

Ebola & Co: Globale Infektionen – Neue Seuchen und alte Bekannte

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Der Triumph des Todes (Pieter Bruegel, 1562)

Impfung



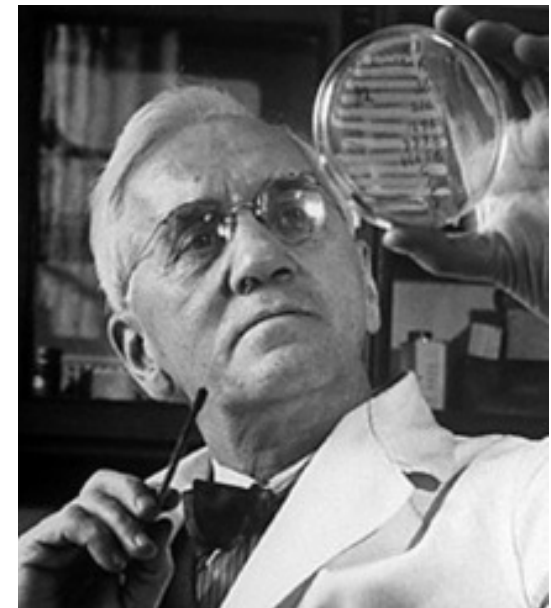
Edward Jenner
1749-1823

Krankheitserreger



Robert Koch
1843-1910

Antibiotika



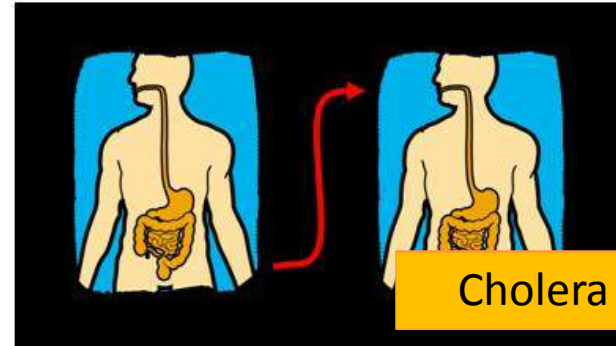
Alexander Fleming
1881-1955

Tröpfcheninfektion



Tuberkulose

Fäkal - orale Übertragung



Cholera

Stechmücken



Malaria

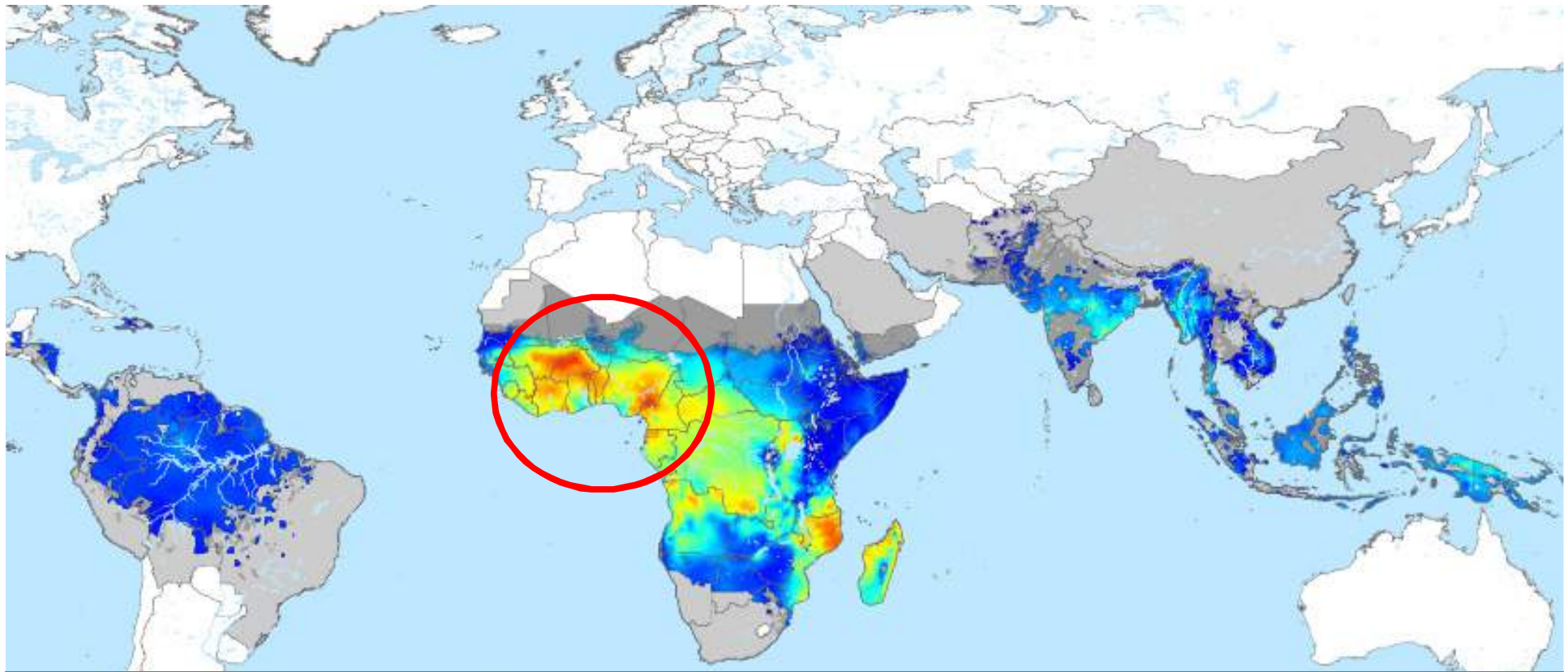


HIV-Aids

Antiinfektiva



- Pneumonie
 - Nierenbeckenentzündung
 - Tuberkulose
 - Syphilis
 - Pest
 - Malaria
-
- Insektizide (DDT)



Malariaverbreitung (*P. falciparum*)

Source: Malaria Atlas Project MAP

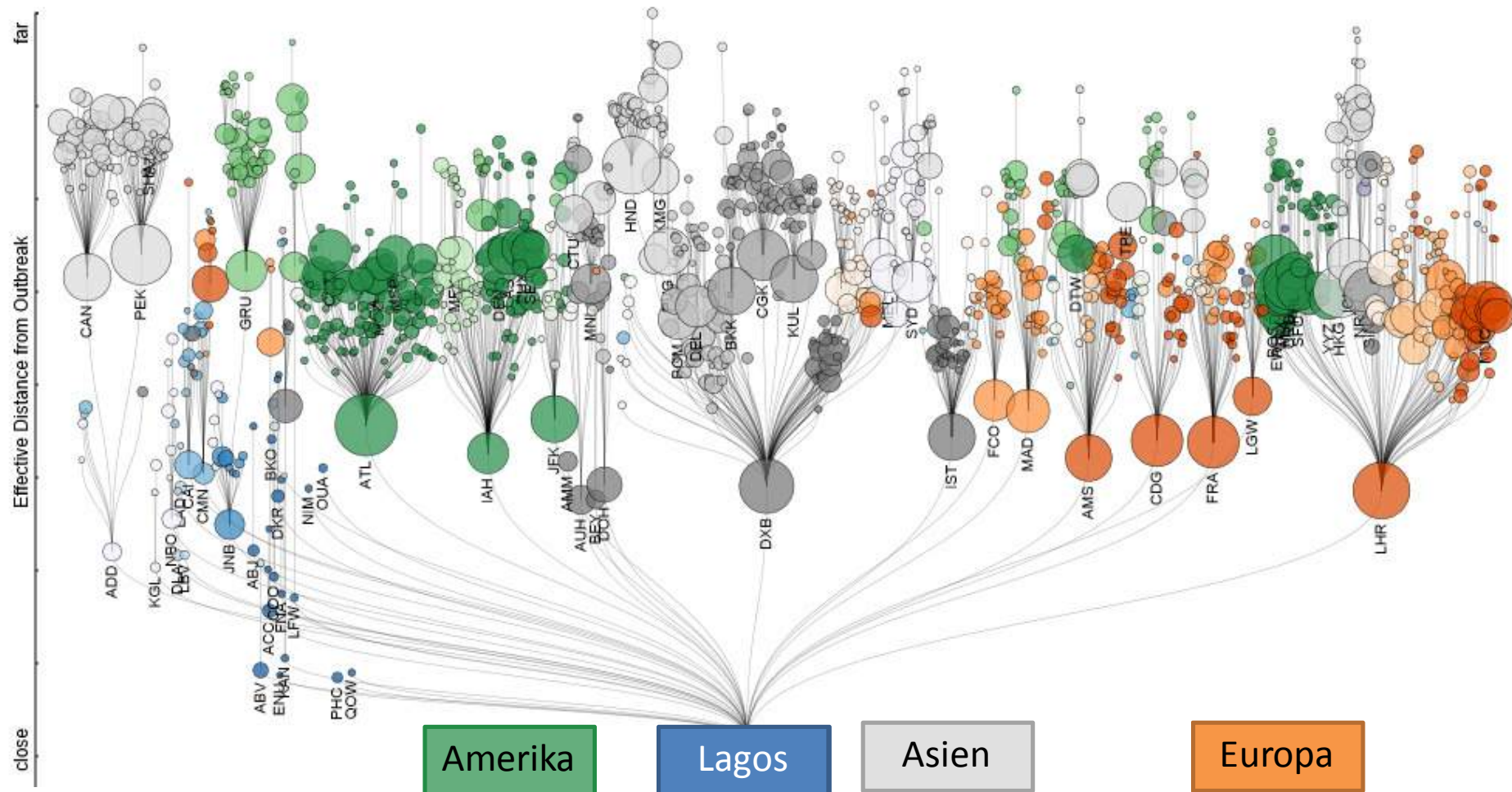
Beölkerungswachstum
Technischer Fortschritt
Migration
Landnutzung
Urbanisierung

Anthropozän



Der Mensch ist zu einem der wichtigsten Einflussfaktoren auf die biologischen, geologischen und atmosphärischen Prozesse auf der Erde geworden.

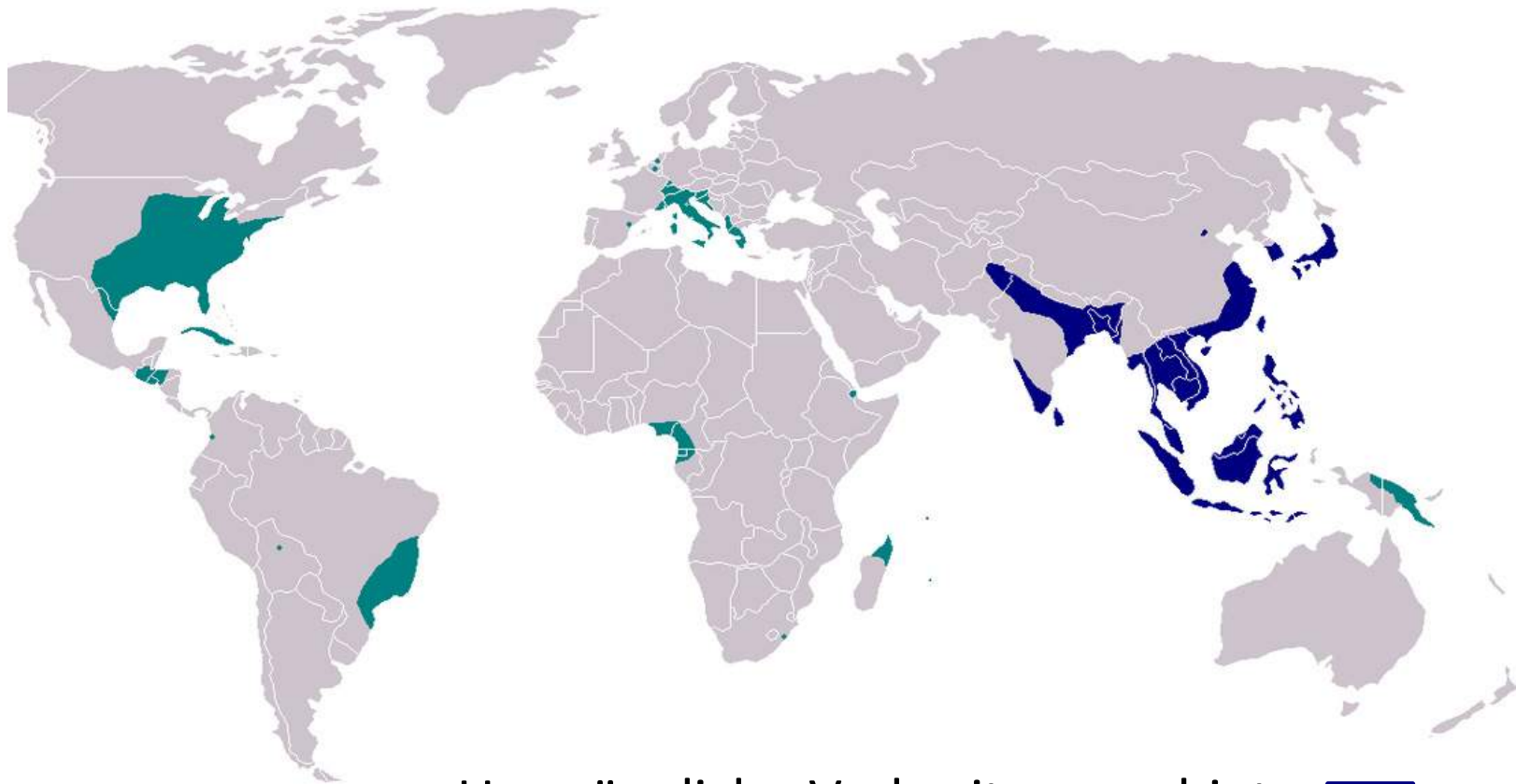
Menschen, Tiere, Waren, Geld, Information



2014 Ebola Outbreak: Worldwide Air Transportation and Relative Import Risk

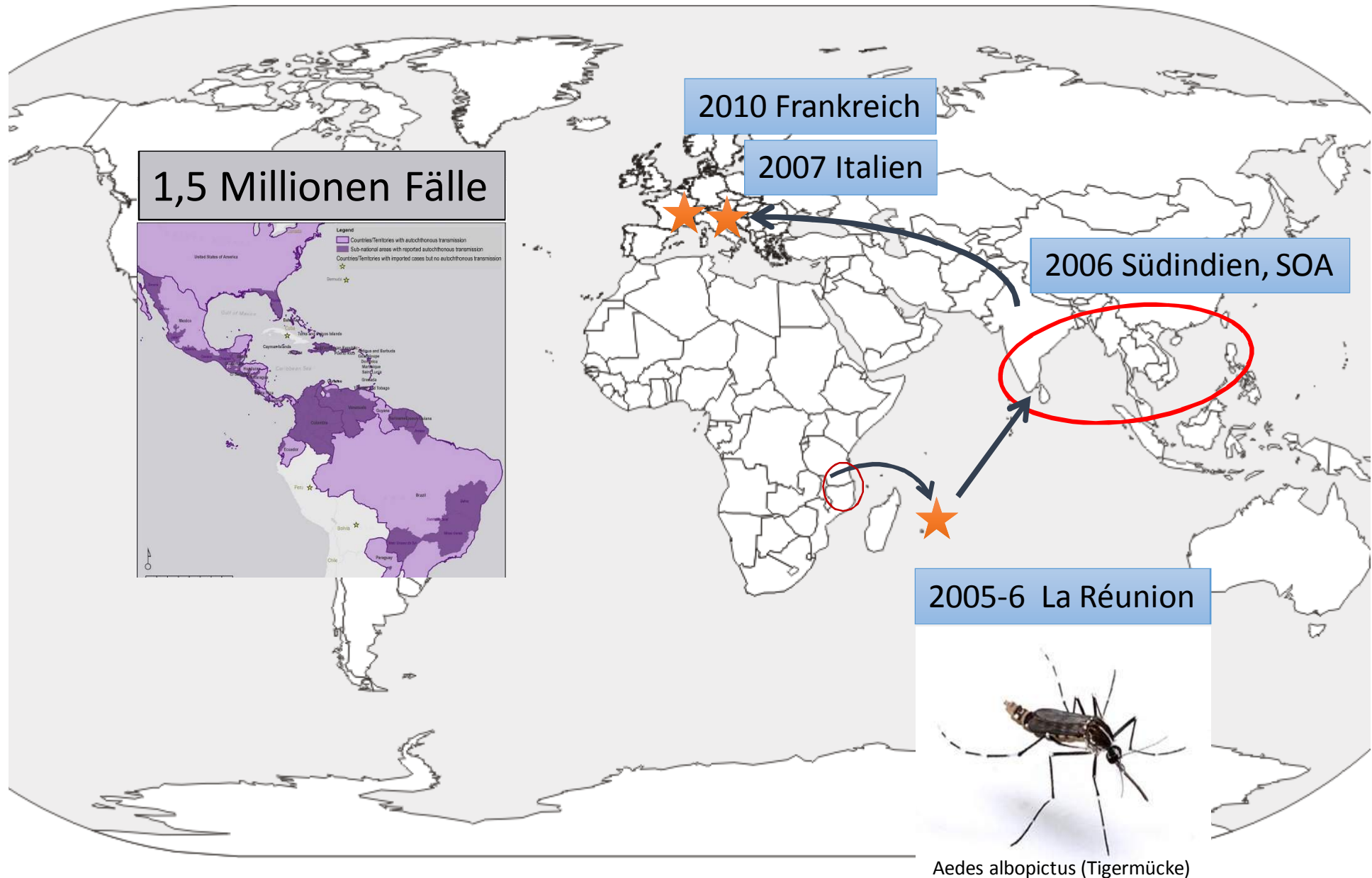


Aedes albopictus (Tigermücke)



Ursprüngliche Verbreitungsgebiete 
und Ausbreitung in den letzten 30 Jahren 

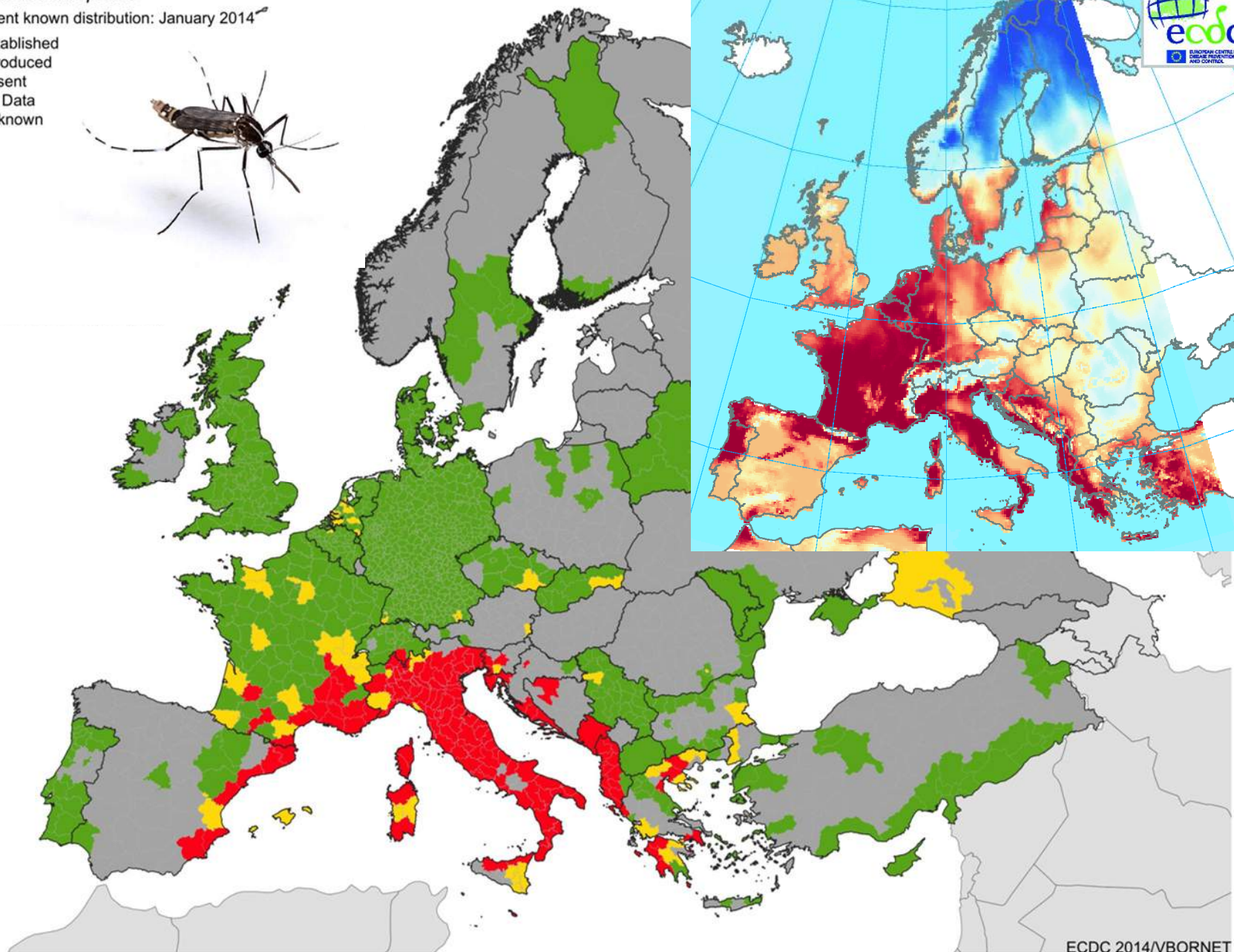
Chikungunya – Der gebeugte Mann

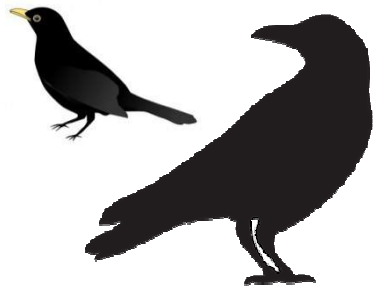


Aedes albopictus

Current known distribution: January 2014

- Established
- Introduced
- Absent
- No Data
- Unknown

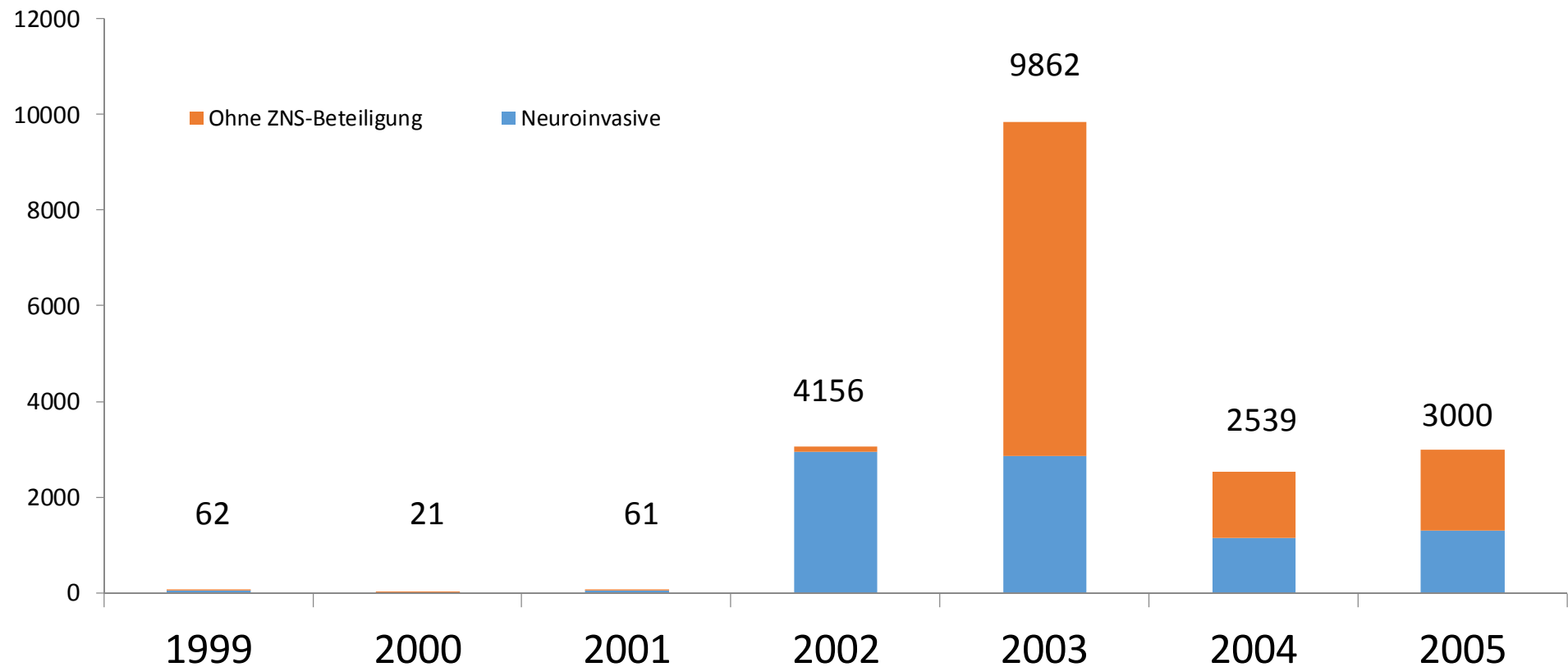




West-Nil-Virus USA



Culex pipiens



West-Nil-Virus Bakersfield (Kalifornien), 2007



EID 14, 11—November 2008

Delinquent Mortgages, Neglected Swimming Pools, and West Nile Virus, California

William Reisen

Schmallenbergvirus

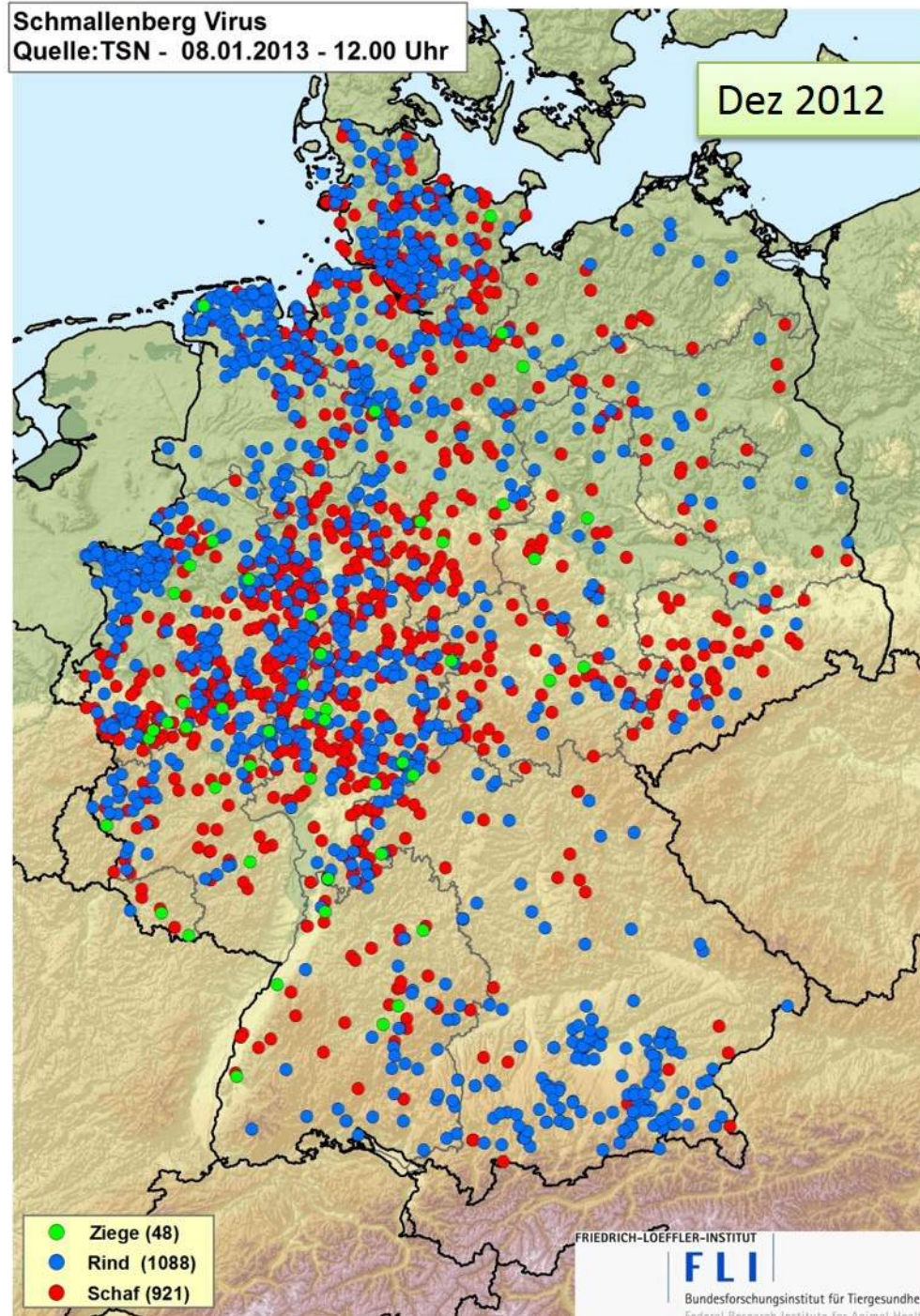
(Nachweis Nov 2011)

- Schafe, Ziege, Rinder
- Foetale Missbildungen



Culicoides
(Gnitzen - Bartmücken)

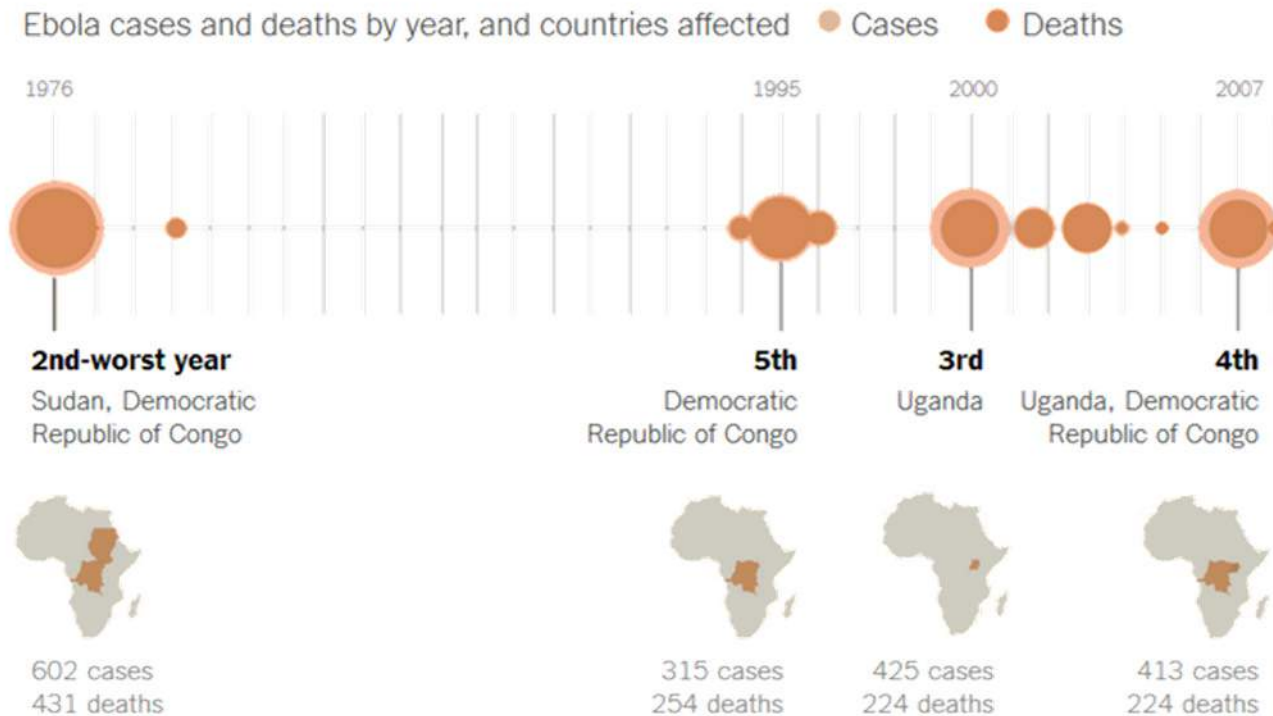




Ausbreitung Schmallenberg-Virus 2012

Ebola

Ebola Ausbrüche seit 1976



Source: World Health Organization

Sporadische Ausbrüche

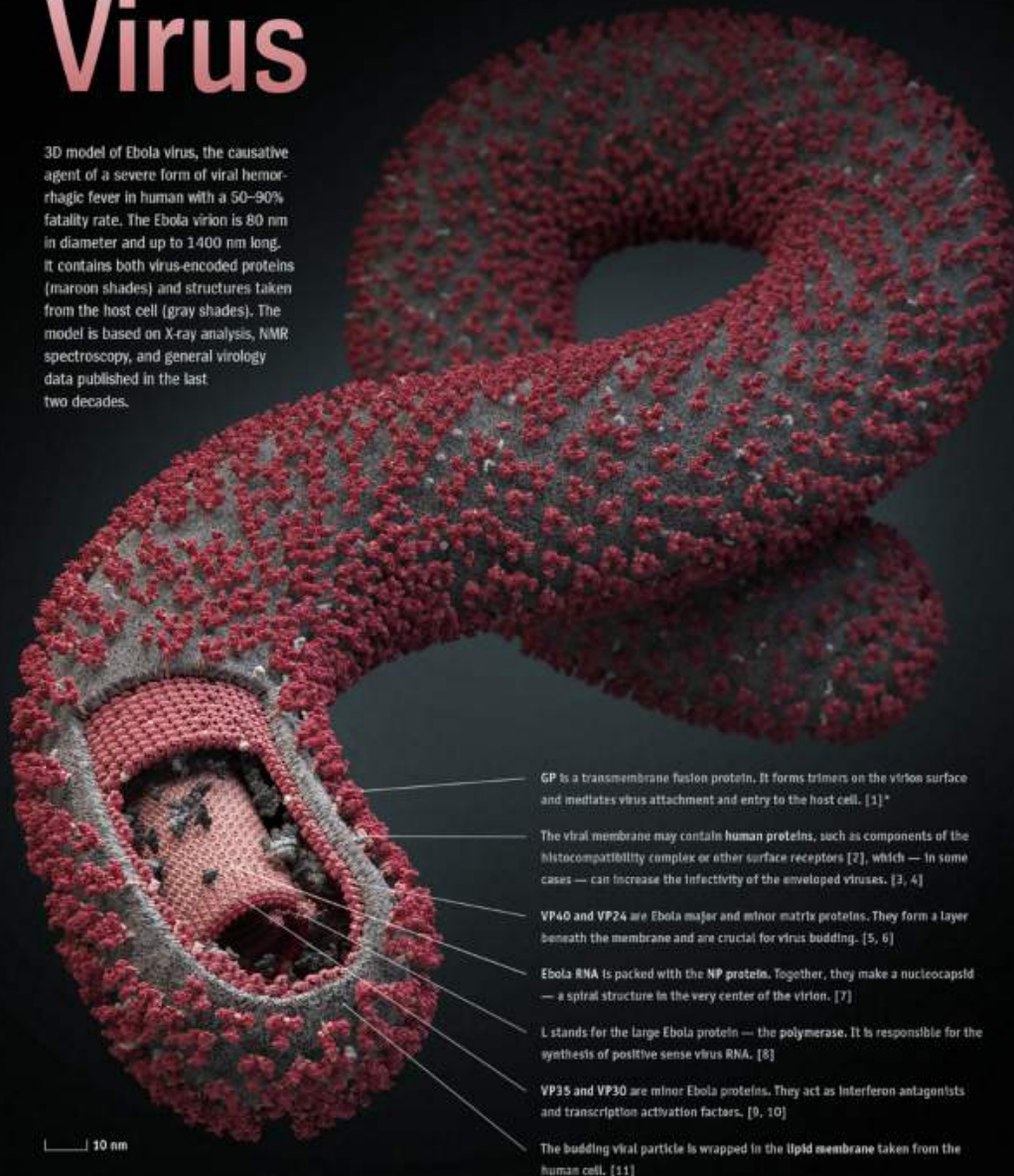
- Kleine Fallzahlen
- Enge Kontaktpersonen
- Nosokomiale Übertragung

Adaptiert von NYT, 2014

The Ebola Virus



3D model of Ebola virus, the causative agent of a severe form of viral hemorrhagic fever in human with a 50–90% fatality rate. The Ebola virion is 80 nm in diameter and up to 1400 nm long. It contains both virus-encoded proteins (maroon shades) and structures taken from the host cell (gray shades). The model is based on X-ray analysis, NMR spectroscopy, and general virology data published in the last two decades.



GP is a trans-membrane fusion protein. It forms trimers on the virion surface and mediates virus attachment and entry to the host cell. [1]*

The viral membrane may contain human proteins, such as components of the histocompatibility complex or other surface receptors [2], which — in some cases — can increase the infectivity of the enveloped viruses. [3, 4]

VP40 and VP24 are Ebola major and minor matrix proteins. They form a layer beneath the membrane and are crucial for virus budding. [5, 6]

Ebola RNA is packed with the NP protein. Together, they make a nucleocapsid — a spiral structure in the very center of the virion. [7]

L stands for the large Ebola protein — the polymerase. It is responsible for the synthesis of positive sense virus RNA. [8]

VP30 and VP30 are minor Ebola proteins. They act as interferon antagonists and transcription activation factors. [9, 10]

The budding viral particle is wrapped in the lipid membrane taken from the human cell. [11]

This model contains accurate models of 11 types of Ebola and human proteins, 18900 nucleotides of genomic RNA and more than 2.5 million lipid molecules.

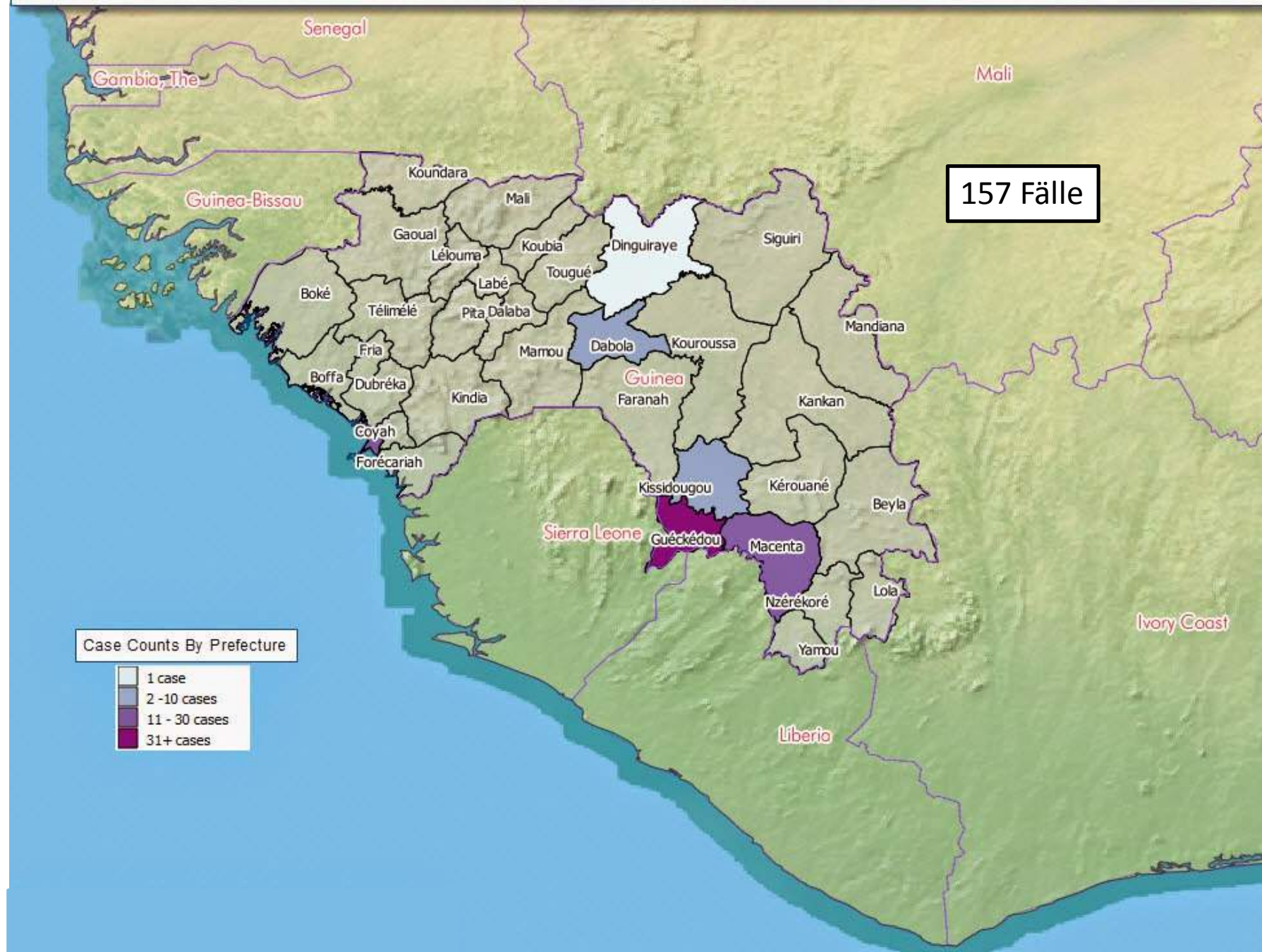
*For more information and references visit www.visualsciencecompany.com/ebola

- RNA-Virus (Filoviridae)
- Seit 1976 bekannt
- Schwächt Immunantwort
 - IFN-Signalweg
 - Schädigung dendritische Zellen und Lymphozyten
- Krankheitsbild:
 - Fieber
 - Durchfälle
 - Erbrechen
 - Blutungen

Ebola Behandlungseinheit (MSF)



Ebola Case Counts (Confirmed and Suspected), Guinea, West Africa, April 8, 2014



Ebola Fallzahlen

(7.1.2015)

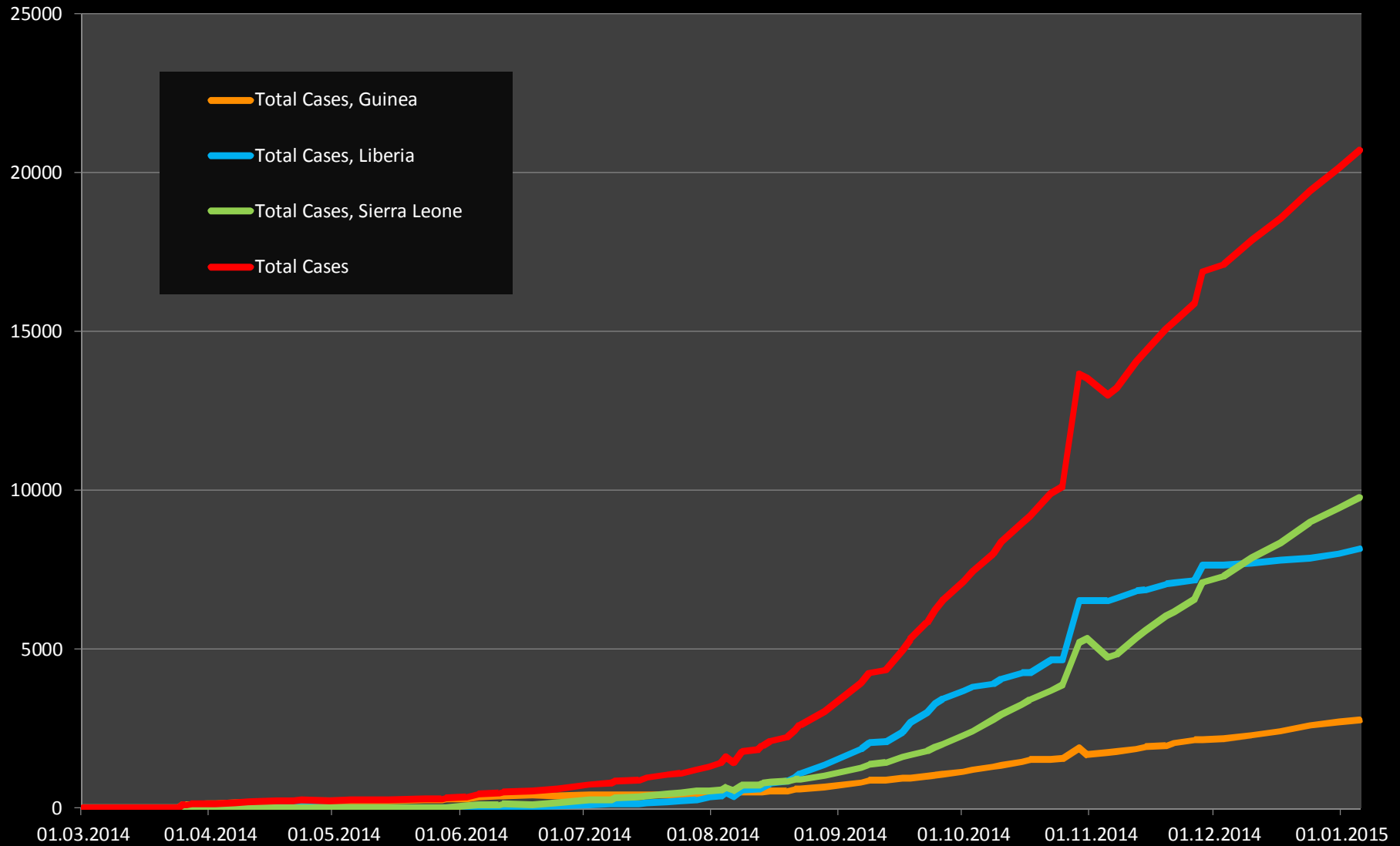
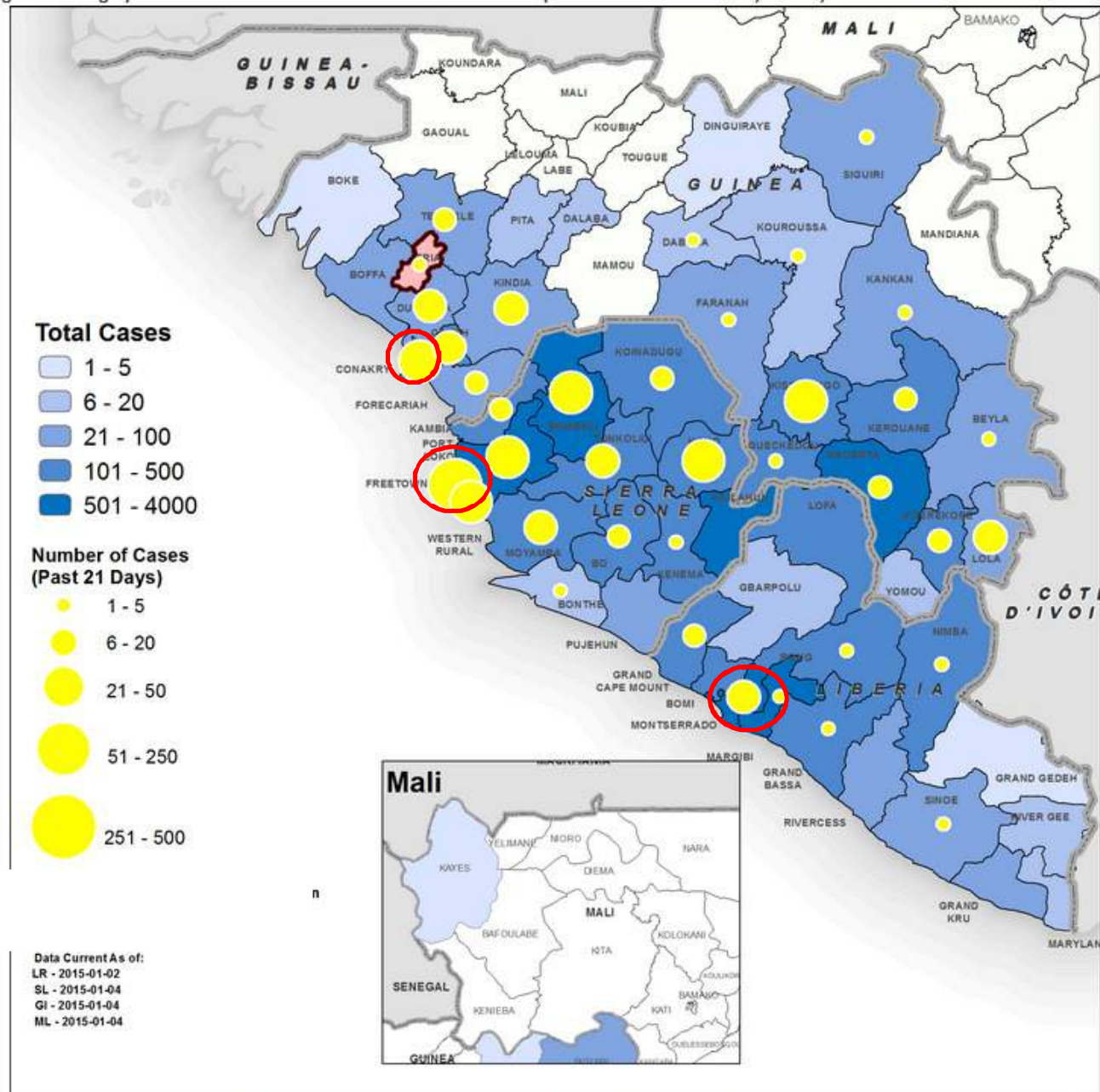


Figure 4: Geographical distribution of new and total confirmed and probable* cases in Guinea, Liberia, Mali and Sierra Leone



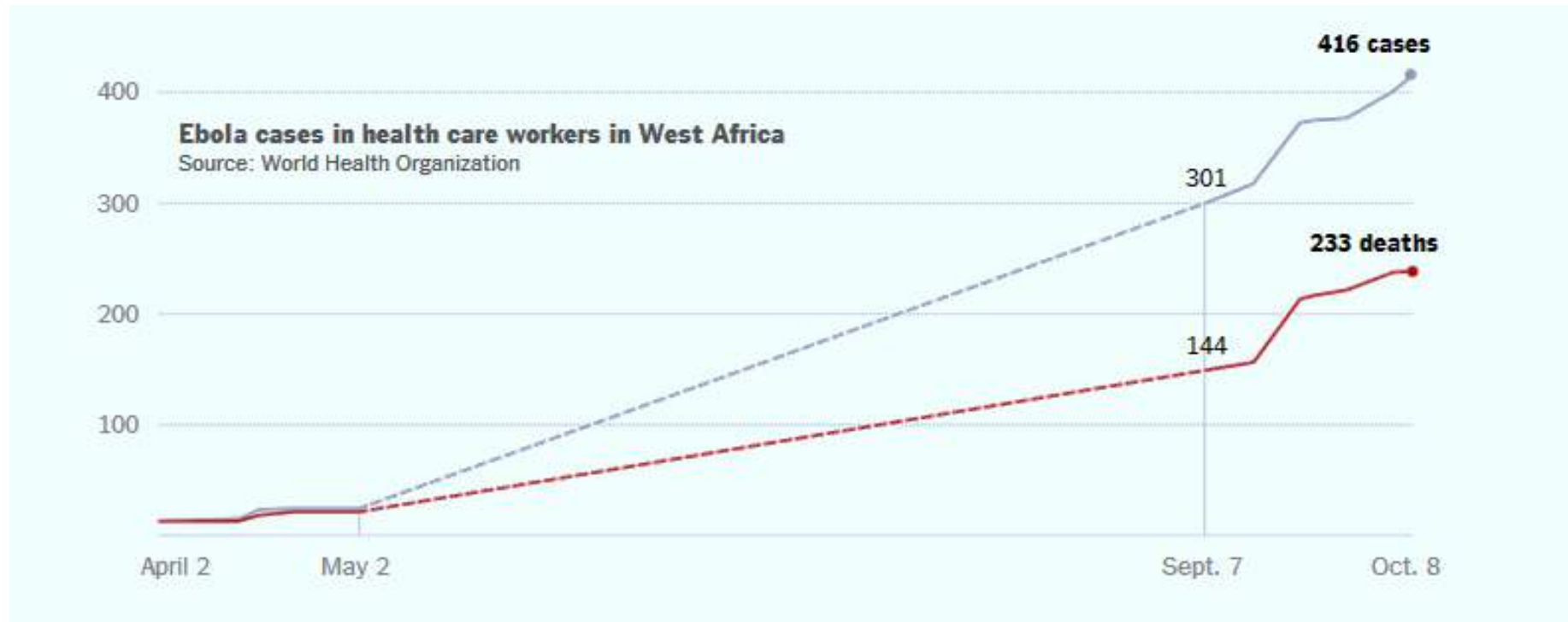
Data are based on situation reports provided by countries. The boundaries and names shown and the designations used on this map do not imply the





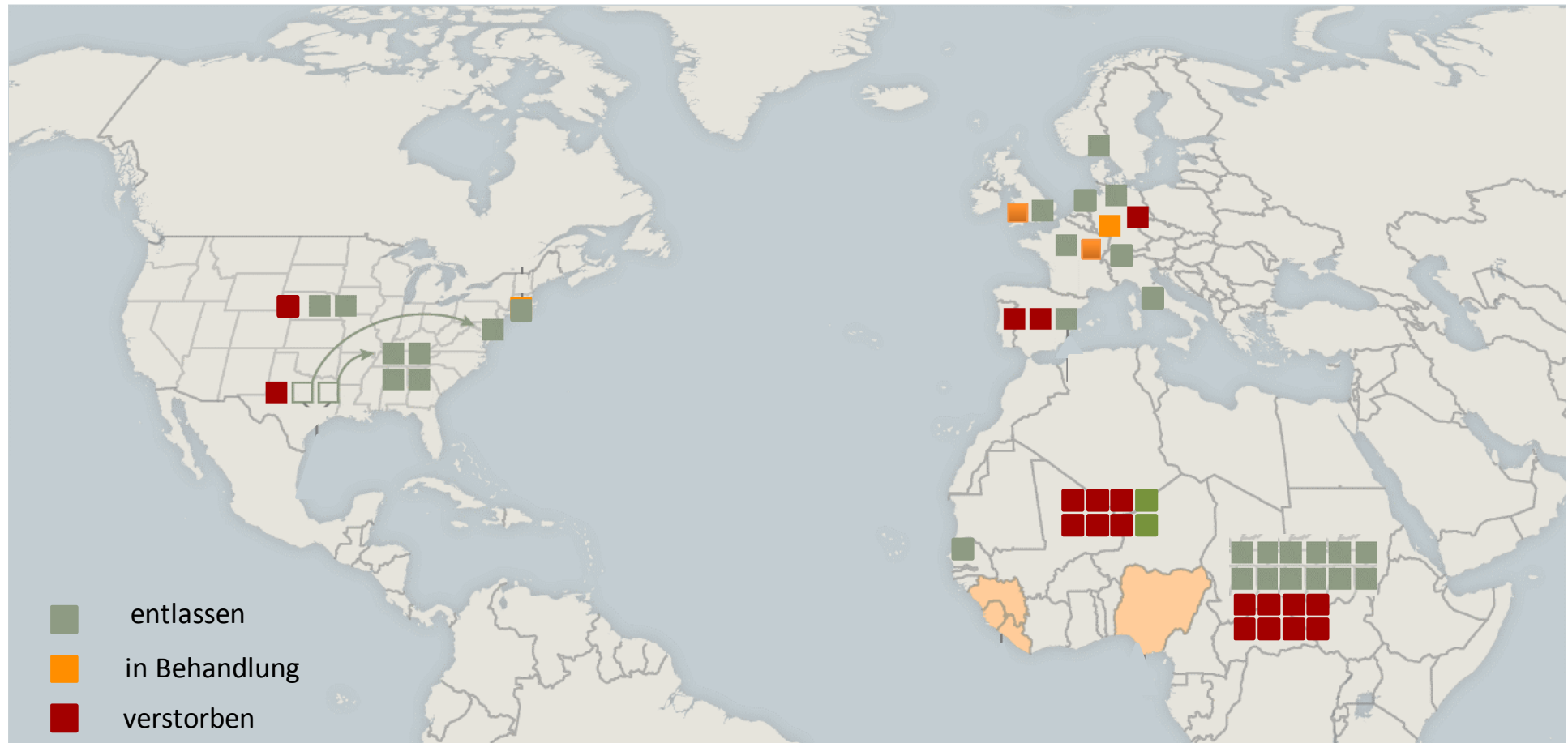
Geburtshilfe, Krankenhaus Koyom

Health Care workers Ebola

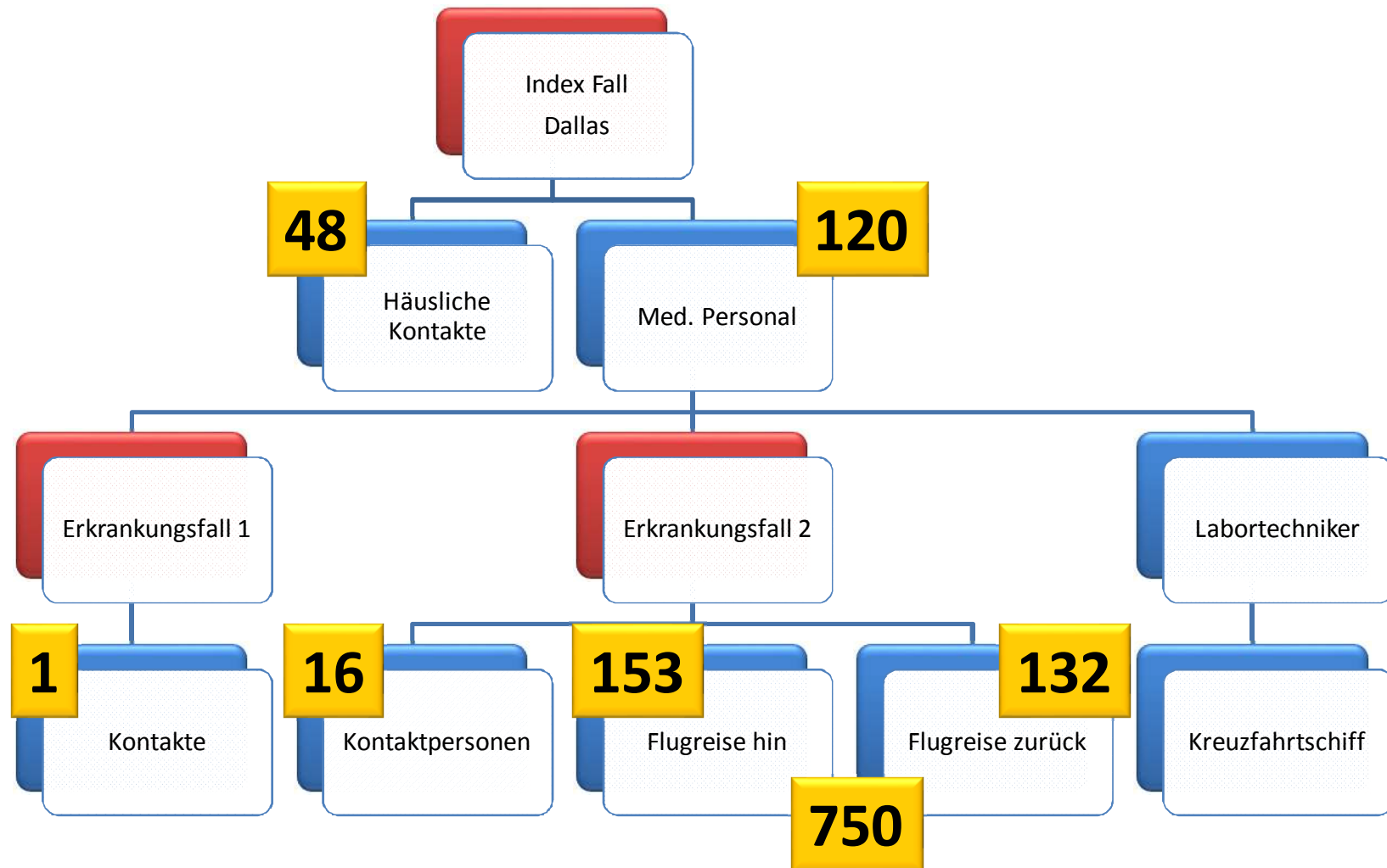


Ebola-Fälle außerhalb Westafrikas

(Stand 5. Jan. 2015)



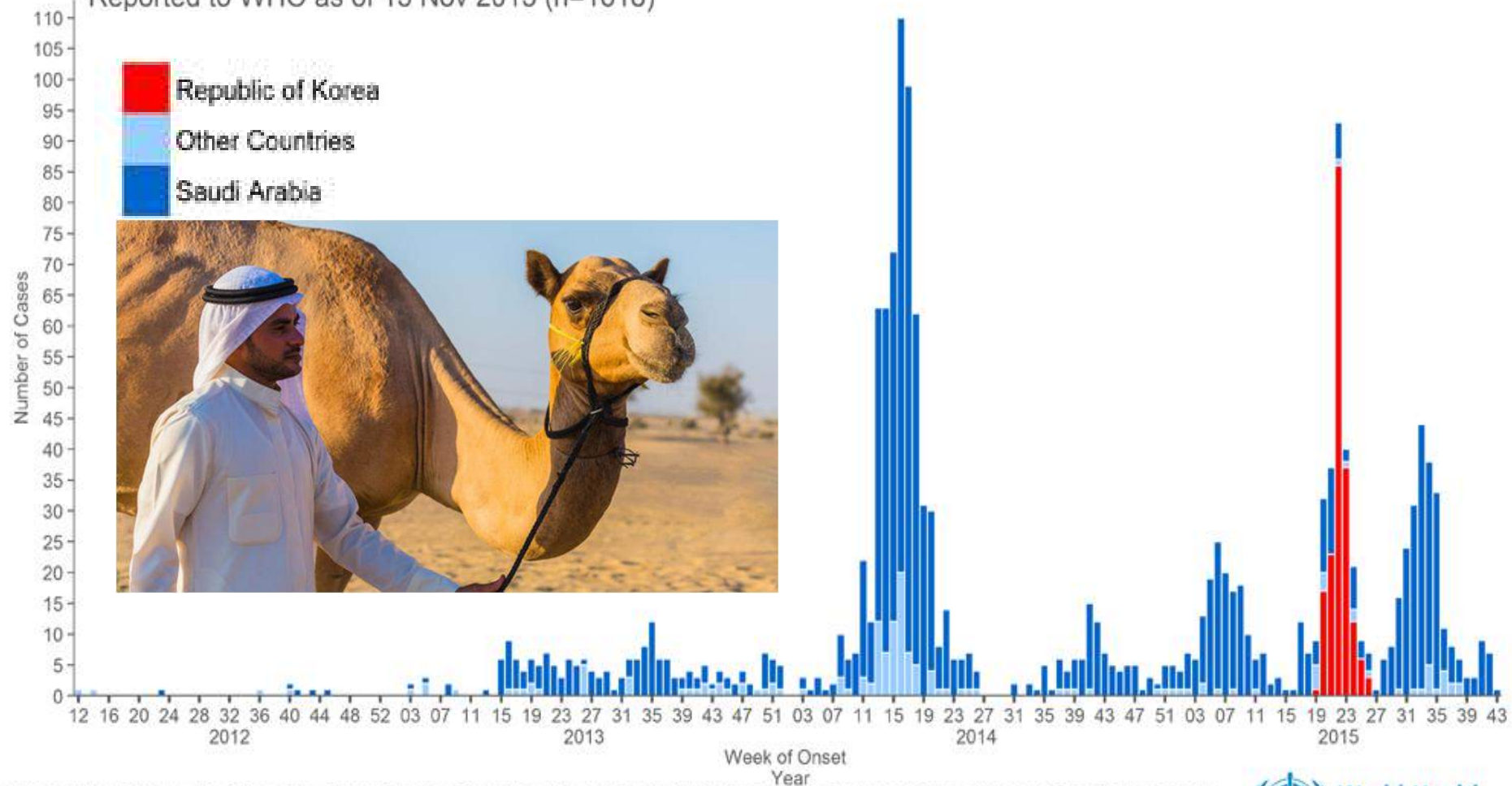
Kontaktpersonen



MERS-CoV (Middle East respiratory syndrome coronavirus)

Confirmed global cases of MERS-CoV

Reported to WHO as of 13 Nov 2015 (n=1618)



메르스 전파 경로

확진 186명(치료 4명, 퇴원 145명, 사망 37명)

메르스 핫라인(☎ 109)

[인터랙티브] 메르스 감염 실태, 한눈에 보기

[인포그래픽] 그림으로 보는 메르스 발생 현황

[인포그래픽] 지도·통계·도표로 보는 '메르스'

[인터랙티브] '국민안심병원' 쉽게 확인하세요

확진자	#1확진자
성별 / 나이	남 / 68세
분류 / 구분	1차감염자 / 일반인
확진일자	2015-05-20
감염장소	중동(최초감염자)
감염경로	첫번째 확진자(#1)
상태	퇴원(2015-09-25)

Samsung
Medical
Centre

Seoul Asan Medical Clinic

Pyongtaek St. Mary's

Konyang University

환자	
가족/간병인/ 의료지원인력	
의사/간호사	
퇴원자	
사망자	
전파 기간(2주) 경과 병원	
2차 감염경로	
3차 감염경로	
4차 감염경로	

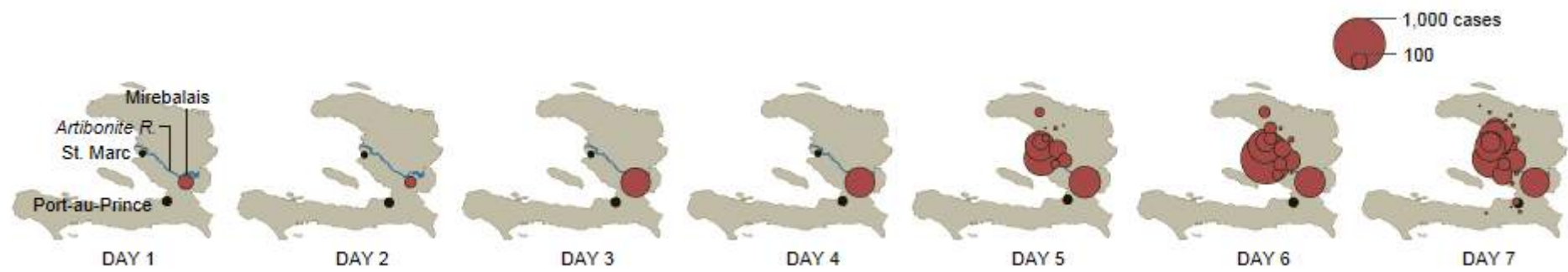
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최종 업데이트 : 2015.10.25(일) 21:00

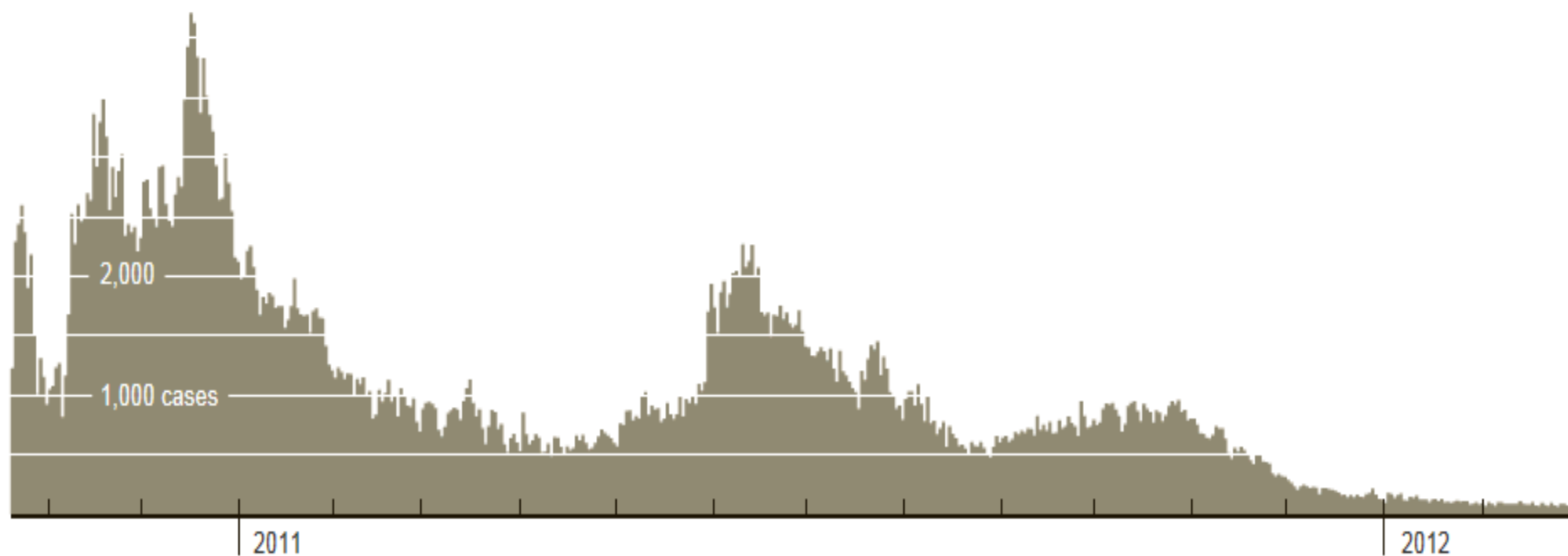
Cholera nach Erdbeben Haiti 2010



"Haiti earthquake of 2010". Photograph. *Encyclopædia Britannica Online*. Web. 09 Nov. 2015.



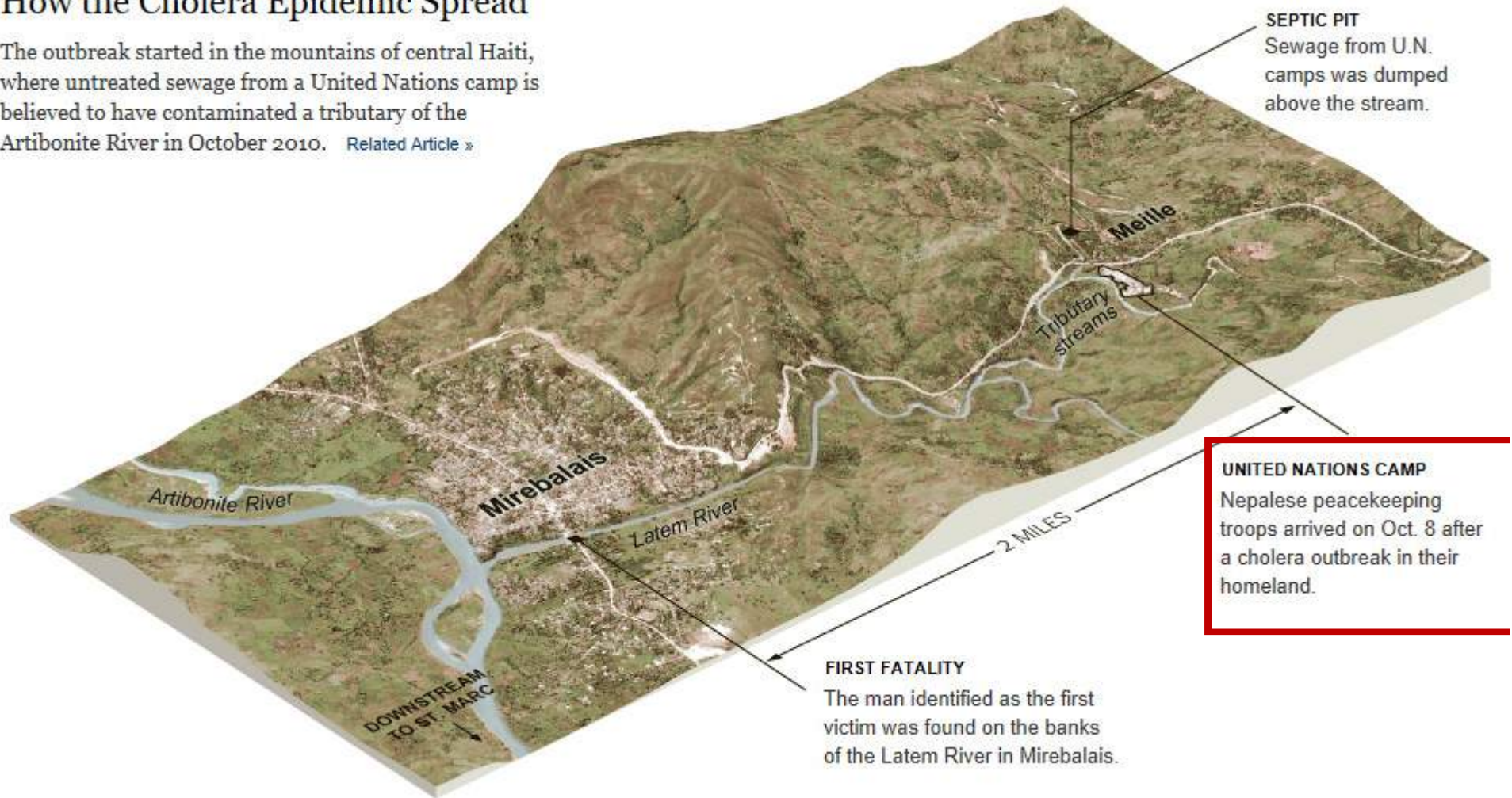
Cholera Haiti 2010-2012



Quelle: New York Times Interactive

How the Cholera Epidemic Spread

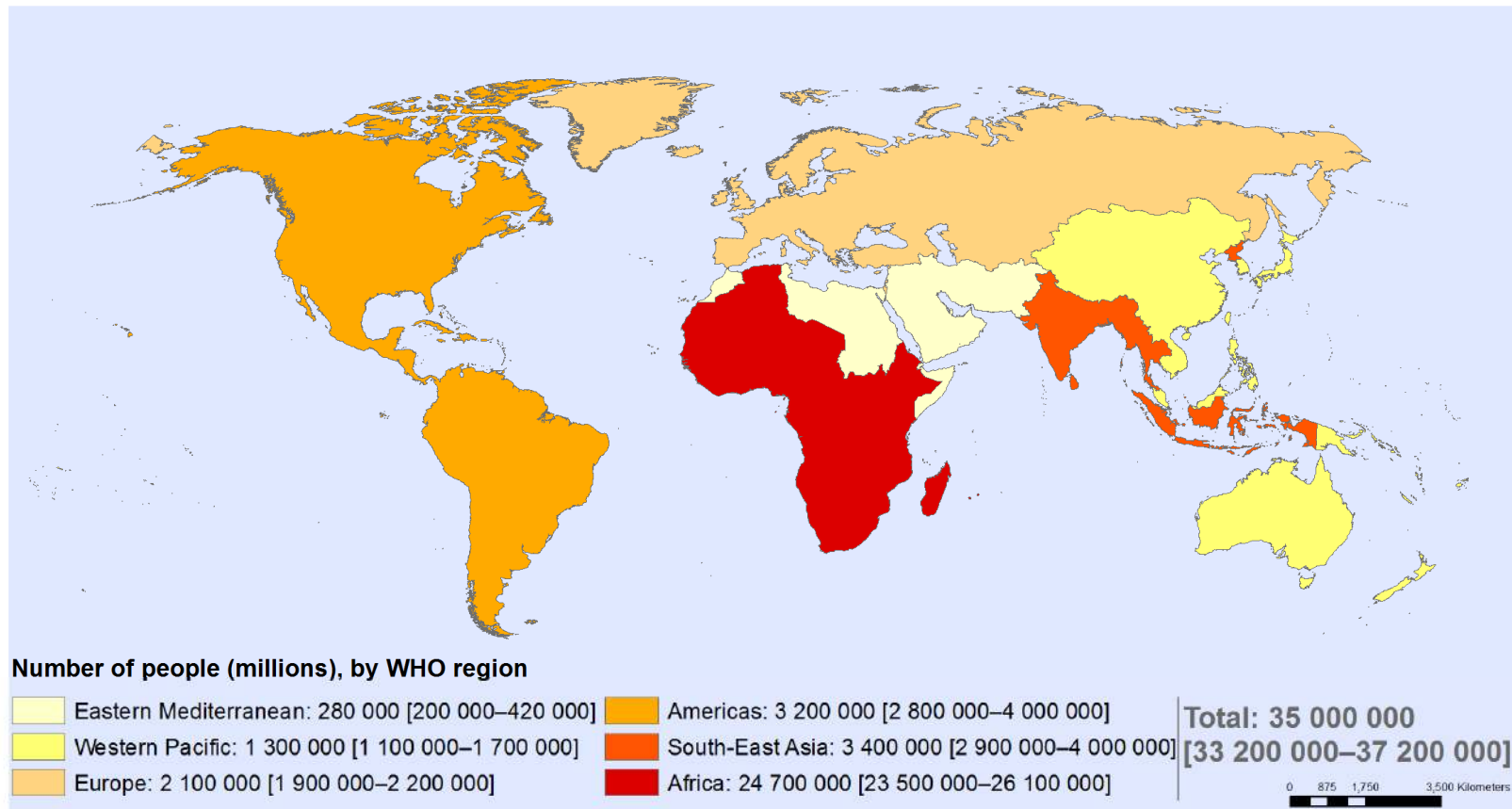
The outbreak started in the mountains of central Haiti, where untreated sewage from a United Nations camp is believed to have contaminated a tributary of the Artibonite River in October 2010. [Related Article »](#)



Quelle: New York Times Interactive

HIV-Aids

Adults and children estimated to be living with HIV, 2013 By WHO region



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

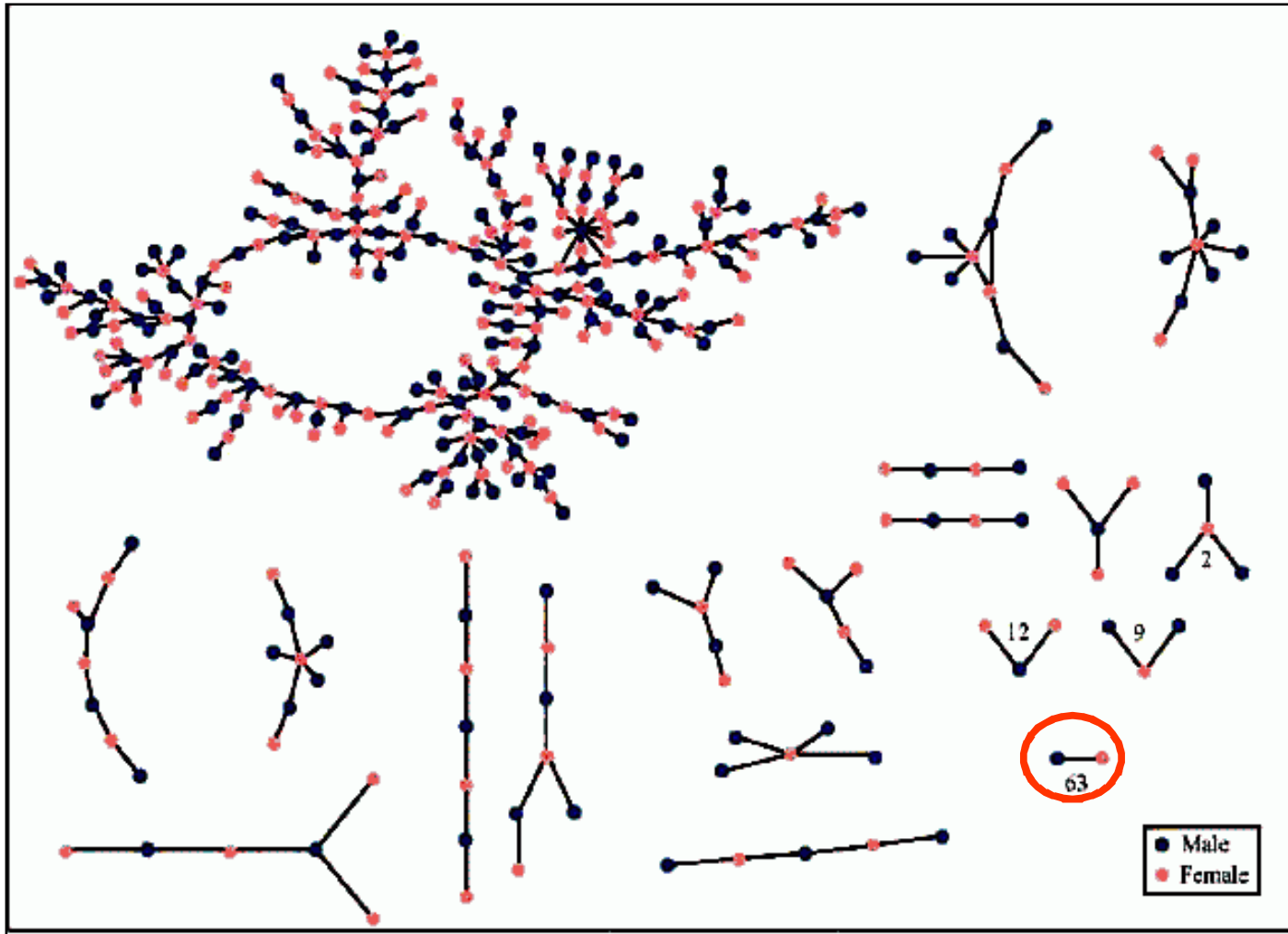
Data Source: World Health Organization
Map Production: Health Statistics and
Information Systems (HSI)
World Health Organization



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„Sexuelle Netzwerke“

„The structure of romantic and sexual relations at Jefferson High School, USA“



American Journal of Sociology, Vol. 100, No. 1.
"Chains of affection: The structure of adolescent romantic and sexual networks,"
Bearman PS, Moody J, Stovel K.

Warum kommt es zu
solchen Ausbrüchen?

Brennbares Material



Feuer

Brandbeschleuniger

POVERTY IS THE DEADLIEST DISEASE

WHO (Weltgesundheitsorganisation) 1993