

An aerial night photograph of the Kaaba in Mecca, Saudi Arabia. The Kaaba is a large, dark, rectangular building with a white roof, surrounded by a massive crowd of pilgrims. The Kaaba is illuminated by bright lights, and the surrounding area is also lit up. In the background, the city of Mecca is visible, with its lights and buildings. The sky is dark, and the overall scene is a vibrant display of light and color.

# Pilgrims to Mecca

Y. Van Laethem  
Travel Clinic - CHU St Pierre  
Brussels



# Mecca

- The Holy Place with the larger number of pilgrims at the same time:
  - between 2 – 3. 10<sup>6</sup> people during the Hajj :
    - 60% from Asia, 25% from Arabic Countries
    - 10 % from Africa, and <5% from Europa
- Leading to transmission of several diseases:
  - tuberculosis
  - meningitis
  - influenza,...





# Pilgrims to Mecca

- From more than 140 countries...and:
  - Netherlands: +/- 6.000/year
  - Belgium: +/- 3.000/year
- At Travel Clinic CHU St Pierre,  
meningo vaccination for:
  - +/- 1.500 pilgrims in 2007
  - 1.100 pilgrims in 2008 and 2009
  - ≈ 20 to 130/day, mostly during 1 month  
after the end of ramadan

# Hajj

- One of the five pillar of Islam
    - Once a year, for a period of 5 days during the 12 th month of the lunar islamic calendar
      - ever-changing seasonal dates (10-11 days « earlier » each year)
      - ≠ environmental/epidemiological conditions
- NB: Umrah : shorter pilgrimage, may be done at every time

# Hajj

- 7 hospitals...
- 74 health-care centers...
- >10.000 specialized health care personnel  
for healthcare free of charge

For pilgrims staying in:

- hotels and appartement( from? to 5 stars !)
- tents (by nationality) for a few nights









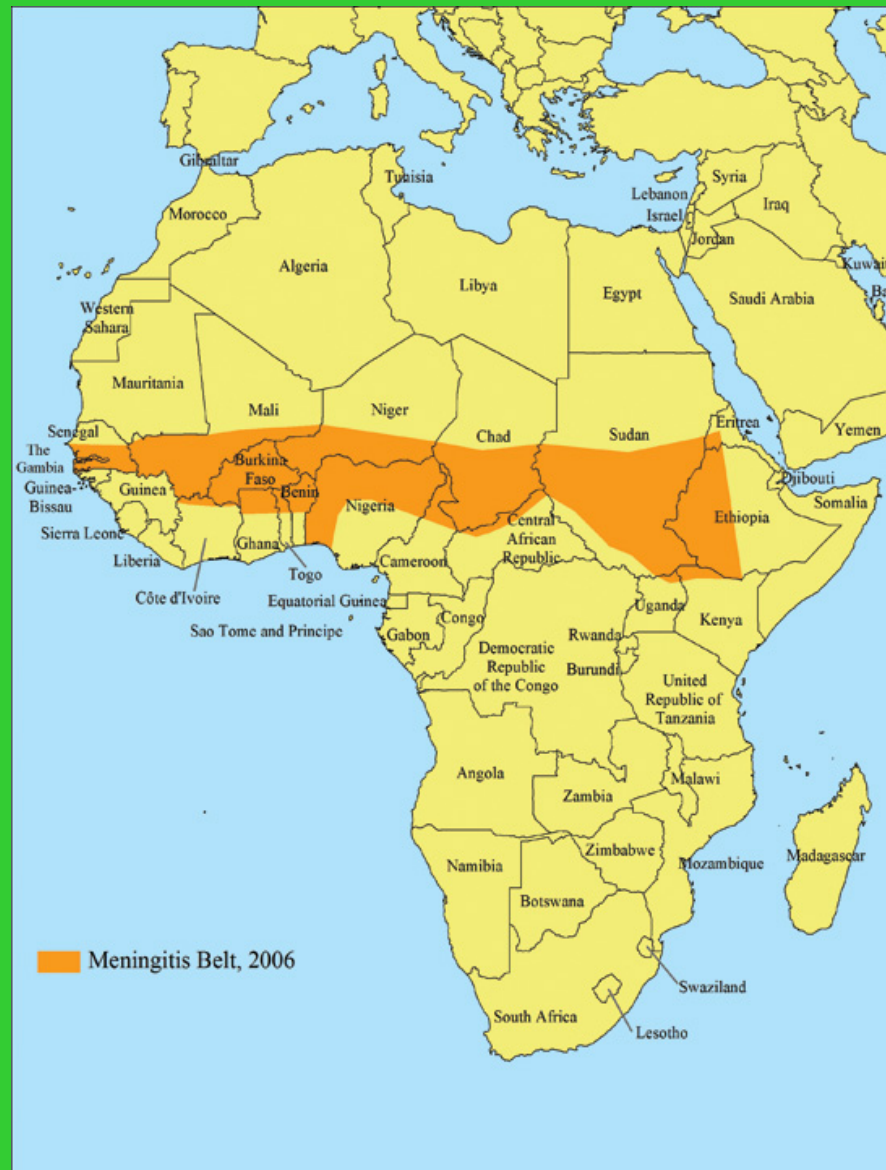
# Meningococcal infection

- Vaccination for pilgrims from the meningitis belt required since a long time.

Several outbreaks of serogroup A disease following the 1987 Hajj:

- 19 cases/10.000 UK pilgrims
- 15 secondary cases in UK
- with carriage +/- 10 %(US pilgrims)

## Areas with frequent epidemics of meningococcal meningitis.



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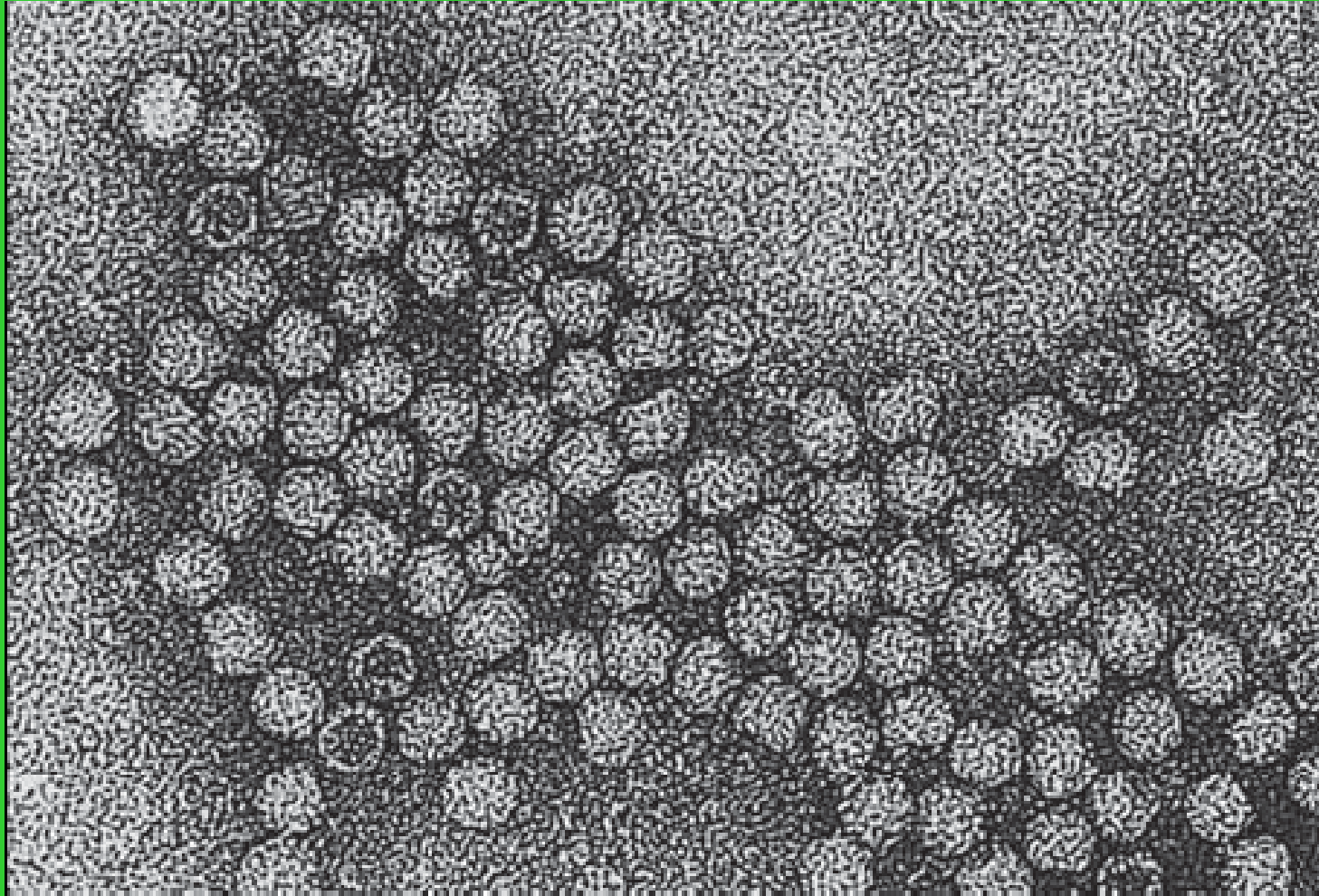
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# Meningococcal infection

- Vaccine(A and C) required since 1988
- Quadrivalent vaccine since 2001(W135 cases)
  - if older than 2 years
  - issued >10 days and < 3 years

NB: if arriving from countries of the meningitis belt,  
administration at the port of entry:

- adults: 500 mg cipro
- children: rifampicin tablets
- pregnant women: ceftriaxone IM

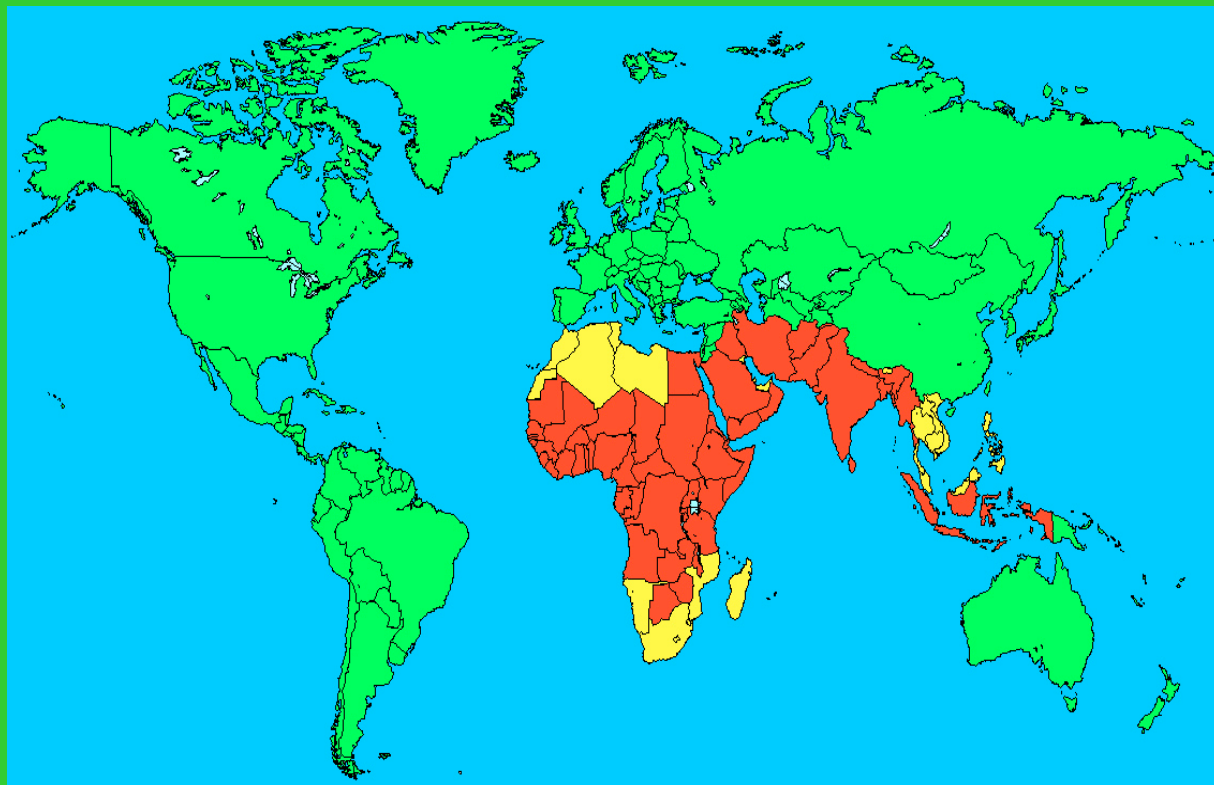









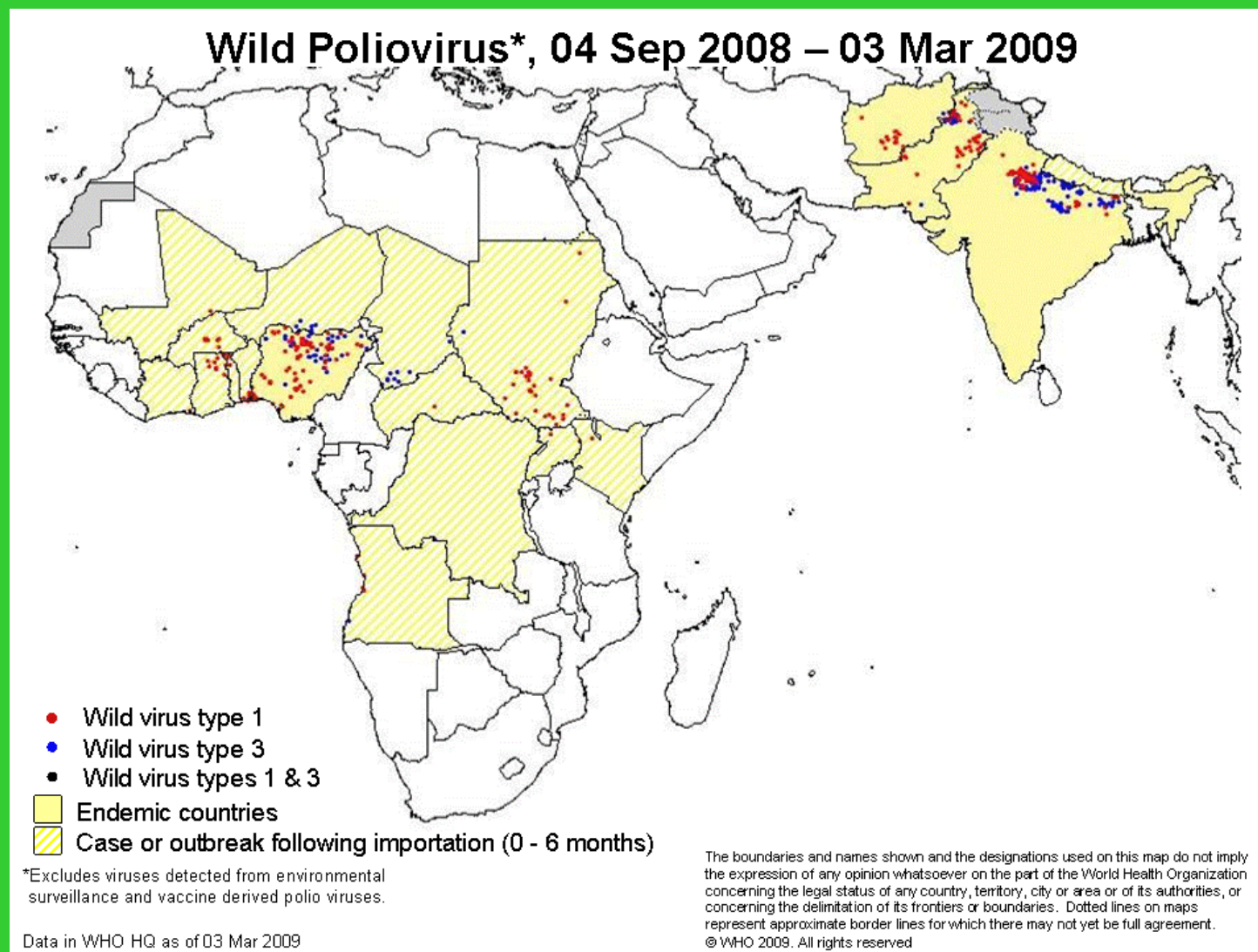
# Poliomyelitis vaccination (WHO 2006)

"For those who have received  $\geq 3$  doses of OPV, it is advisable to offer another dose of polio vaccine as a **ONCE-ONLY** dose to those traveling to endemic areas"



-  Certified free of polio
-  Free of polio since 2000 or earlier
-  Poliomyelitis not yet eradicated (incl. imports)

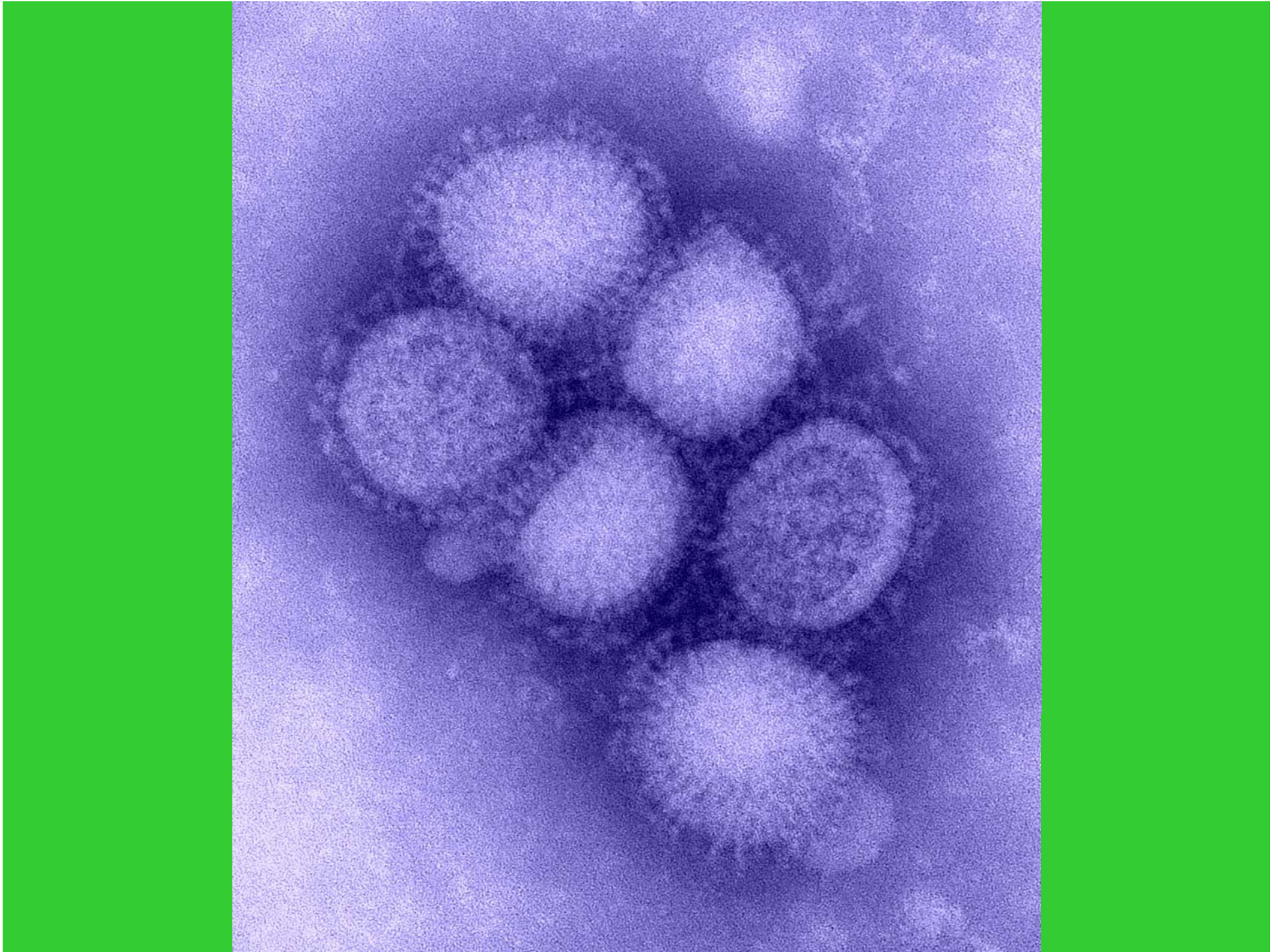
## Wild Poliovirus Weekly Update



# Poliomyelitis

- Imported from Nigeria into Saudi Arabia in 2004
- Since 2005: requirement for documented proof of up to date oral vaccination
  - 6 weeks before application for a visa
  - in < 15 y old from countries where polio still occur
- + 1 dose administered to all those < 15 y at the border
- IF arriving from India, Pakistan, Afghanistan or Nigeria:
  - ALL pilgrims (regardless of age,..) should receive
    - 1 dose 6 weeks prior to departure
    - 1 dose at the border





# Influenza (pandemic)

- Vaccination mandatory IF the vaccine is available in the country of origin FOR those pilgrims (risk groups,...)
- IF not available:
  - visa issued;responsability of the health authorities of each country...also responsible for educating / advising !

# Influenza (seasonal)

- Mandatory
  - at least 2 weeks before arriving  
in Saudi Arabia

IF available in the country of origin

# Yellow fever

- Required for all pilgrims arriving from or transiting through any country infected with yellow fever
- → **For Belgium:** important only if the pilgrim is first going to a/his subsaharian country of origin
- Valid if  $> 10$  days and  $< 10$  years



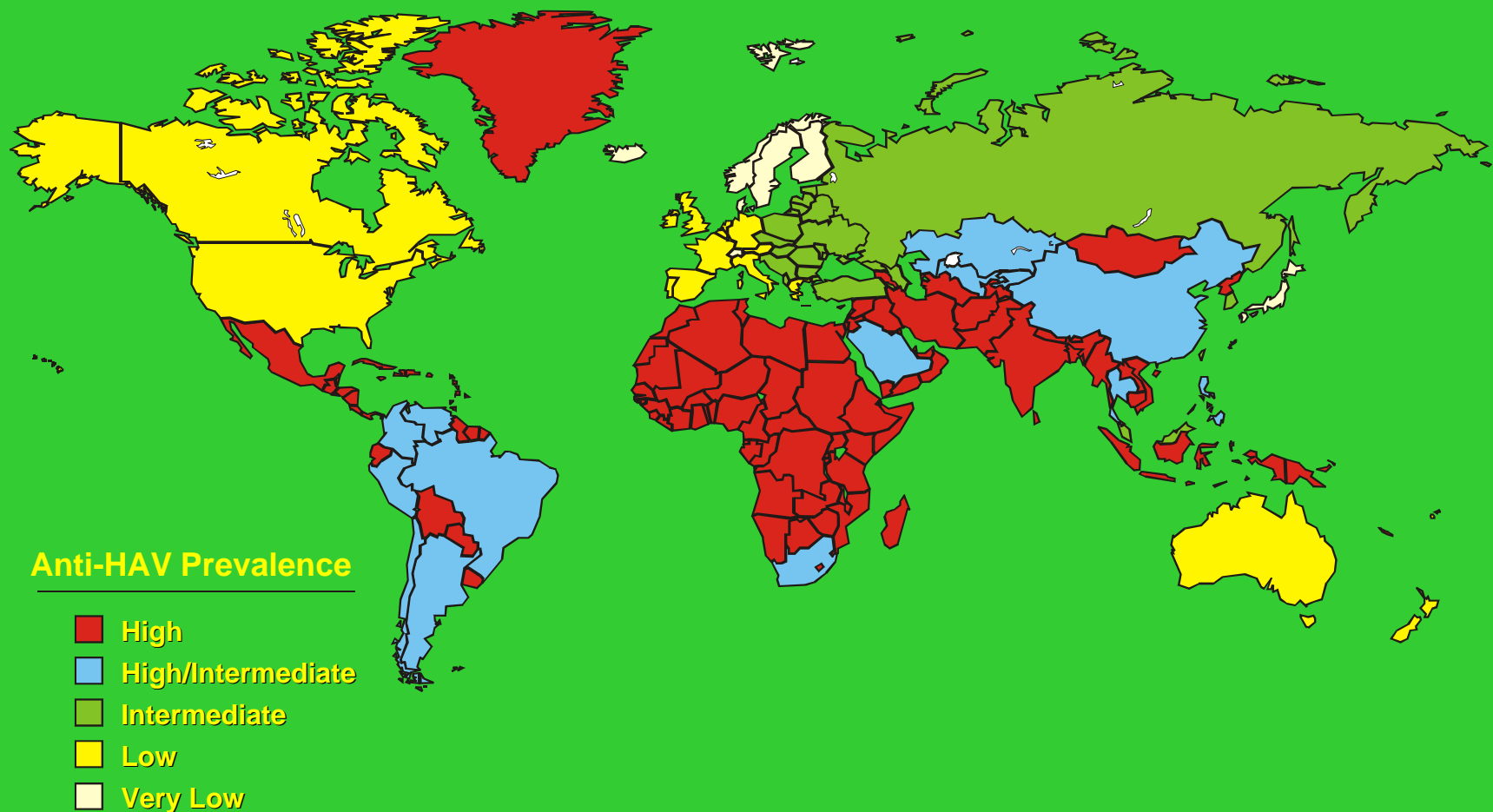
## Yellow fever-endemic zones in Africa, 2007.



# Hepatitis A

- S Arabia: High/moderate endemicity country  
...but most pilgrims coming from  
high endemicity countries !
- (Most) older pilgrims naturally protected  
→ vaccination for youngsters born  
in european countries!

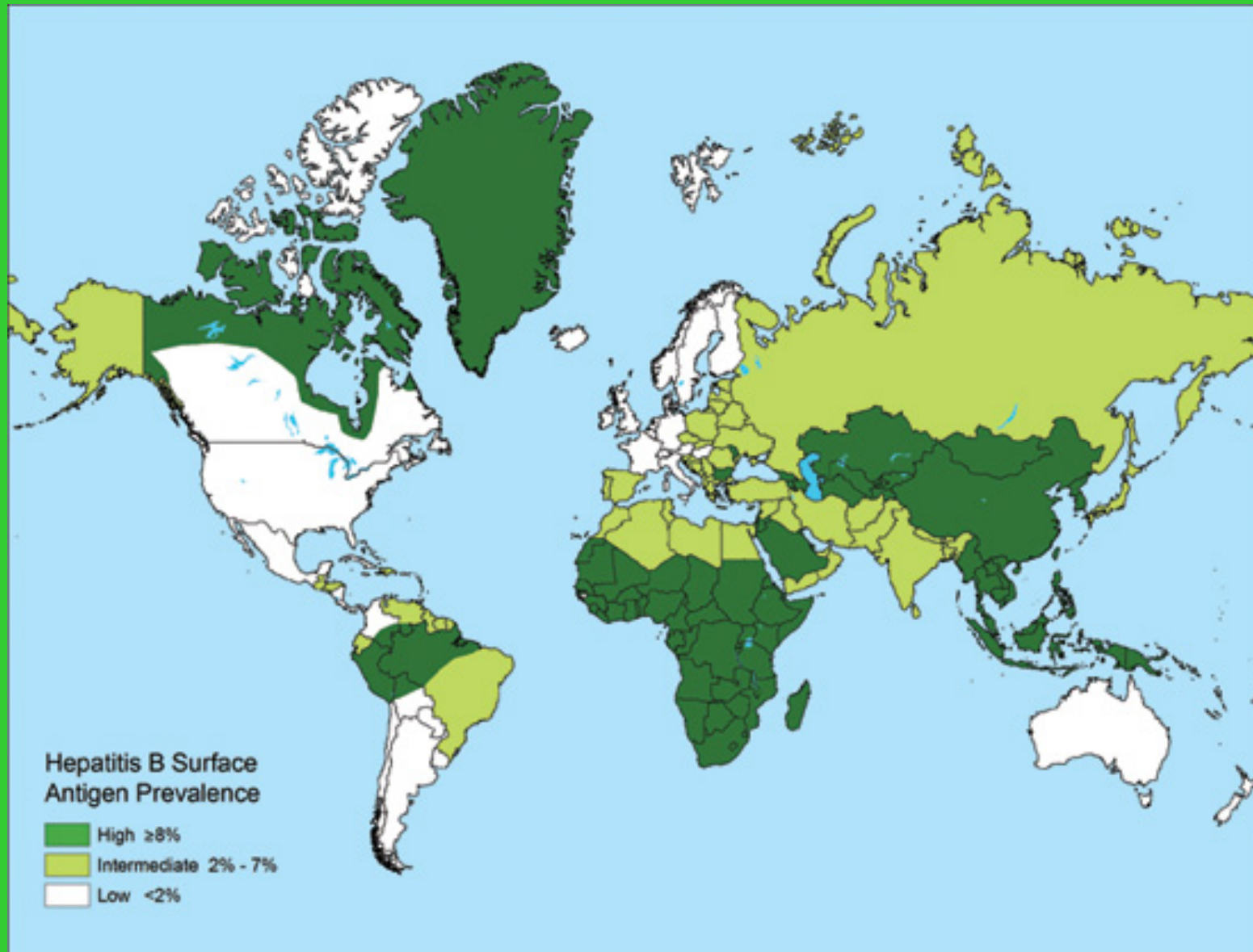
# Geographic Distribution of Hepatitis A Virus Infection



# Hepatitis A

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## Prevalence of chronic infection with hepatitis B virus, by country, 2006



# Hepatitis B

- Low risk  
(no sexual relation allowed for pilgrims)
- Mostly linked to ritual shaving  
by non official barbers  
→ either vaccinate and /or advice to :
  - be shaved by official barbers
  - use your own razor blades..!...Hepatitis C....

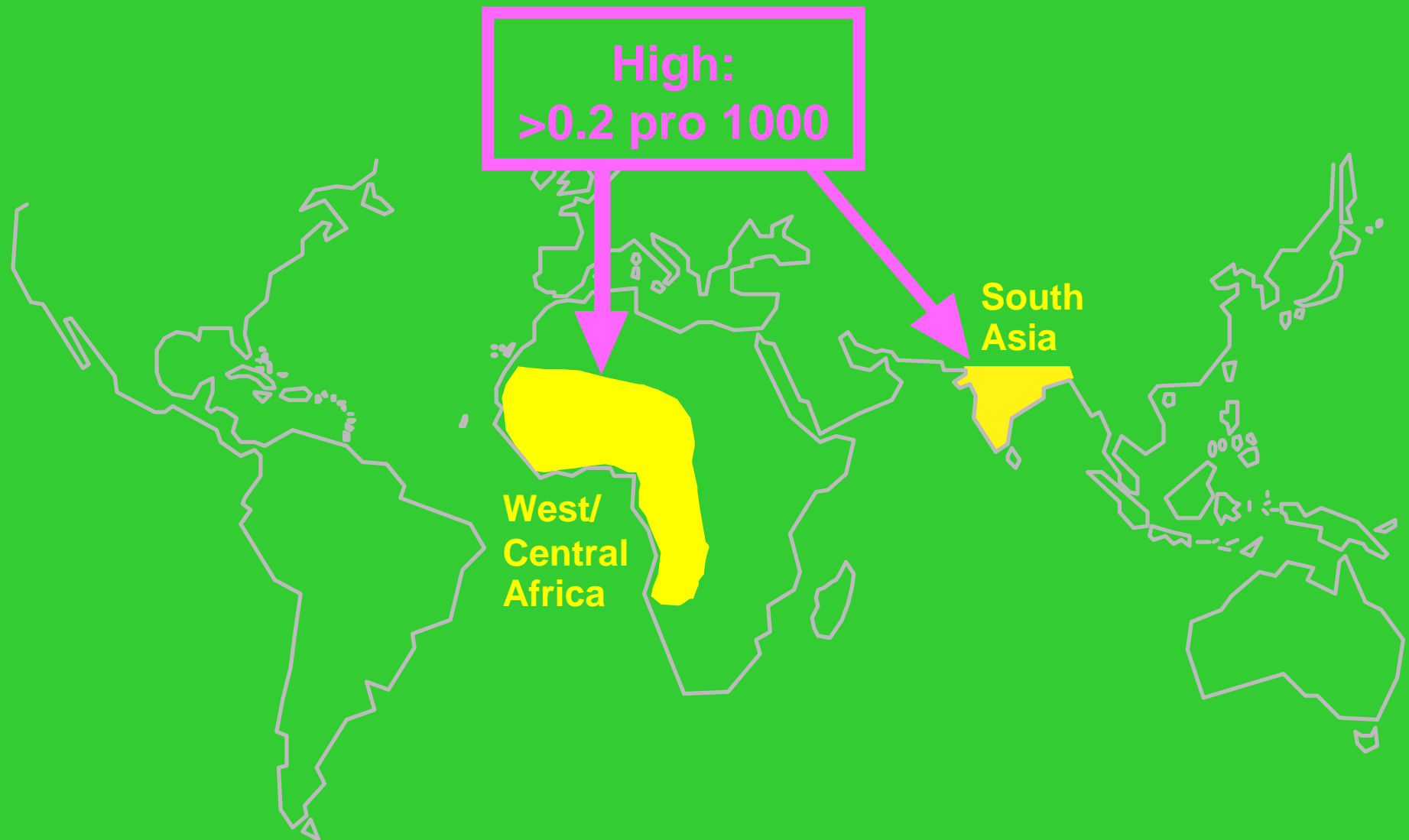


# Typhoid fever

- Few data available....
- Local risk seems low for most
  - -vaccine not obviously useful for most pilgrims
  - consider for long stays in « poor » conditions



# Typhoid fever – estimated incidence rates



# Dengue fever

- Low endemicity around Medine/Mecca
- Few available data/transparency...
  - Non official reports:
    - 150 hospitalized in Mecca/3 months
    - +/- 100 cases/month in Jedda
    - beginning 2009

# Sand fly fever

- Small risk of this endemic viral disease,  
especially between april and october  
in periurban areas
- Same protection as for dengue:  
DEET 20-30% during the day

# Malaria

- NO risk around Mecca-Medine-Jedda



# Diarrhea

- Water from distribution systems is safe in major urban areas, as the Holy Places
- Remaining risk linked to local food but few epidemiological data ...
- Risk of deshydration, especially during the summer months!

NB:importation of food is not allowed  
no cholera anymore since 1989



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# Infections of the U/LRT

- Most frequent complain and reason for local hospital admission...

...but nothing to do specifically...

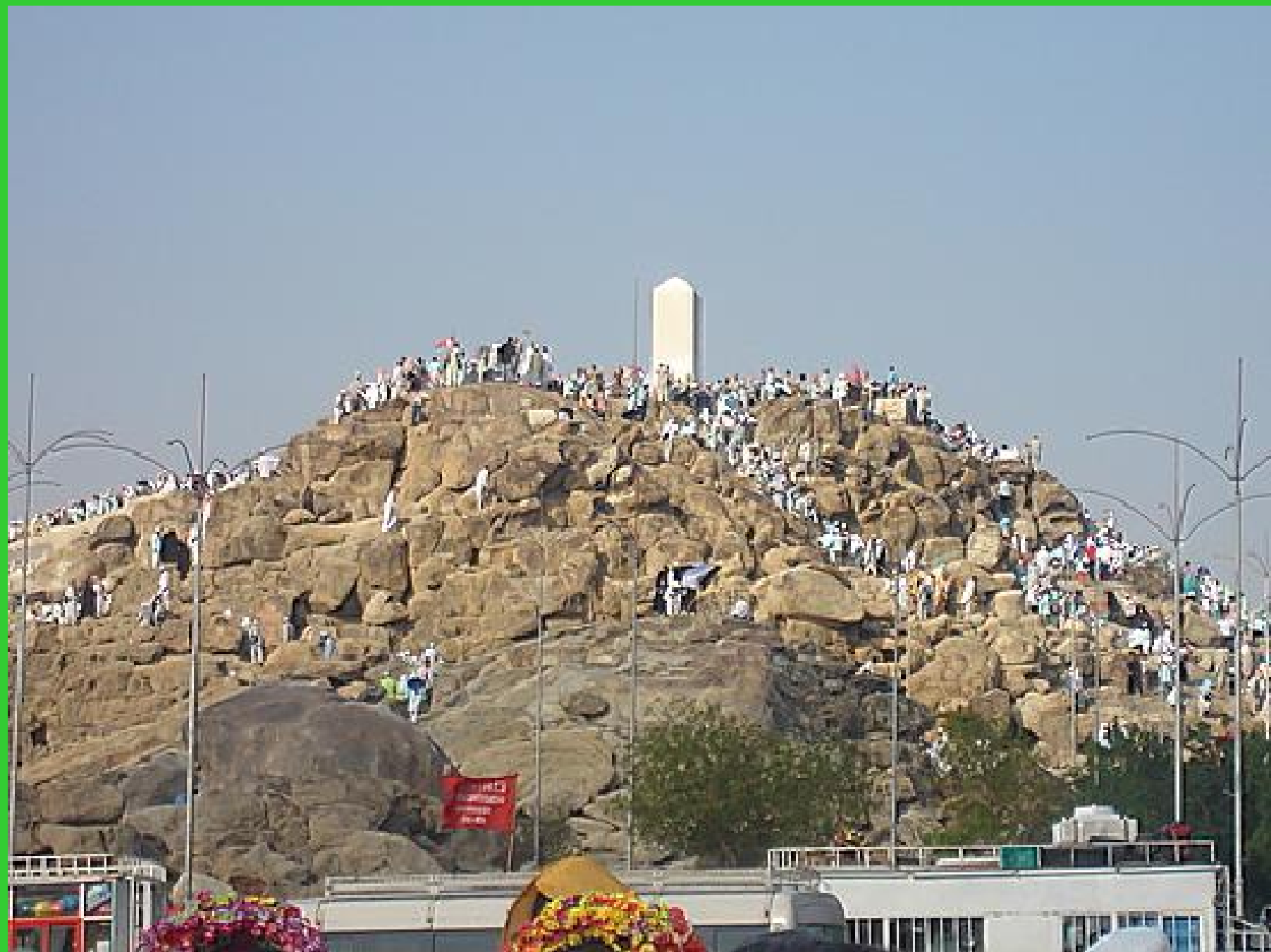
...outside flu vaccine!

# Trauma

- Mostly focused on the Jamaraat sites:  
occasional unfortunate crowd stampedes  
(380 death in 2006...)

But may happen everywhere...









# Cardiovascular diseases

- Most frequent cause of death...

As in other travellers worldwide !

# MABROUK HADJ

