



Yellow Fever

Re-emergence in the world and
case(s) in the Netherlands

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Nederlander loopt gele koorts op in Suriname

© 10-03-2017, 14:36 AANGEPAST 15-03-2017, 16:56 BINNENLAND

Brazilië wil miljoenen mensen inenten

Nederlander besmet met gele koorts in Brazilië

17 jan. 2018 in BINNENLAND



ROTTERDAM - Een Nederlandse toerist heeft tijdens een bezoek aan Brazilië de gevaarlijke tropische ziekte gele koorts opgelopen. De 46-jarige man raakte besmet in Mairiporã, een



YF risk for travellers

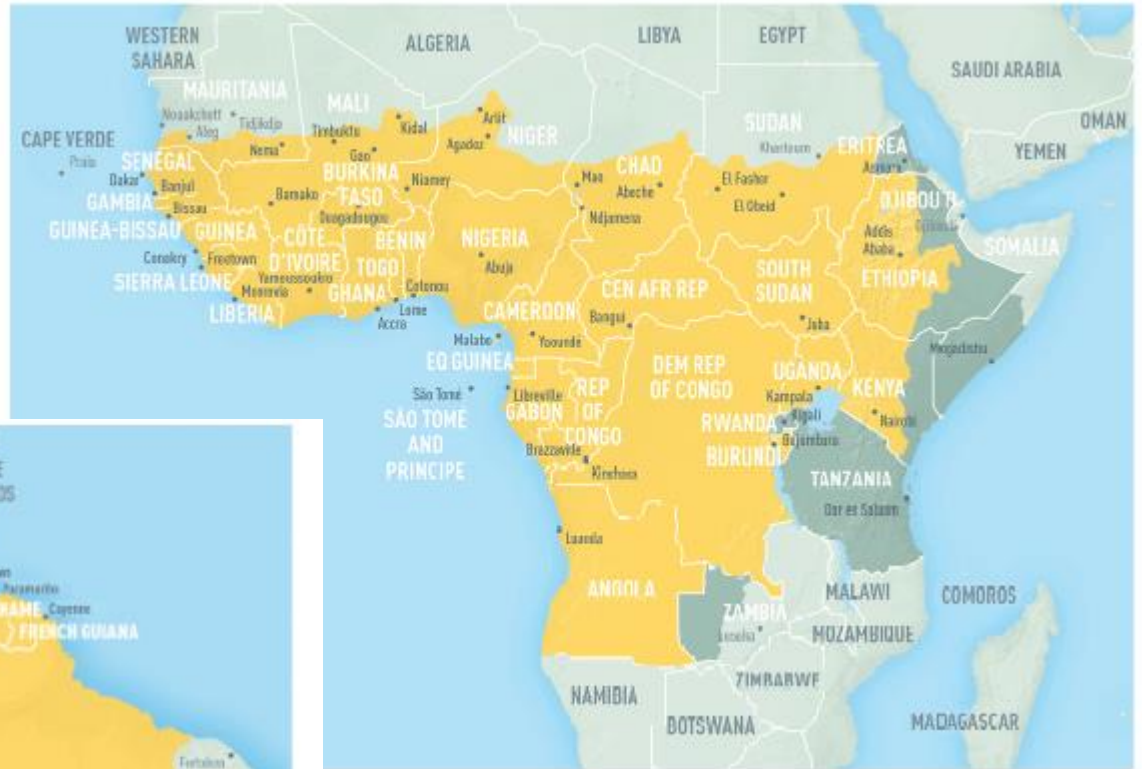
The risk of acquiring yellow fever is difficult to predict because of variations in ecologic determinants of virus transmission. For a 2-week stay, the estimated risks for illness and death due to yellow fever for an unvaccinated traveler visiting an endemic area in:

- West Africa are 50 per 100,000 and 10 per 100,000, respectively
- South America are 5 per 100,000 and 1 per 100,000, respectively

From 1970 through 2015, a total of 10 cases of yellow fever were reported in unvaccinated travelers from the United States and Europe who traveled to West Africa (5 cases) or South America (5 cases). Eight (80%) of these 10 travelers died.

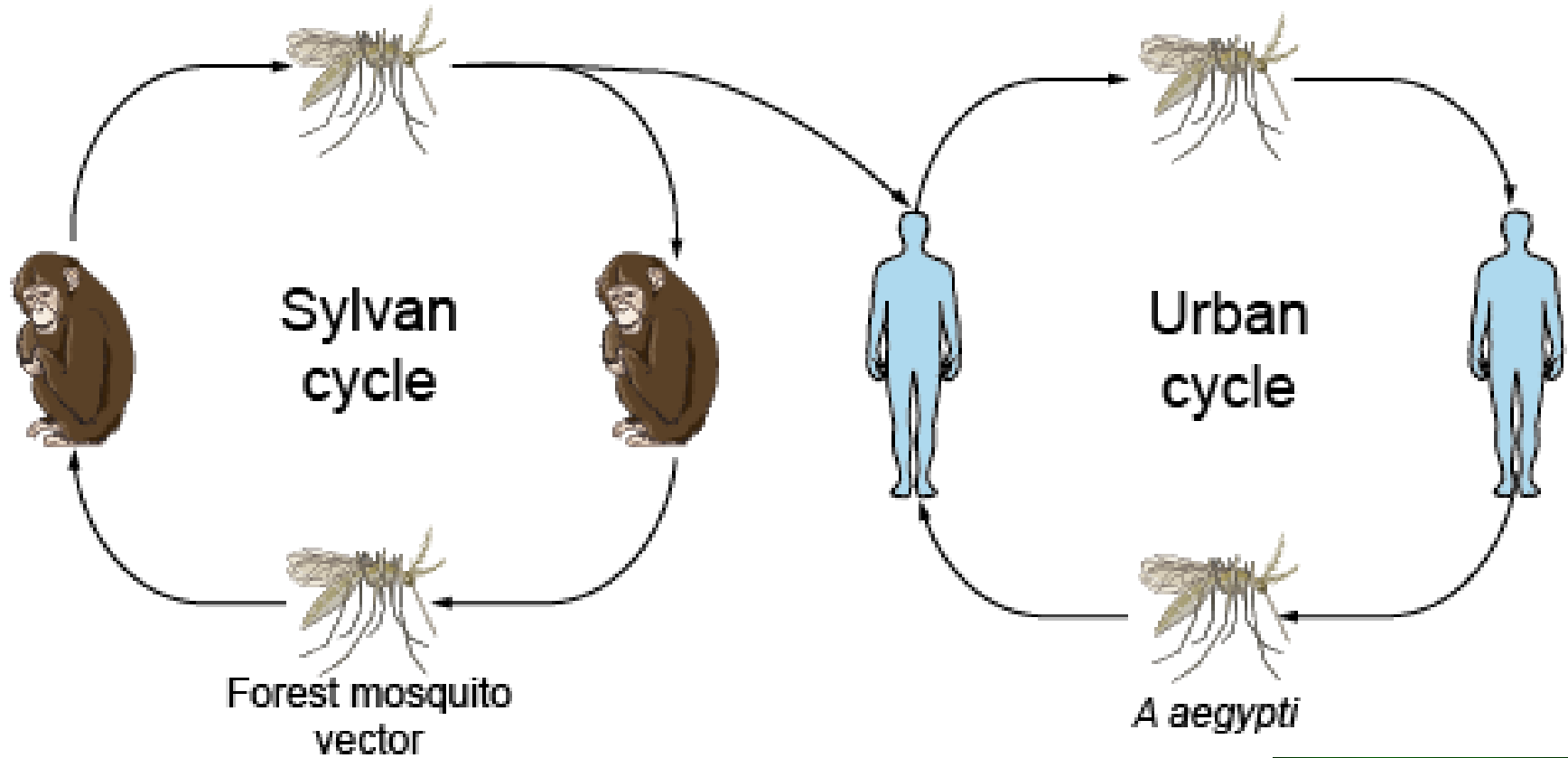
- Last Dutch import YF case: 1985 (Africa)
-

- Last reported YF case in Suriname (not travel-related): 1972



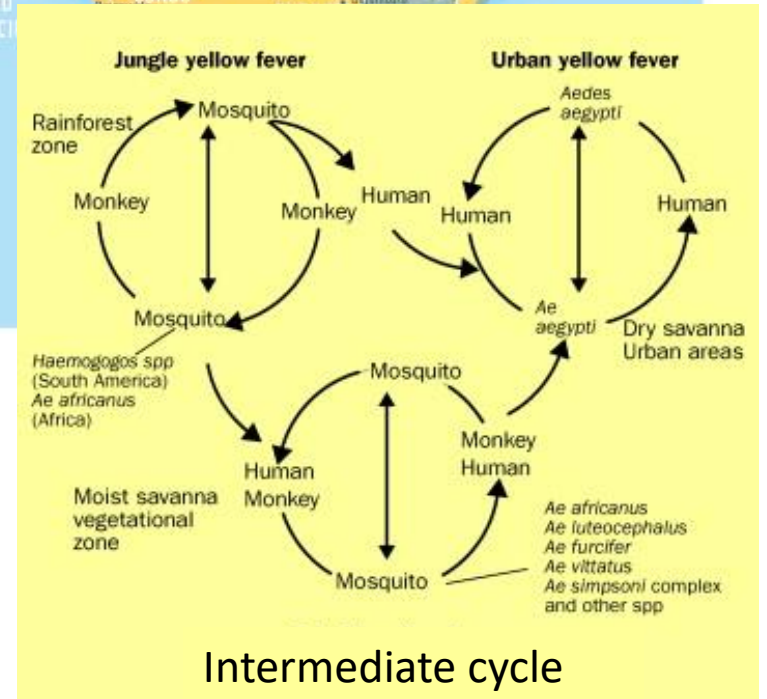


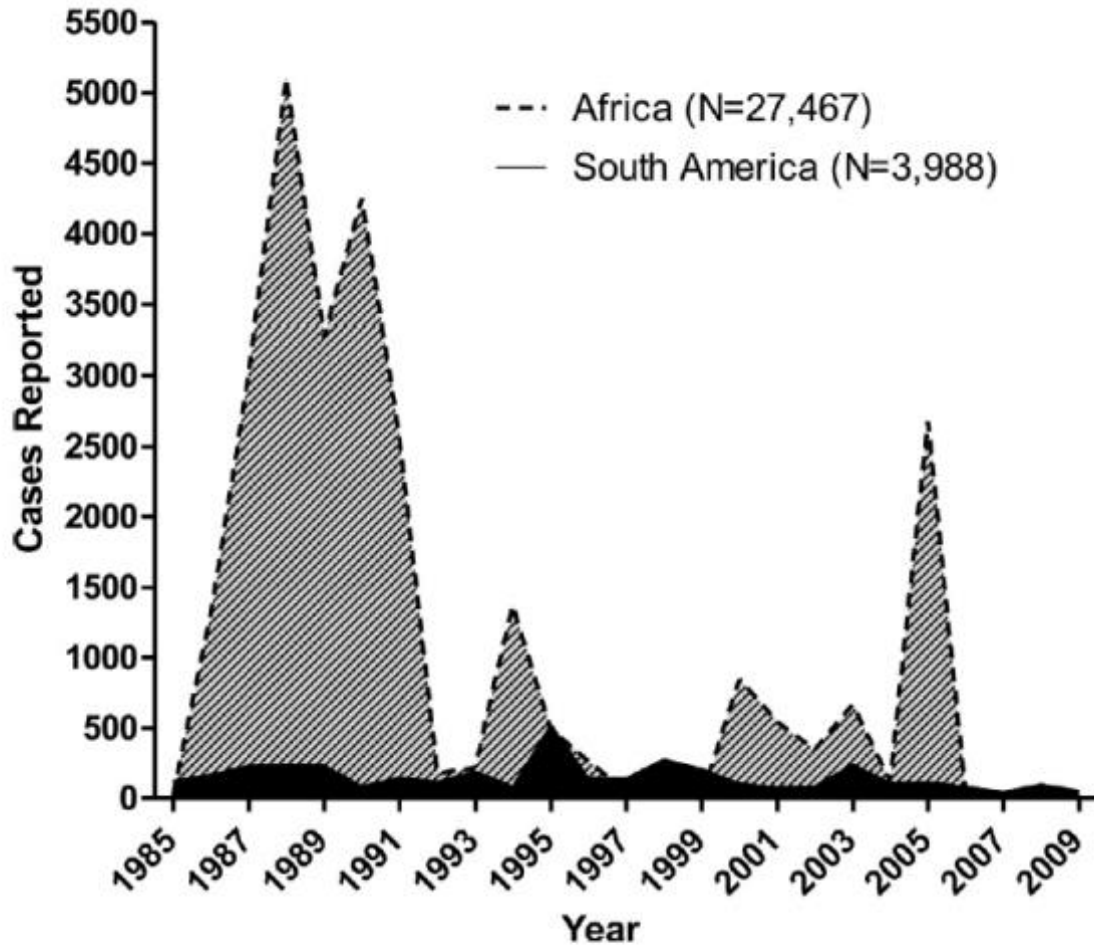
YFV transmission cycles



Vector: mosquitoes
Reservoir: monkeys
Sporadic host: human







2016 De Congo

2016 Angola

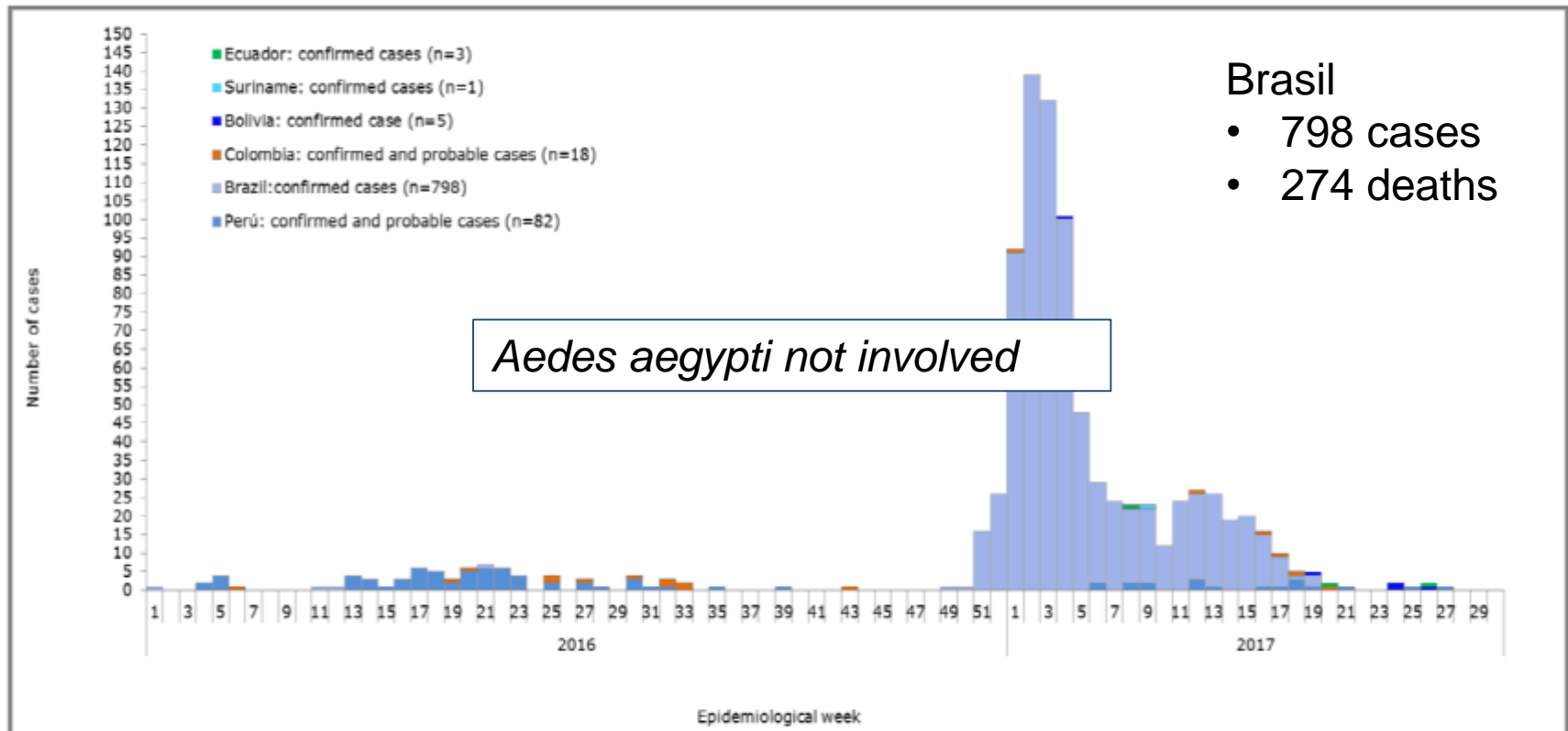
2017 Nigeria

Fig. 1. Cases of yellow fever in Africa and South America, 1985–2009, officially notified to the World Health Organization.



YFV in South-America

Figure 1. Distribution of confirmed and probable yellow fever cases. The Americas, EW 1 c 2016 to EW 30 2017



Source: Data provided by the Ministries of Health of Brazil,¹ Bolivia, Colombia,² Ecuador, Peru, and Suriname and reproduced by PAHO/WHO.



YFV in Suriname

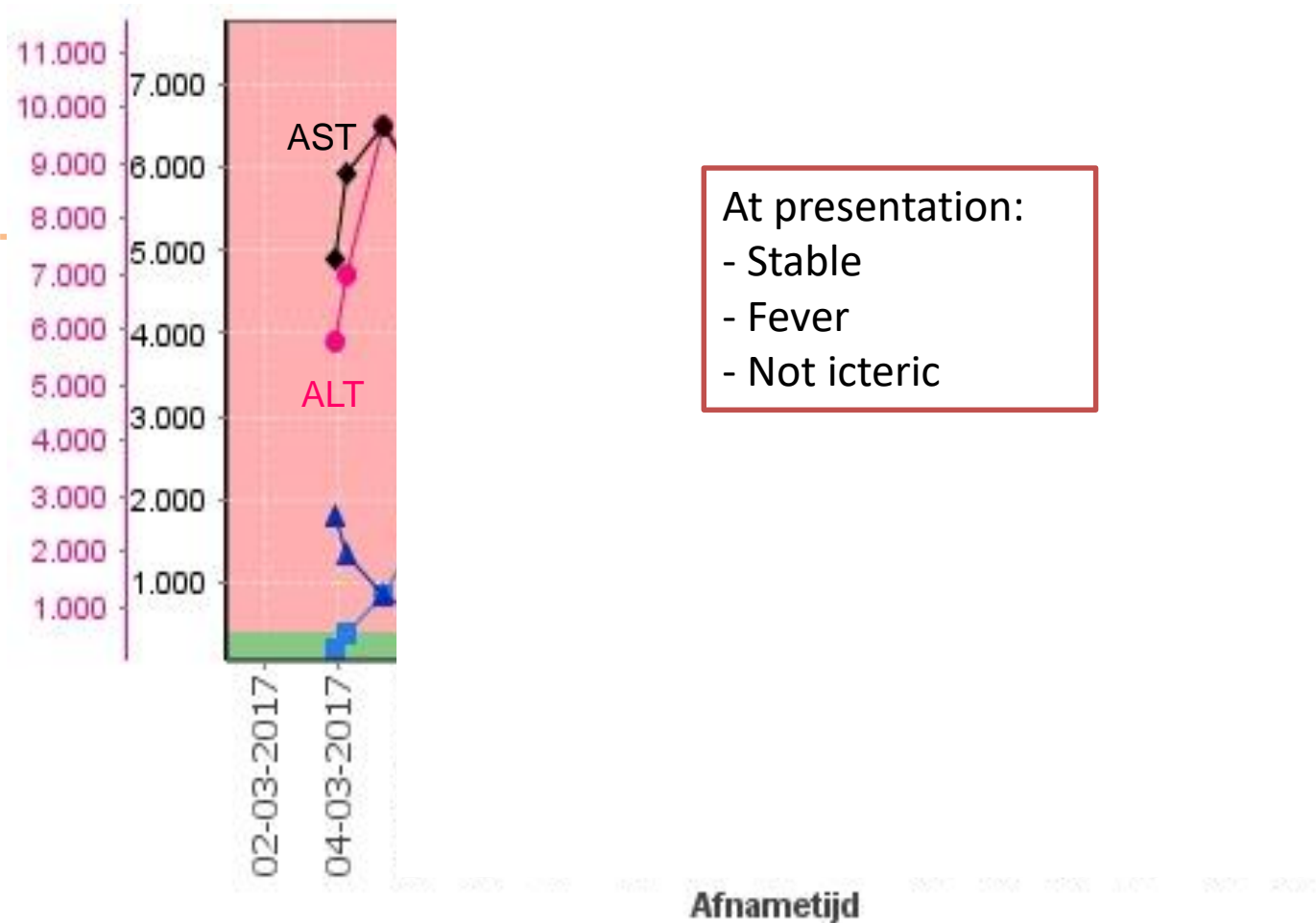
- Last reported case 1972
- 27-year-old Dutch woman
- 2 weeks vacation in Suriname
- No vaccination
- Paramaribo and two trips in tropical rain forest





YFV in Suriname

- Last reported case 1972
- 27-year-old Dutch woman
- 2 weeks vacation in Suriname
- No vaccination
- Paramaribo and two trips in tropical rain forest
- Sick at day 12 of stay (dps 0)
- Flew home on dps 2
- UMCG on dps 3



At presentation:

- Stable
- Fever
- Not icteric

Other abnormalities:

- Increased APTT (49s) and PT (26.6s); reduced antithrombin (49%); fibrinogen low
- Leukopenia $0.9 \times 10^9/L$
- Renal function normal apart from severe albuminuria



Infectious disease diagnostics

Working diagnosis: hepatitis/ fever after return from the tropics

Negative diagnostic tests for:

Plasmodium spp; hepatitis A virus; hepatitis B virus; hepatitis C virus; hepatitis E virus; EBV; CMV; HSV; Dengue virus, Chikungunya virus; Zika virus; *Leptospira* spp.

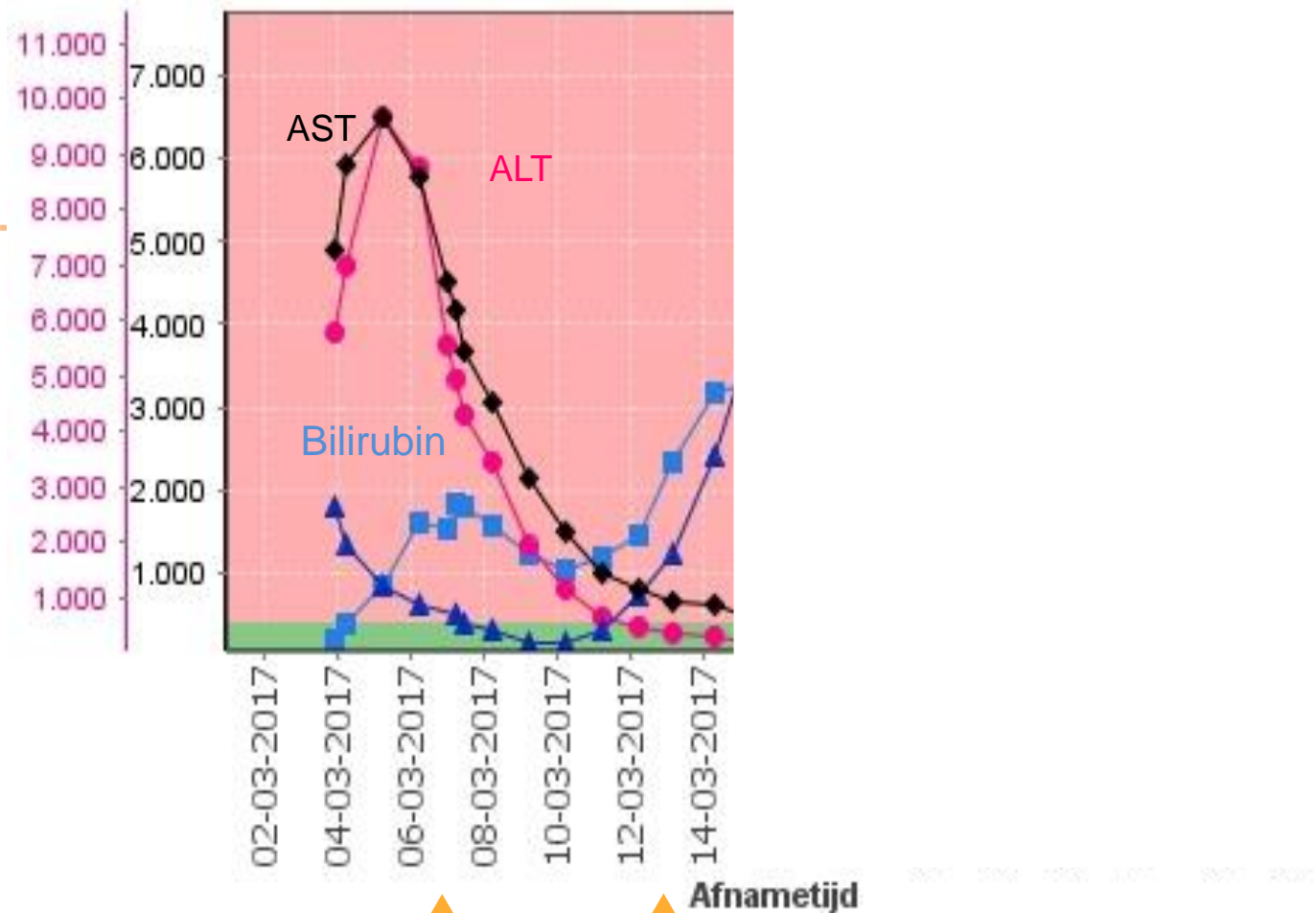
Positive detection of YFV RNA by PCR

- Plasma dps 3, 4, 5, 6

Detection of YFV IgM by IF

- Serum dps 6

Diagnosis: YELLOW FEVER



Afnametijd

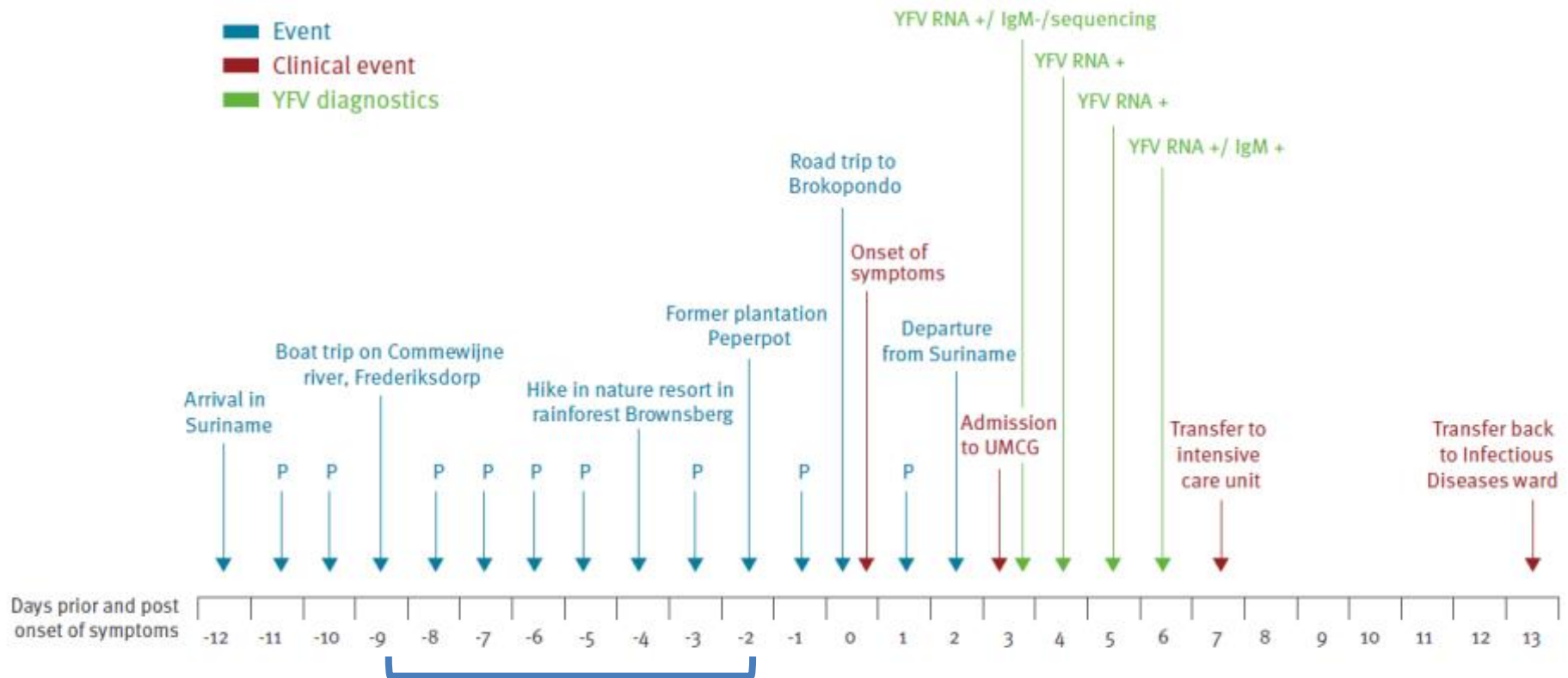
Back to ward, rapid clinical recovery

Hepatic encephalopathy (ammonia 149 $\mu\text{mol/L}$) -> transfer to ICU

- Vit K
- Rifaximin, lactulose
- Ceftriaxon 2g/day iv



FIGURE
Timeline of events and diagnostic results, case of yellow fever in a traveller returning from Suriname to the Netherlands, March 2017



P: Paramaribo; RNA: ribonucleic acid; UMCG: University Medical Center Groningen; YFV: yellow fever virus.

Incubation time 2-9 days, median 4 days



YFV detection in urine

Reusken et al. JCM 2017

TABLE 1 Longitudinal analysis of serum and urine samples of a naturally infected yellow fever patient

Parameter	Result ^a								
	Serum			Urine					
Day of sampling ^b	6	14	20	9	17	20	24	31	45
Dilution factor ^c	10×	None	None	2×	None	None	None	None	None
C _T value ^d	28.60	31.95	35.23	26.50	35.40	32.20	36.60	>40.00	>40.00
Interpretation	P	P	P	P	P	P	P	ND	ND

Barbosa et al. EID 2017:

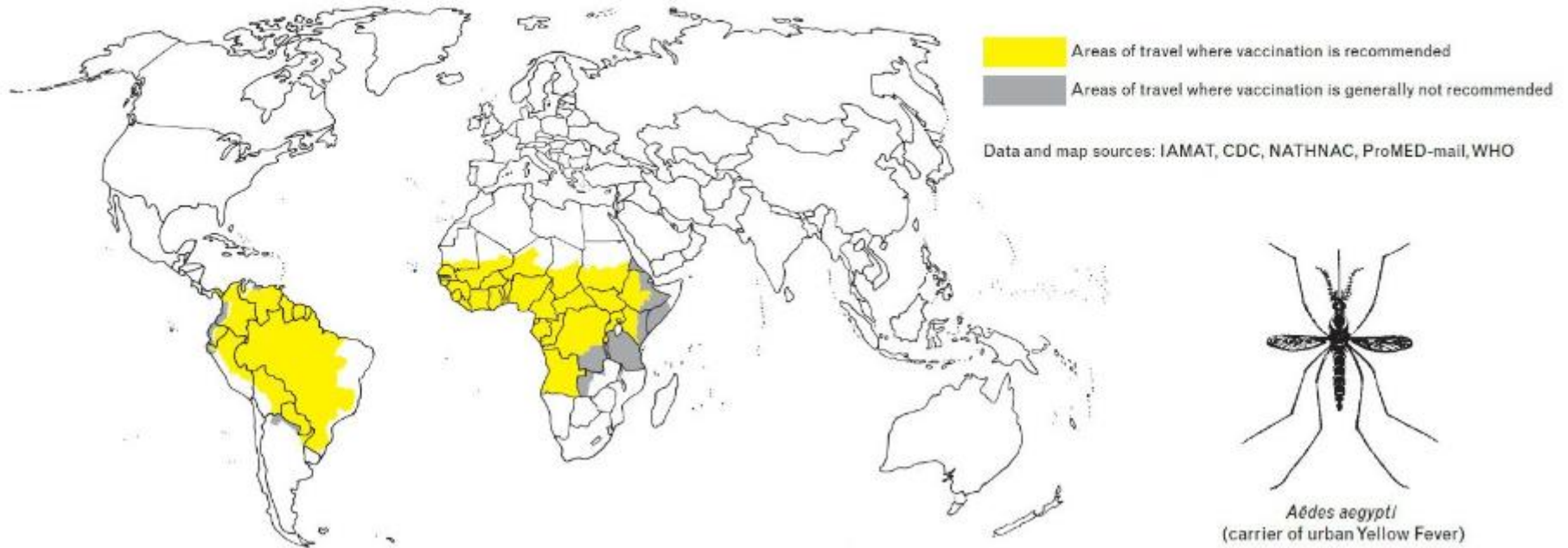
- Urine and semen positive 21 dps
- Infective virus!



Vaccination for travellers

Risk

Travellers are at risk when going to endemic areas of Africa and South America.



Suriname

Gelekoorts

In dit land komt gele koorts voor. Vaccinatie wordt aanbevolen en is bovendien VERPLICHT VOOR ALLE REIZIGERS.

Brasil

Gelekoorts

In dit land komt gele koorts voor. Vaccinatie is VERPLICHT als men VANUIT een gele koorts gebied komt. Bespreek met een deskundig reizigersgeneeskundig (huis)arts of reizigersverpleegkundige of vaccinatie voor u zinvol is.



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UMCG

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- AP van den Berg
- C Van Leer-Buter
- B Oude Velthuis
- TS van der Werf
- WF Bierman

