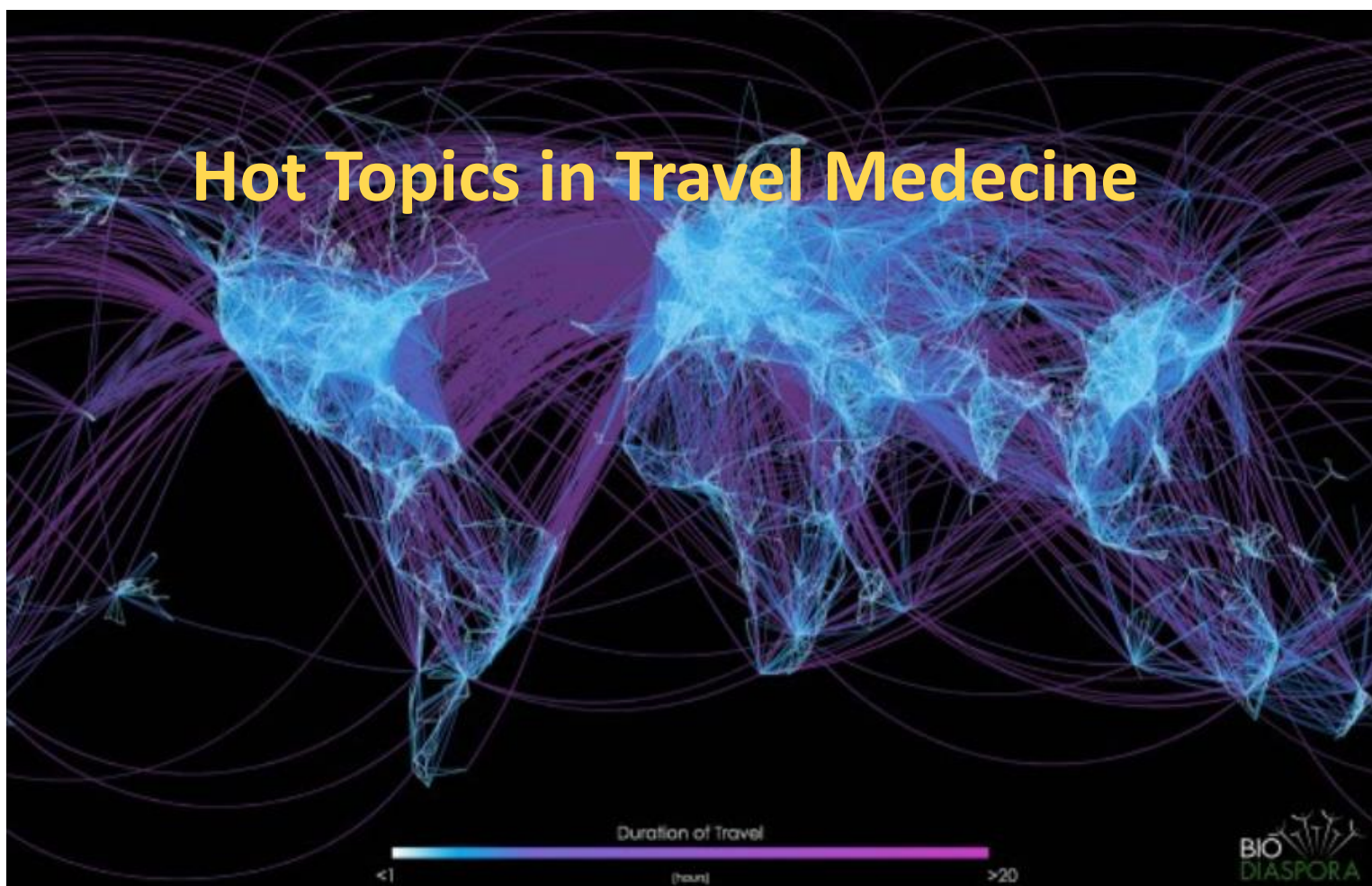


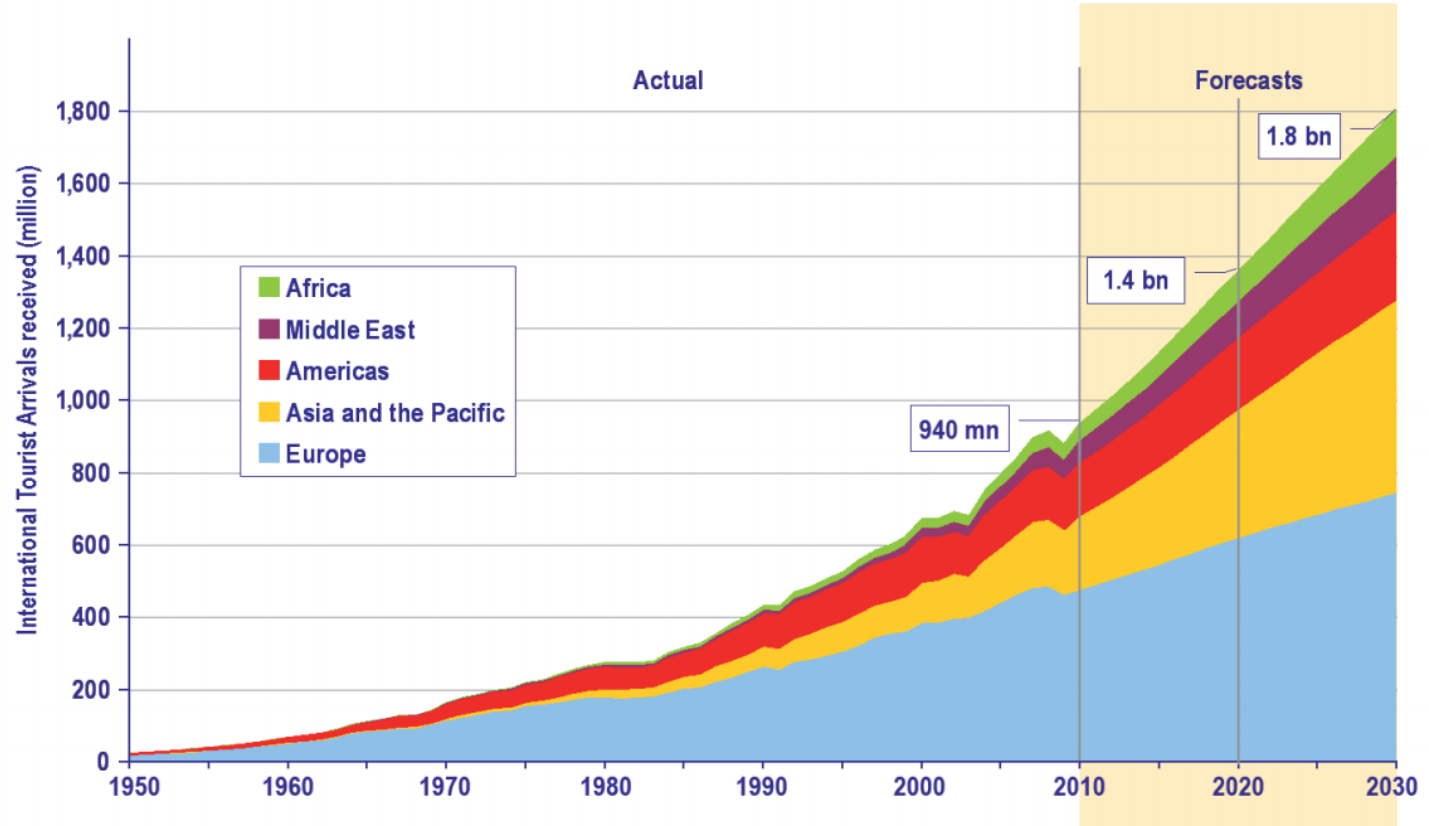


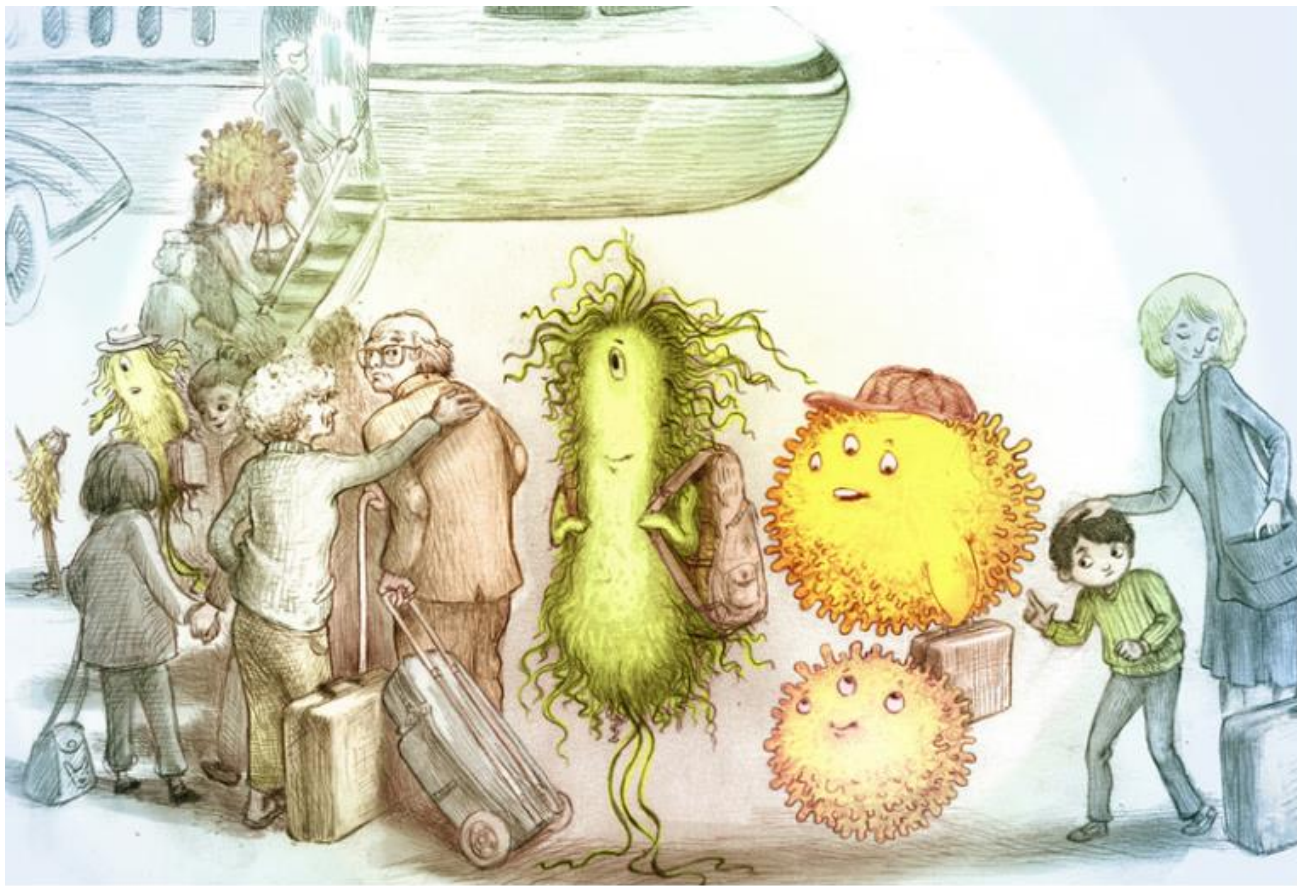
INSTITUTE
OF TROPICAL
MEDICINE
ANTWERP

Hot Topics in Travel Medicine



UNWTO Tourism Towards 2030: Actual trend and forecast 1950-2030

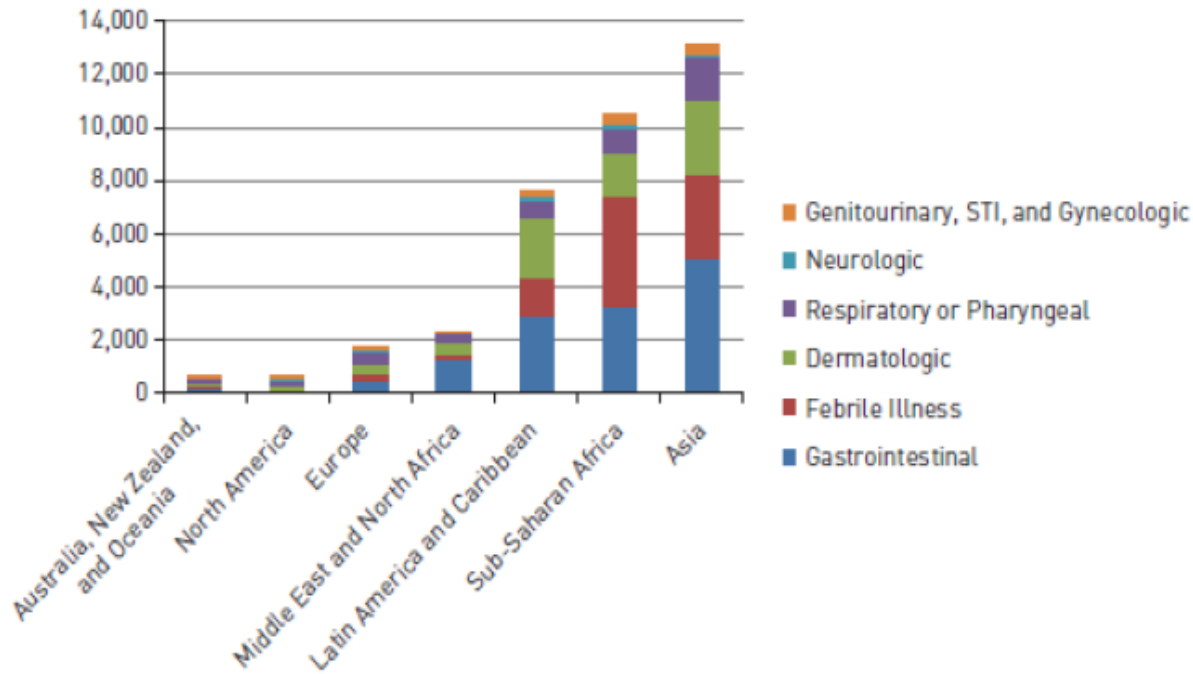




Suspicious travel companions: Bacteria can survive for days on surfaces inside a plane. But that doesn't mean you have to take these critters home with you.

Benjamin Arthur for NPR

Illness during travel: where to get which disease...?



Data: Geosentinel



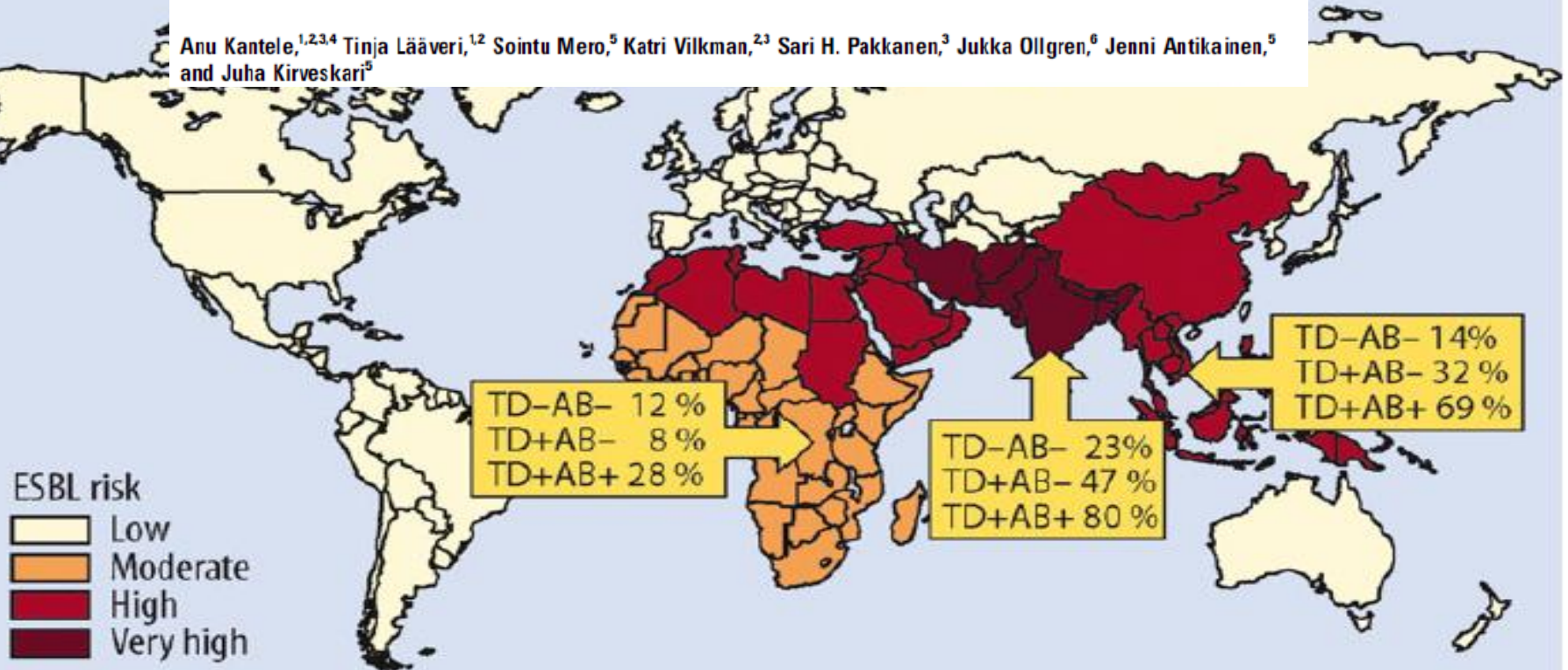
Travelers diarrhea

- Acute gastro enteritis
 - Often bacterial (> 80%), or viral
 - Sometimes unicellular
 - No worms
 - Usually self limiting
 - Rehydration+/- Symptomatic treatment
 - Antibiotics seldom needed!
- Persistent/chronic diarrhea
 - often unicellular (giardia)
 - Sometimes bacterial



Antimicrobials Increase Travelers' Risk of Colonization by Extended-Spectrum Betalactamase-Producing *Enterobacteriaceae*

Anu Kantele,^{1,2,3,4} Tinja Lääveri,^{1,2} Sointu Mero,⁵ Katri Vilkkman,^{2,3} Sari H. Pakkanen,³ Jukka Ollgren,⁶ Jenni Antikainen,⁵ and Juha Kirveskari⁵



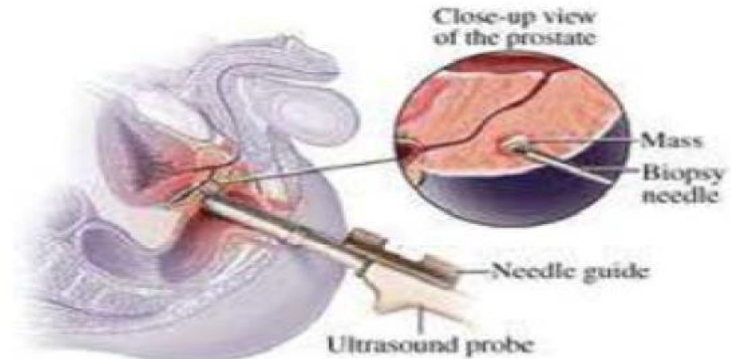


From colonisation to infection...



Asia travel is a risk factor for CA-ESBL+ UTI: OR 21 (4.5-97)

Soraas, Plos One 2013

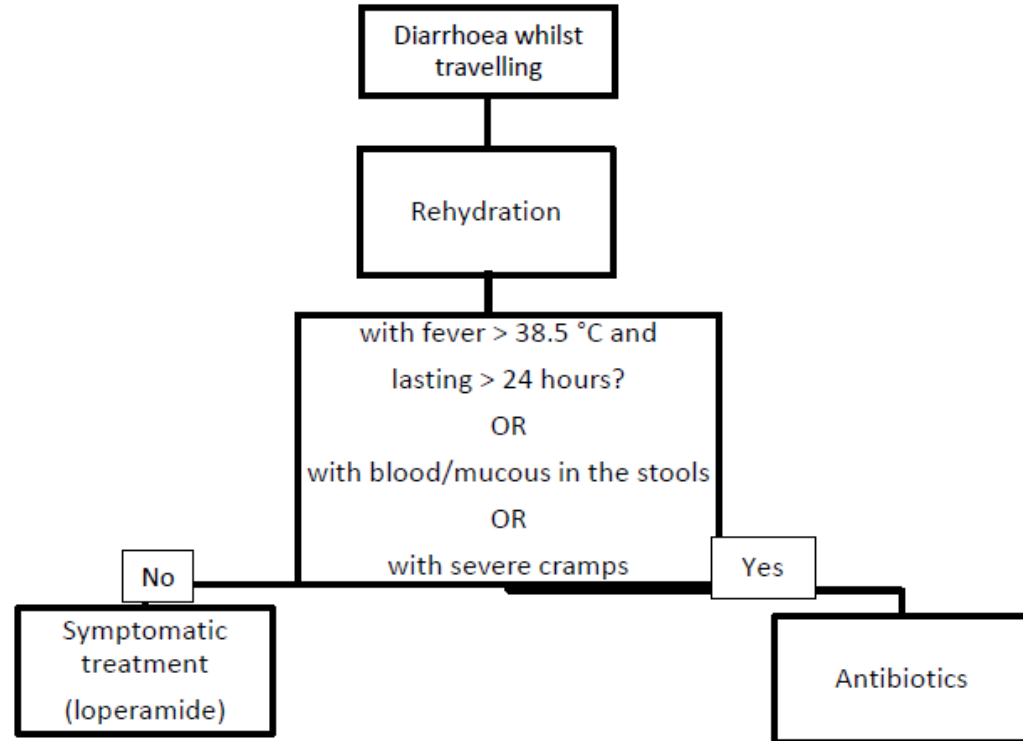


Travel is a risk factor for severe sepsis after prostatic Bx: RR 2.7 (1.0-7.1)

Patel, BJU, 2011

Belgian guideline (2016)

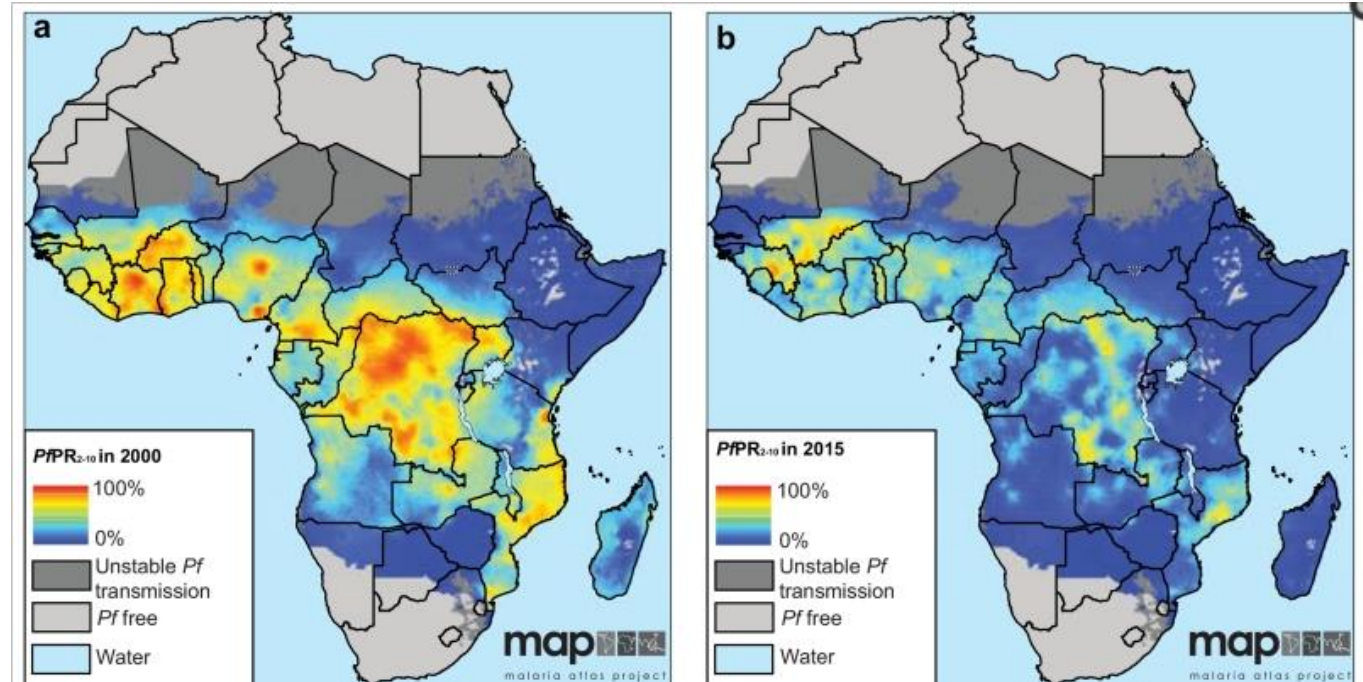
- Asia/ Africa
- Only when trip > 16 days
- Or risk factor (eg immunosuppression, pregnant, inflamm bowel disease, child ...)
- Azithromycine: 1x1000 mg
- Kids: 10 mg/ kg



Malaria

WHO

- 214 000 000 malaria cases
- -37% between 2000-2015
- -60% mortality



The effect of malaria control on *Plasmodium falciparum* in Africa between 2000 and 2015

[S. Bhatt](#),^{#5,1} [D.J. Weiss](#),^{#1} [E. Cameron](#),^{#1} [D. Bisanzio](#),¹ [B. Mappin](#),¹ [U. Dalrymple](#),¹ [K. Battle](#),¹ [C.L. Moyes](#),¹ [A. Henry](#),¹ [P.A. Eckhoff](#),² [E.A. Wenger](#),² [O. Briët](#),^{3,4} [M.A. Penny](#),^{3,4} [T.A. Smith](#),^{3,4} [A. Bennett](#),⁵ [J. Yukich](#),⁶ [T.P. Eisele](#),⁶ [J.T. Griffin](#),⁷ [C.A. Fergus](#),⁸ [M. Lynch](#),⁸ [F. Lindgren](#),⁹ [J.M. Cohen](#),¹⁰ [C.L.J. Murray](#),¹¹ [D.L. Smith](#),^{1,11,12,13} [S.I. Hay](#),^{11,13,14} [R.E. Cibulskis](#),⁸ and [P.W. Gething](#),^{5,1}



Malaria

- **P falciparum:**
 - Can cause severe malaria and cerebral malaria
 - No relapses
- **P ovale-P vivax:**
 - hypnozoites can cause relapses
- **P malariae**
- **P knowlesi:** zoönose forests in South-East Asia



Symptoms

- **Fever**
- Myalgia, headache
 - D/ 'flu'
- Abdominal pain, diarrhea
- nausea, vomiting
 - D/ 'gastroenteritis'
- Cough



Malaria diagnosis

- Clinical presentation
 - Awareness!
 - Every fever or 'flu' after tropical travel....
- Lab tests
 - RDT: looking for antigens
 - Thick and thin smear



Prognosis depends of...

- **Patient**

- Immune status, age, co-morbidity, co-medication
- DELAY
 - Patient's delay
 - Doctor's delay

- **Parasite**

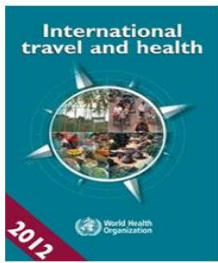
- Type: *P. falciparum* >> non-falciparum
- Parasitemia: > 1-5%



Malaria treatments

- Treatment P/o:
 - Atovaquone/proguanil (Malarone)
 - Artemeter/lumefrantine (Riamet)
 - Artemisinin/piperaquine (Eurartesim)
 - (chloroquine)
 - (quinine)
- IV:
 - Quinine+ doxy/clinda
 - Artemisinin (+doxy/clinda)





ABCDE of malaria prevention for travelers

A: Awareness

B: Bite prevention

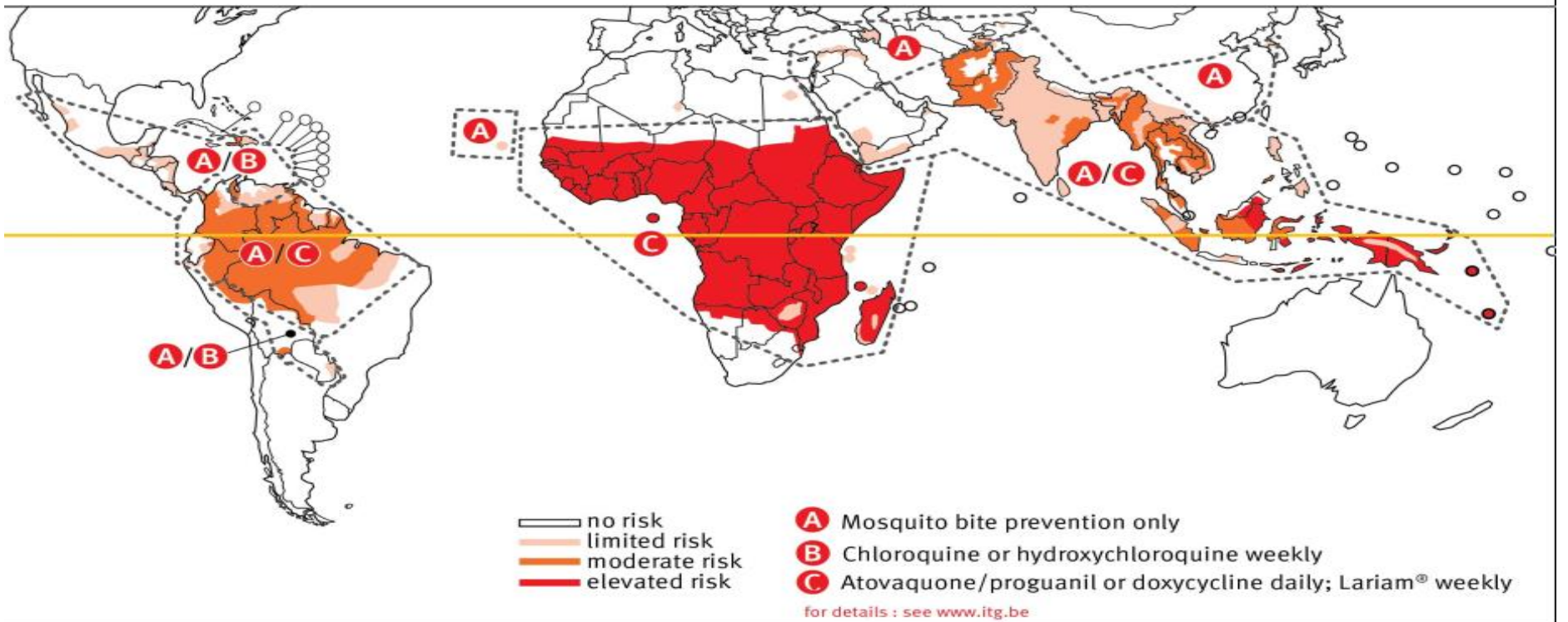
C: Chemoprophylaxis, if indicated.

D: Diagnosis: rapid diagnosis when symptoms

E: Environment: Avoid outdoor activities in environments that are mosquito breeding places, especially in late evenings and at night.



Malaria 2016 (source WHO 2010, World Malaria Report 2015)



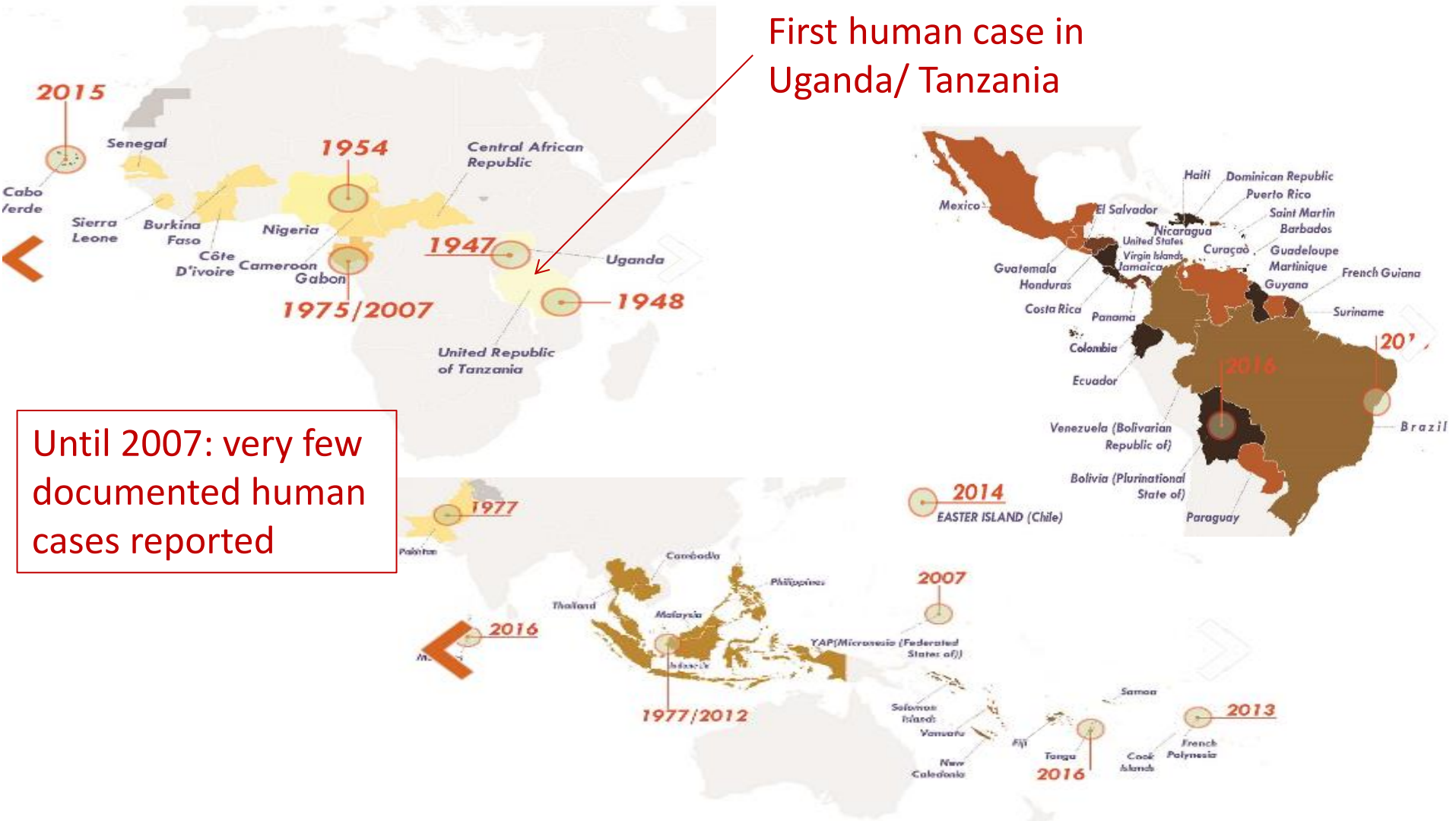
Zika



Ricardo Moraes/Reuters



First human case in
Uganda/ Tanzania



2007: first zika outbreak in Yap Island

Sign or Symptom	No. of Patients (%)
Macular or papular rash	28 (90)
Fever*	20 (65)
Arthritis or arthralgia	20 (65)
Nonpurulent conjunctivitis	17 (55)
Myalgia	15 (48)
Headache	14 (45)
Retro-orbital pain	12 (39)
Edema	6 (19)
Vomiting	3 (10)

population 11,250
incidence 73 %
Asymptomatic 80%

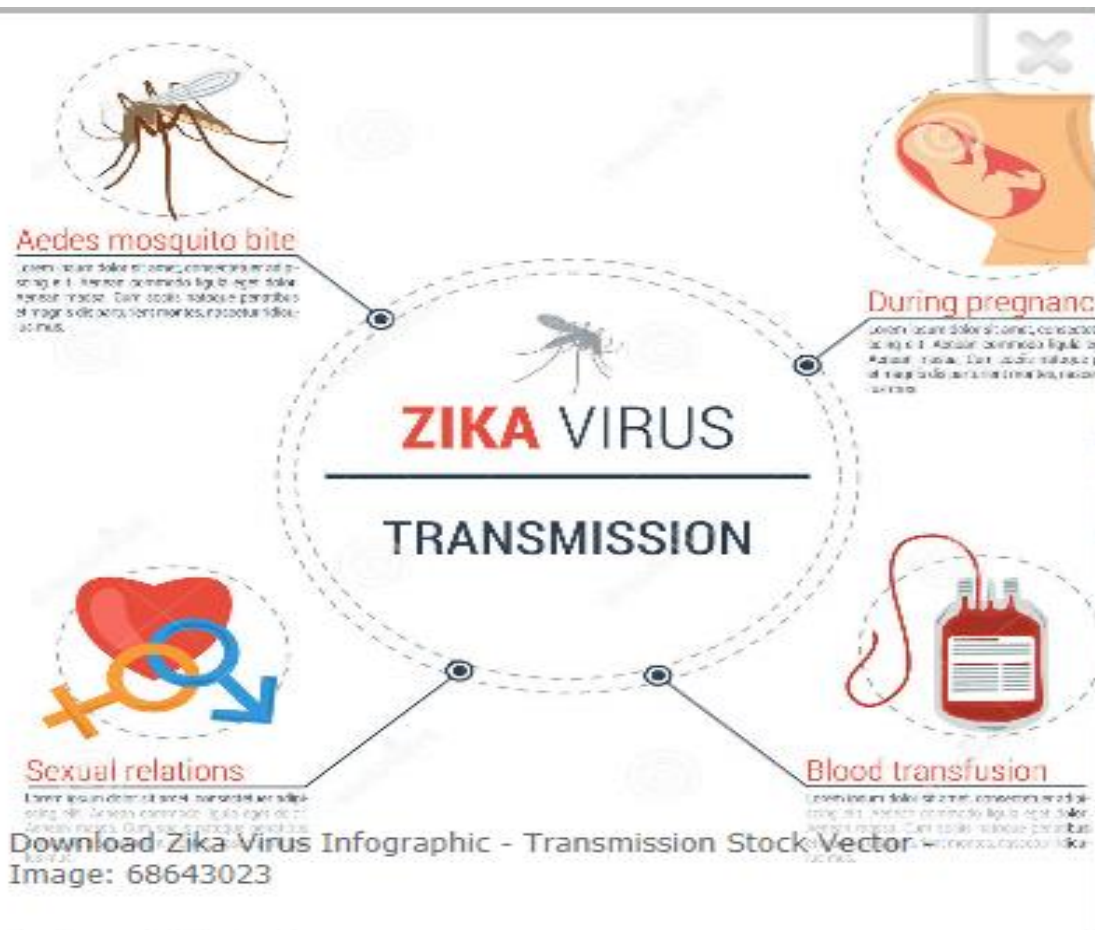


Zika associated congenital syndrome

- Microcephaly
- Intracranial calcifications
- Brain anomalies
- Eye defects
- Hearing loss
- Redundant scalp skin
- Arthrogryposis



Zika virus transmission

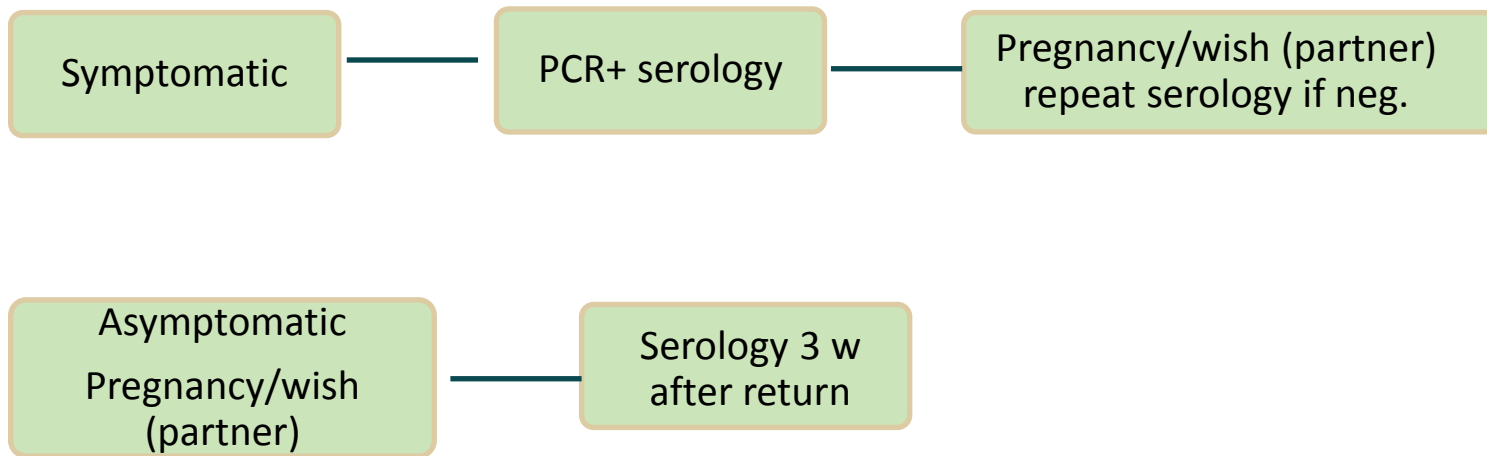


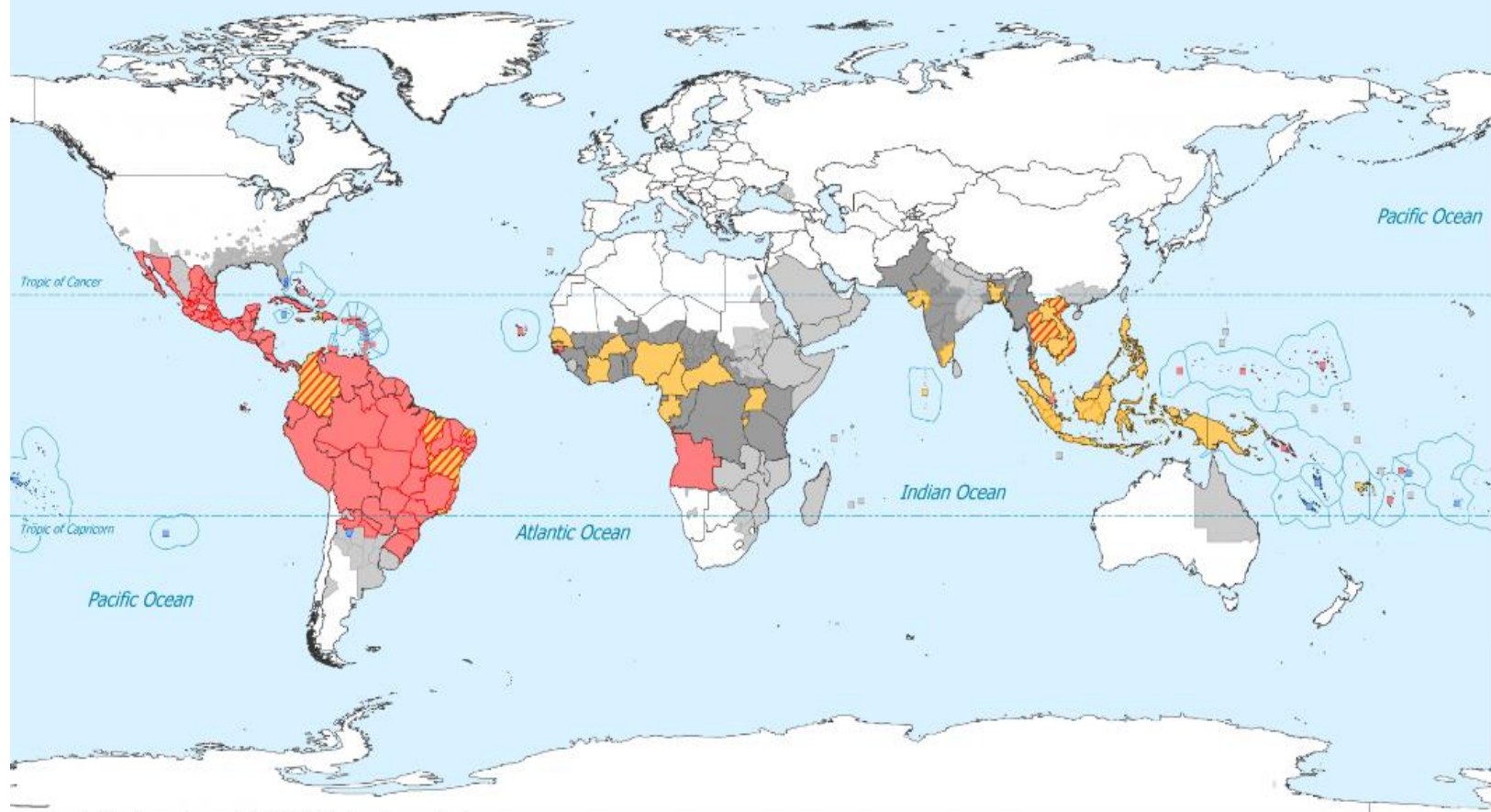
Questions?

- Are congenital disorders only seen in the Americas?
- How high is the risk of congenital disorders?
- Is there a risk during all terms of pregnancy?
- How long should one wait after traveling to a zika region before conception?



Laboratory diagnosis





Country classification category (Cat.) for Zika virus transmission

- Areas with virus transmission following virus new/re introduction (WHO Cat. 1)
- Areas with virus transmission following previous virus circulation (WHO Cat. 2)
- ▨ WHO Cat. 2 areas with new documented intense transmission

/portal/files/images/ZikaMap_OutbreakClassification_World%20wide.png

- Areas bordering a WHO Cat. 2 area (sub-category of WHO Cat. 4)
- Areas with potential for transmission (sub-category of WHO Cat. 4)
- Maritime Exclusive Economic Zones for non-visible areas



ECDC. Map produced on 29 Aug 2017.
 Man your data at: <https://emma.ecdc.europa.eu>

Every year, unvaccinated people get **measles** while abroad and bring it to the United States.

Stay safe & healthy when traveling this summer.



www.cdc.gov/features/measlesinternationaltravel/

MEASLES



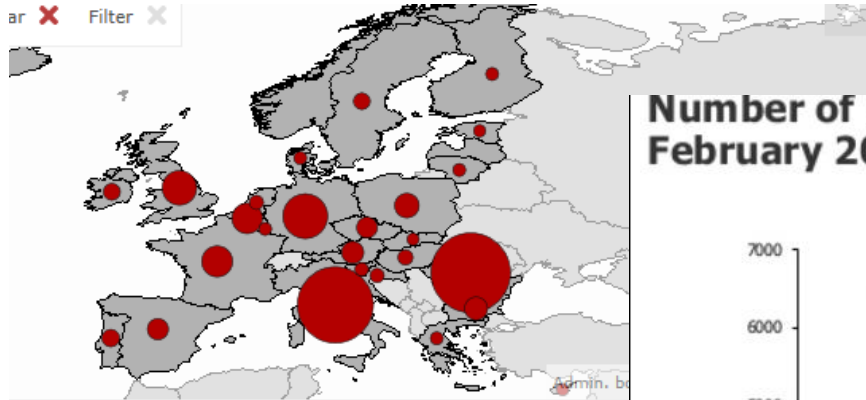
is **highly contagious** and spreads through the air when an infected person **coughs or sneezes**.



It is so contagious that if one person has it, **9 out of 10 people** of all ages around him or her will also become infected if they are not protected.

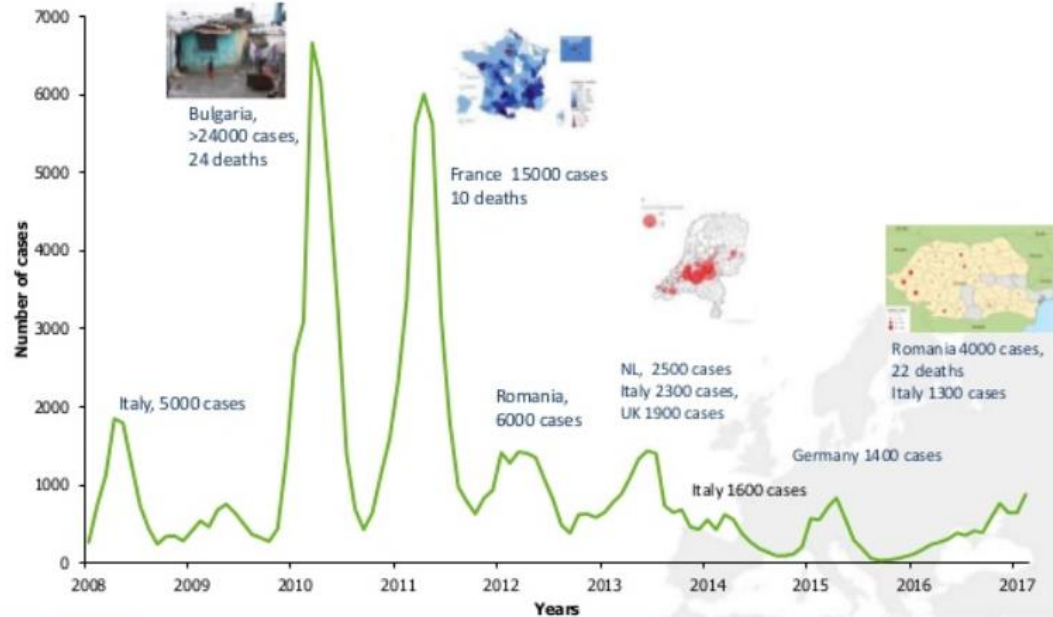


Measles outbreak Europe



ECDC accessed 8/9/2017

Number of measles cases by month, January 2008 – February 2017 (n=116 594), EU/EEA countries



Measles outbreak

- Romania: 6968 cases in 2017-33 death
- 4328 cases in Italy
- Germany: 860 cases
- Belgium: 288 cases, 37 health care workers
- But also in Nigeria, CAR, RDC

→ Check MMR status!

+ consider vaccinating between 6m-12m
in young children

Eurosurveillance, Volume 22, Issue 17, 27 April 2017

Rapid communication

ONGOING MEASLES OUTBREAK IN WALLONIA, BELGIUM, DECEMBER 2016 TO MARCH 2017: CHARACTERISTICS AND CHALLENGES

T Grammens¹, C Schirvel², S Leenen², N Shodu², V Hutse³, E Mendes da Costa¹, M Sabbe¹

+ Author affiliations



Special travelers: visiting friends and relatives



- Good opportunity to update vaccination!
- Sometimes particular vaccines are recommended
 - eg Men ACWY135
 - Typhoid fever
- Malaria prophylaxis!
 - often risk of malaria is underestimated
- Food security

Special travelers: immunosuppressed

- Young lady in her twenties
- Antec: Psoriasis arthritis
- R/ Humira since +/- 1y → no pain since 1y
- Has booked an organised trip to Ghana of 3 weeks – “off the beaten track”
- leaving in 2 weeks



Yellow Fever Vaccination Recommendations in the Americas, 2017 (28-3-2017)

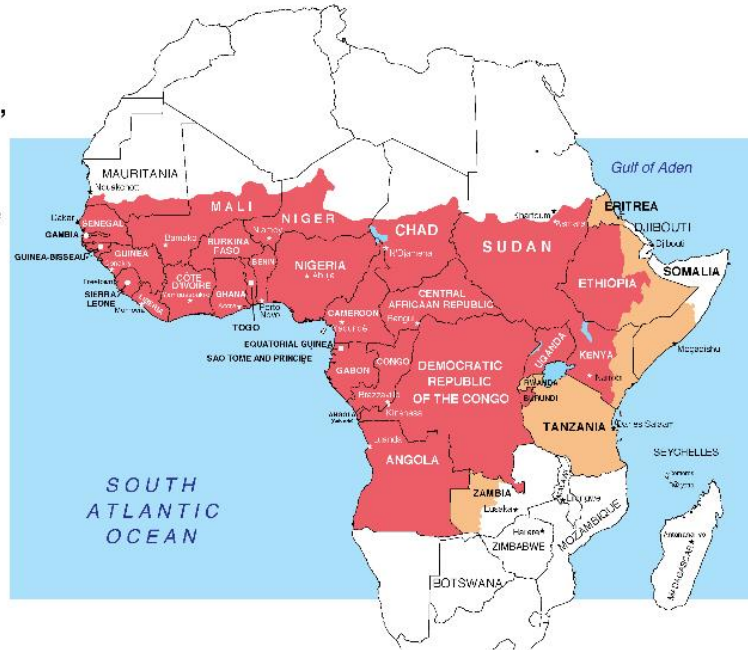
- low risk area, but yellow fever vaccination is recommended by the Belgian scientific study group on travel medicine, unless there is a contra-indication for vaccination
- strongly recommended or even obligatory

Yellow Fever Vaccination Recommendations in Africa, 2015 (7-7-2015)

- low risk area, but yellow fever vaccination is recommended by the Belgian scientific study group on travel medicine, unless there is a contra-indication for vaccination
- strongly recommended or even obligatory
- vaccination not recommended



For Details See WWW.ITG.BE



DE. BE

- General principles:
 - Higher risk infectious diseases, higher risk for complicated infections
- Vaccinations
 - Inactivated vaccines are safe, but immunogenicity can be reduced:
(Slower Ab respons, lower Ab respons)
 - Sometimes specific vaccines are recommended (cfr recommendations HGR: influenza; pneumococcal diseases; Men ACWY 135)
 - Live attenuated vaccines are often contra indicated (eg MBR-Yellow fever)
Or can only be given after interruption of the treatment



Today's patient might be tomorrow's travellers...



22 JUN



**REIZEN EN
IMMUUNSUPPRESSIE**

Nieuwe optie in de afsprakentool

REISGENEESKUNDE



**Hoge
Gezondheidsraad**

**VACCINATIE VAN
IMMUNOGECOMPROMITEERDE
EN CHRONISCH ZIEKE KINDEREN
EN VOLWASSENEN**

HGR NR. 8561



**Conseil
Supérieur de la Santé**

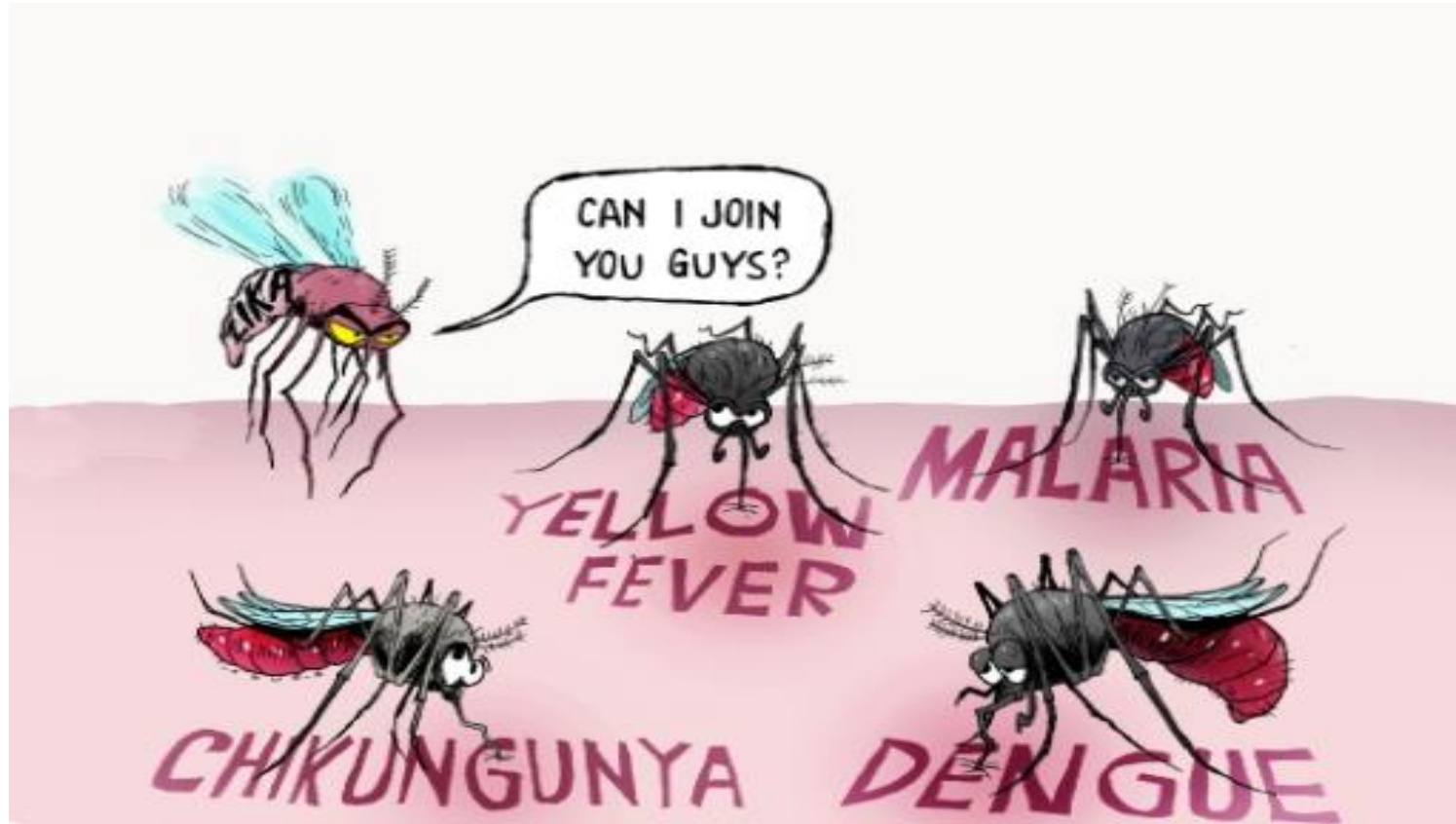
**VACCINATION D'ENFANTS
ET D'ADULTES IMMUNODÉFICIENTS
ET MALADES CHRONIQUES**

CSS N° 8561

Being updated

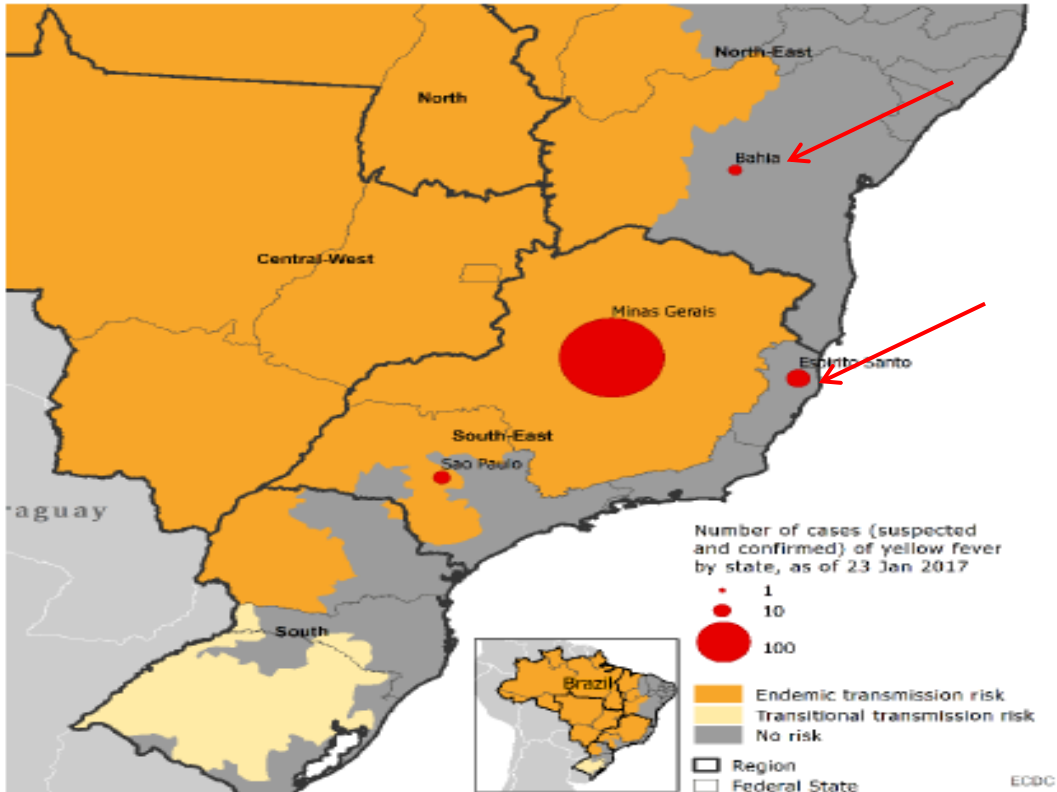


And insects like to travel as well....



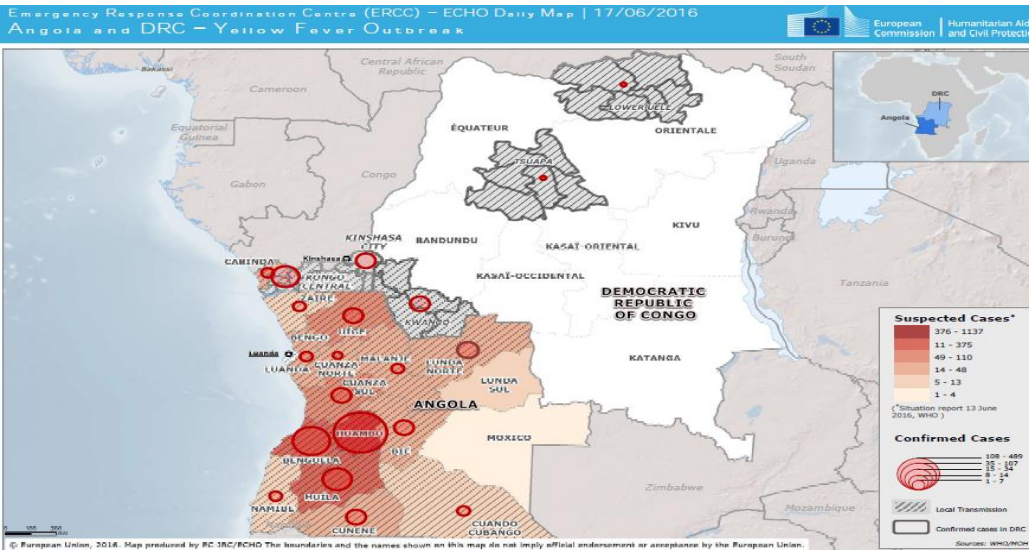
Yellow fever: current outbreak in Brazil

Figure 5. Human suspected and confirmed cases of yellow fever by municipality, Brazil, 2017, as of 23 January 2017



- 777 cases
- 261 death,
- Sylvatic

Yellow fever epidemiology



Epidemic 2015-2016 in Angola/
RDC (including Luanda): +/-
7300 cases (+/- 1000
confirmed), 500 death



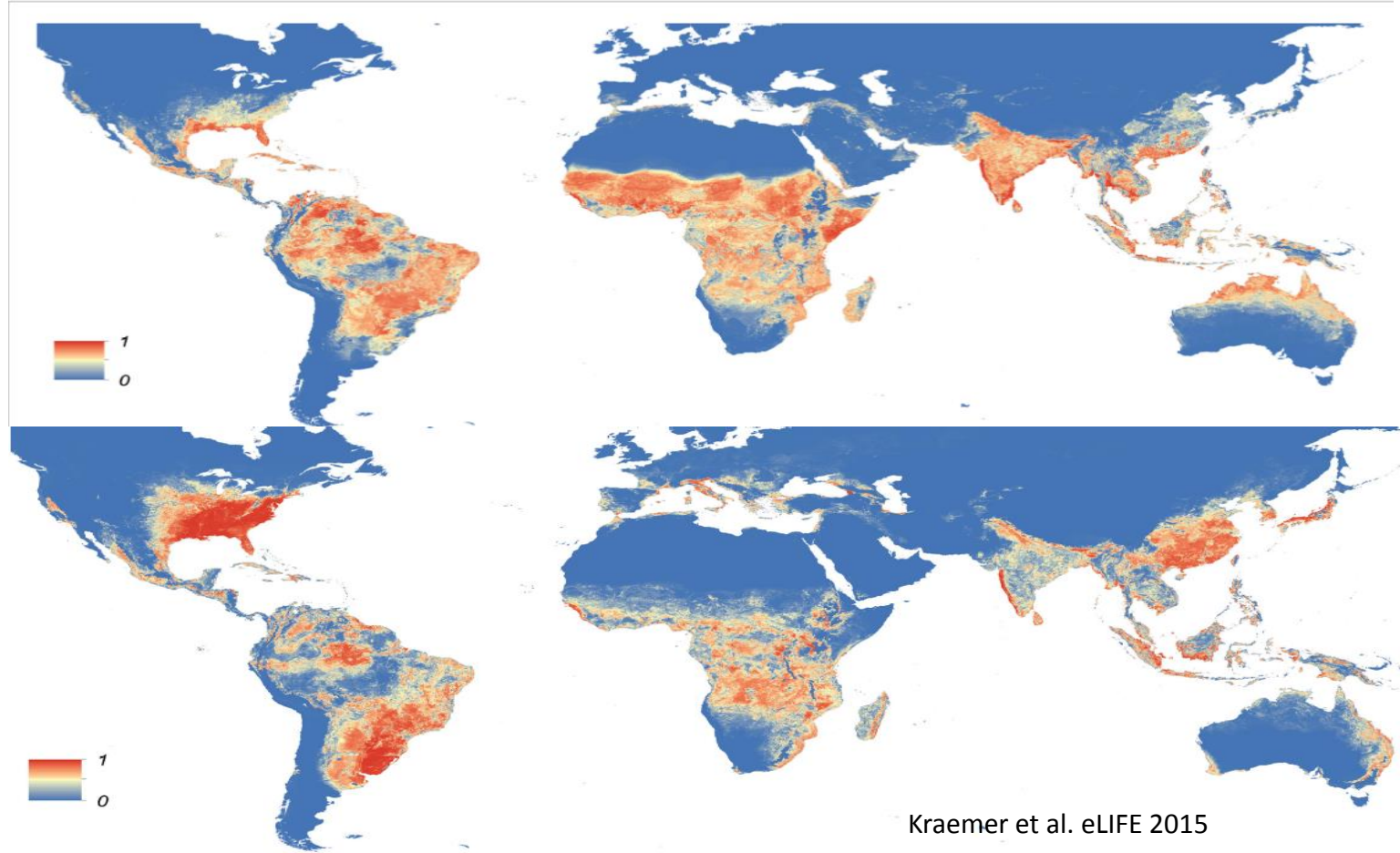
- **SPECIES NAME/CLASSIFICATION:** *Aedes (Stegomyia) albopictus* (Skuse) [66]
- **COMMON NAME:** Asian tiger mosquito, Forest day mosquito
- **SYNONYMS AND OTHER NAME IN USE:** *Stegomyia albopicta* (sensu Reinert et al. [67])

This mosquito species is a known vector of chikungunya virus, dengue virus and dirofilariasis.

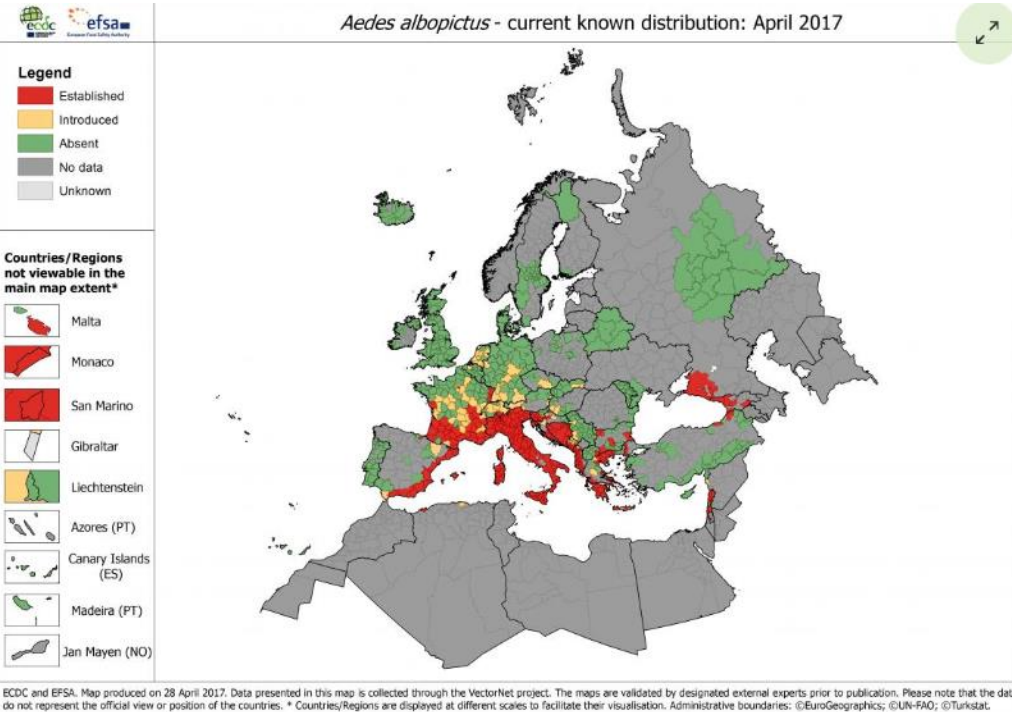


distribution of *Ae. aegypti* & *Ae. albopictus*

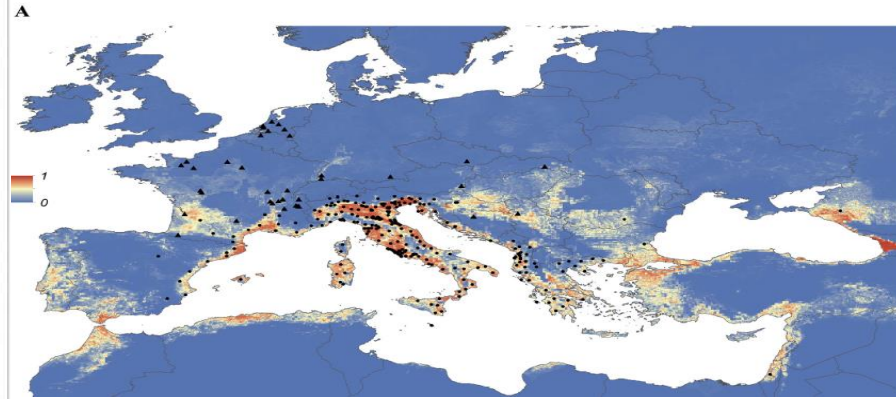
Ae. aegypti



occurrence of *Ae albopictus*.



● established ▲ transient



Kraemer et al. eLIFE 2015

Epidemiological update: Chikungunya – France – 2017

epidemiological update

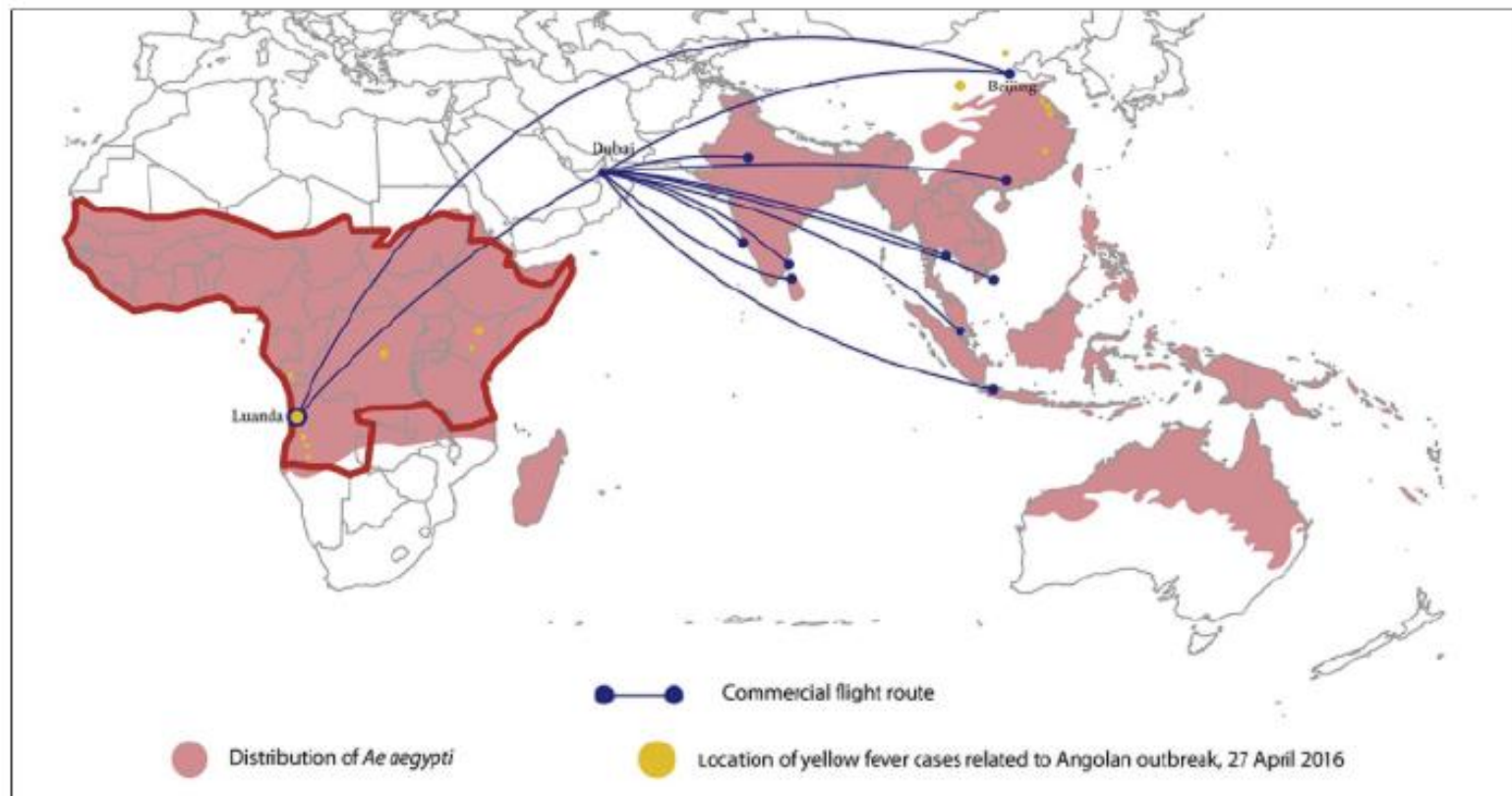
1 Sep 2017



On 11 August 2017, France gave notification of an autochthonous case of chikungunya virus infection detected in the Var Department in southern France through the Early Warning and Alert System (EWRS).

As of 30 August 2017, France has reported six confirmed autochthonous chikungunya cases and one probable case all living in the same neighbourhood in Cannet-des-Maures (Var). The dates of onset of these cases range from 28 July to 19 August 2017. To date, there is no recent report of imported chikungunya cases in the Var or Alpes-Maritimes Departments that could account for the introduction of the virus in the area.

French authorities have implemented successive vector control campaigns, case finding, blood safety measures, community measures for personal protection and vector control, and widely sensitised the public and physicians to this cluster of chikungunya cases.



Map showing the distribution of *Aedes aegypti* across Africa and the Asia-Pacific region (areas shaded pink). The red outline delineates yellow fever-endemic regions. Yellow dots represent the location of yellow fever cases related to the Angolan outbreak (source: HealthMap). Commercial flight routes with direct connections between Luanda and Beijing and indirect connections from Luanda to South and Southeast Asia via Dubai (source: FLIRT[®]) are also



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Kies een regio ▾

Kies het land of de regio waar je heen gaat en we voorzien je van de nodige info.



THX for your attention!

www.reisgeneeskunde.be

