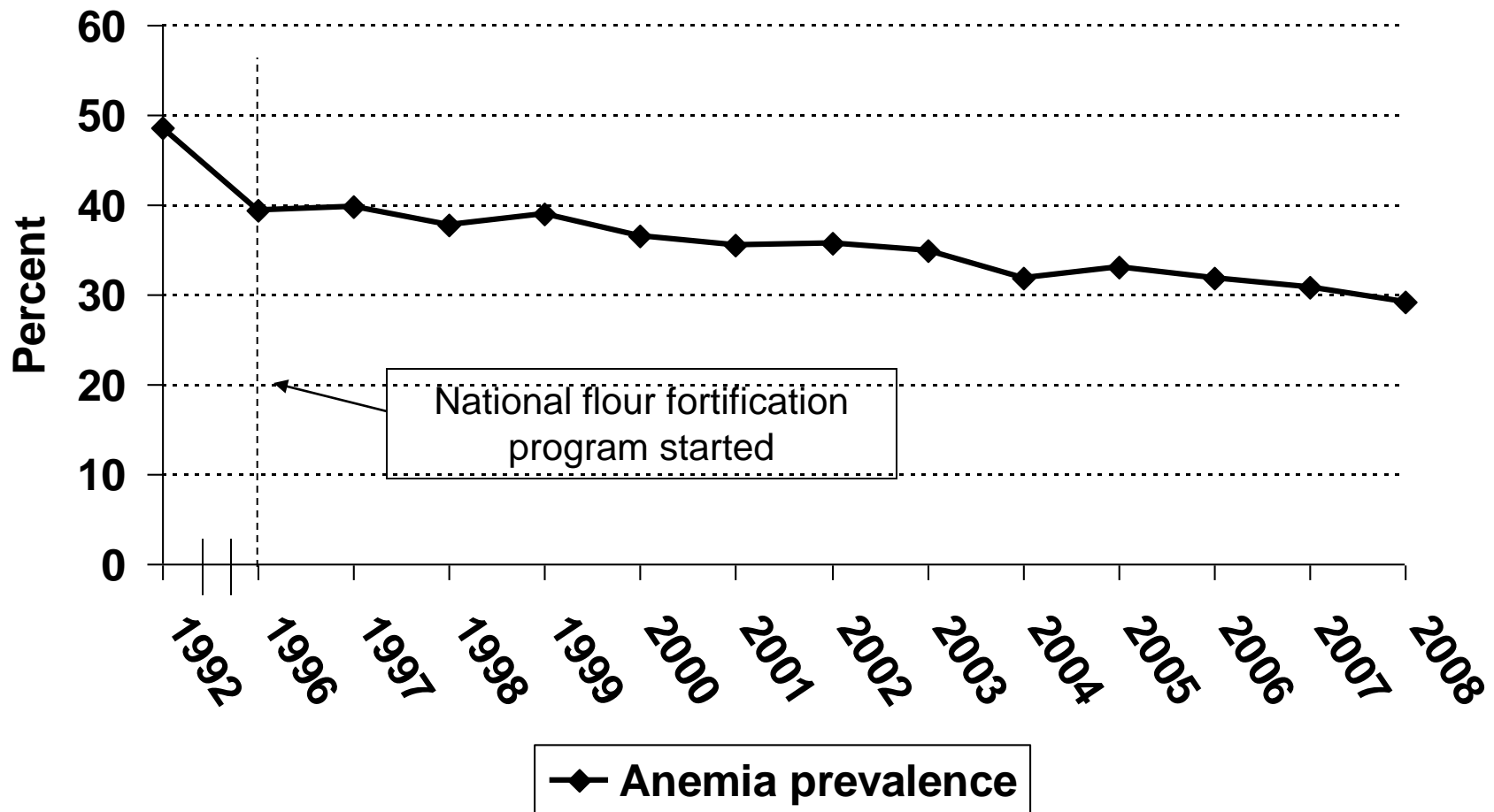


Anemia Trends Among Kuwaiti Females

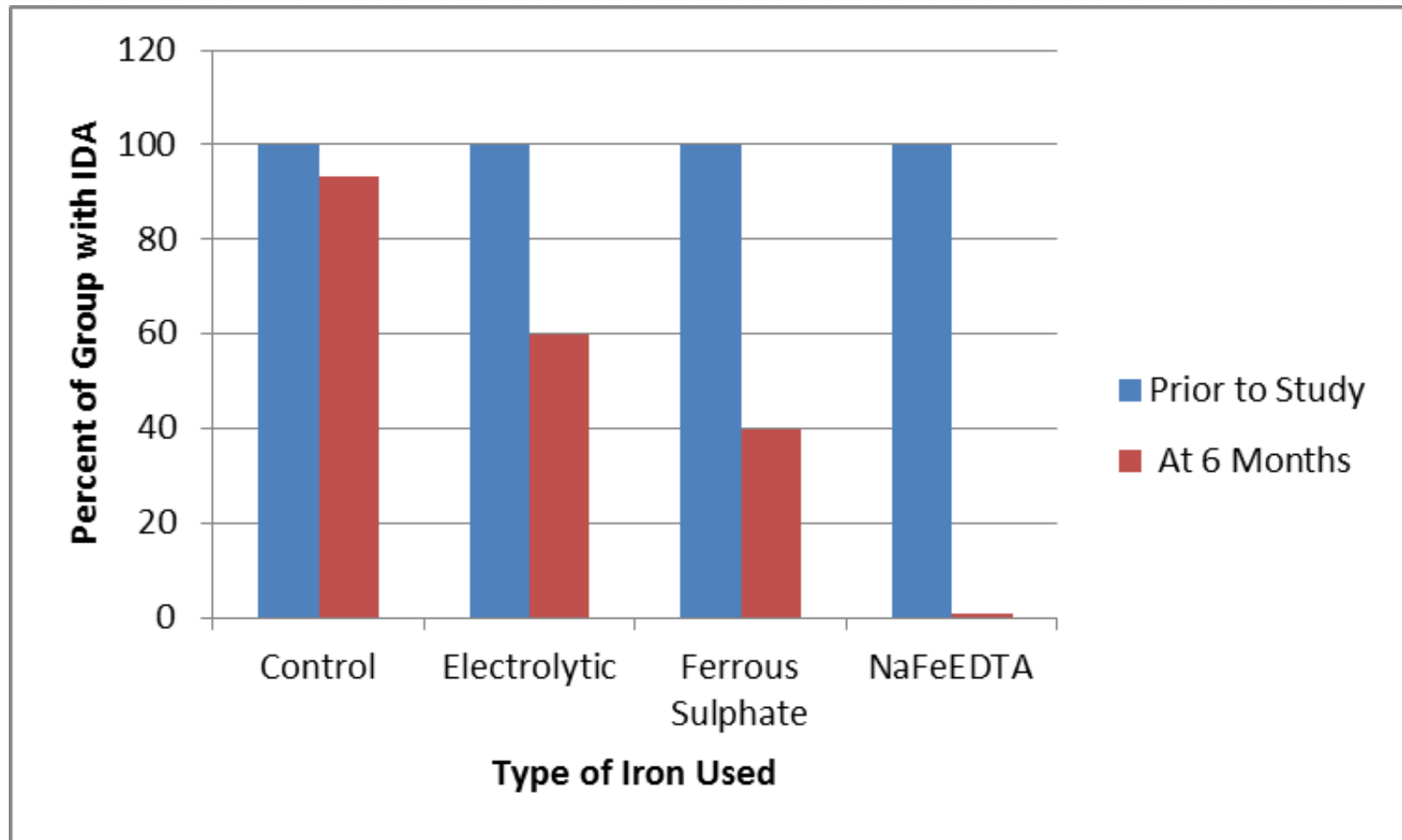
Kuwait (Sentinel) Nutrition Surveillance System



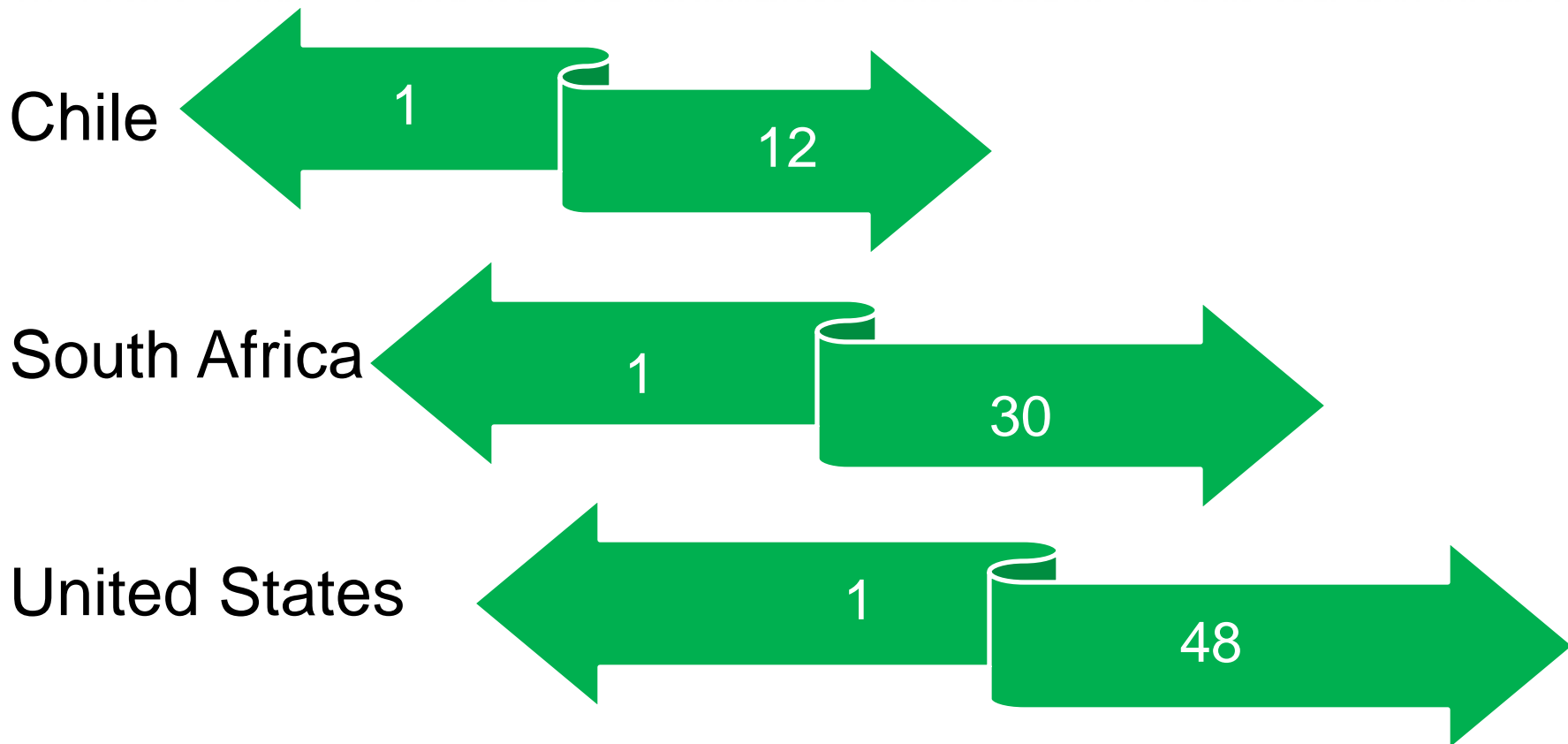
Prevalence of Anemia among Women Seeking Prenatal Care in their First Trimester of Pregnancy: Oman



Impact of Flour Fortification: Iron Efficacy Study



Cost:Benefit Ratio for Preventing Spina Bifida



Key Points to Remember

- Flour fortification is an effective strategy for addressing micronutrient malnutrition
- To date, 68 countries have legislation requiring flour fortification of at least one type of commonly consumed flour
- Flour fortification plays an important role in the reduction of neural tube defects and iron-deficiency along with the prevention of iron-deficiency anemia
- There are many examples and resources to support your efforts to create sustainable flour fortification programs



THANK YOU