

# Vaccine Security

# UNICEF Vaccine Procurement

# Overview

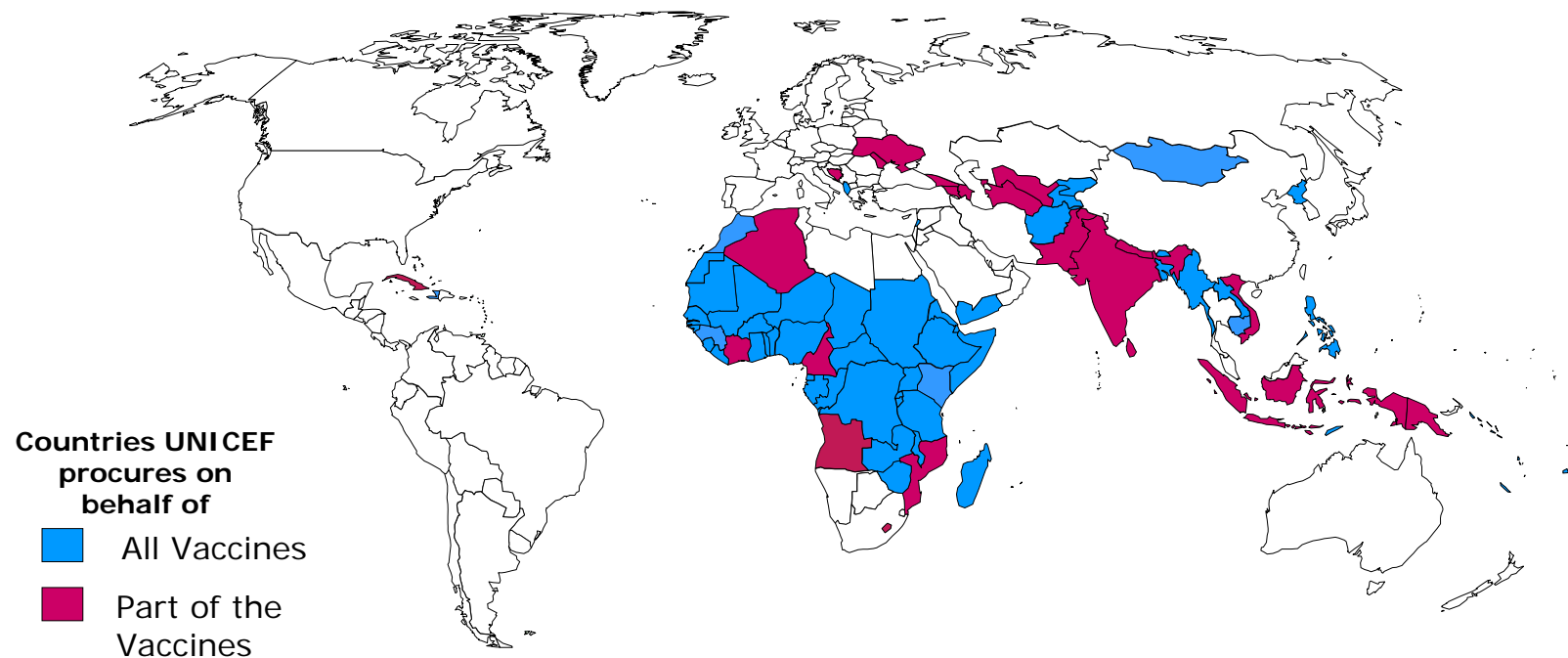
Supplier meeting

UNICEF Supply Division 3-4 April 2008

Rob Matthews

# UNICEF procures immunization supplies on behalf of around 80-100 countries annually in support of GIVS (BCG, DTP, TT/Td/DT, Measles, OPV, HepB, YF, DTP-HepB, DTP-HepB/Hib, DTP/Hib, Hib, MR, Meningitis, MMR, IPV, etc)

- 2007** – Immunization supply expenditures: US\$ 685m, Vaccines: ~ US\$ 620m
- 3.3 billion doses of vaccine
  - 1,850 vaccine shipments



Based on 2008 Forecasts received by UNICEF

# A significant proportion of developing country routine vaccine needs are met through UNICEF procurement

Classification	% of Birth Cohort covered by UNICEF Procurement
High income: nonOECD	0%
High income: OECD	0%
Upper middle income	1%
Lower middle income	11%
Low income	52%
<b>Grand Total</b>	<b>31%</b>

Classification	% of Birth Cohort covered by UNICEF Procurement excl India China and Indonesia
High income: nonOECD	0%
High income: OECD	0%
Upper middle income	1%
Lower middle income	25%
Low income	84%
<b>Grand Total</b>	<b>48%</b>

## MDG Regional Focus

UNICEF is forecast\* to procure vaccines for:

- **88%** of Sub-Sahara Africa's birth cohort;
- **59%** of South East Asia and West Pacific Region's birth cohort

*(excl self producing/procuring countries of India, Indonesia and China)*

\* Based on UNICEF Vaccine forecast 2008

Data Sources:

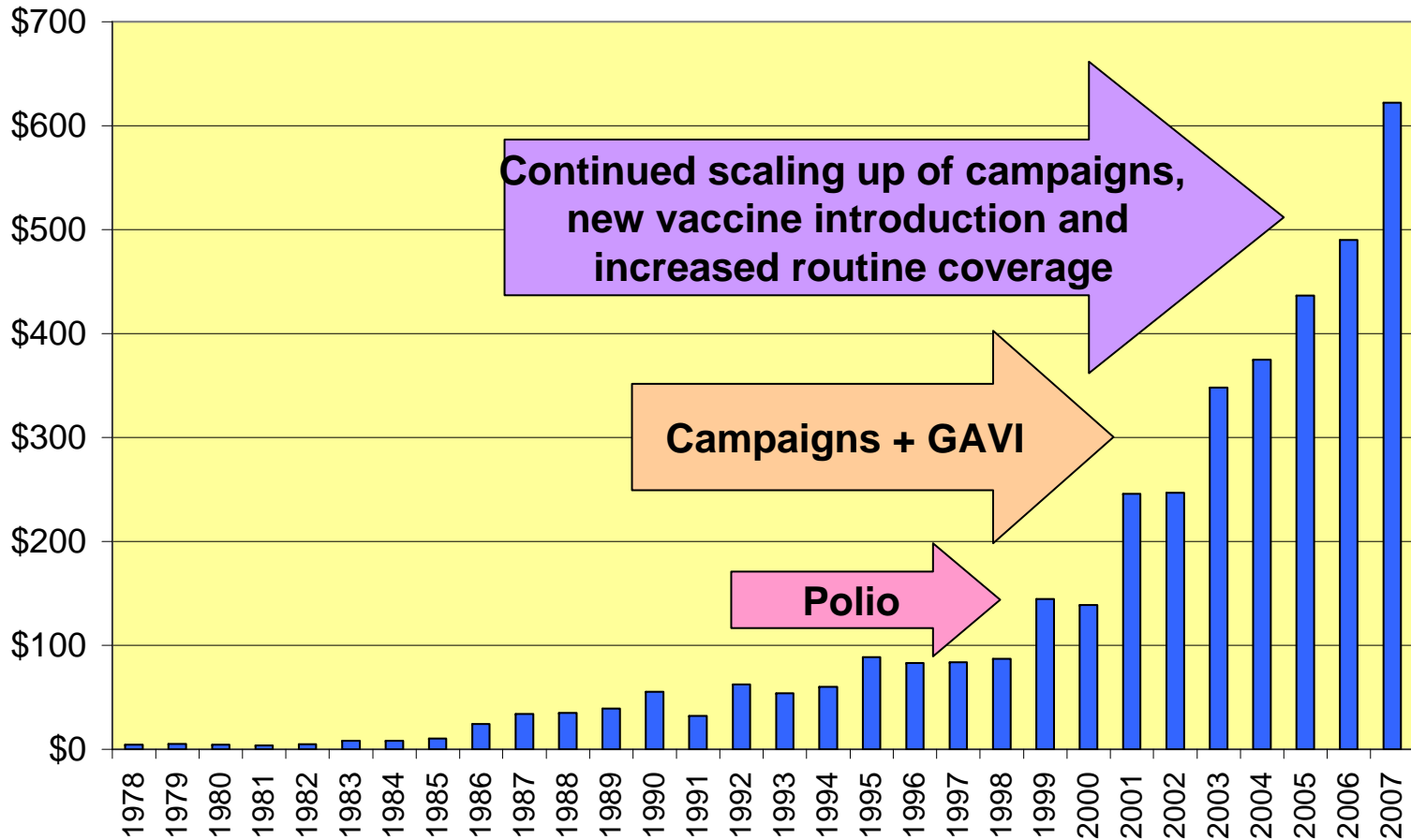
Population Data: 'The State of the Worlds Children 2008'

Procurement Coverage Data: UNICEF Vaccine Forecast 2008

Income Classification: World Bank

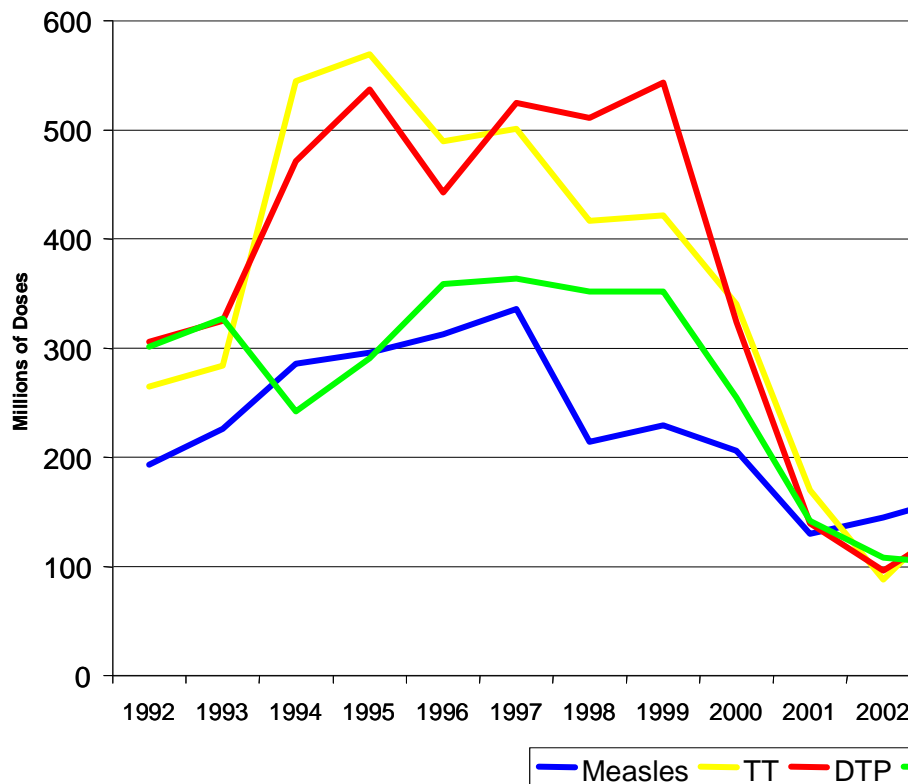
# UNICEF annual vaccine procurement continues to increase - from 2000 to 2007, procurement value quadrupled

UNICEF SD Annual procurement value of vaccines, in million USD



# The changes within the Vaccine industry in the late 90's highlighted the importance of knowing the market and the need to change the procurement strategy

Quantity Offered to UNICEF



- Diverging markets
- Mergers & Acquisitions
- Public – Private Sector shift
- Lack of Profitability
- Consultation with Industry
  - Short Timelines
  - Procured as if commodities
  - Focused too much on price
  - Bought as if buying for 1 country

# Vaccine Security – Ensuring the uninterrupted, sustainable supply of affordable, quality vaccines

## Vaccine Procurement Principles

A healthy industry is vital to ensure an uninterrupted and sustainable supply of vaccines

Procurement from multiple suppliers for each vaccine presentation

Procurement from manufacturers in developing countries and industrialized countries

Paying a price that is affordable to Governments and Donors and a price that reasonably covers manufacturers minimum requirements

Long term accurate forecasting is provided by UNICEF, accurate production plans provided by Manufacturers

As a public buyer, providing grants to manufacturers is not the most effective method of obtaining capacity increases

The option to quote tiered pricing should be given to manufacturers—in accordance with the World Bank classification.

## 3 Pillars of Vaccine Security

### Appropriate Contracting

- to secure production
- dependant on the individual vaccine markets

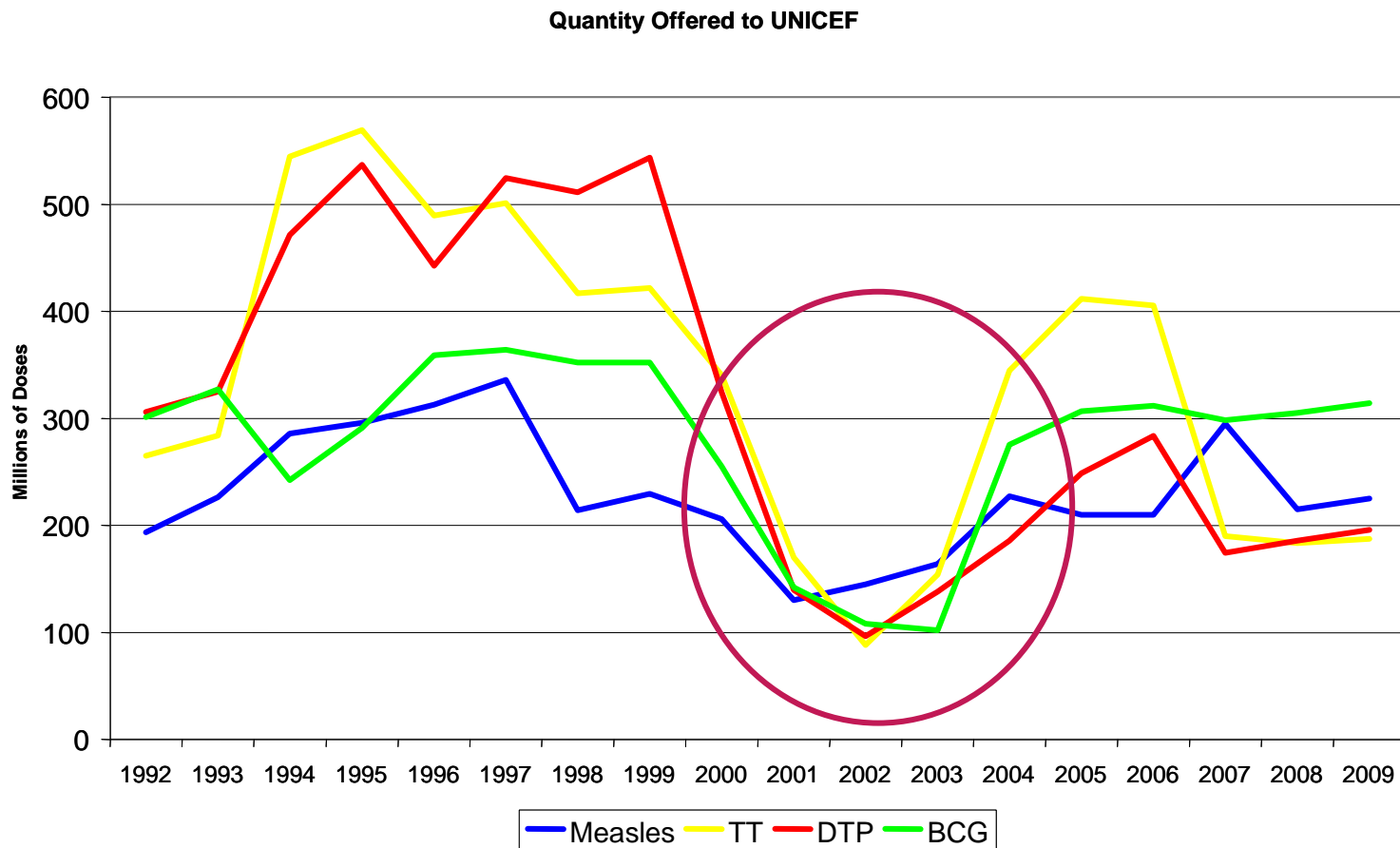
### Firm Funding

- contracting could not occur without the necessary funding in place

### Accurate Forecasting

- the **forecast is the foundation of Vaccine security** – it is the base upon which the production quantities are determined and funding needs identified

# Implementation of the Vaccine Security principles ensured vaccine availability....



# ...with Individual Vaccine markets at various stages of development in terms of Vaccine Security

## Number of manufacturers per vaccine

Vaccine Group	Number of Manufacturers awarded in 2001-2003	Number of Manufacturers awarded in 2004-2006	Number of Manufacturers awarded in 2007-2009
BCG	5	4	4
DTP	5	4	3
Measles	5	5	3
TT	7	4	3 (+1)
tOPV	4	5	5
mOPV1	0	1	5
mOPV3	0	1	3
DTP+Hib	0	0	1
DTP-HepB+Hib	1	1	2
DTP-HepB	1	1	3
HepB	4	5	6
YF	3	3	3
Meningitis	1	1	1
MMR	3	3	2
MR	1	1	2
DT/Td	3	2	2

While progress has been made in terms of overall availability.....there is **less Vaccine Security** within the traditional Vaccine markets with an increased dependency on fewer manufacturers for a growing demand... ..on a positive note there has been an **additional manufacturer awarded for TT...** ...and there are **positive developments** within the DTP in combination market



= Current Awards, not Number of Pre-qualified products

# UNICEF Vaccine Procurement Objectives

Ensure an uninterrupted, sustainable supply of affordable, quality vaccine

Supply Arrangements established to achieve Vaccine Security in compliance with:

- UNICEF Vaccine Procurement Principles
- UNICEF Financial Rules and Regulations
- Public Procurement Principles
  - Integrity
  - Competition
  - Client Service
  - Equal Treatment
  - Organizational Objectives

# Appropriate Contracting

Significant changes in UNICEF's approach to contracting for vaccines occurred following the Supply Crisis and subsequent dialogue with Industry

- Establishment of vaccine procurement principles
- Move to 3-year (+5-year OPV; 1-year specials)
- Move to RFP from ITB for multi-year
- Move to multiple awards per vaccine

Supply arrangements are dependant upon the various market profiles

- Criteria: Market development stage, number of PQ suppliers; Demand Profile – quantity, activity split, urgency of need; reliability of demand; anticipated duration of demand; Funding profile,

Within the different vaccine markets the focus on various elements to achieve Vaccine Security may differ, but overall goal of Vaccine Security remains the same

# Without adequate and timely funding, procurement cannot occur

Seen from a Country perspective....

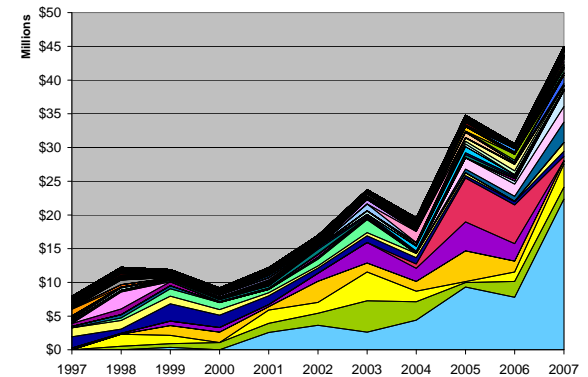
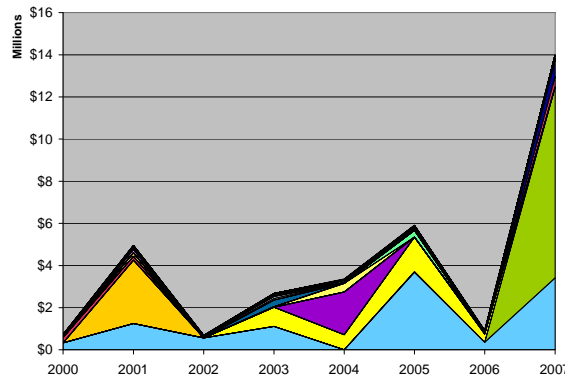
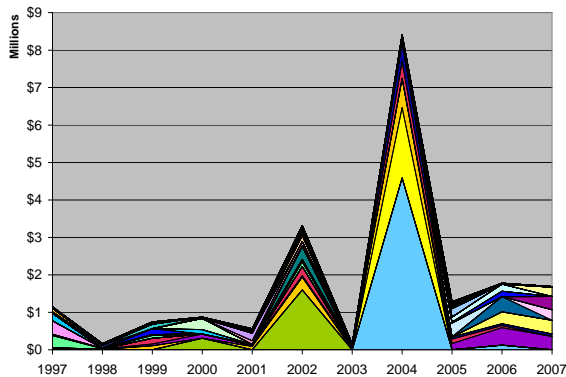
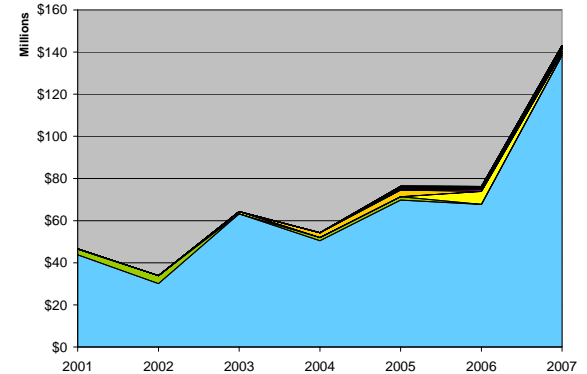
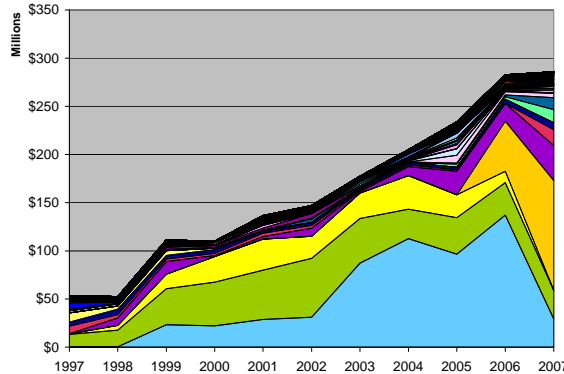
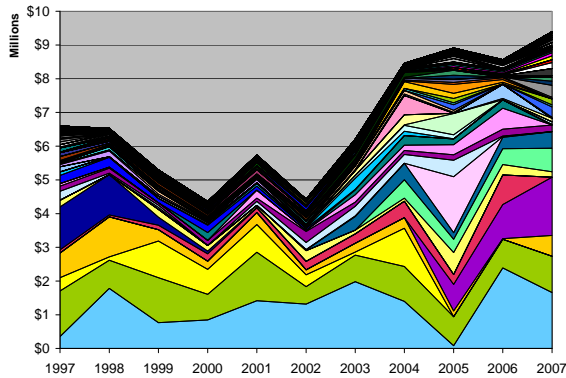
Aggregated causes	COUNTRY	No. of Vaccines
<b>Forecast &amp; stock management issues</b>		
	Burundi	1
	East Timor	1
	Guinea-Conakry	1
	Haiti	1
<b>Funding issues</b>		
	Bhutan	1
	Bosnia-Herzegovina	2
	Equatorial Guinea	4
	Lao PDR	3
	Niger	4
	Nigeria	7
	Senegal	3
	Somalia	2
	Swaziland	1
	Tanzania	5
<b>Procurement process issues</b>		
	Indonesia	4
	Nepal	1
<b>Quality issues</b>		
	Albania	1
<b>Shipping</b>		
	Georgia	1
	Madagascar	2
	Rwanda	1
<b>Other</b>		
	West Bank & Gaza	1

A lack of or delay in funding has the **highest frequency** and has the **widest impact** across multiple vaccines

Individual vaccines, countries, and programmes have **varying funding sources** which **significantly influence the forecast accuracy** and **capacity to order the required vaccines**

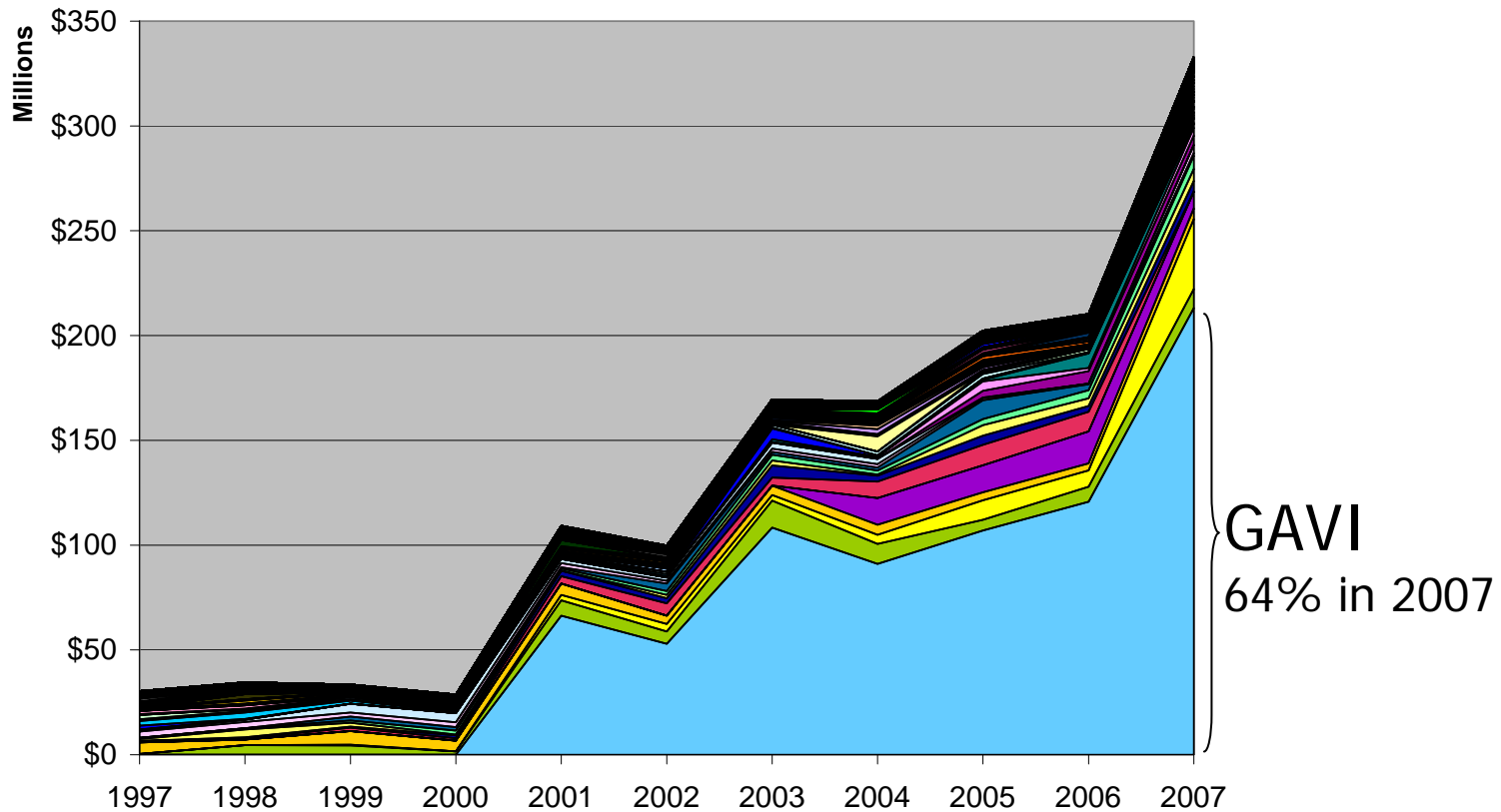
Source: UNICEF Vaccine Forecast 2008 data- covering January to September 2007

# Funding for the various vaccines varies significantly both in terms of scale and profile of funding sources



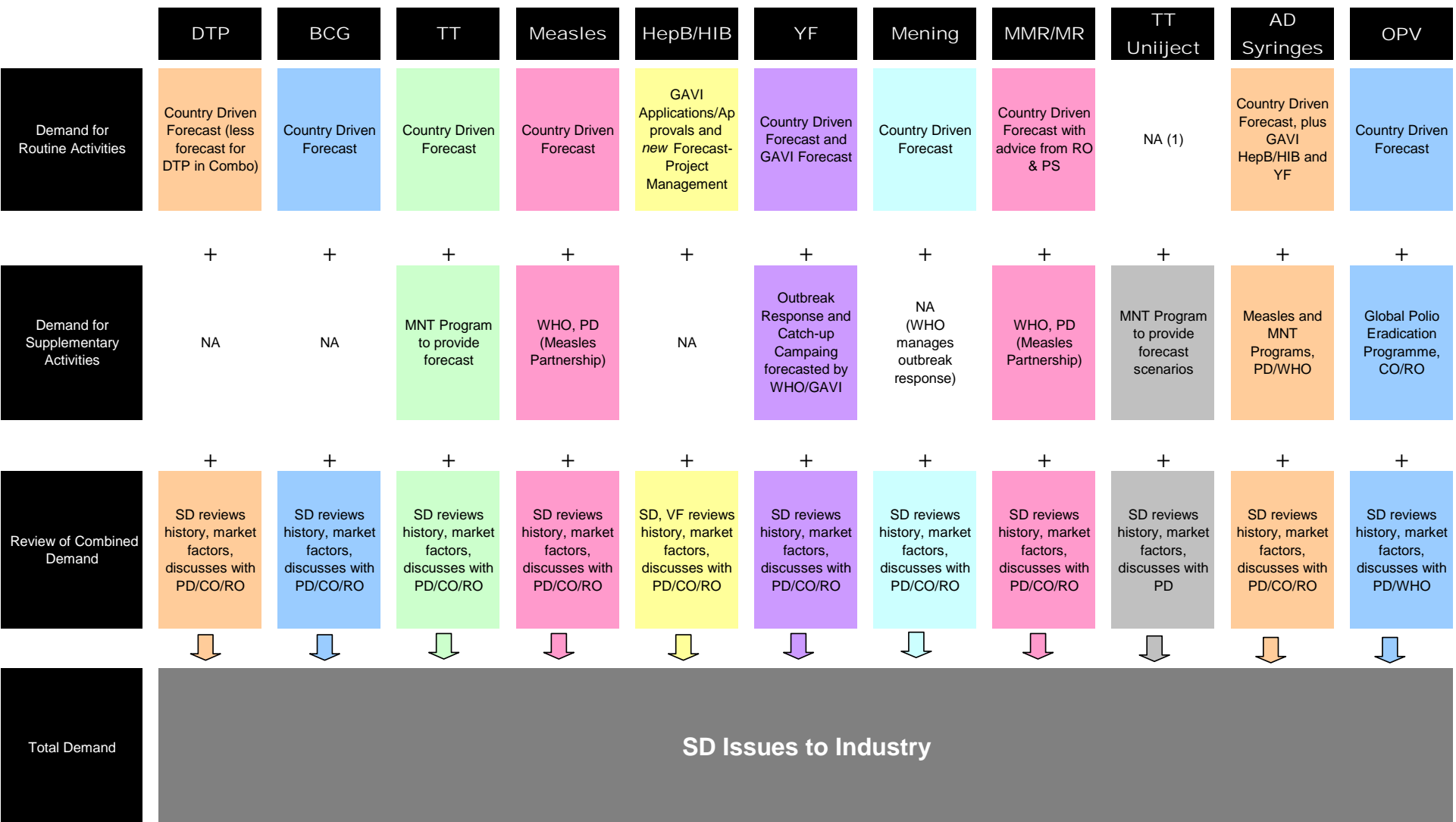
# Vaccine procurement through UNICEF outside of polio is increasingly depending on GAVI funding

## Non Polio Vaccine Procurement through UNICEF



Creates stability but also dependency

# Forecasting is the basis of determining the funding needs and production requirements



# Forecast Accuracy – key in ensuring an uninterrupted supply

Forecast Variance from Original LTA Quantity

LTA	2003	2004	2005	2006	2007
BCG	-13%	0%	5%	9%	-2%
DTP	-20%	-6%	-17%	-20%	-18%
HepB	-54%	-22%	15%	97%	-32%
DTP-Hep-B	-42%	1%	9%	-33%	11%
DTP-HepB-Hib	-44%	7%	-31%	-23%	-3%
Measles	26%	-22%	-10%	27%	-16%
TT	-34%	-28%	-34%	-48%	5%

Forecast Variance from the annual Forecast

Year	2003	2004	2005	2006	2007
BCG	-5%	3%	5%	5%	-2%
DTP	-25%	-1%	-10%	6%	-11%
HepB	-8%	-19%	6%	17%	-44%
DTP-Hep-B	-4%	1%	-39%	76%	7%
DTP-HepB-Hib	-13%	13%	2%	-3%	5%
Measles	-7%	-13%	10%	41%	2%
TT	-15%	-20%	-12%	-34%	-4%

Demand and Supply variances

Target 100% accuracy; <20% variance from original estimates

3 Year LTA timeline requires annual updates

Inherent nature of biological products is challenging to forecasting

Supplementary activities make up the largest volumes and have the highest variance

Specific challenges for each vaccine

Regular communication and updates are critical

# The scale and scope of UNICEF procurement is heavily influenced by key individual country and vaccine demand

Procure of behalf of 80 – 100 countries annually

Top 10 make up 63% of routine demand, 66% total

Individual countries can have significant impacts

USD Value Vaccine Group	Country Split				Grand Total	Value Split/ Vaccine Group
	INDIA	PAKISTAN	Remaining Top 10	Other Countries		
OPV	\$152,566,749	\$37,935,480	\$61,361,941	\$34,014,578	\$285,878,748	46.2%
DTP-HepB/Hib			\$62,681,622	\$80,538,635	\$143,220,257	23.1%
DTP-HepB		\$17,115,000	\$13,057,905	\$16,421,593	\$46,594,498	7.5%
MEA		\$13,819,672	\$11,152,390	\$19,987,027	\$44,959,088	7.3%
YF		\$2,925	\$7,443,171	\$14,130,864	\$21,576,960	3.5%
DTP			\$8,605,875	\$5,717,743	\$14,323,618	2.3%
MR				\$13,996,111	\$13,996,111	2.3%
HEPB	\$681,075		\$8,672,130	\$3,621,593	\$12,974,798	2.1%
TT		\$380,000	\$4,730,336	\$5,642,070	\$10,752,406	1.7%
DTP-Hib				\$9,439,412	\$9,439,412	1.5%
BCG		\$1,731,428	\$3,931,757	\$3,729,882	\$9,393,067	1.5%
MMR				\$1,846,544	\$1,846,544	0.3%
MENING			\$1,136,219	\$553,300	\$1,689,519	0.3%
OTHER				\$1,075,307	\$1,075,307	0.2%
HIB				\$446,900	\$446,900	0.1%
Td				\$437,188	\$437,188	0.1%
DT				\$122,484	\$122,484	0.0%
INFLUENZA			\$3,234	\$39,903	\$43,137	0.0%
<b>Grand Total</b>	<b>\$153,247,824</b>	<b>\$70,984,504</b>	<b>\$182,776,579</b>	<b>\$211,761,134</b>	<b>\$618,770,041</b>	<b>100%</b>
<b>Percentage Split</b>	<b>25%</b>	<b>11%</b>	<b>30%</b>	<b>34%</b>	<b>100%</b>	
<b>Top 10 Countries</b>			<b>66%</b>	<b>34%</b>	<b>100%</b>	

Pakistan shift to self procurement

# Forecast Challenges

Variances in demand are due to a number of issues including:

- Delay or lack of Funding
- Competing programmes
- Independent (unforecasted) activities
- Outbreaks and emergency response
- Political factors
- Slow uptake of new vaccines
- Epidemiological development

Continuous dialogue with countries, programmes and suppliers is critical

Forecasting is never an event, but an ongoing activity

# UNICEF remains committed to providing accurate forecasts and regular updates to manufacturers

- **Dedicated Unit** within UNICEF Supply Division focusing on Vaccine forecasting
- **Historical Forecast Accuracy Database** – enabling a comparative review of the country's forecasting ability
- **Forecast Accuracy Reports** sent to Regional and Country Offices to monitor forecast performance and encourage improvement
- **Provisional Plans** sent to countries, providing countries with an overview of the financial requirements for the forecasted vaccine procurement for the year ahead
- **Detailed Reviews of the Top 20 Countries** forecasted demand requirements
- **Vaccine Security Missions**, on invitation to advise countries on vaccine security, the vaccine market and vaccine forecasting
- **Monthly Supplier Updates** on Forecast Demand providing manufacturers with an updated overview of the calendar years' forecast requirements

# Supply Management

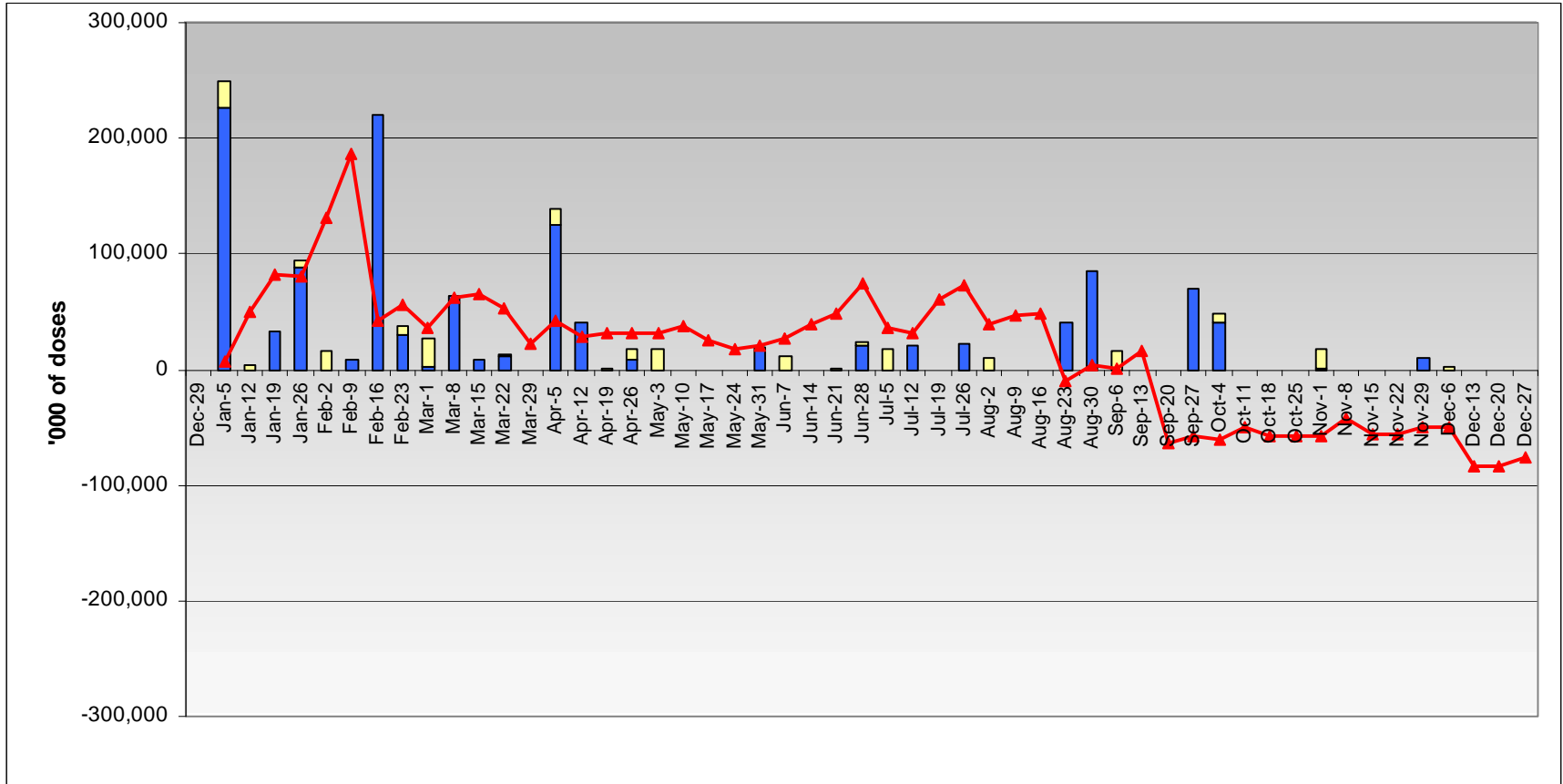
The continuous changes in both supply and demand creates a dynamic market that requires continuous monitoring and management

~ 40 Vaccines from ~ 20 Suppliers	}	80-100 countries
~ 14 Immunization devices from ~ 8 Suppliers		

Systems are in place to monitor demand against supply and to report regularly both to manufacturers, countries and partners

UNICEF has the capacity to reallocate demand and supply between Countries and Suppliers, to avert crisis and reduce the impact of demand or supply fluctuations

# 9 January

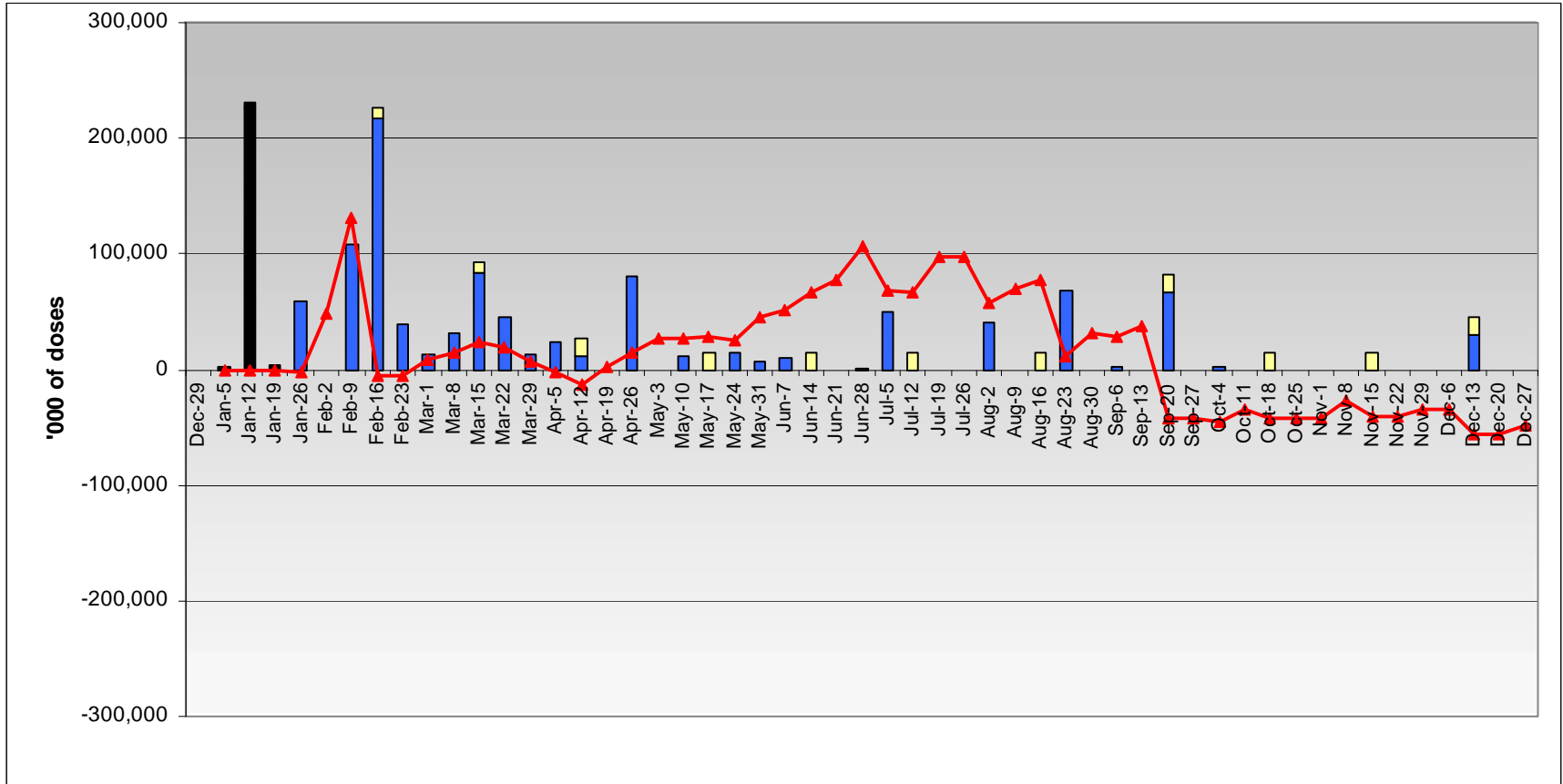


## Managing Changes in Demand and Supply

### Example: OPV over 12 month period

— Cumulative Balance      ■ Supplementary Demand      ■ Routine Demand

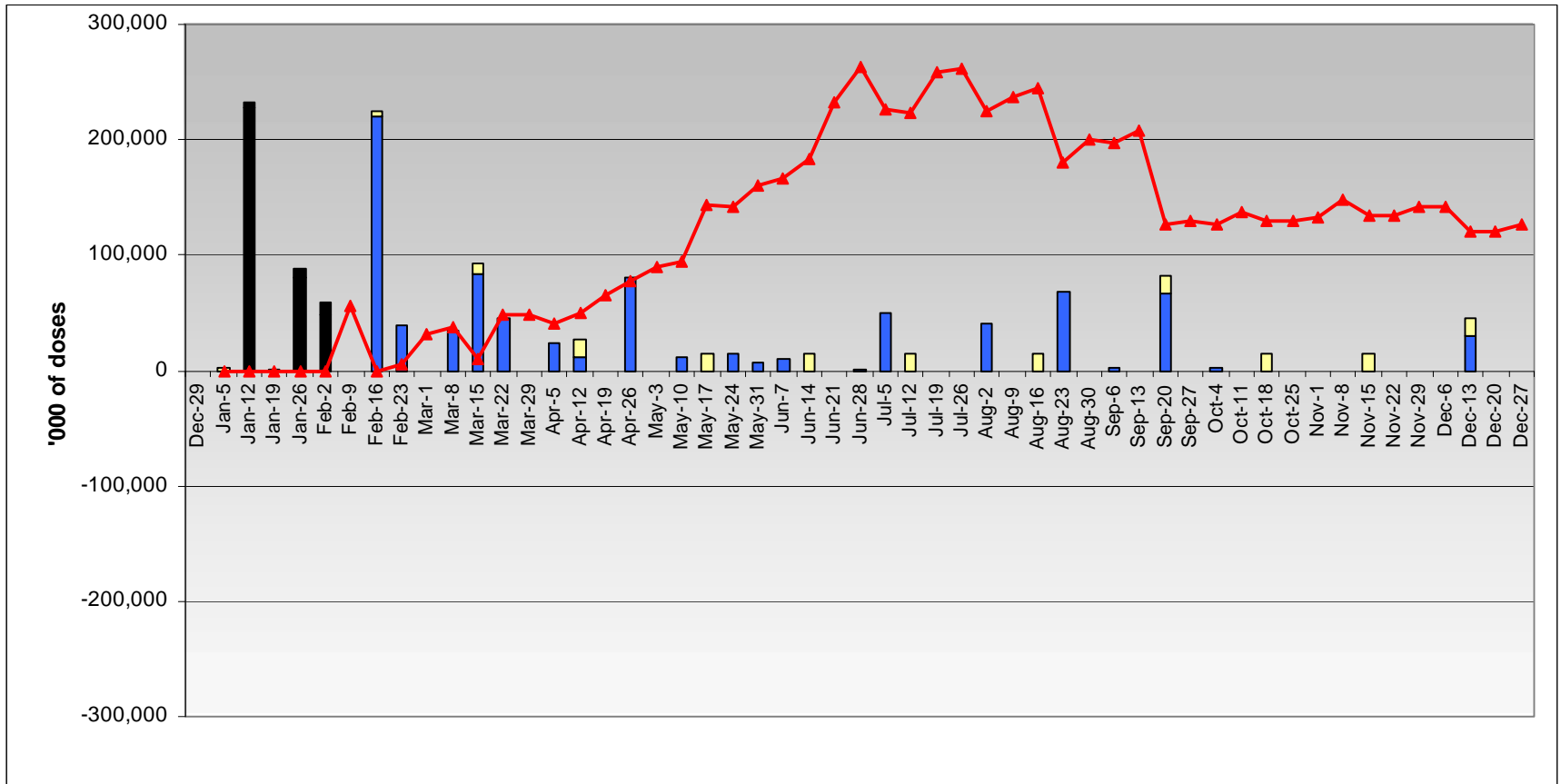
# 26 January



Comments:

— Cumulative Balance      ■ Supplementary Demand      ■ Routine Demand

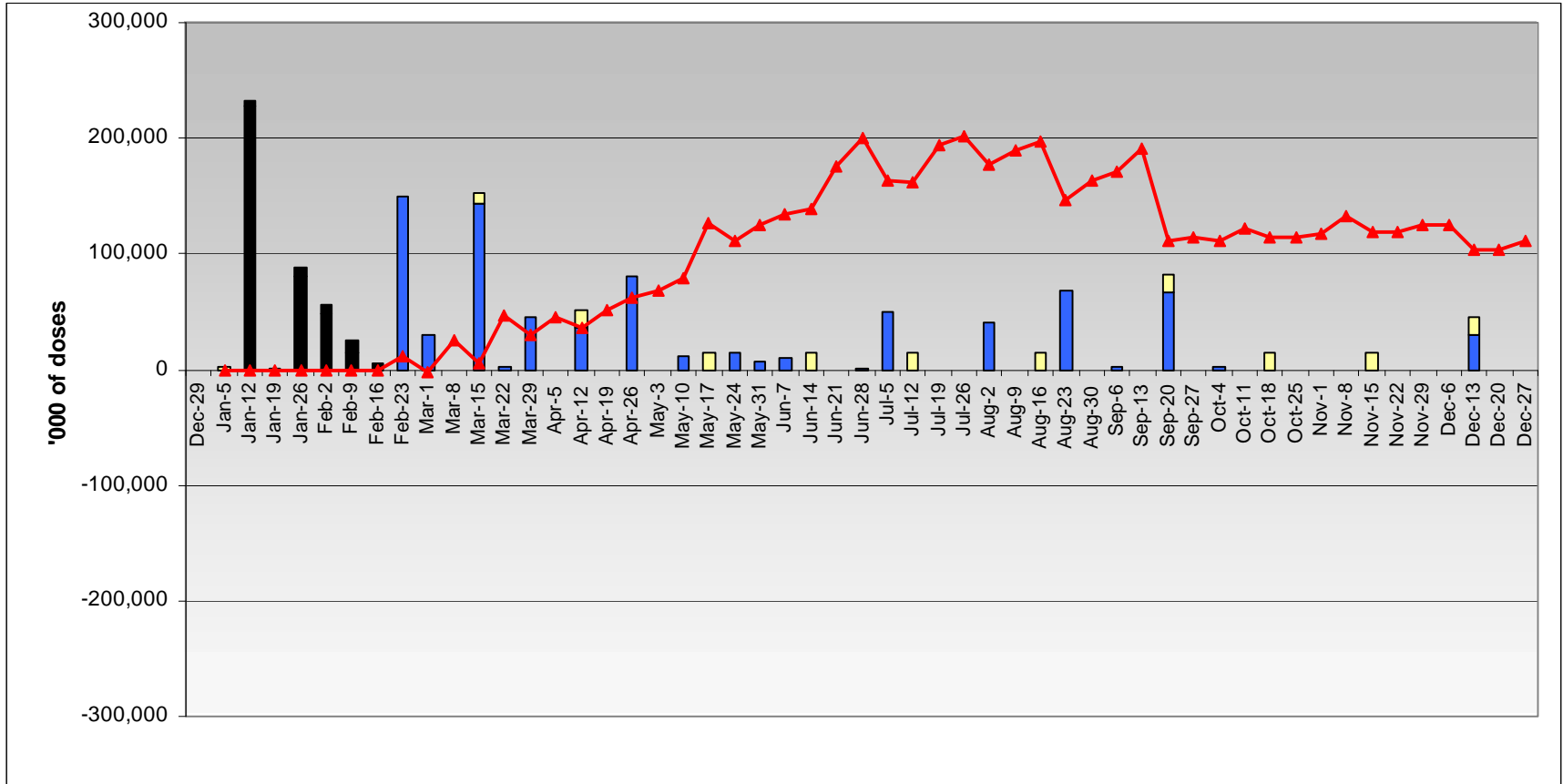
# 9 February



Comments: Supply availability confirmed for April – December 2004

—▲— Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

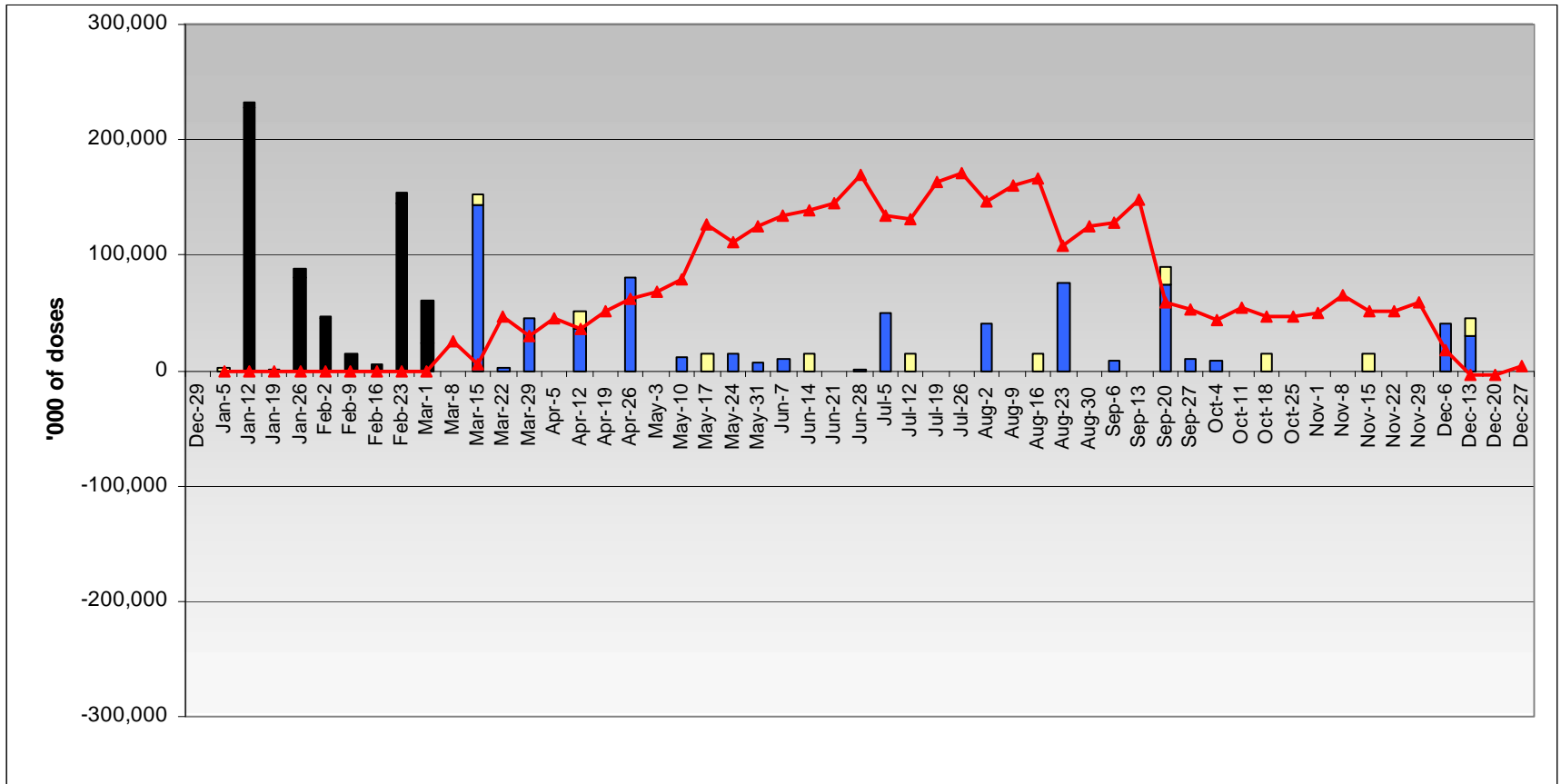
# 23 February



Comments:

— Cumulative Balance      ■ Supplementary Demand      ■ Routine Demand

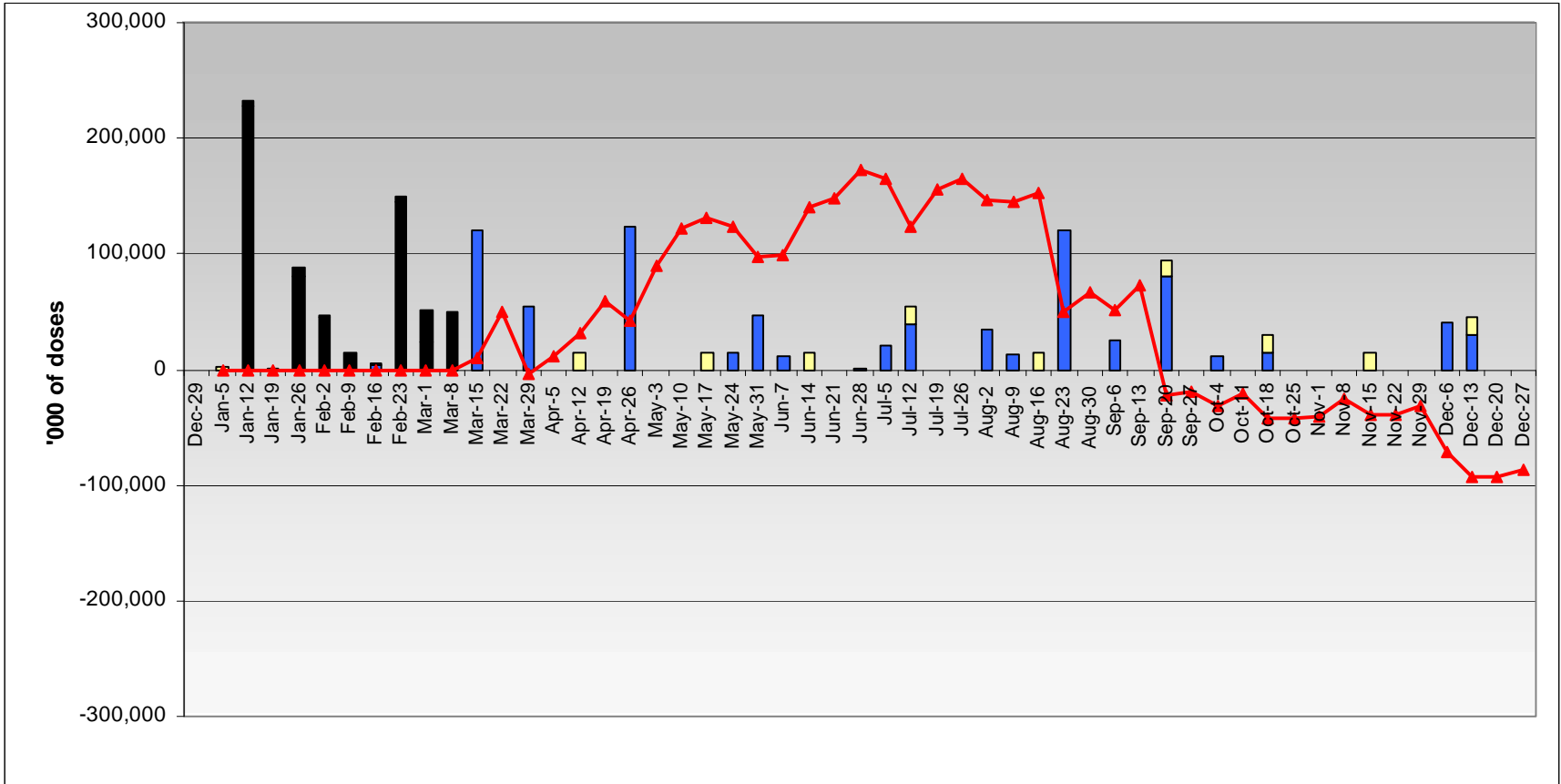
# 8 March



Comments:

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

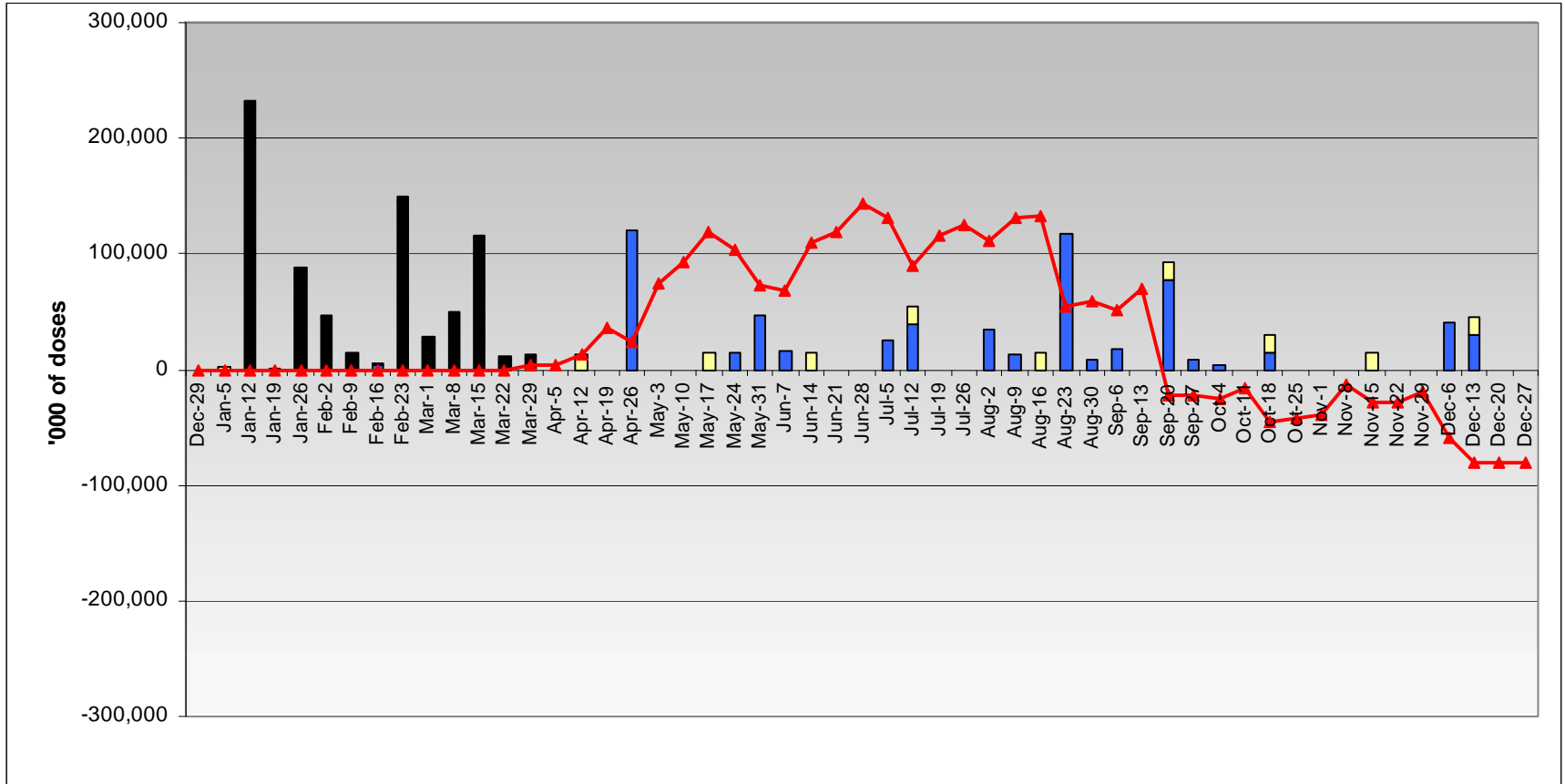
# 15 March



Comments:

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

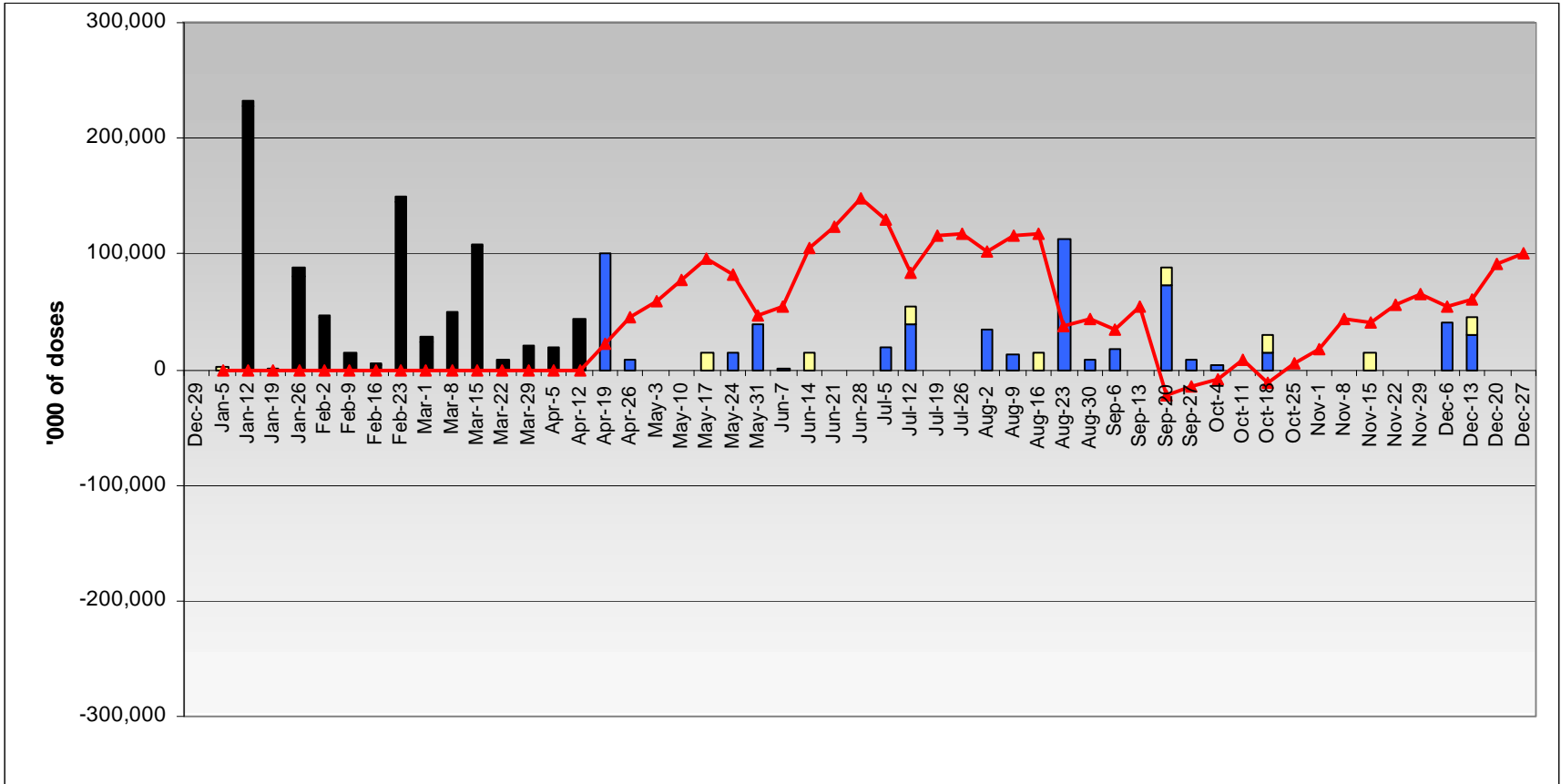
# 29 March



Comments:

— Cumulative Balance      ■ Supplementary Demand      ■ Routine Demand

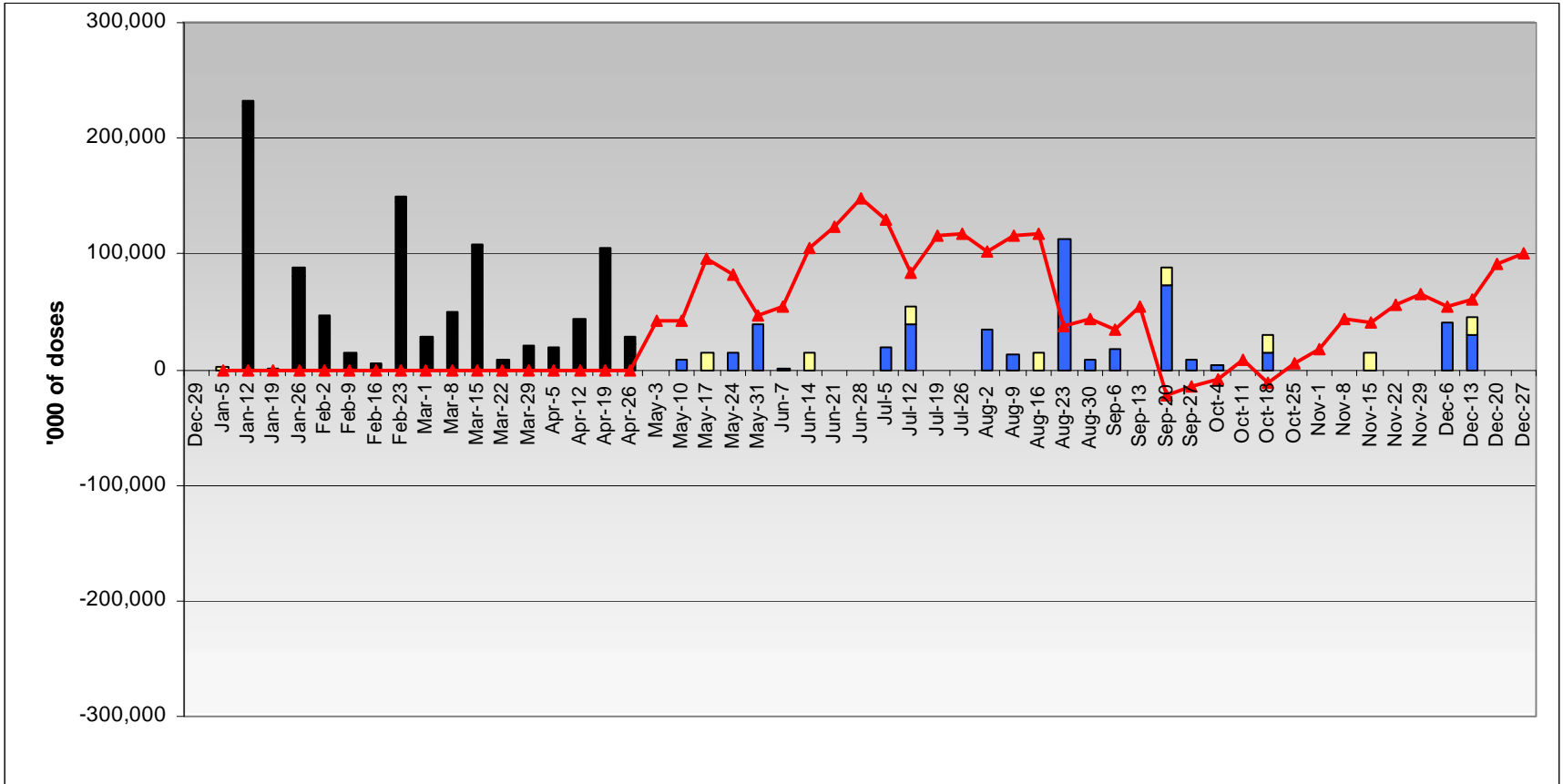
# 19 April



Comments:

— Cumulative Balance      — Supplementary Demand      — Routine Demand

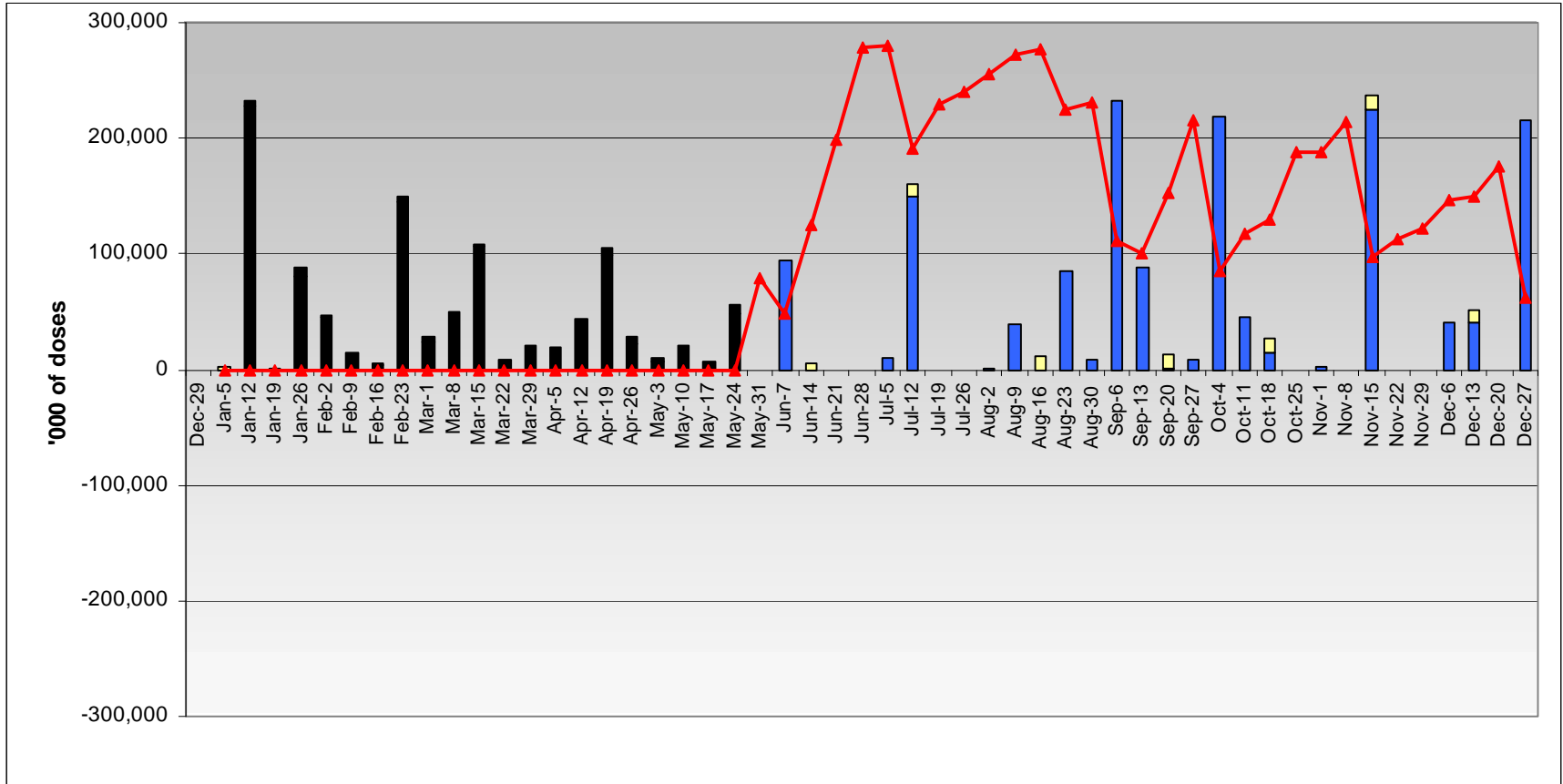
# 3 May



Comments:

— Cumulative Balance      ■ Supplementary Demand      ■ Routine Demand

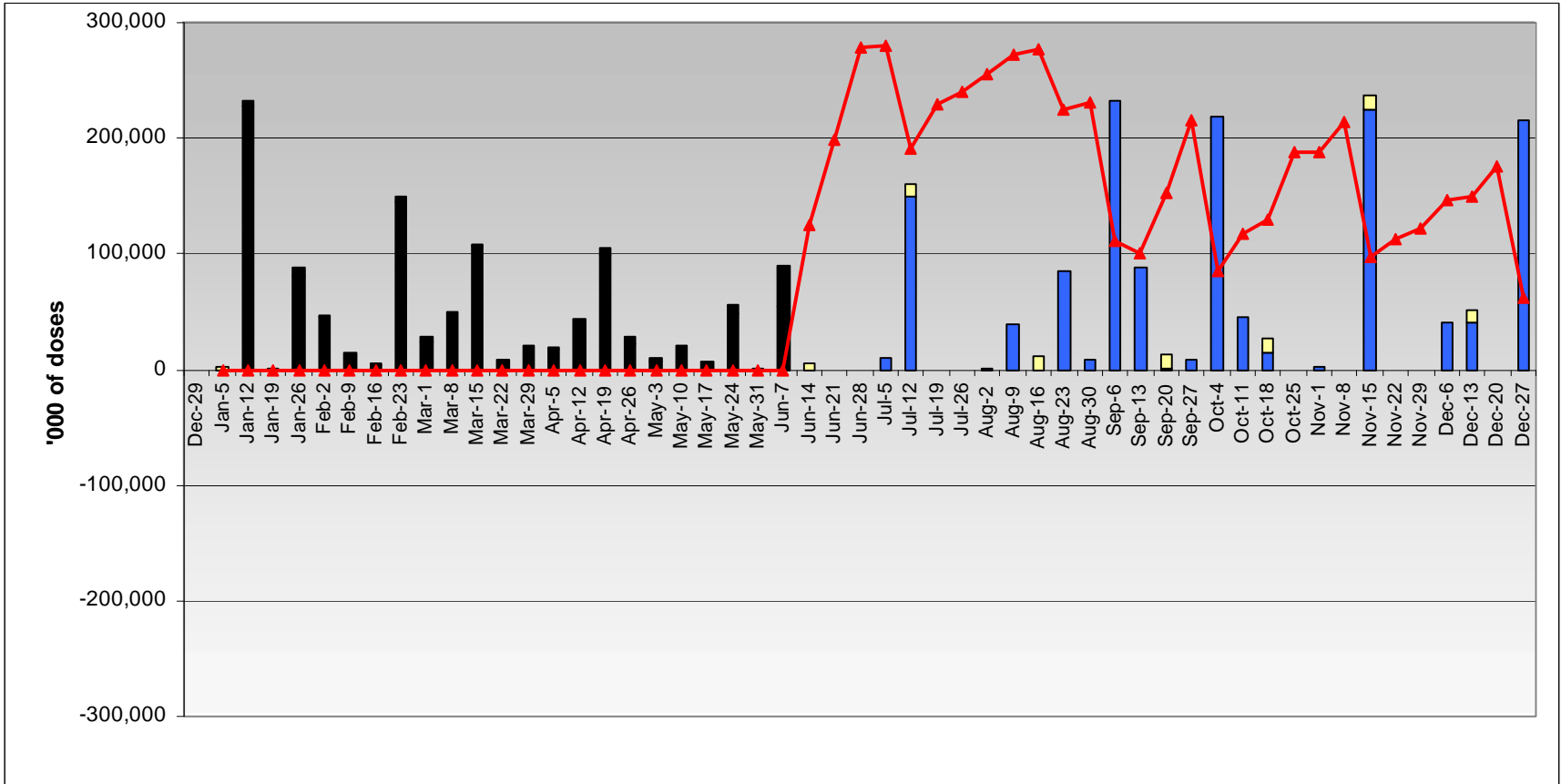
# 31 May



Comments: Supply award for intensified campaign schedule in India with deliveries in the second half of the year. Stockpile coordination with manufacturers required.

—▲— Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

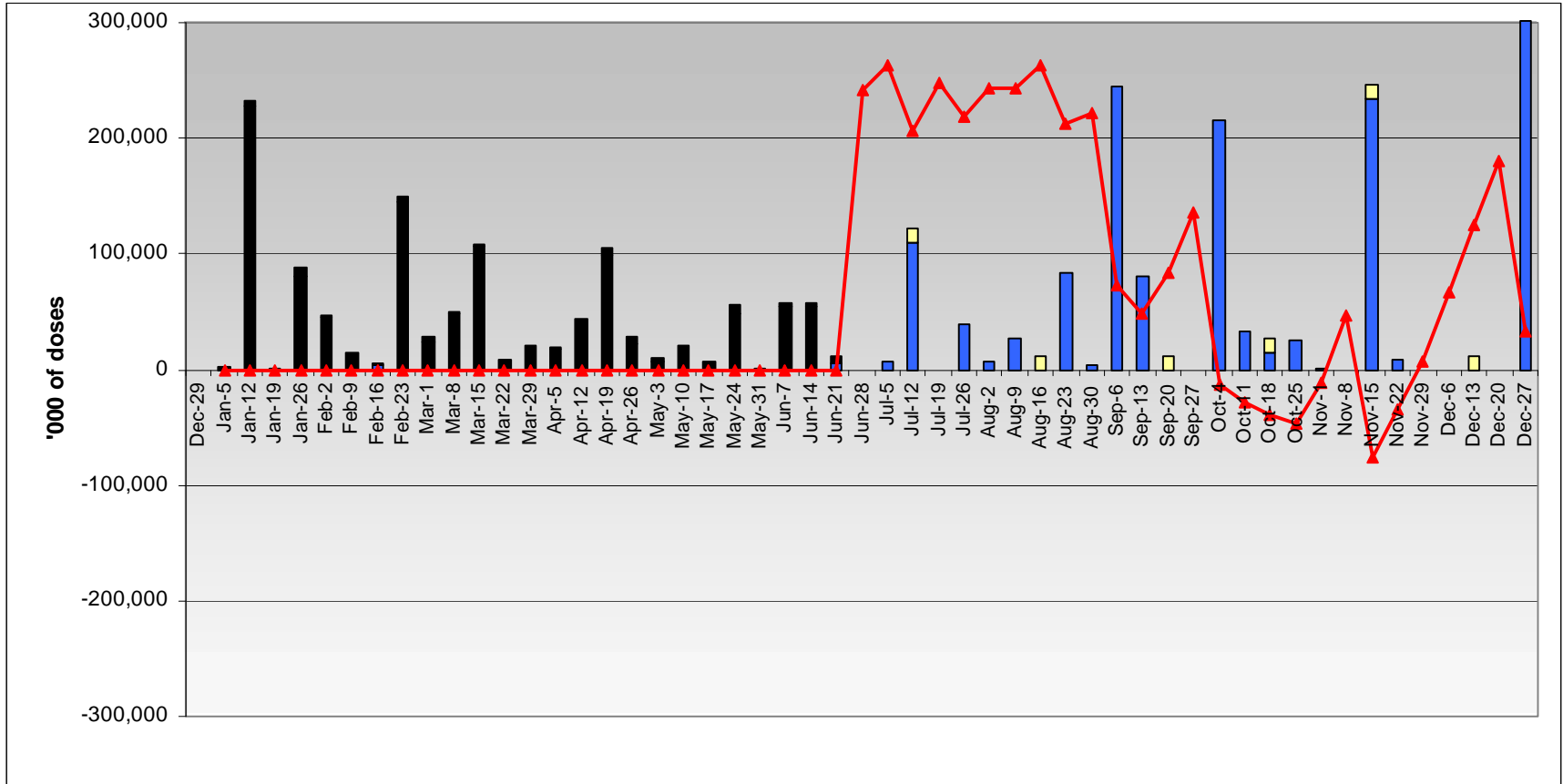
# 14 June



Comments:

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

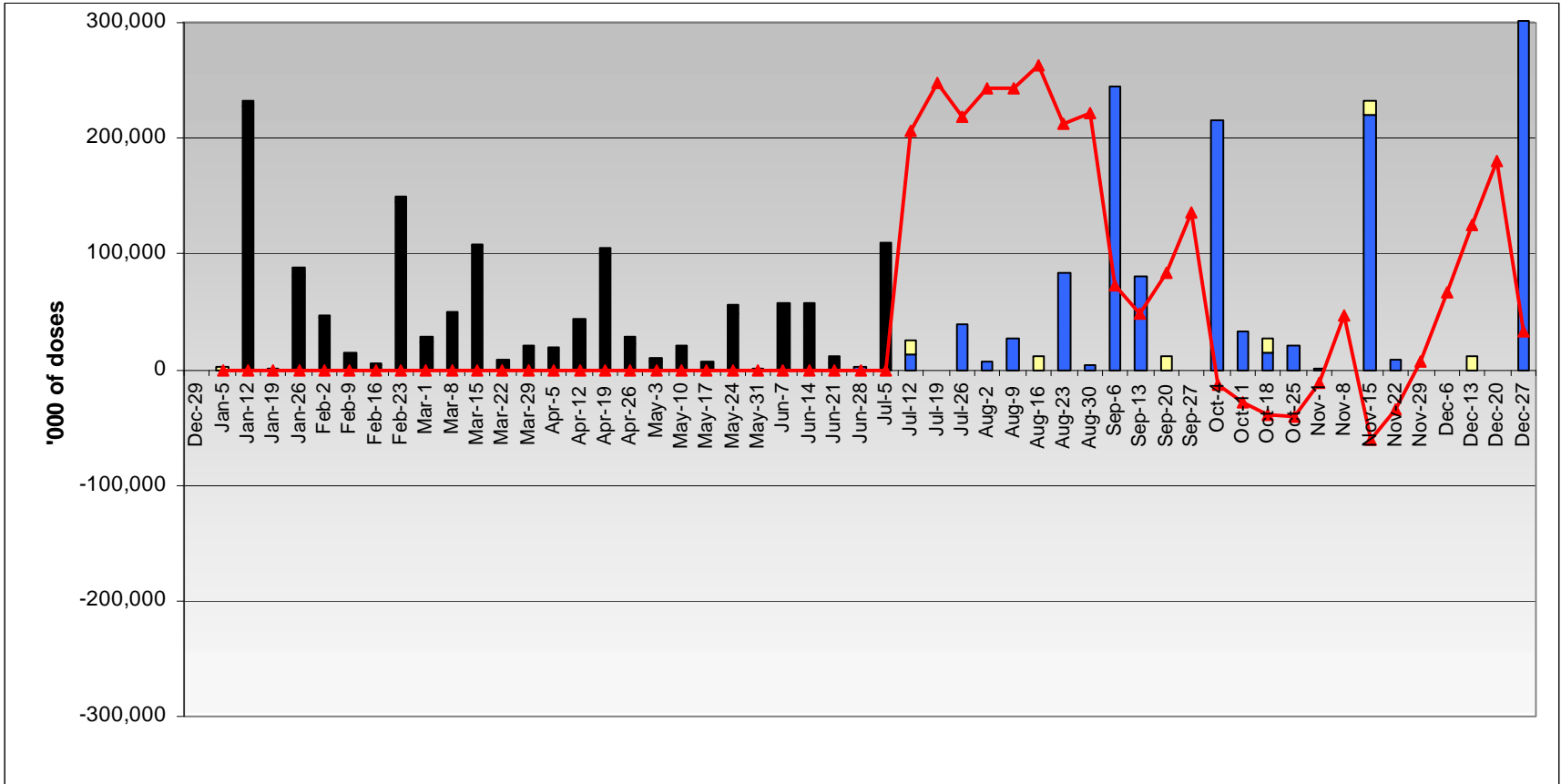
# 28 June



Comments: Updated global Programme requirements with projected negative availability balance from October 2004

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

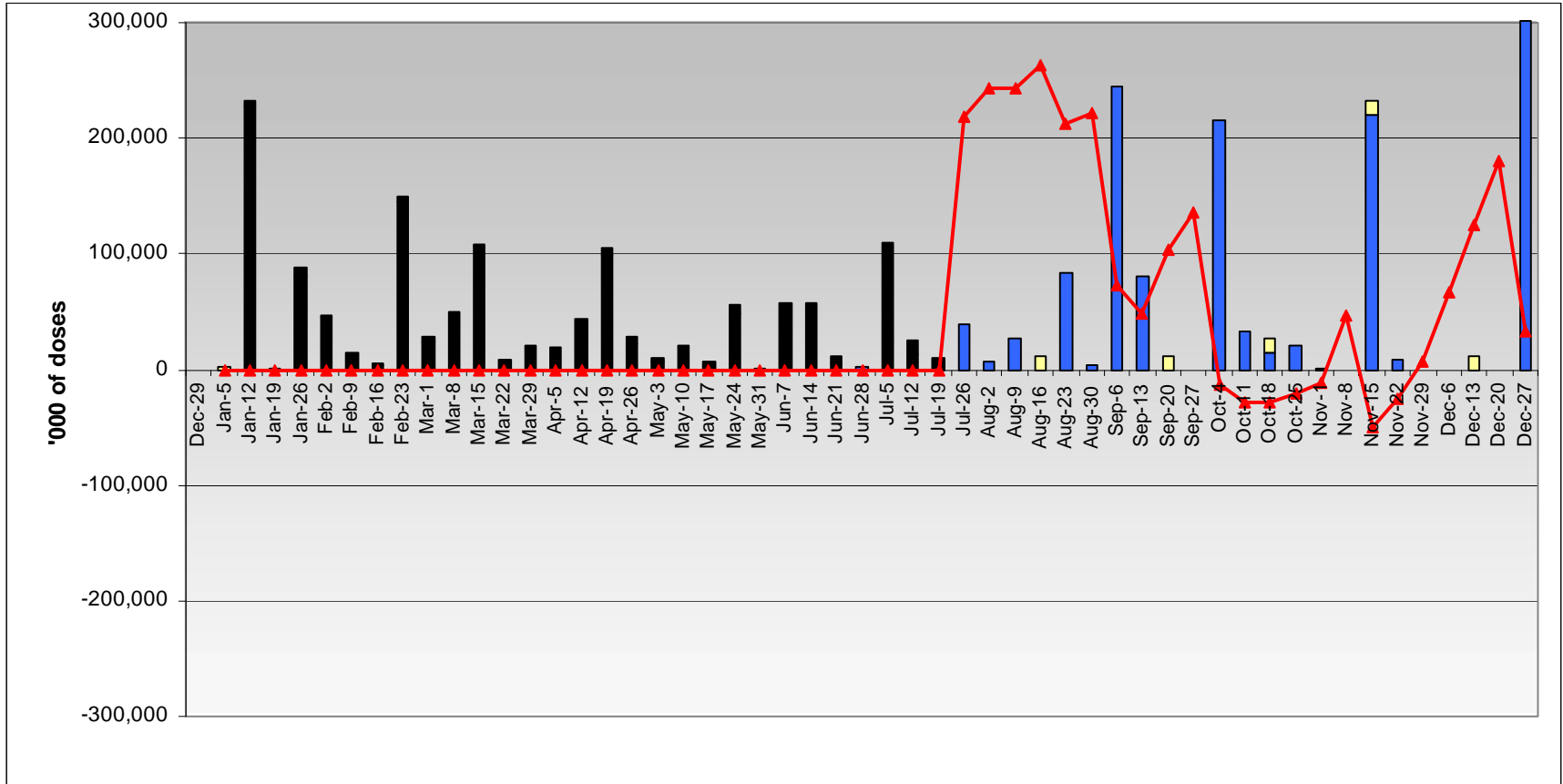
# 12 July



Comments:

— Cumulative Balance      — Supplementary Demand      — Routine Demand

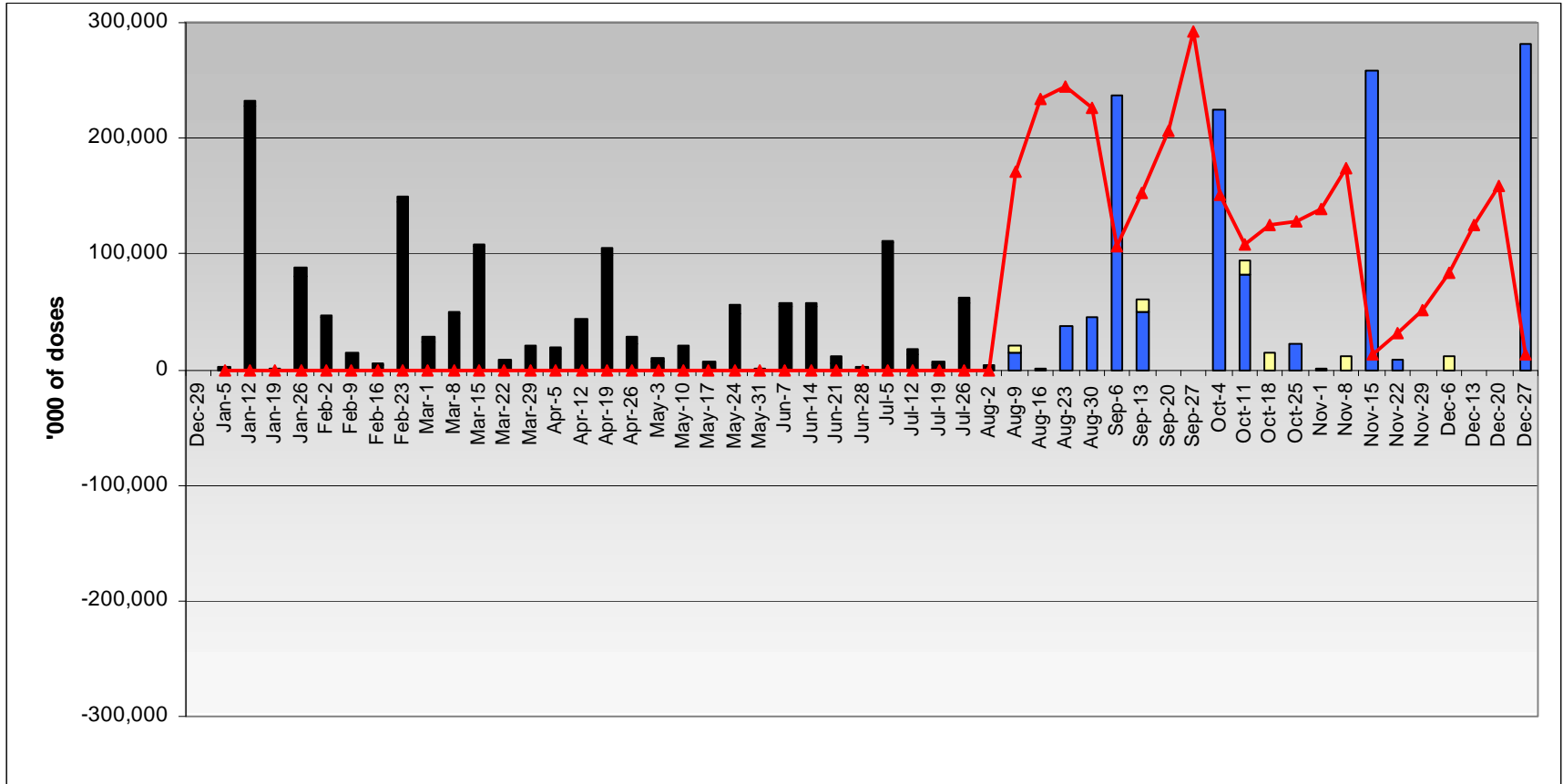
# 26 July



Comments:

— Cumulative Balance      — Supplementary Demand      — Routine Demand

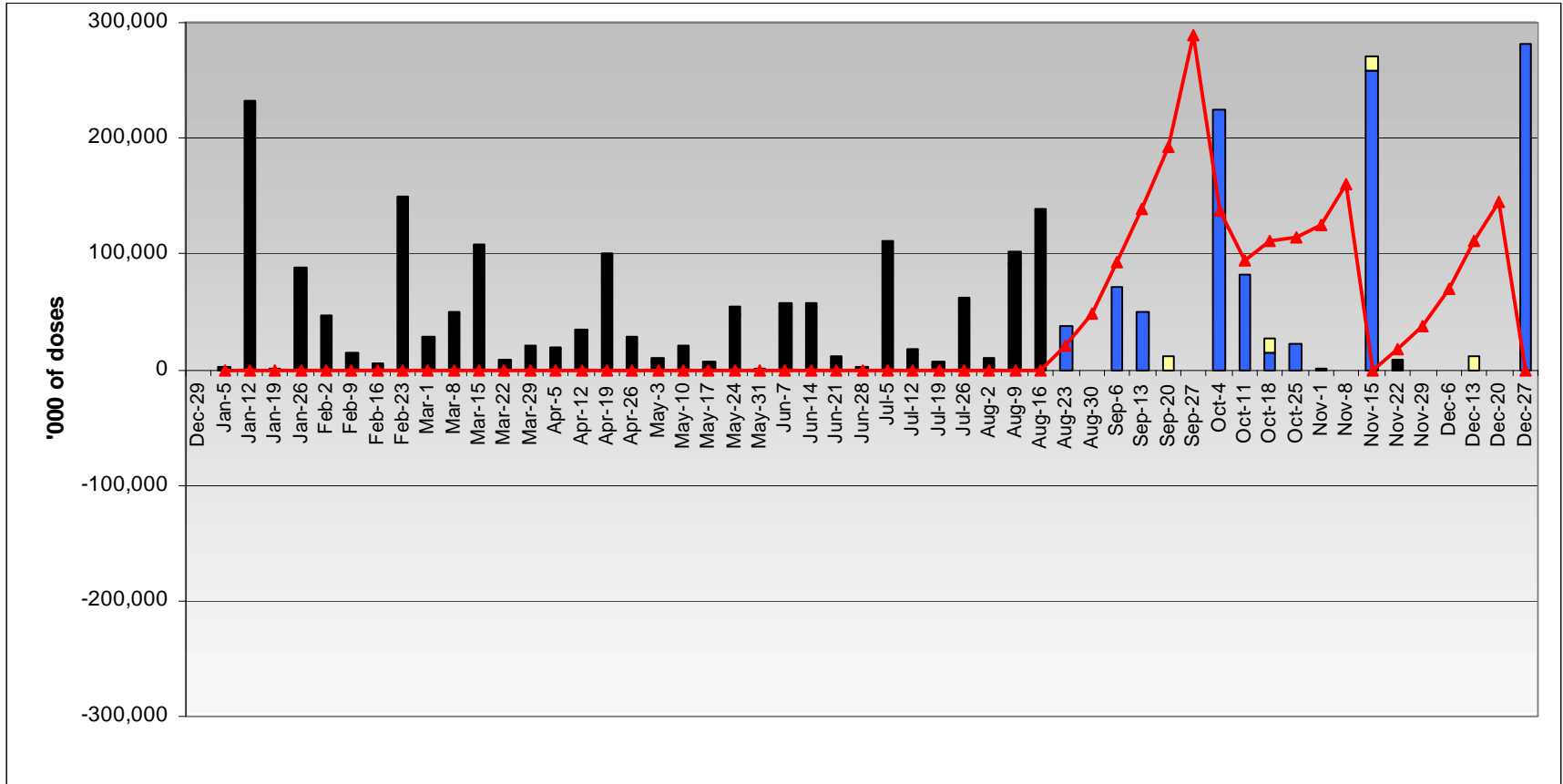
# 9 August



Comments: Programme adjustment of campaign schedule + confirmed increased availability

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

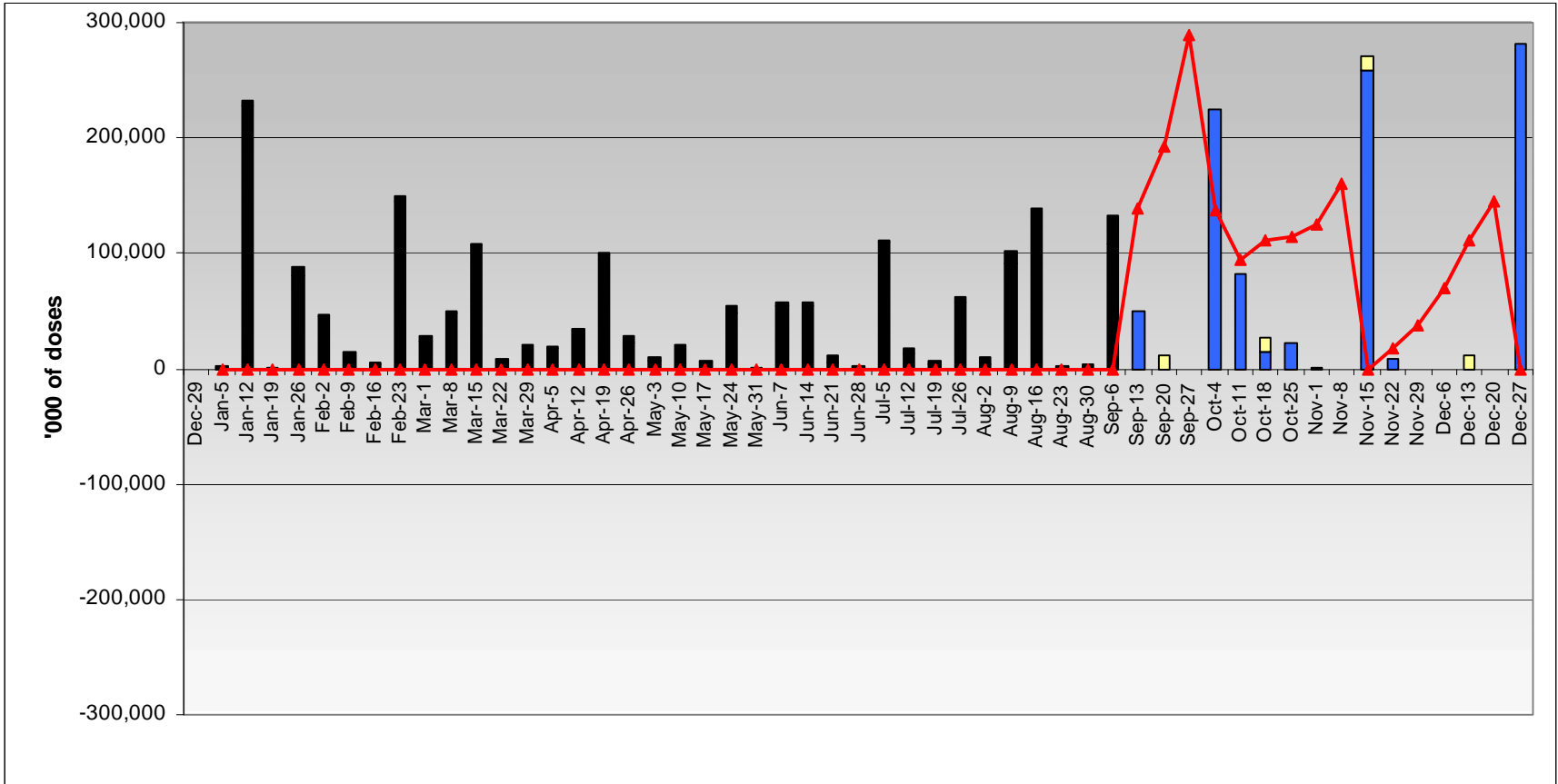
# 23 August



Comments:

— Cumulative Balance      — Supplementary Demand      — Routine Demand

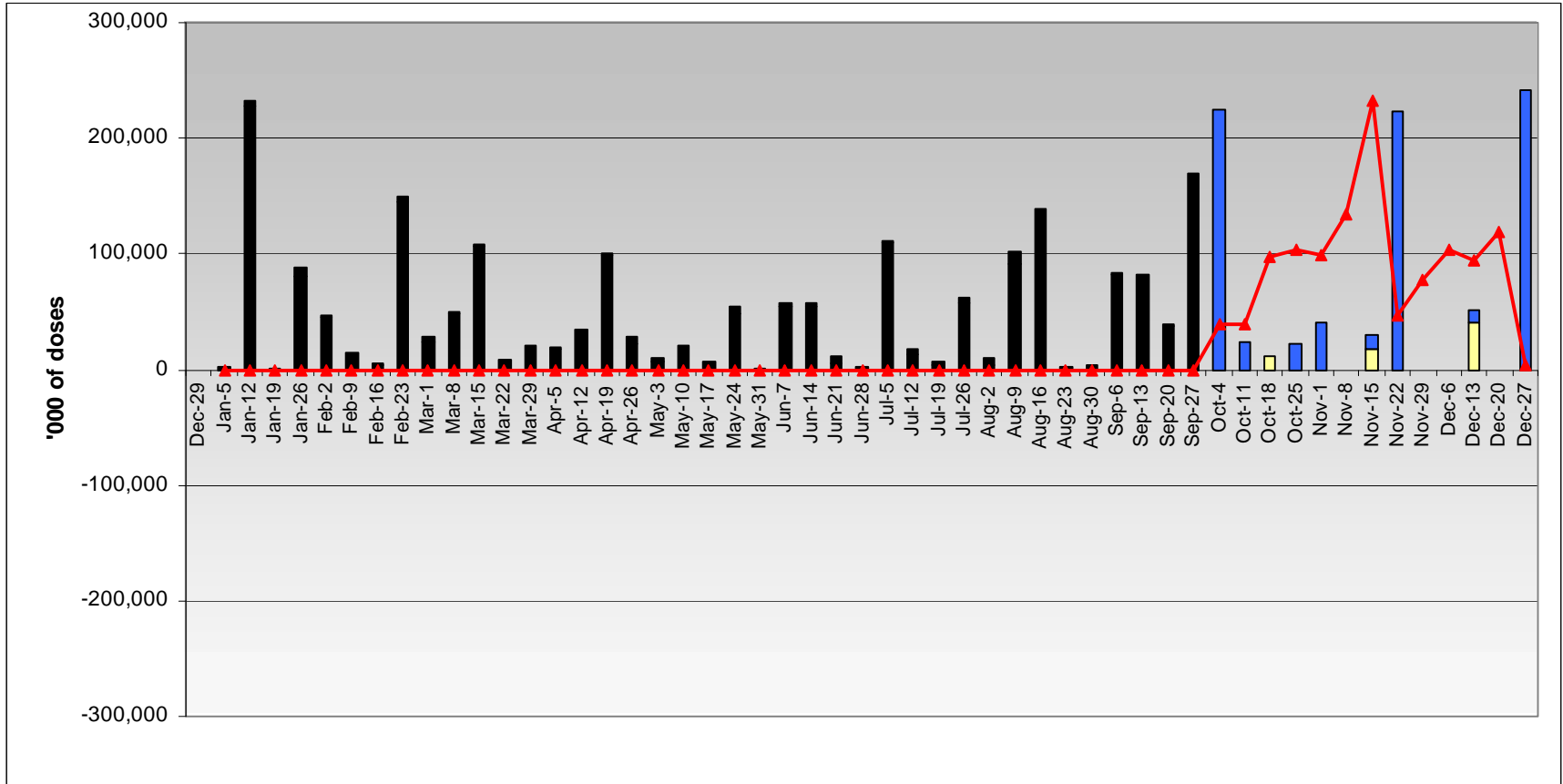
# 13 September



Comments:

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

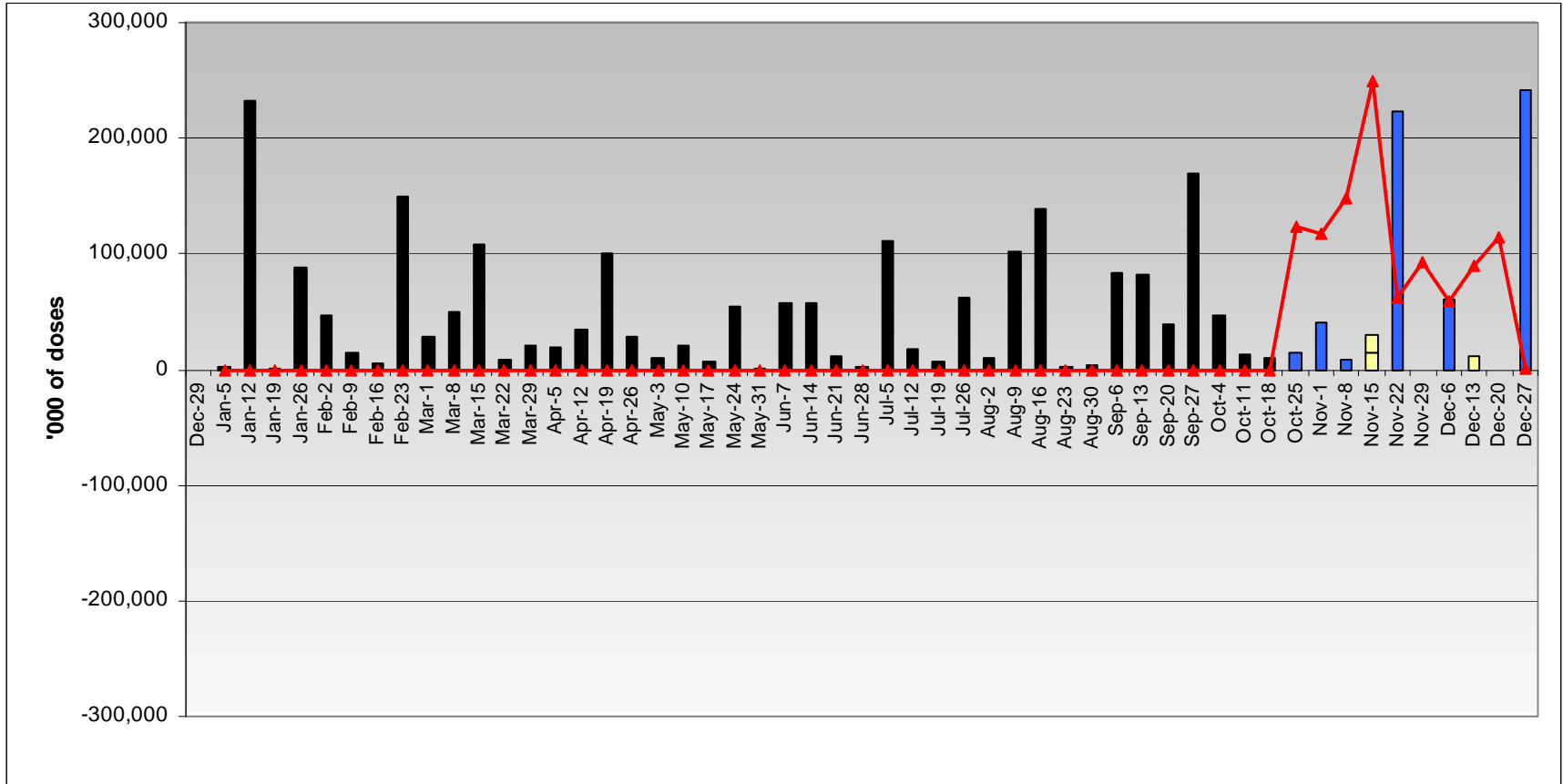
# 4 October



Comments:

— Cumulative Balance      — Supplementary Demand      — Routine Demand

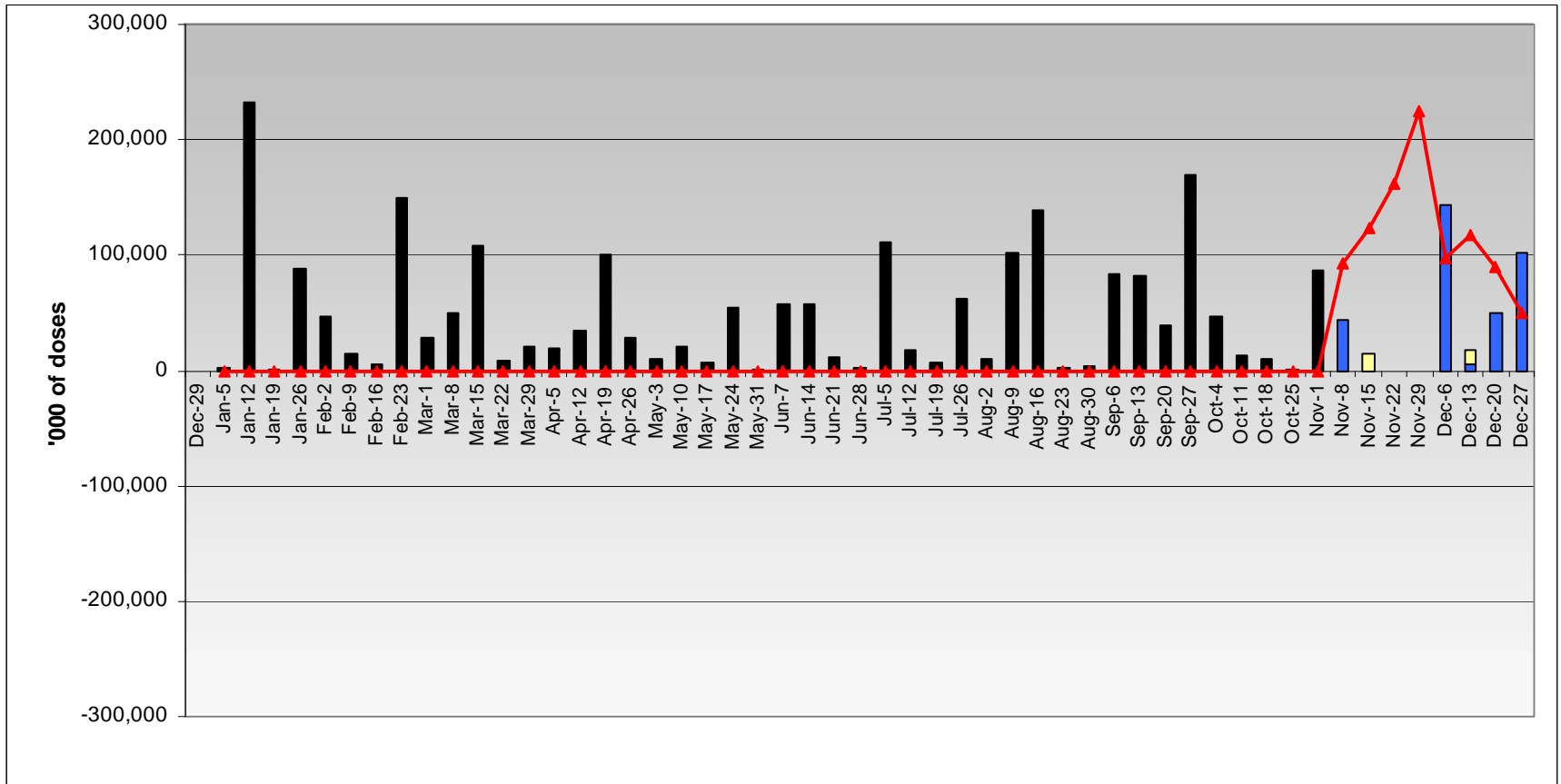
# 25 October



Comments: Delisting of WHO prequalified manufacturer

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

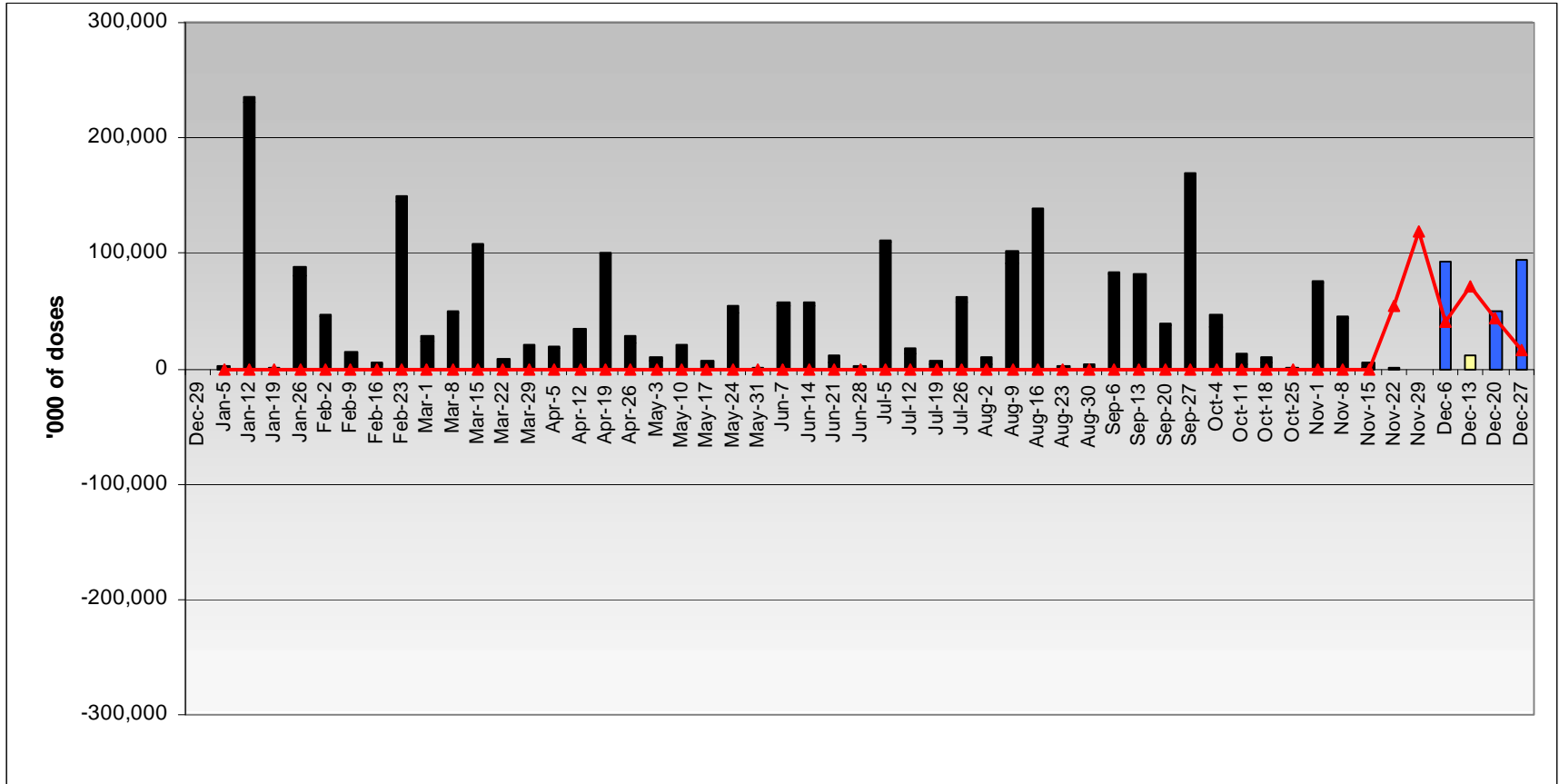
# 4 November



Comments: Delisting of WHO prequalified manufacturer and subsequent adjustment of campaign schedule.

—▲ Cumulative Balance     
 ■ Supplementary Demand     
 ■ Routine Demand

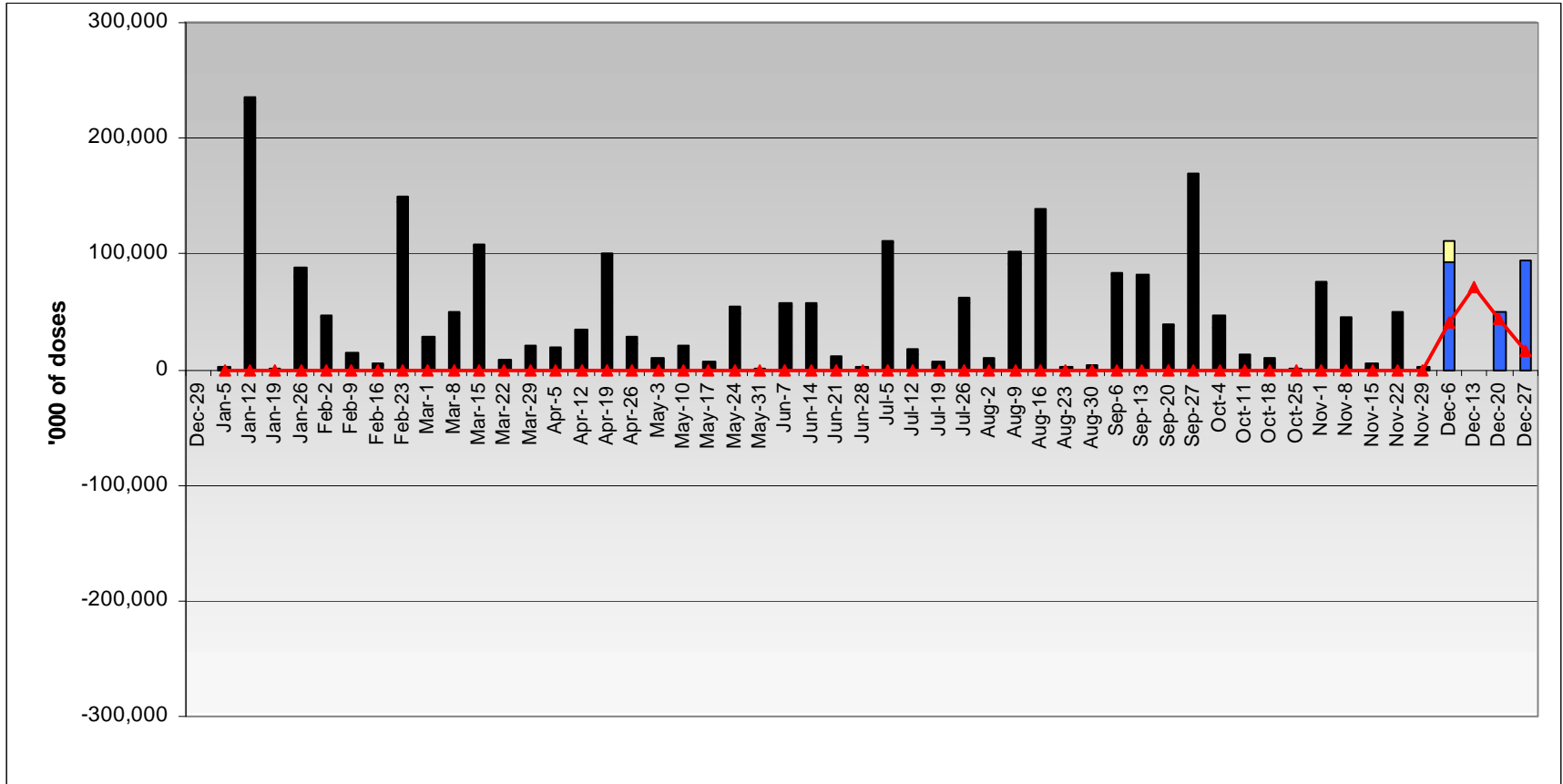
# 22 November



Comments:

— Cumulative Balance      — Supplementary Demand      — Routine Demand

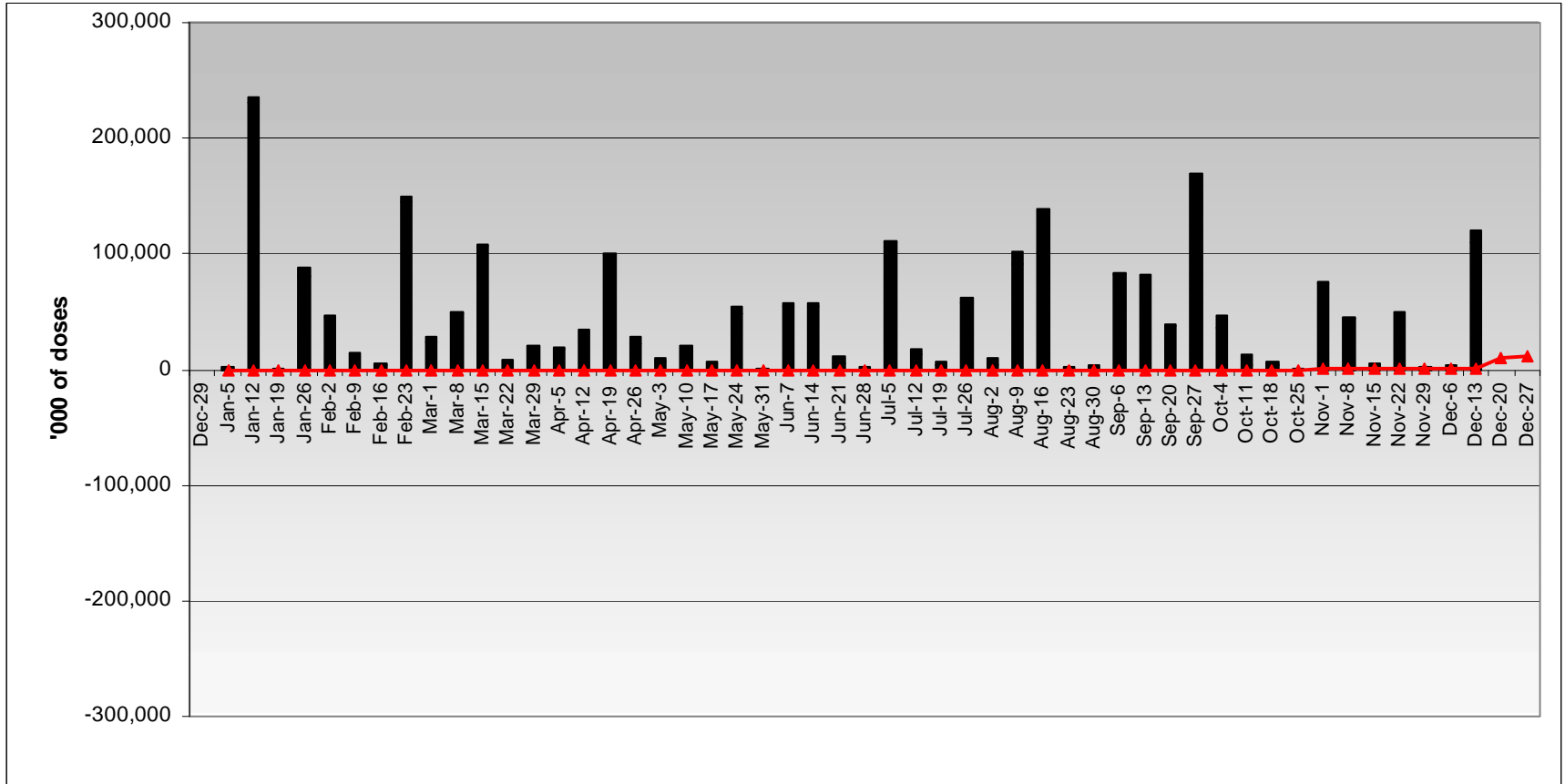
# 4 December



Comments:

- Cumulative Balance
- Supplementary Demand
- Routine Demand

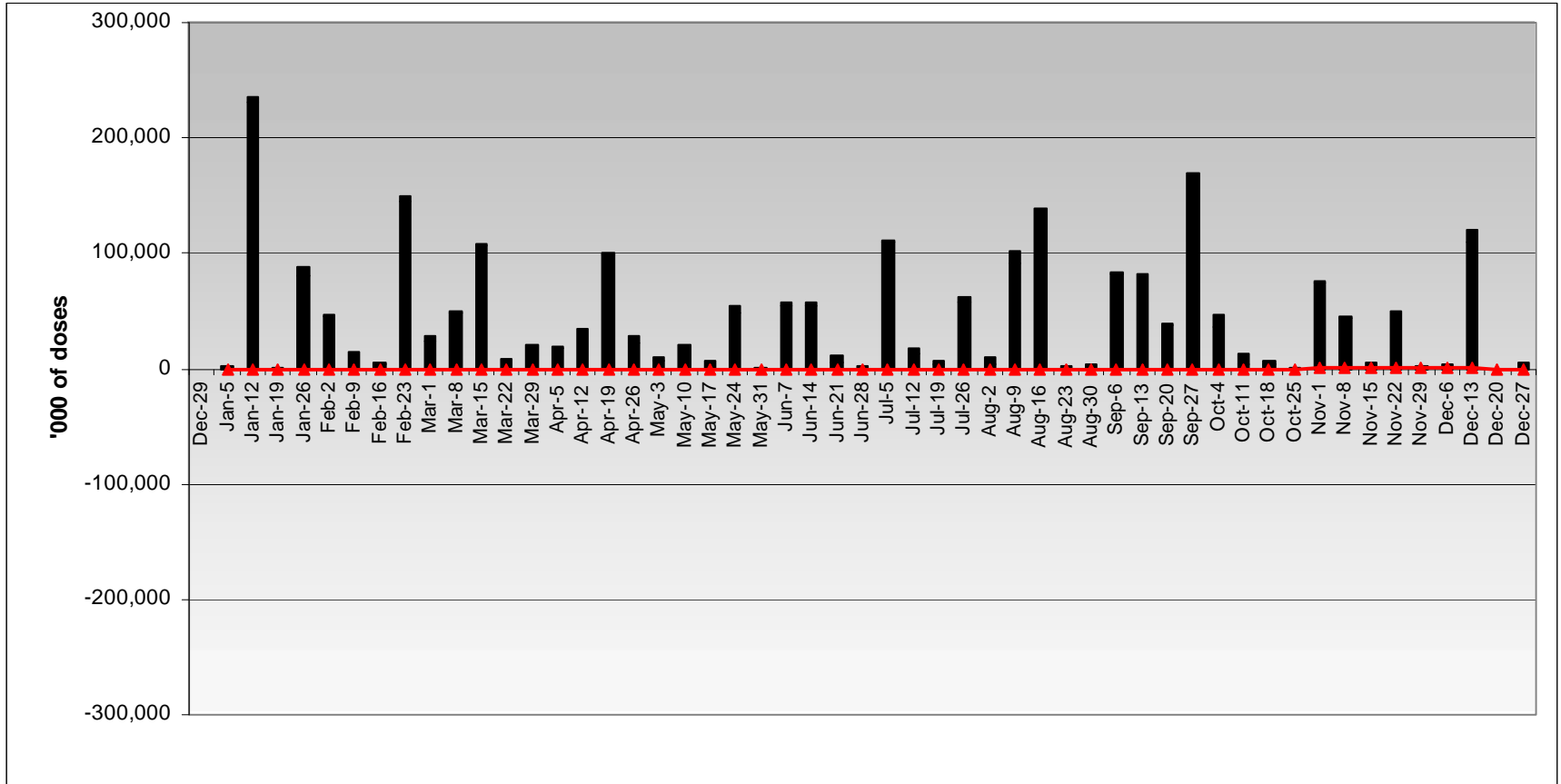
# 23 December



Comments: Postponement of deliveries into the first week of January 2005

— Cumulative Balance     
 █ Supplementary Demand     
 █ Routine Demand

# 31 December



Comments:

— Cumulative Balance     
 — Supplementary Demand     
 — Routine Demand

# Upcoming Tenders

Description	Timeline
India mOPV requirements June 08 - Apr 09	Issued
Pneumococcal conjugate vaccine, 7-valent	upon prequalification of first vaccine
tOPV 2009 - 2011	Q2 2008
Rotavirus vaccines	Q3-Q4 2008 (Provisional)
YF IC Extension Tender	Q3 2008 (Provisional)
Hepatitis B/Hib containing vaccines 2010 - 2012	Q1 2009
EPI Vaccine Tender 2010- 2012	Q1 2009
Mening conjugate A	end 2009 (Provisional)

# The Industry input and feedback is highly valued ....

## Meeting Objectives

- Provide the Vaccine Industry with an update on current immunization programmes and to specify related UNICEF demand forecast for the individual vaccines
- Provide and discuss expected new vaccine introduction in the short and long term and provide an update on the changing context of immunization financing
- Provide an update to industry on WHO technical specifications and pre-qualification processes
- Provide an opportunity for manufacturers to provide feedback on these areas as well as any other areas related to vaccine procurement

*Thank You!*