Acute Flaccid Paralysis (AFP): Surveillance Standard for Certification

Situation Analysis in the European Region

November 1999

In addition to finding poliovirus if it is circulating, the BIG Question answered by *AFP surveillance* is:

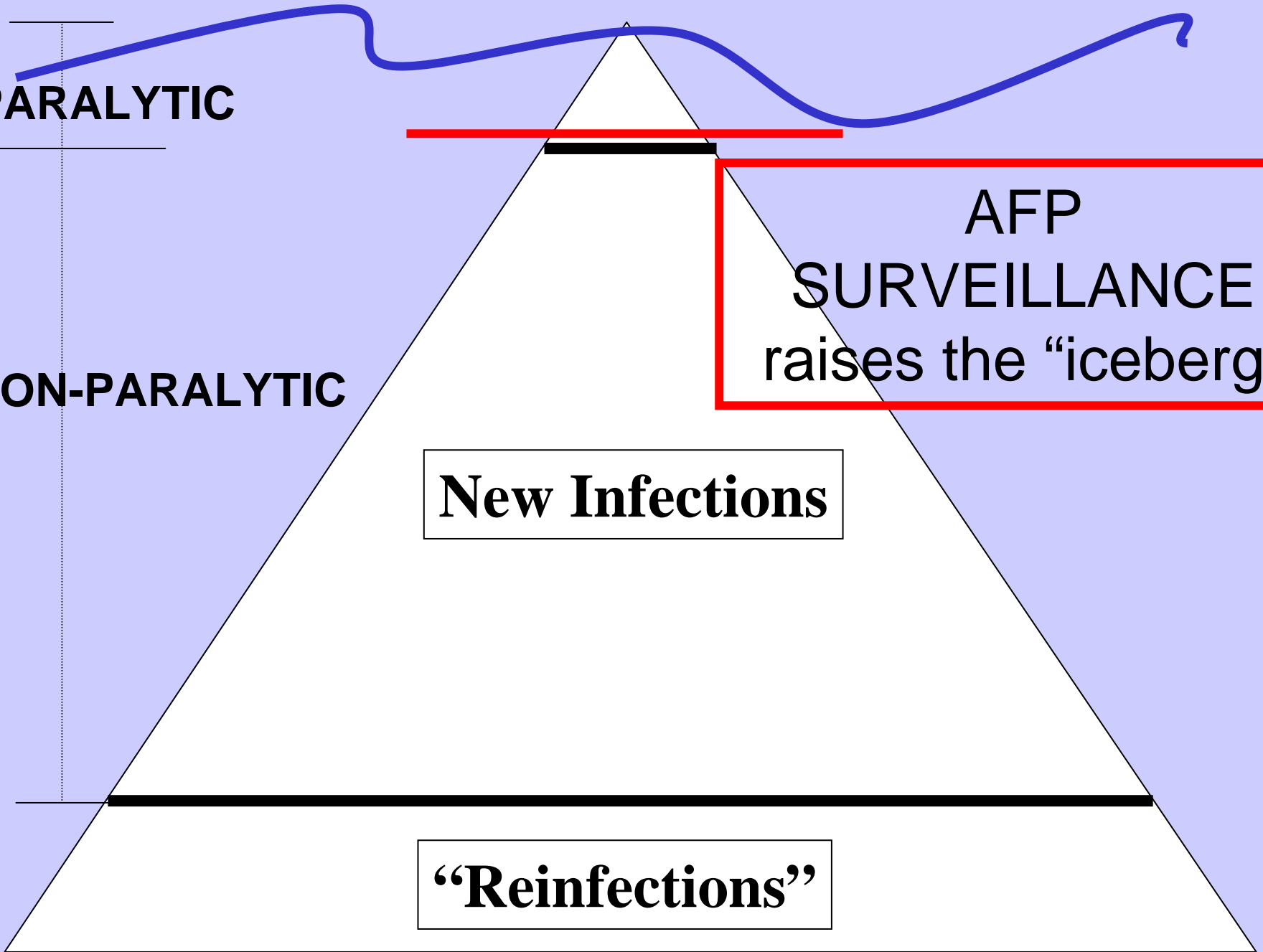*How can we be certain that there is no wild poliovirus in a country which reports 'zero' cases of polio?*

PARALYTIC

NON-PARALYTIC

AFP
SURVEILLANCE
raises the "iceberg"

New Infections

"Reinfections"

HOW?

AFP SURVEILLANCE
The Process

Onset of paralysis

↓ **≤ 7 days of onset**

Detection & notification

↓ **≤ 14 days of onset**

Case investigation & specimen collection → **≤ 3 days of being sent** → **Specimens arrive at national lab**

≤ 28 days ↗ **Primary culture results reported to EPI**

↘ **Isolates sent to regional lab for intra-typic differentiation**

↓

Intra-typic differentiation results reported to EPI

≥ 60 days of onset

↓

Follow-up exam → **Classification of case (≤ 12 weeks of onset)** ←
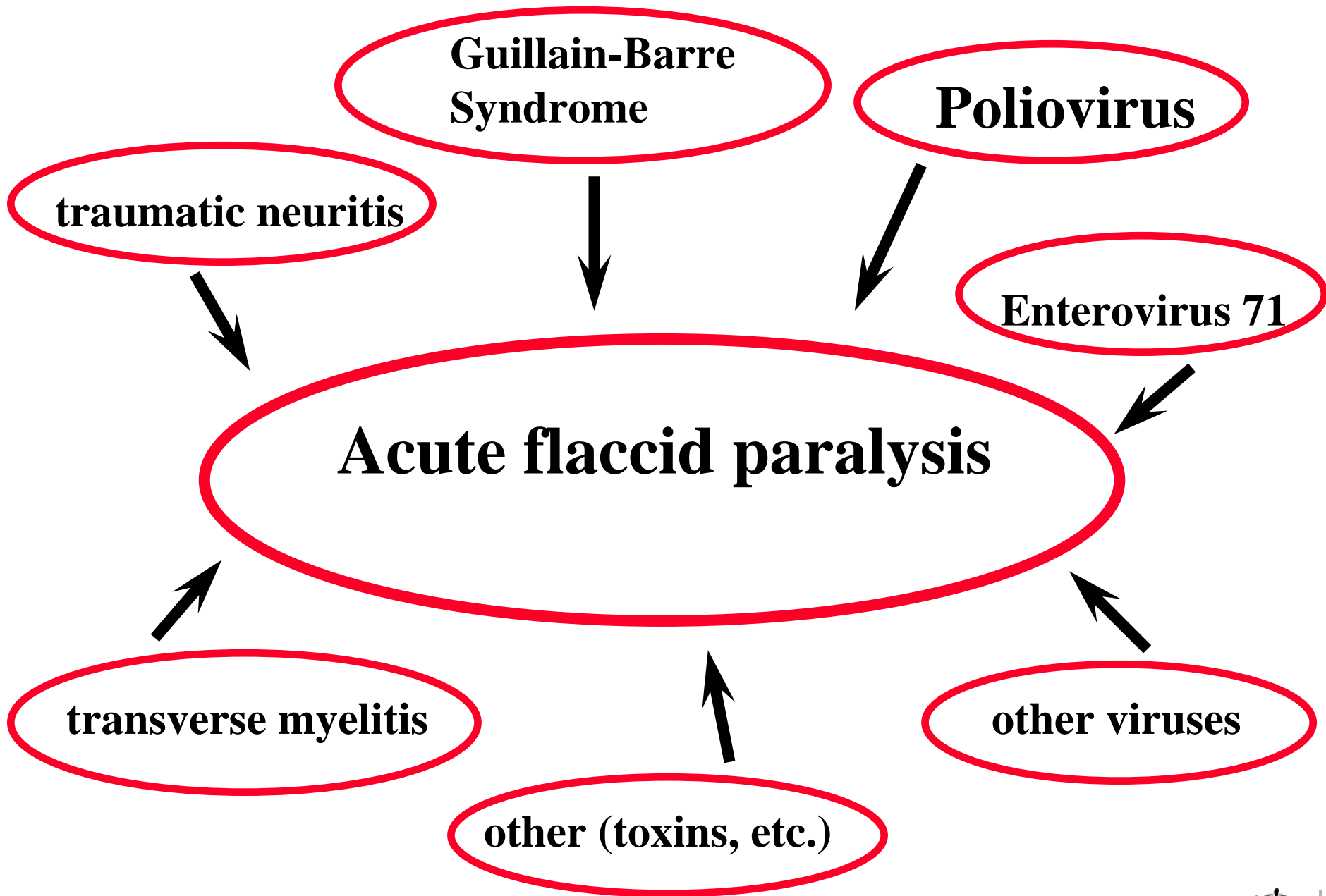
WHAT?
AFP Case Definition

AFP:

Any case of flaccid paralysis of acute onset in a child aged less than 15 years of age;

Clinically suspected polio at any age

Guillain-Barre Syndrome

Poliovirus

traumatic neuritis

Enterovirus 71

Acute flaccid paralysis

transverse myelitis

other (toxins, etc.)

other viruses

Estimates of GBS incidence rates per 100 000 children <15 years

- **Canada, USA:** 1.2 by hospital diagnosis
- **PAHO:** 0.91 subset with neurologist review
- **various:** 0.6-2.4 total population

AFP Surveillance Performance Indicators

System Sensitivity

- Non-polio AFP rate in children < 15 years of age
  Objective: $\geq$ **1 / 100 000**

- Geographic areas representative of population
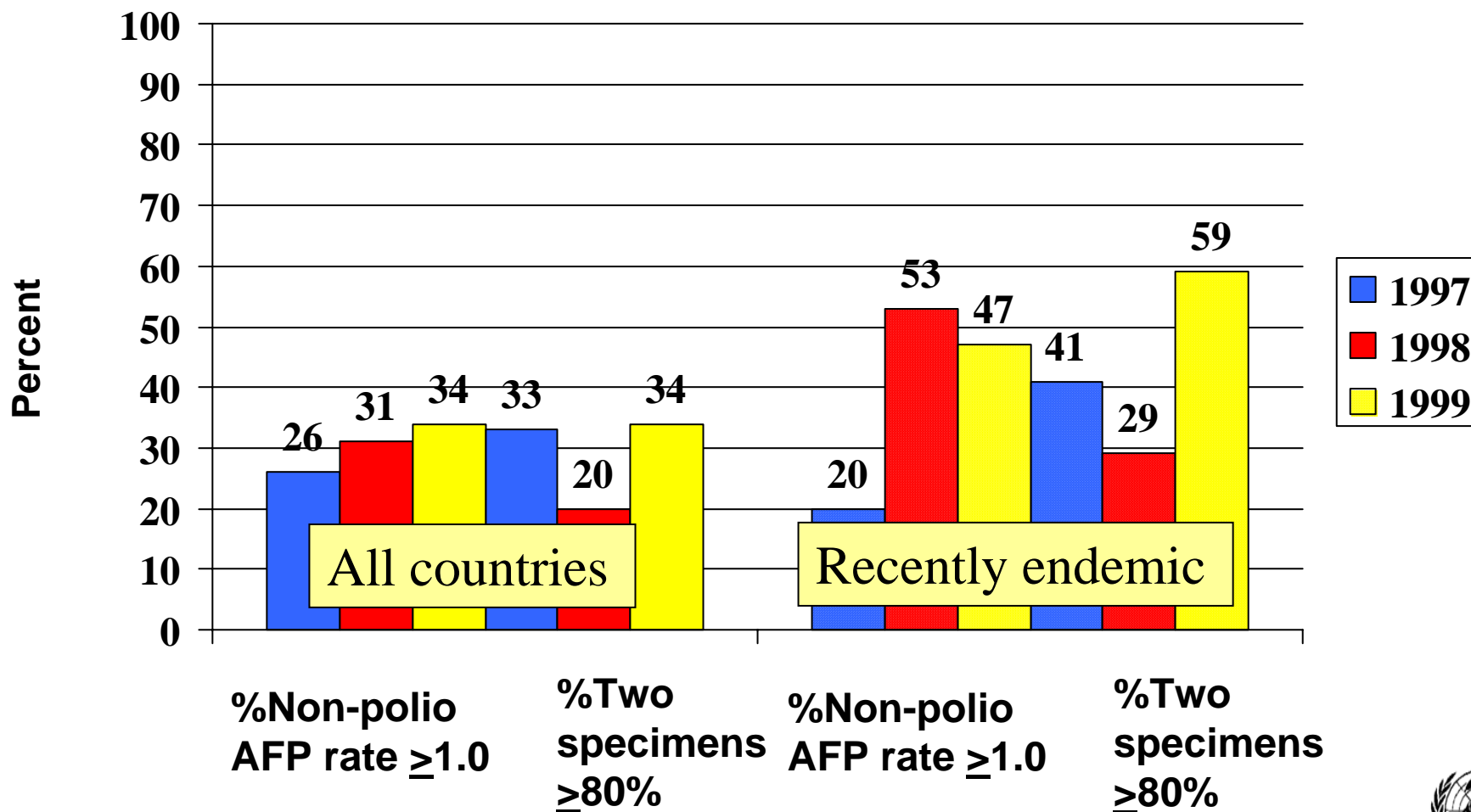 **Objective:** $\geq$ **ALL**

AFP Surveillance Performance Indicators

Reporting and Investigation Operations

- **Completeness: % of all expected AFP weekly reports received**
  Objective: 90%

- **Timeliness: % of all expected AFP weekly reports received by deadline**
  Objective: 90%

- **Investigation $\leq$ 48 hours of report**
  Objective: $\geq$ 80%

- **2 stools collected $\leq$ 14 days of paralysis onset ($\geq$ 24 hrs apart)**
  Objective: $\geq$ 80%

- **Living patient with follow-up at 60 days for residual paralysis**
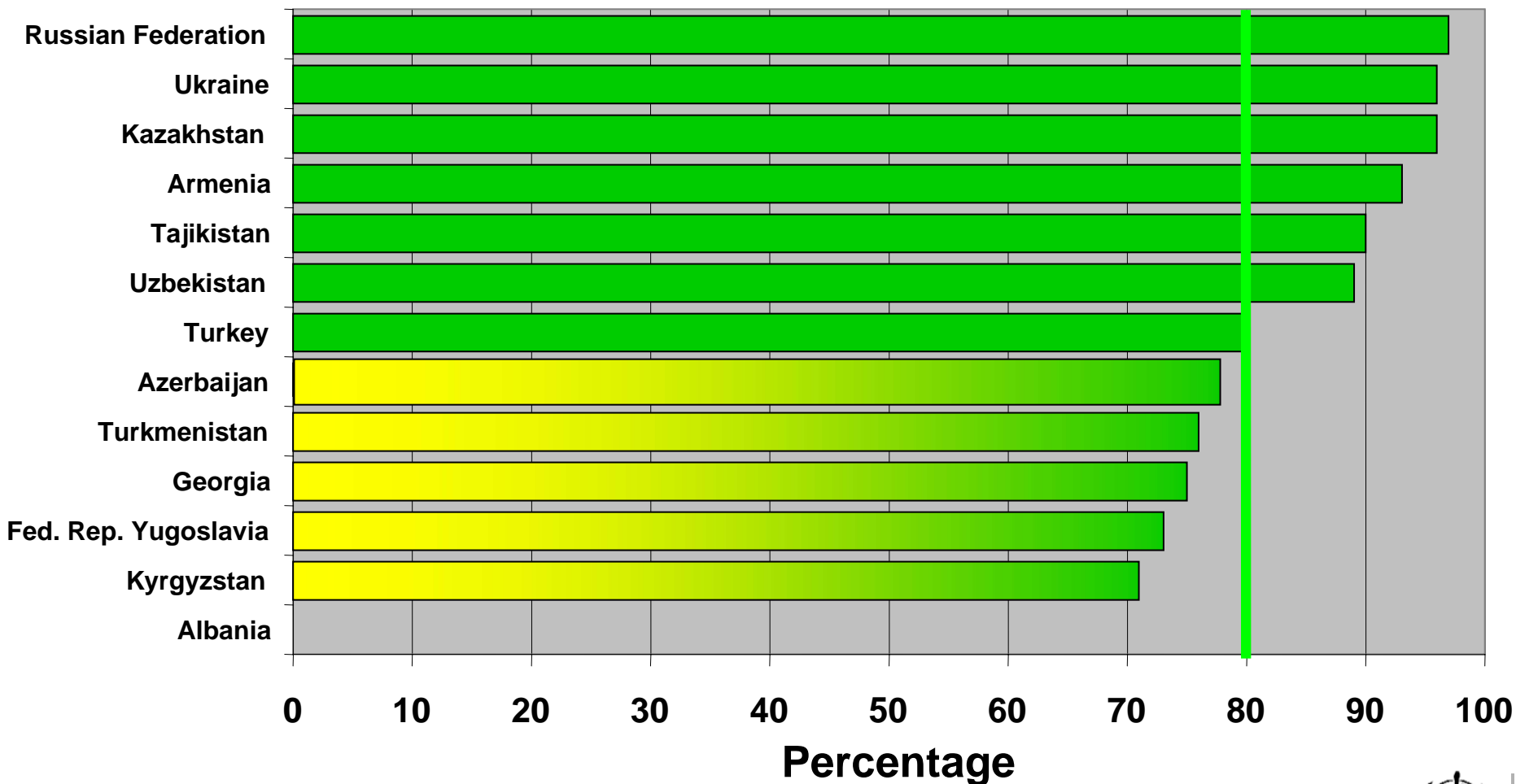 **Objective: $\geq$ 80%**

Performance Indicators of AFP surveillance in the European Region of WHO: all reporting countries and recently endemic

Non-Polio AFP Rate by MECACAR Plus Country, 1999

Bar chart of NPAFP Rate by country:

Country	NPAFP Rate (approx.)
Turkmenistan	2.55
Armenia	1.95
Russian Federation	1.75
Tajikistan	1.6
Ukraine	1.3
Uzbekistan	1.27
Kyrgyzstan	1.1
Turkey	1.0
Fed. Rep. Yugoslavia	0.87
Azerbaijan	0.73
Kazakhstan	0.67
Georgia	0.4
Albania	0

NPAFP Rate

Department of Infectious Diseases WHO EURO
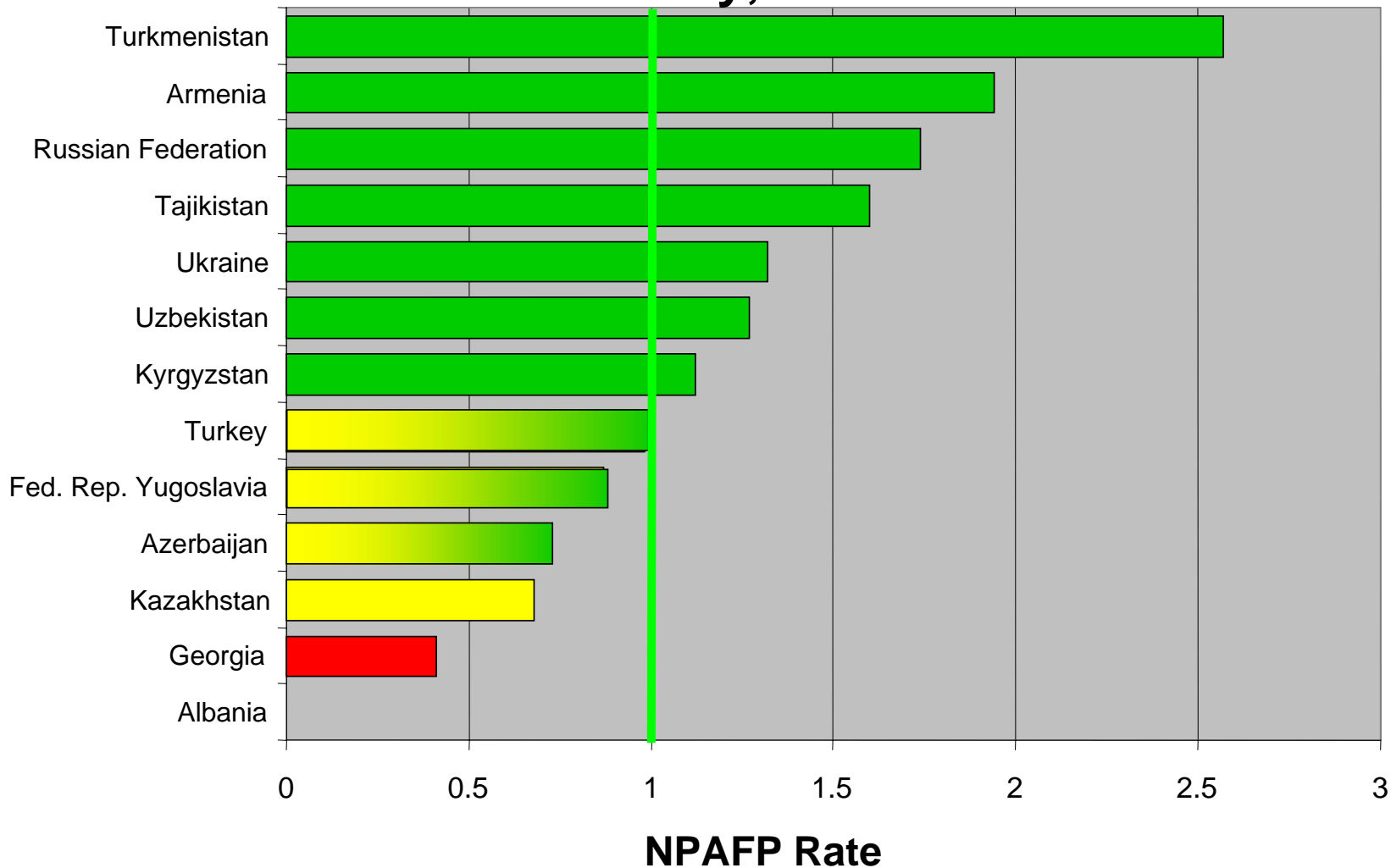
Percent of AFP cases with 2 Faecal Specimens within 14 days, MECACAR Plus Countries, 1999

Country	
Russian Federation	
Ukraine	
Kazakhstan	
Armenia	
Tajikistan	
Uzbekistan	
Turkey	
Azerbaijan	
Turkmenistan	
Georgia	
Fed. Rep. Yugoslavia	
Kyrgyzstan	
Albania	

Percentage

0 10 20 30 40 50 60 70 80 90 100

Calculation of Index of non-polio AFP among Member States conducting AFP surveillance in the European Region of WHO

Index = non-polio AFP incidence per 100 000
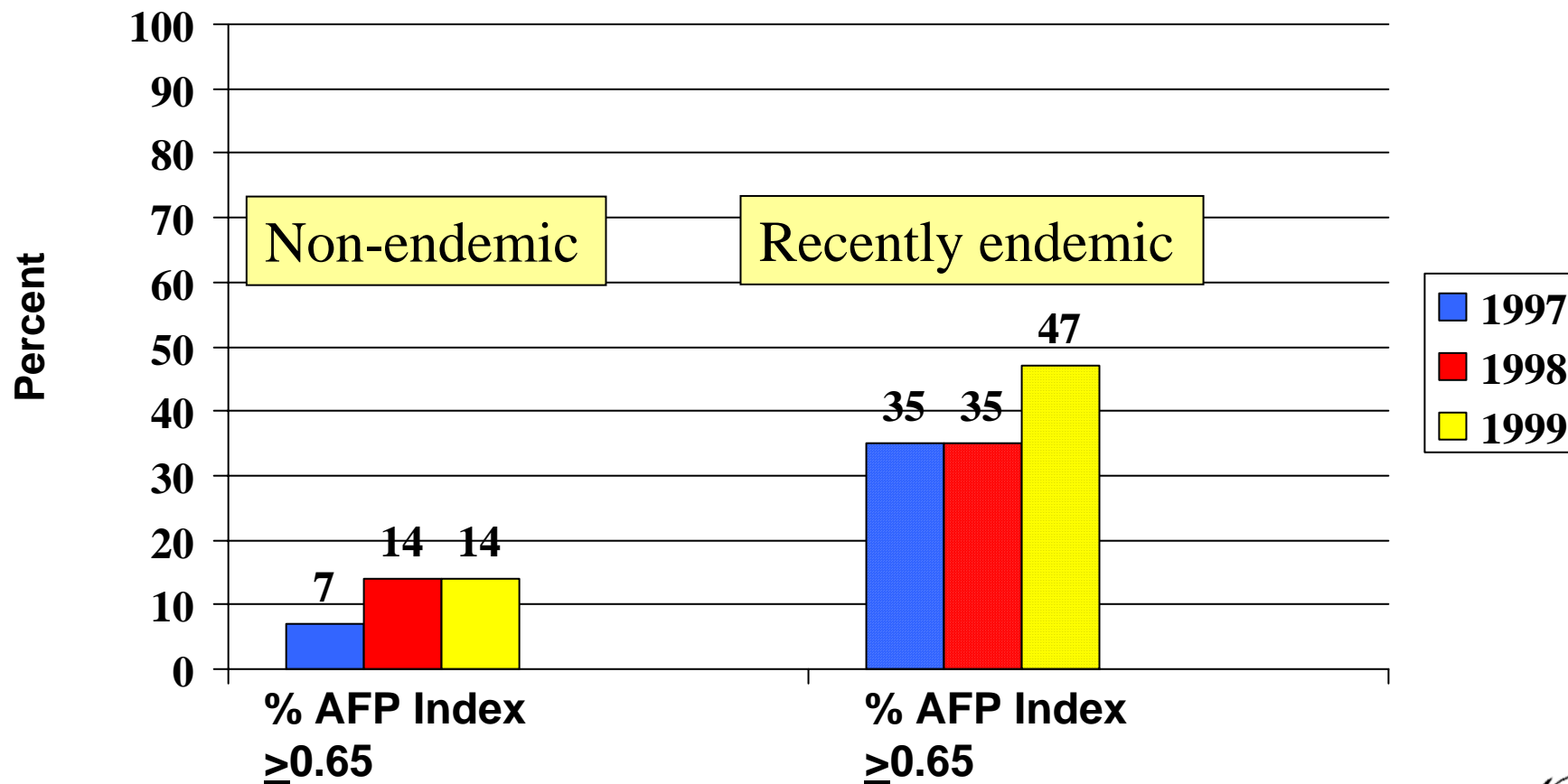*[maximum of 1.0]*
x
proportion with 2 faecal specimens*
$\leq$14 days of onset and $\geq$24 hours apart

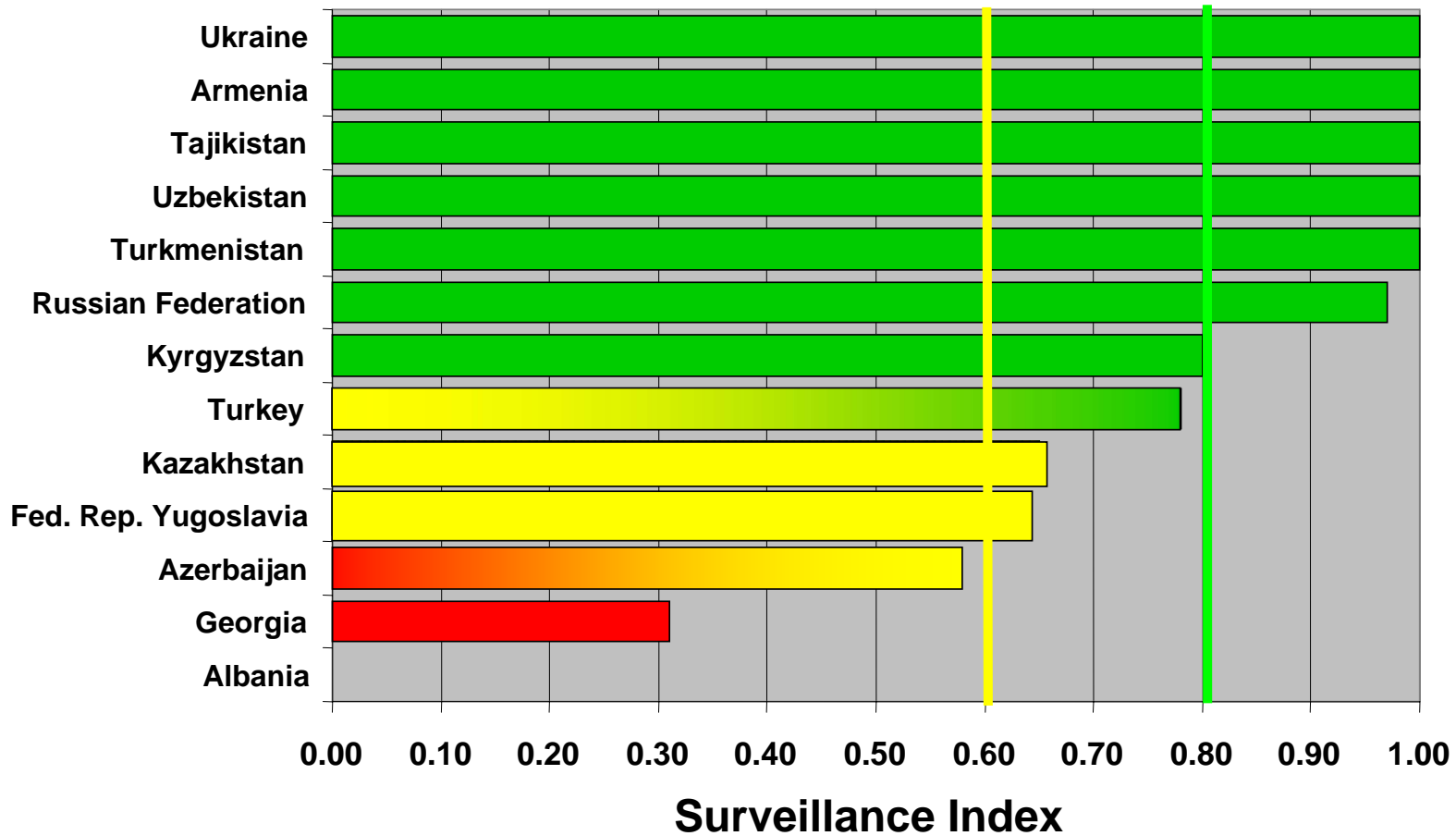**For example: 0.8 *x* 70% = 0.56**
1.2 *x* 80% = 0.80

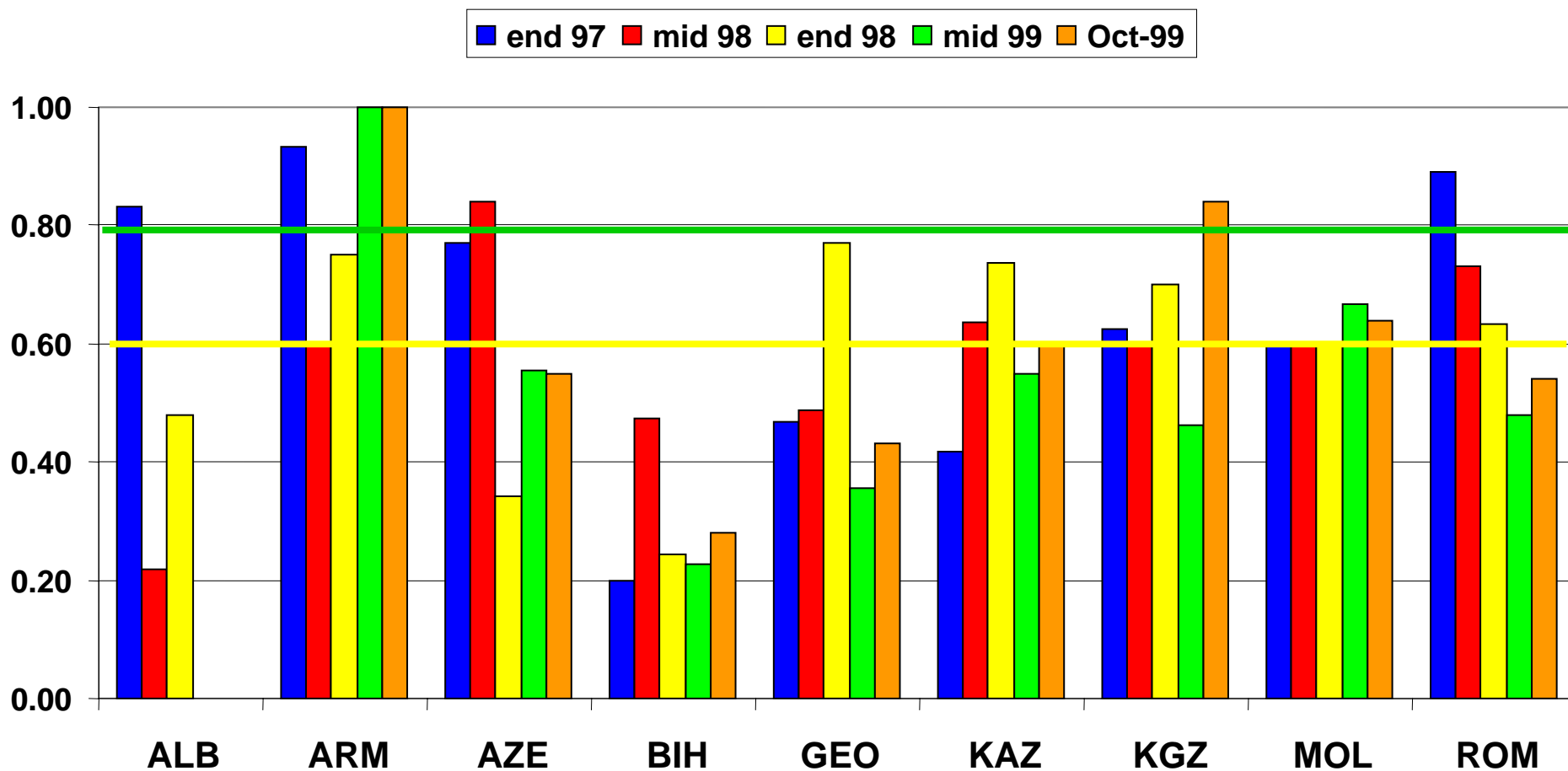**for non-endemic countries, at least one specimen within 14 days*

AFP Surveillance Index in the European Region of WHO: Non-endemic and Recently Endemic Countries
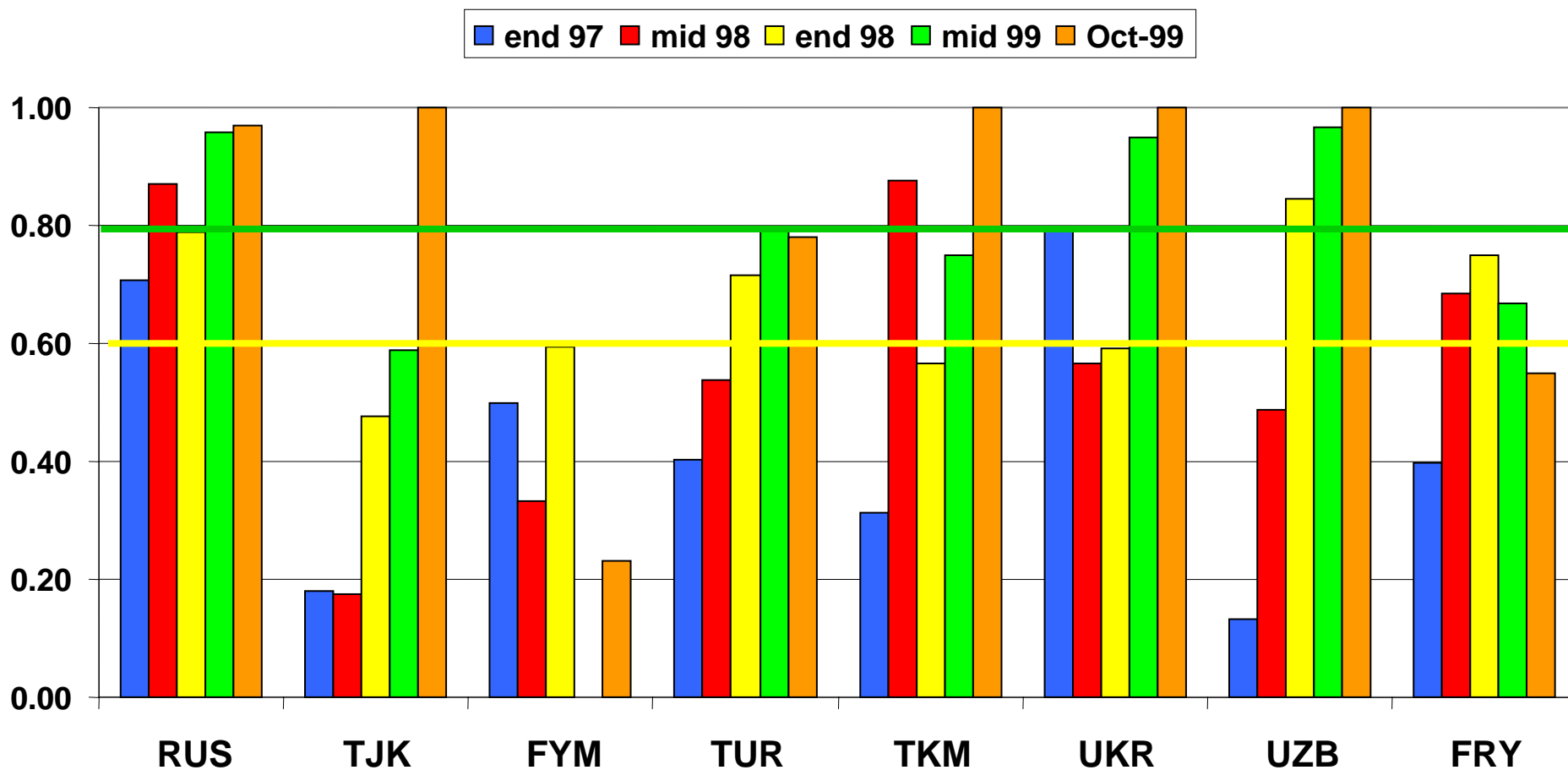## 1997-1999 to date

AFP Surveillance Index by MECACARP Plus Country, 1999

Country	Surveillance Index
Ukraine	green, ~1.00
Armenia	green, ~1.00
Tajikistan	green, ~1.00
Uzbekistan	green, ~1.00
Turkmenistan	green, ~1.00
Russian Federation	green, ~0.97
Kyrgyzstan	green, ~0.80
Turkey	yellow-green, ~0.78
Kazakhstan	yellow, ~0.65
Fed. Rep. Yugoslavia	yellow, ~0.64
Azerbaijan	red-orange, ~0.58
Georgia	red, ~0.31
Albania	(no bar)

Surveillance Index

AFP Surveillance Index, EUR Recently Endemic Countries, 1997-1999

Legend: ■ end 97 ■ mid 98 □ end 98 ■ mid 99 ■ Oct-99

AFP Surveillance Index, EUR Recently Endemic Countries, 1997-1999

Legend: ■ end 97　■ mid 98　□ end 98　■ mid 99　■ Oct-99

Categories: RUS, TJK, FYM, TUR, TKM, UKR, UZB, FRY

Index rates of non-polio AFP among Member States conducting AFP surveillance in the European Region of WHO, 1998*
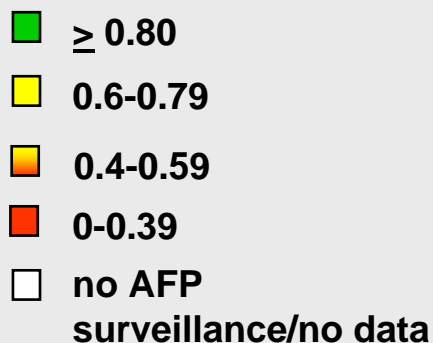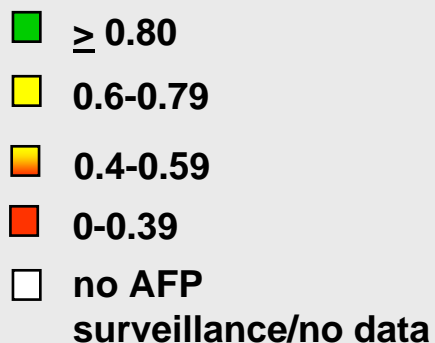
*index=(incidence [max 1.0] x proportion with faecal specimens); AFP includes facial paralysis for Russia; as of 29 Jul 1999.
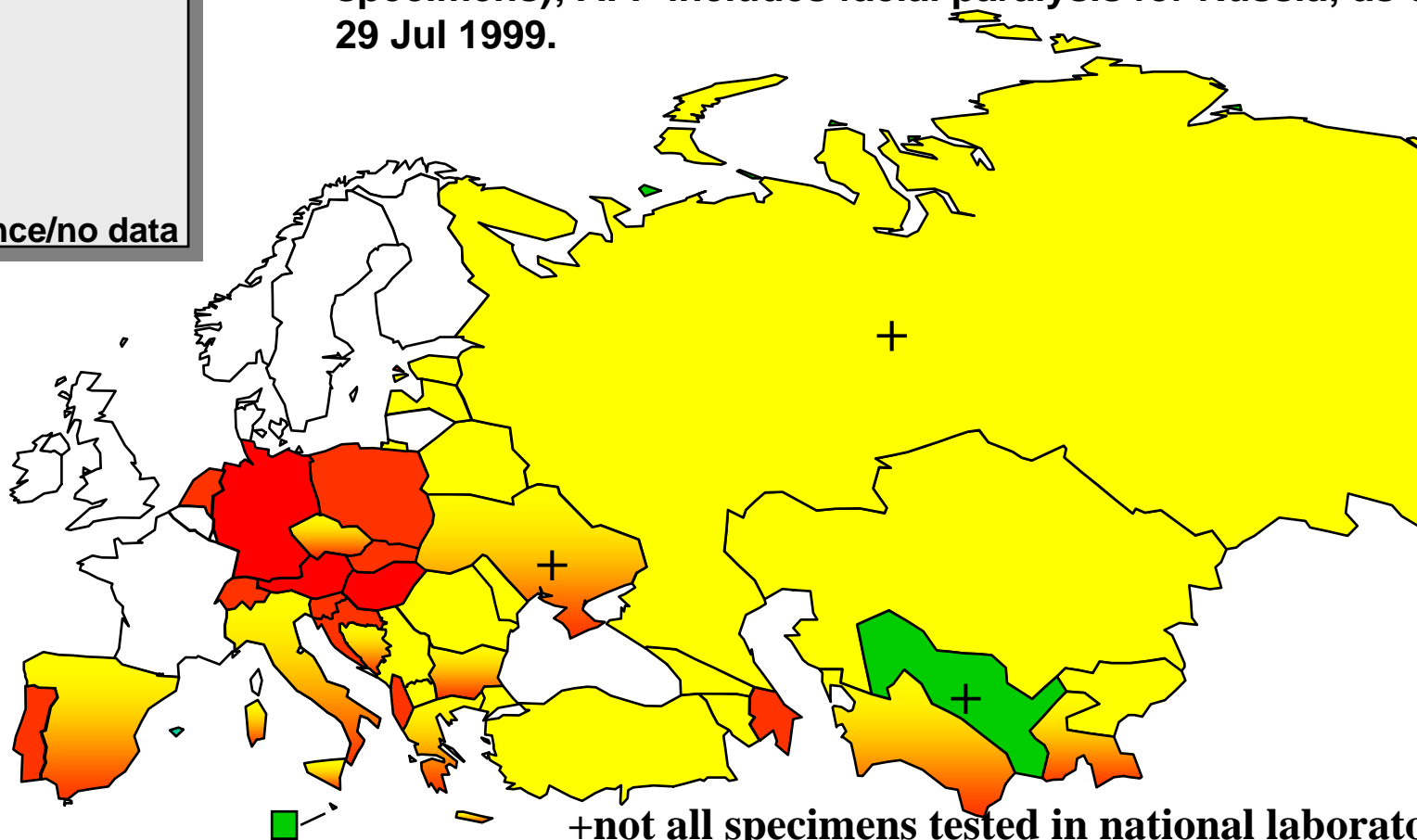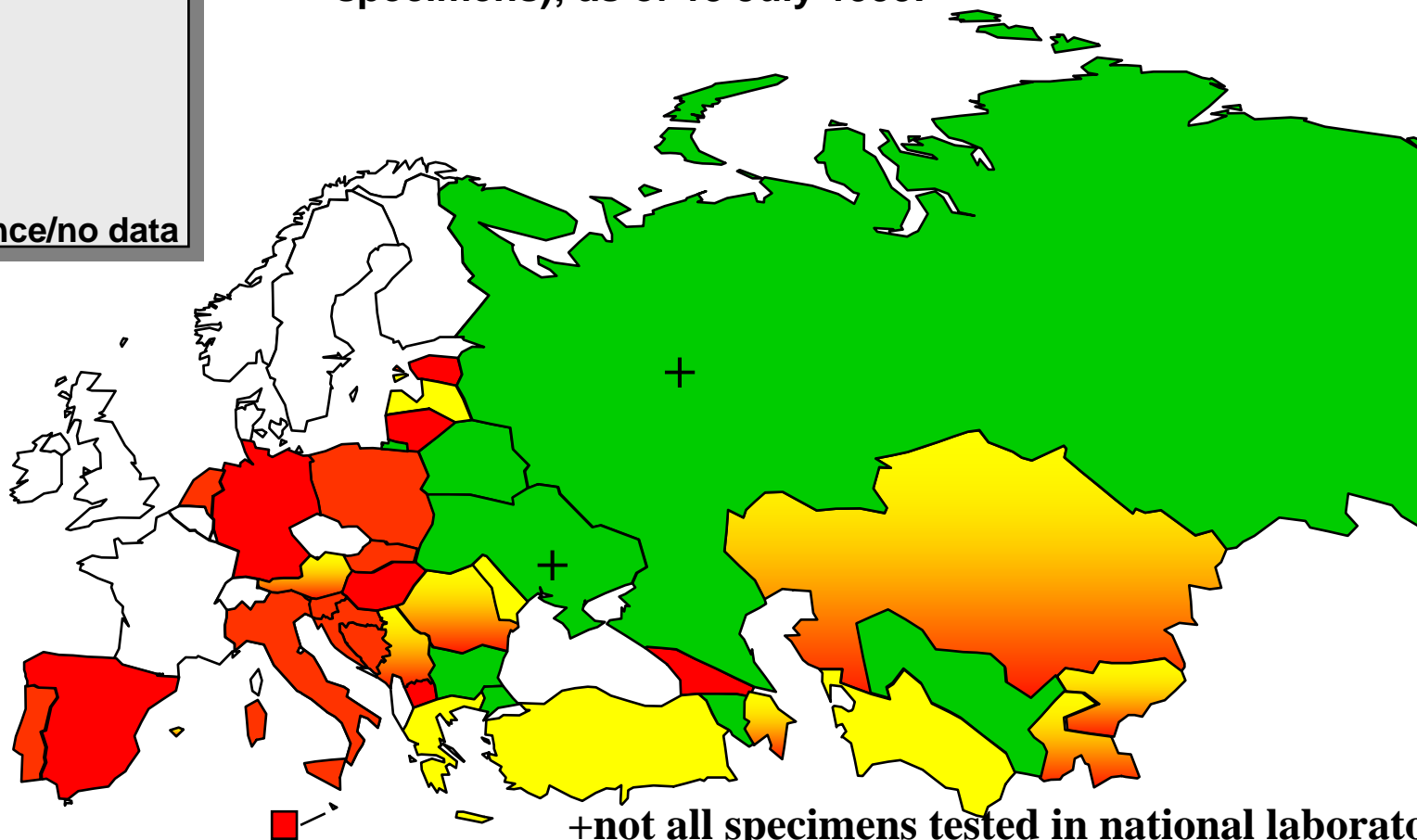
- ≥ 0.80
- 0.6-0.79
- 0.4-0.59
- 0-0.39
- no AFP surveillance/no data

+not all specimens tested in national laboratory

Index rates of non-polio AFP among Member States conducting AFP surveillance in the European Region of WHO, 1999*

Legend:
- ≥ 0.80 (green)
- 0.6-0.79 (yellow)
- 0.4-0.59 (orange)
- 0-0.39 (red)
- no AFP surveillance/no data (white)

*index=(incidence [max 1.0] x proportion with faecal specimens); as of 13 July 1999.

+not all specimens tested in national laboratory

Index rates of non-polio AFP among Member States conducting AFP surveillance in the European Region of WHO, 1999*
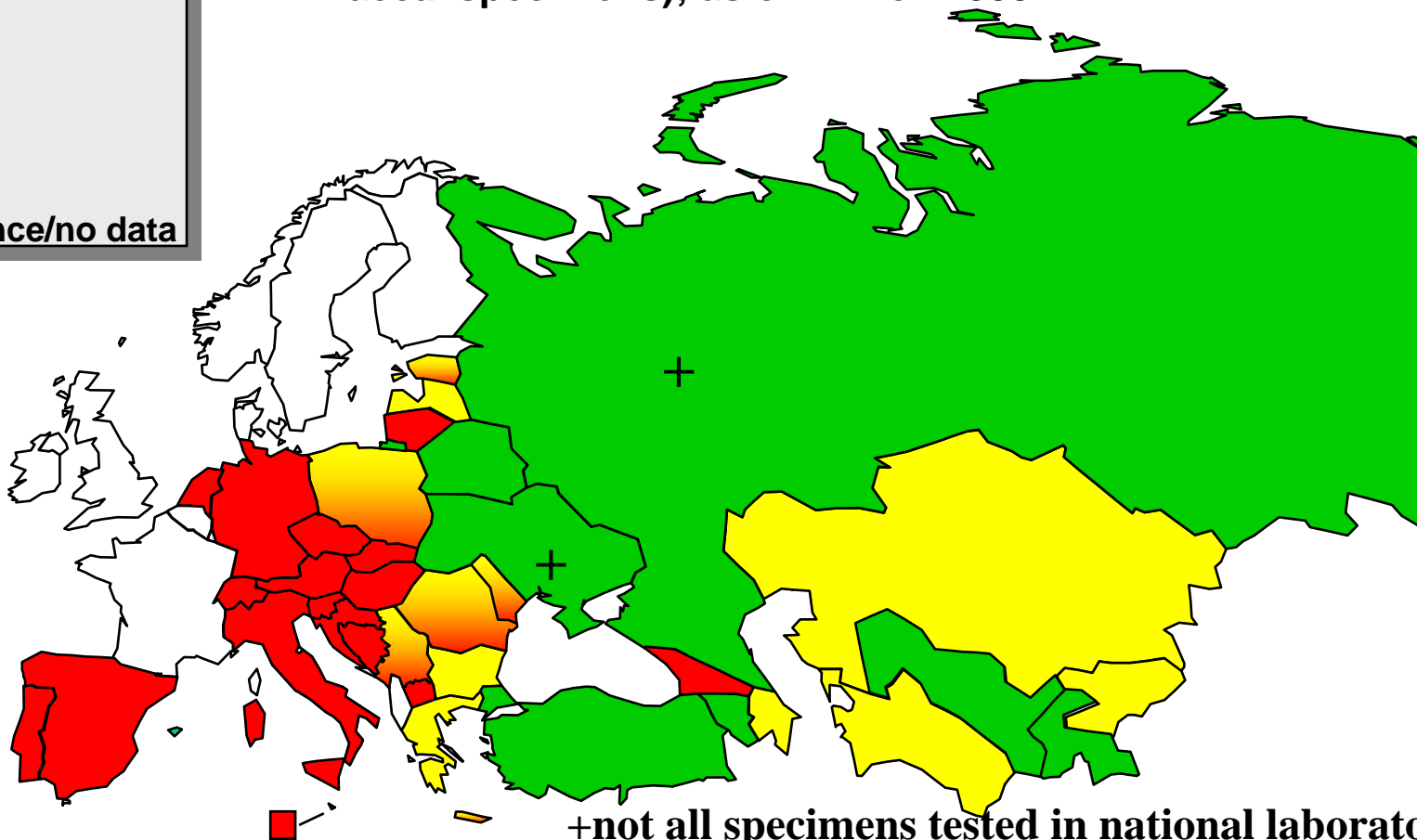
Legend:
- 🟩 ≥ 0.80
- 🟨 0.6-0.79
- 🟧 0.4-0.59
- 🟥 0-0.39
- ⬜ no AFP surveillance/no data
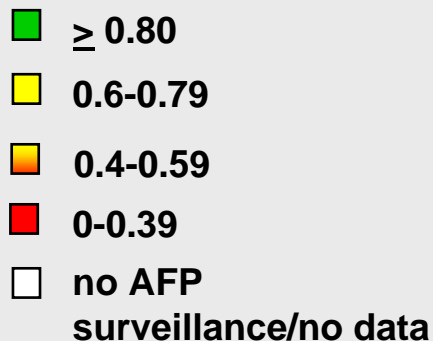
*index=(incidence [max 1.0] x proportion with appropriate faecal specimens); as of 22 Nov 1999.

+not all specimens tested in national laboratory