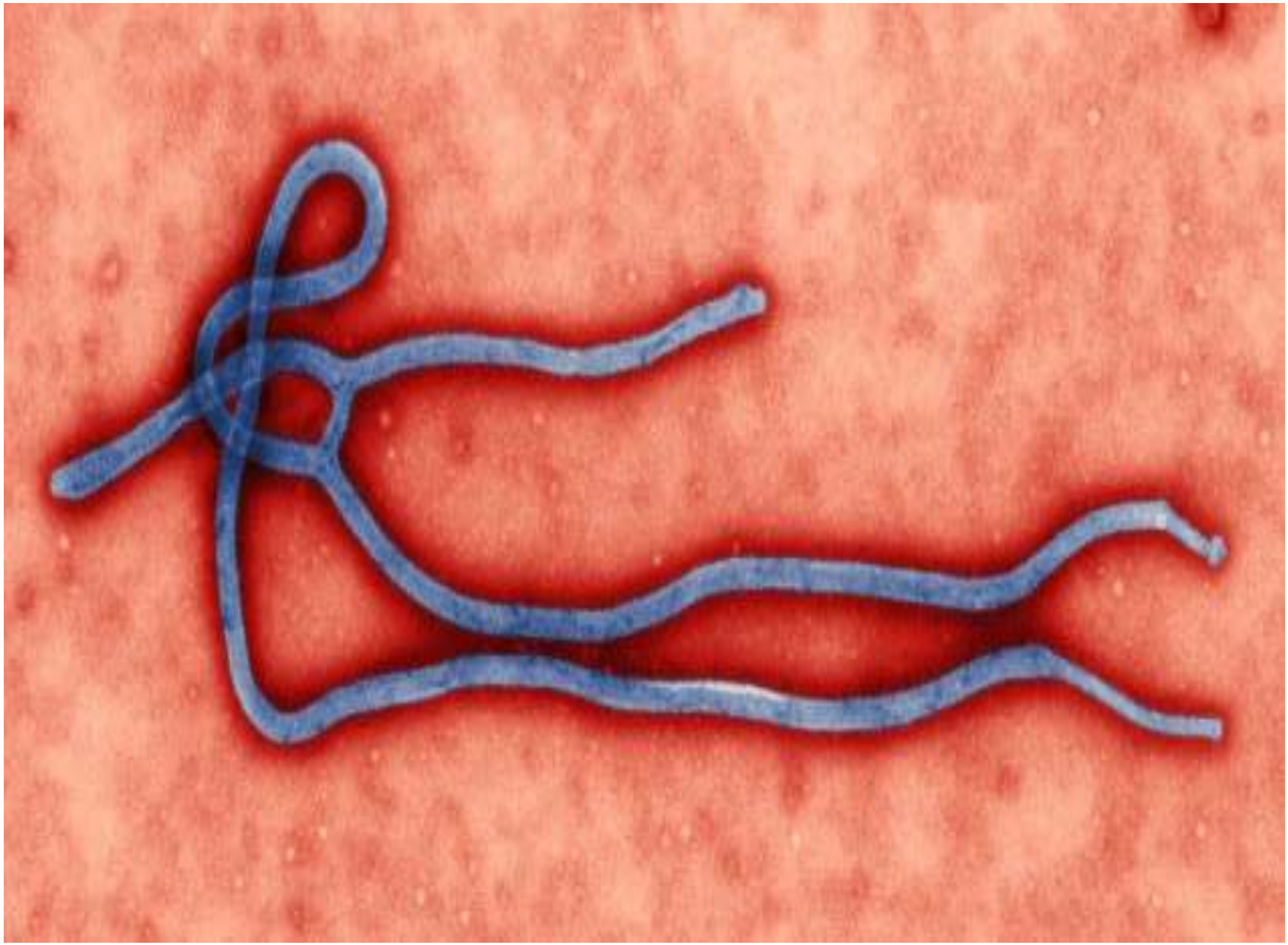
Seyahatlerle İlişkili Viral Hastalıklar-2

(İnfluenza, MERS, EBOLA)

Prof Dr Candan Çiçek



MERS 2012 Nisan

Ürdün

MERS 2012 Haziran

Cidde, Suudi Arabistan

DSÖ salgın ilanı Batı Afrika

EBOLA Aralık 2013

Gine

EBOLA Mart 2014

Güney Kore 186/38

Son olgu bildirimleri

MERS 2015 Haziran

EBOLA 27 Mart 2016

Ebola

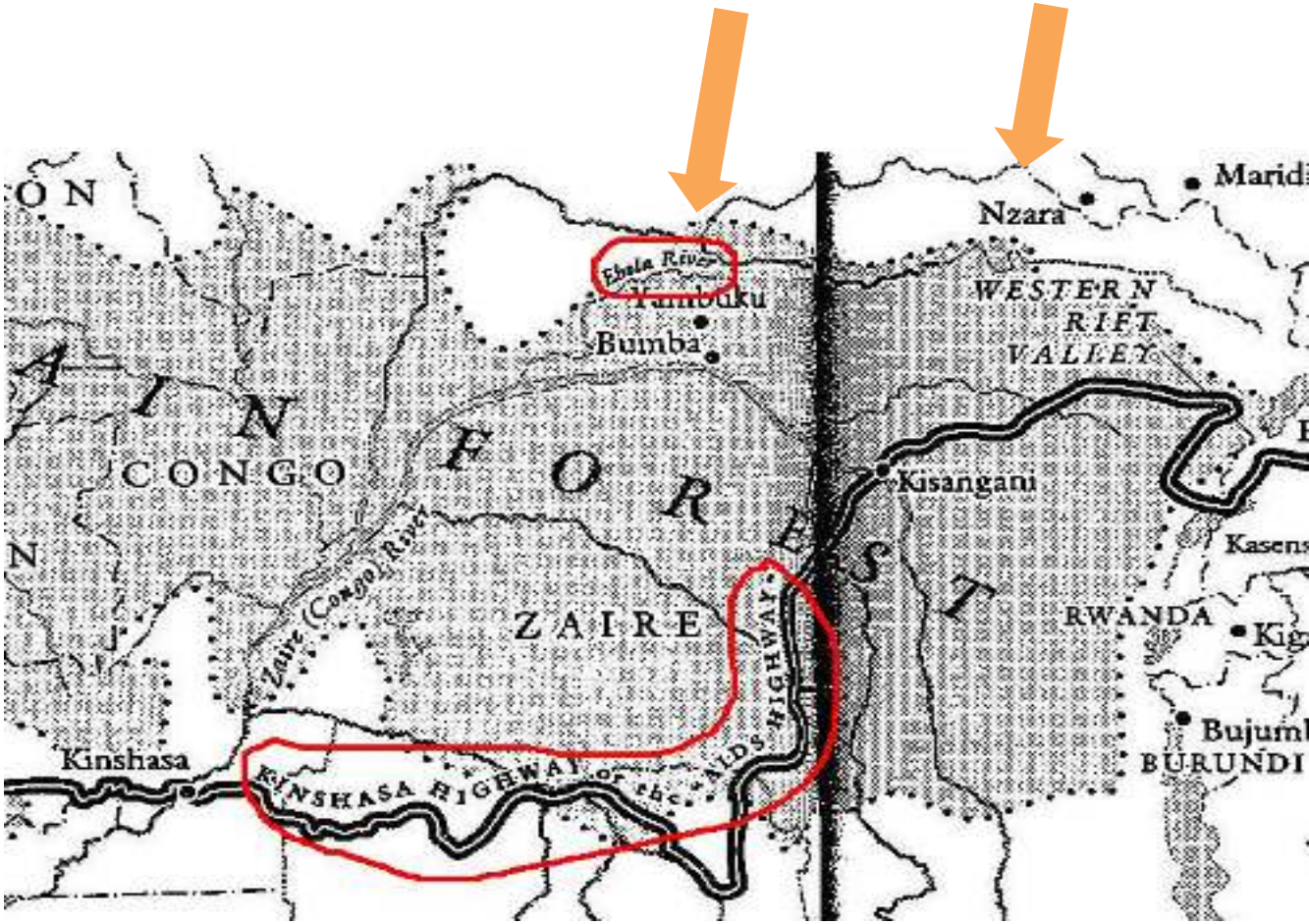
- Aralık 2013-Nisan 2016 arasında Gine, Liberya, ve Sierra Leone'da bugüne kadar bilinen en büyük Ebola virüs hastalığı (EVH) salgını gerçekleşti

- 28 652 olgu,11 325 (%39.5) ölüm

After Ebola in West Africa — Unpredictable Risks, Preventable Epidemics, WHO Ebola Response Team, N Engl J Med 375;6 August 11, 2016


Peter Piot

1976 yılında Zaire (DRC) ve Sudan'da eş zamanlı iki salgın Dr Peter Piot, Tropikal Hastalıklar Enstitüsü, Antwerp, Belçika
Etken, Marburg virüsüne benzemekle birlikte ondan daha farklı
İki farklı serotip: Zaire ebolavirus ve Sudan ebolavirus
Sıtma tedavisinde ortak kullanılan 5 enjektör ile salgın başlamış
602 olgu/431 ölüm (%71,6)



ISOLATION OF MARBURG-LIKE VIRUS FROM A CASE OF HÆMORRHAGIC FEVER IN ZAIRE

S. PATTYN W. JACOB
G. VAN DER GROEN P. PIOT
G. COURTEILLE

University of Antwerp and Institute of Tropical Medicine, Antwerp, Belgium, and Clinique Ngaliema, Kinshasa, Zaire

WE record here our findings in the investigation of the outbreak of severe hæmorrhagic fever in Zaire.

SOURCE AND EXAMINATION OF SPECIMEN

A 42-year-old woman (patient M.E.) fell ill on Sept. 23, 1976, in Yambuku, Equateur Province, Zaire. She was transported by air on Sept. 25 to Kinshasa, where a hæmorrhagic syndrome gradually developed. Clotted blood taken on the 5th day of illness was sent on ice to the Institute of Tropical Medicine, Antwerp. The sample arrived in the evening of Sept. 29 and was kept in the refrigerator.

The next morning serum was inoculated into 6 young adult mice by intracerebral and intraperitoneal routes, into 2 litters

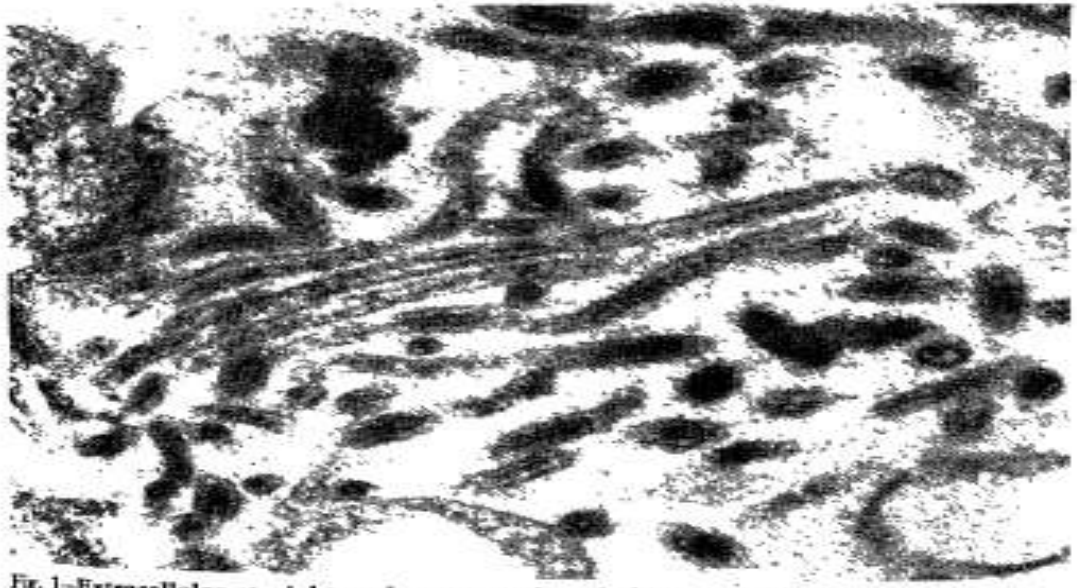


Fig. 1—Extracellular straight and cross-sectioned virus particles (reduced from × 112 000).

The serum was tested by complement fixation for Lassa-virus antibodies (the result was negative) and by neutralisation on Vero cells for antibodies against yellow-fever virus (antibodies were present at 1/30 dilution).

RESULTS OF INOCULATIONS

Mice

One animal was found dead on the 4th day and a second on the 5th day. Brains were taken from these animals and the survivors on the 5th day.

Newborn Mice

On the fifth day of observation one animal was found dead and partially eaten in each litter. In one litter several mice had disappeared on days 6 and 7, leaving only one animal. In the second litter, however, in which the animals had been very healthy during the whole observation period, only three young mice were left: one dead, one paralysed, and one very sick. The brains of these animals were removed and sent to the Microbiological Research Establishment, Porton, for further study.

Vero Cells

During the first 4 days of observation some cells in the bottom of most tubes became detached from the glass surface. Though this was first interpreted as a partial cytopathic effect, it did not increase during the following days and it was then judged to be non-specific. On day 5 the tissue-culture medium was changed to the succinate/succinic-acid buffered medium (as described by Plaisner et al.[1]) without serum. In our experience this medium permits the observation of Vero cells for several weeks, while many arboviruses produce a cytopathic effect in these conditions. On day 11 a very striking cytopathic effect was observed in these cultures, with most cells still attached to the glass. The cytopathic effect was almost complete on day 12.

ELECTRON-MICROSCOPY FINDINGS

The supernatant fluid of three tubes was decanted and they were filled with 3% glutaraldehyde for 30 min. The cells were then scraped off in a small amount of glutaraldehyde, rinsed with cacodylate-buffered sucrose (7·5%), postfixed in 1% phosphate-buffered osmium tetroxide, and prepared by the albumin coagulation method. Blocking staining

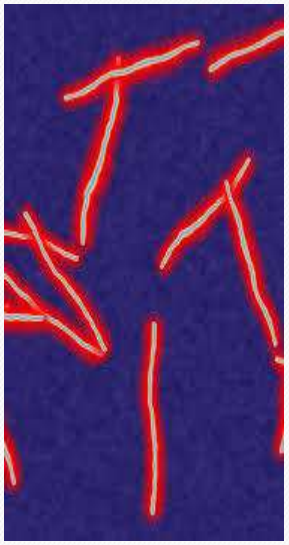

DRC

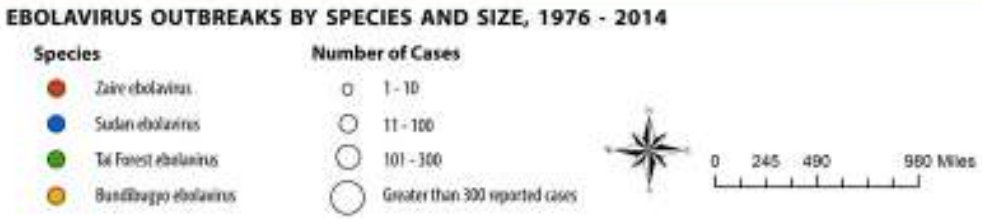
Ebolavirus

Filoviridea ailesi, zarflı, negatif polariteli, tek sarmallı RNA virüsü

Filamentöz, boyu 800-1400 nm

Toplam 5 serotipi var (Zaire, Sudan, Bundibugyo, Reston, Tai Forest)





Aralık 2013'e kadar 37 yılda toplam olgu sayısı 2322

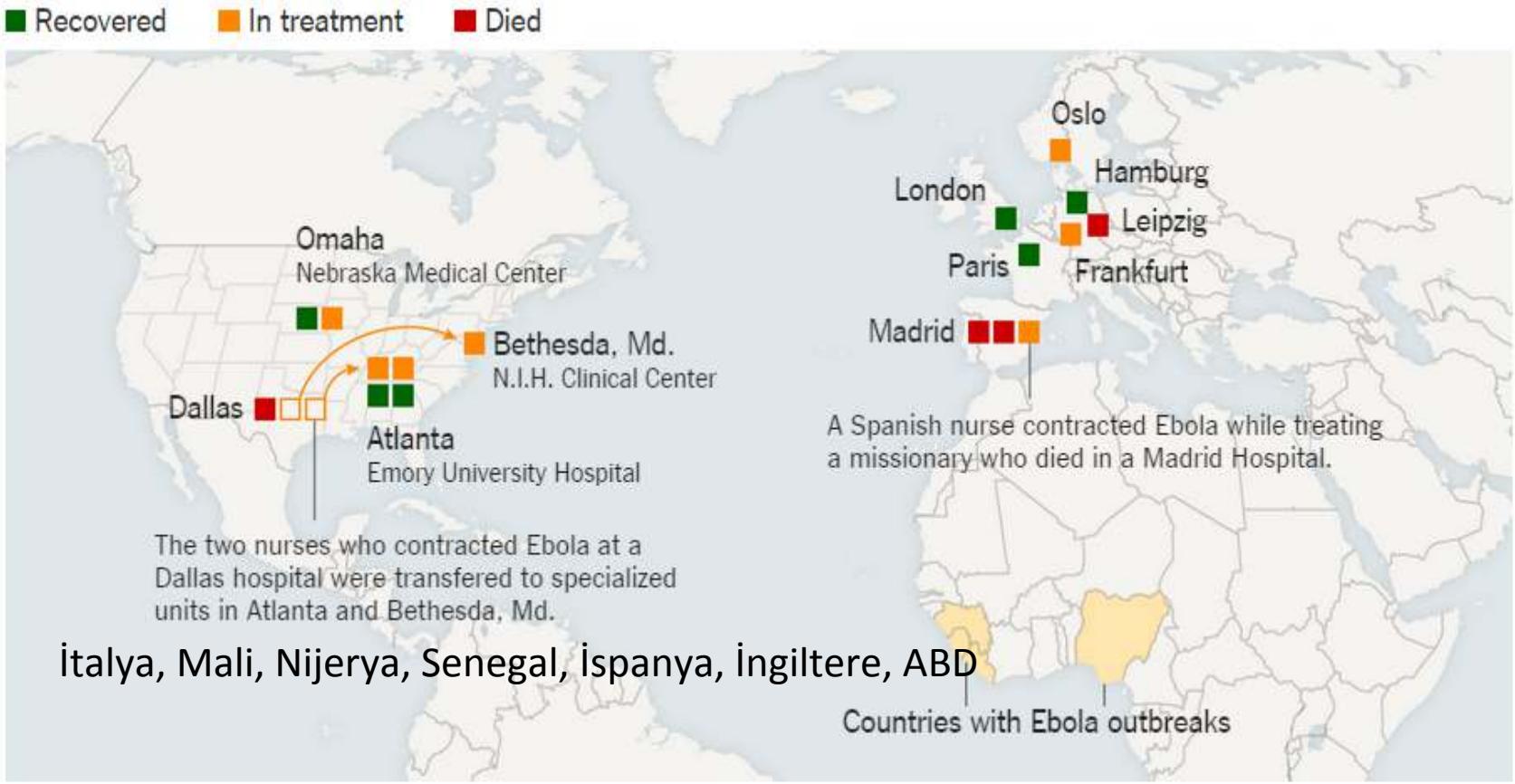
Country	Town	Cases	Deaths	Species	Year
Multiple countries	multiple	4833*	2431*	*Zaire ebolavirus*	2014
Uganda	Luwero District	6*	3*	*Sudan ebolavirus*	2012
Dem. Rep. of Congo	Isiro Health Zone	36*	13*	*Bundibugyo ebolavirus*	2012
Uganda	Kibaale District	11*	4*	*Sudan ebolavirus*	2012
Uganda	Luwero District	1	1	*Sudan ebolavirus*	2011
Dem. Rep. of Congo	Luebo	32	15	*Zaire ebolavirus*	2008
Uganda	Bundibugyo	149	37	*Bundibugyo ebolavirus*	2007
Dem. Rep. of Congo	Luebo	264	187	*Zaire ebolavirus*	2007
South Sudan	Yambio	17	7	*Zaire ebolavirus*	2004
Republic of Congo	Mbomo	35	29	*Zaire ebolavirus*	2003
Republic of Congo	Mbomo	143	128	*Zaire ebolavirus*	2002
Republic of Congo	Not specified	57	43	*Zaire ebolavirus*	2001
Gabon	Libreville	65	53	*Zaire ebolavirus*	2001
Uganda					2000
South Africa					1996
Gabon					1996
Gabon					1996
Dem. Rep. of Congo					1995
Côte d'Ivoire (Ivory Coast)	Tai Forest	1	0	*Tai Forest ebolavirus*	1994
Gabon	Mekouka	52	31	*Zaire ebolavirus*	1994
South Sudan	Nzara	34	22	*Sudan ebolavirus*	1979
Dem. Rep. of Congo	Tandala	1	1	*Zaire ebolavirus*	1977
South Sudan	Nzara	284	151	*Sudan ebolavirus*	1976
Dem. Rep. of Congo	Yambuku	318	280	*Zaire ebolavirus*	1976

1979-1994 arasında 15 yıl salgın görülmedi ancak serolojik bulgular devam etti
2000 yılından sonra salgınlar arttı


Guinea-Bissau
Mali
Guinea
Sierra Leone
Liberia
Côte d'Ivoire
Total Cases
0
1 - 5
6 - 20
21 - 100
101 - 500
501 - 4,000
28 652
Mauritania
Senegal
Gambia
Mali
Guinea-Bissau
Burkina Faso
Guinea
Sierra Leone
Liberia
Côte d'Ivoire
Ghana
Newly infected area in Mali
Source: WHO: Ebola Response Roadmap 31 October 2014
CDC

How many Ebola patients have been treated outside of West Africa?

At least 17 cases have been treated in Europe and the United States. Most involve health and aid workers who contracted Ebola in West Africa and were transported back to their home country for treatment. Cases shown below are compiled from reports by the C.D.C., the World Health Organization, Doctors Without Borders and other official agencies.



İtalya, Mali, Nijerya, Senegal, İspanya, İngiltere, ABD

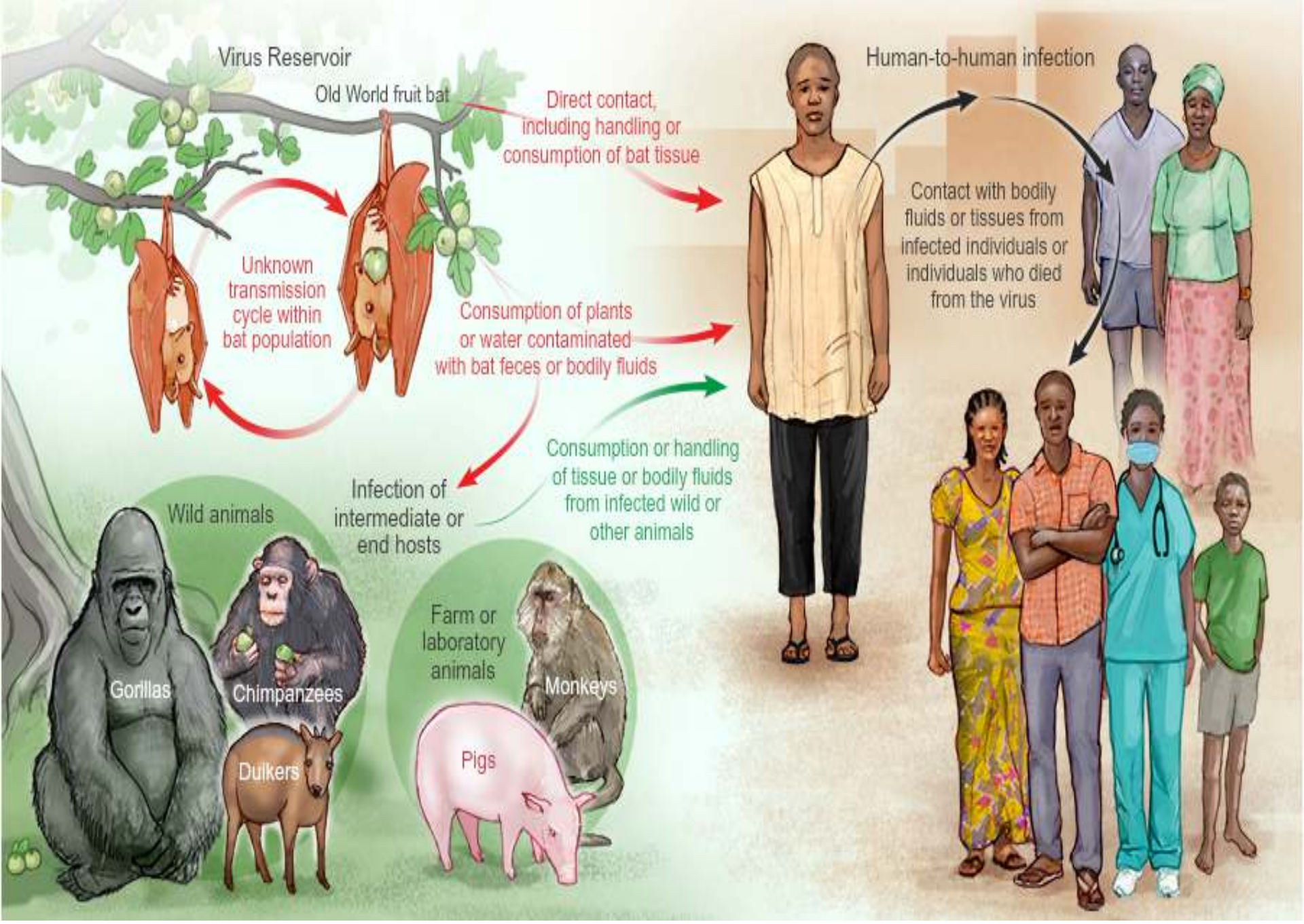
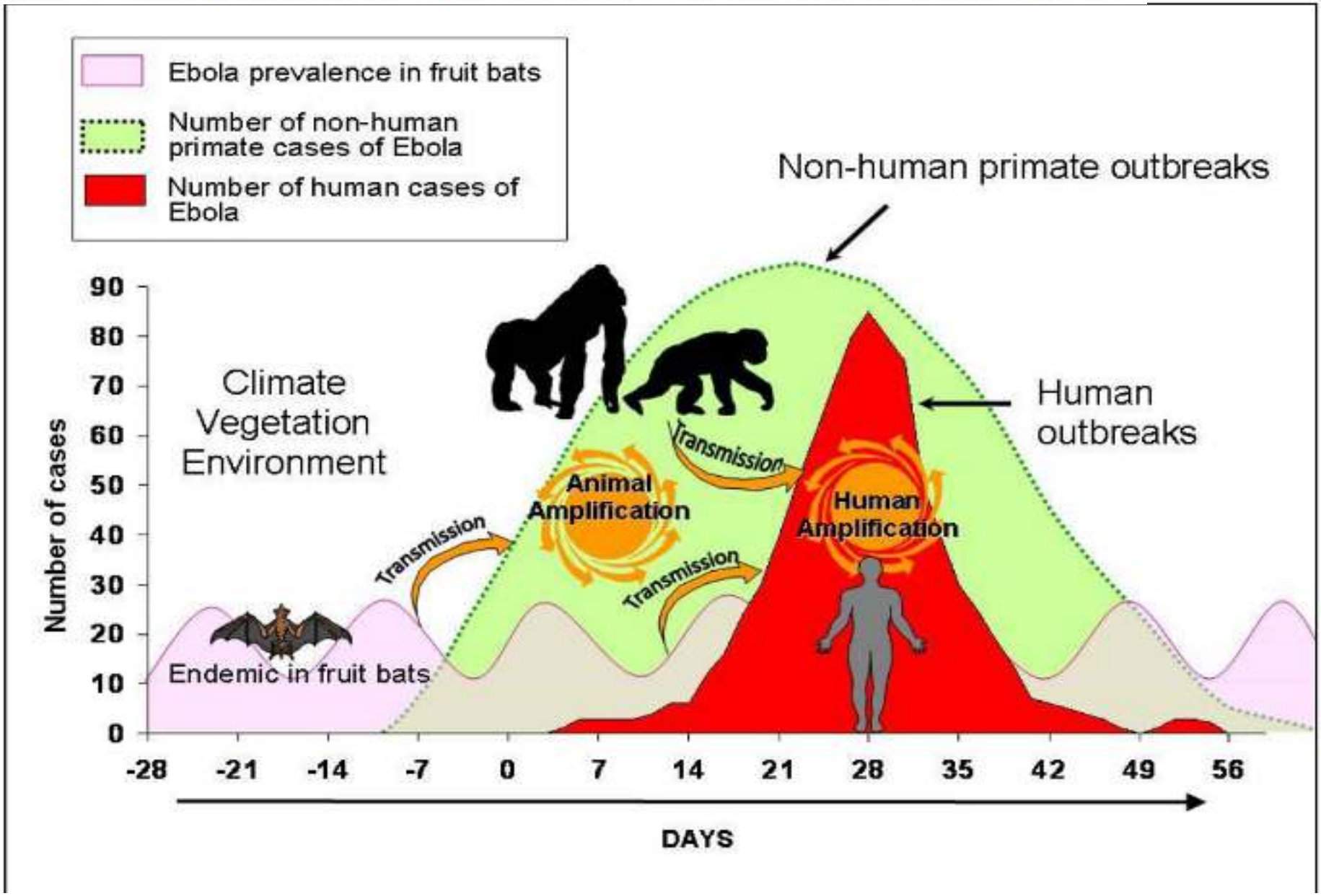

Virus Reservoir
Old World fruit bat
Direct contact, including handling or consumption of bat tissue
Human-to-human infection
Contact with bodily fluids or tissues from infected individuals or individuals who died from the virus
Unknown transmission cycle within bat population
Consumption of plants or water contaminated with bat feces or bodily fluids
Consumption or handling of tissue or bodily fluids from infected wild or other animals
Infection of intermediate or end hosts
Wild animals
Gorillas
Chimpanzees
Dulkers
Farm or laboratory animals
Monkeys
Pigs

Figure 4. Ebola: Epidemic curves in humans and animals at the human-animal interface



http://apps.who.int/iris/bitstream/10665/130160/1/WHO_HSE_PED_CED_2014.05_eng.pdf?ua=1&ua=1

PROTECT YOURSELF
PROTECT YOUR FAMILY
PROTECT YOUR COMMUNITY

from the Ebola virus

✓ DO

Always wash your hands with soap and

Always cook your food properly

Go to health facility anytime you have head ache, fever, pain, diarrhoa, red eyes rash and vomiting

Tell everyone yo meet abo Ebola so they ca be inform

Call for help o questions
0886520581 or 0886374793

✗ DO NOT

Do not touch people with signs of Ebola or have died of Ebola

Do not touch clothes & bed cloths of people who have died of Ebola

Do not touch vomit, saliva, urine, blood and poo
e signs and symptoms o

Do not play with monkeys and baboons

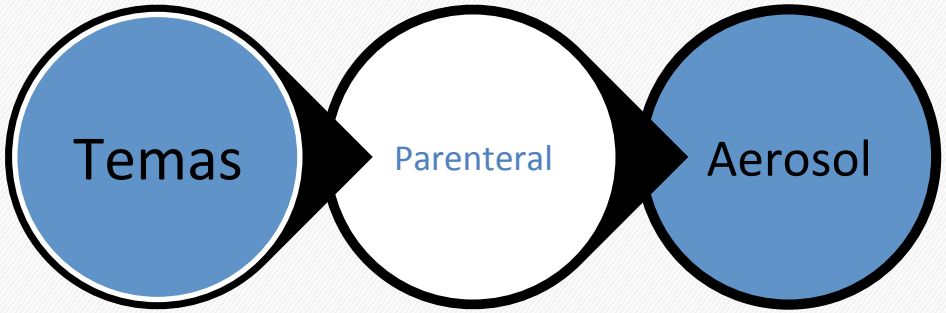
Do not eat bush meat

Do not eat plums eaten by bats

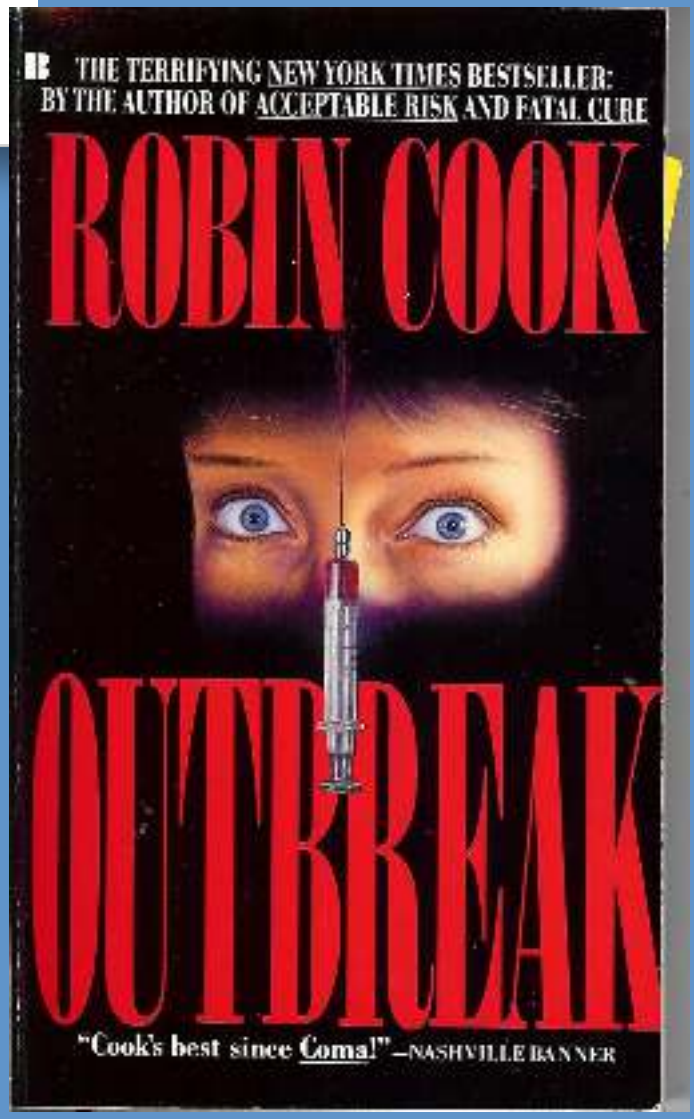
Let's stop the spread of Ebola together

unicef

Bulaşma



Cinsel ilişki



Bulaşma

- Temas
  - Hastaların kan, vücut sekresyonları, sıvıları ve organlarıyla doğrudan hasarlı deri ve mukoza teması
  - Vücut sıvılarıyla enfekte objelere hasarlı deri ve mukoza teması
  - Cenaze defin işlemleri
- Parenteral yol
  - İğne ve kesici alet yaralanmaları
  - Enjektör ve ekipmanların ortak kullanımı
- Aerosol oluşturan işlemler
- Cinsel ilişki

- Su, normal gıda ve hava yoluyla bulaşmaz
- Semptomları olmayan kişilerden bulaşmaz

- Kan
- Tükrük
- Ter
- Gözyaşı
- Semen

- Kusmuk
- Balgam
- İdrar
- Dışkı

EVH Semptomlar

- İnkübasyon dönemi 2-21 gün
- Semptomlar başlayıncaya kadar insanlar bulaştırıcı değil
- Ateş, halsizlik, kas, baş ve boğaz ağrısı ile aniden başlıyor
- Bu semptomları kusma, diyare, döküntü, böbrek ve karaciğer fonksiyonlarında bozulma izliyor
- Bazı olgularda internal ve eksternal kanamalar başlıyor

- İyileşen hastalarda 6-11 gün içinde düzelme
- Uzun bir konvalesan dönem

İlk bildirilen olgu Gine'nin Güney-Doğu'sund
Gueckedou'da Meliandou köyünde yaşayan
2 yaşında bir erkek hasta

26 Aralık 2013'de hastada ilk semptomlar başlıyor ve 2 gün sonra hasta ölüyor.
Enfeksiyon etkeni Zaire Ebolavirüs olarak saptanıyor.
Yarasa-Erik-Çocuk

Salgın

- İlk olgu hayvan enfeksiyonundan kaynaklanmasına karşın ondan sonraki olguların tümünün insandan insana geçtiği düşünülmektedir
- En sık bulaşma yolu, semptomatik hastaların kan veya diğer vücut sıvıları ile direkt temas
- Viral RNA, enfeksiyondan iyileşen ve asemptomatik kişilerin semen (12 ay) ve anne sütünde (18 ay) çok uzun süre saptanabilmektedir

Gire SK, Goba A, Andersen KG, et al. Genomic surveillance elucidates Ebola virus origin and transmission during the 2014 outbreak. Science 2014; 345: 1369–72.

Deneysel Aşı: rVSV-ZEBOV

- 2015 yılında ilk kez Gine’de denendi
- EVD'ye karşı oldukça koruyucu olduğu gösterildi
- Aşı yapılan 5837 kişinin hiçbirinde Ebola olgusu kaydedilmemiştir

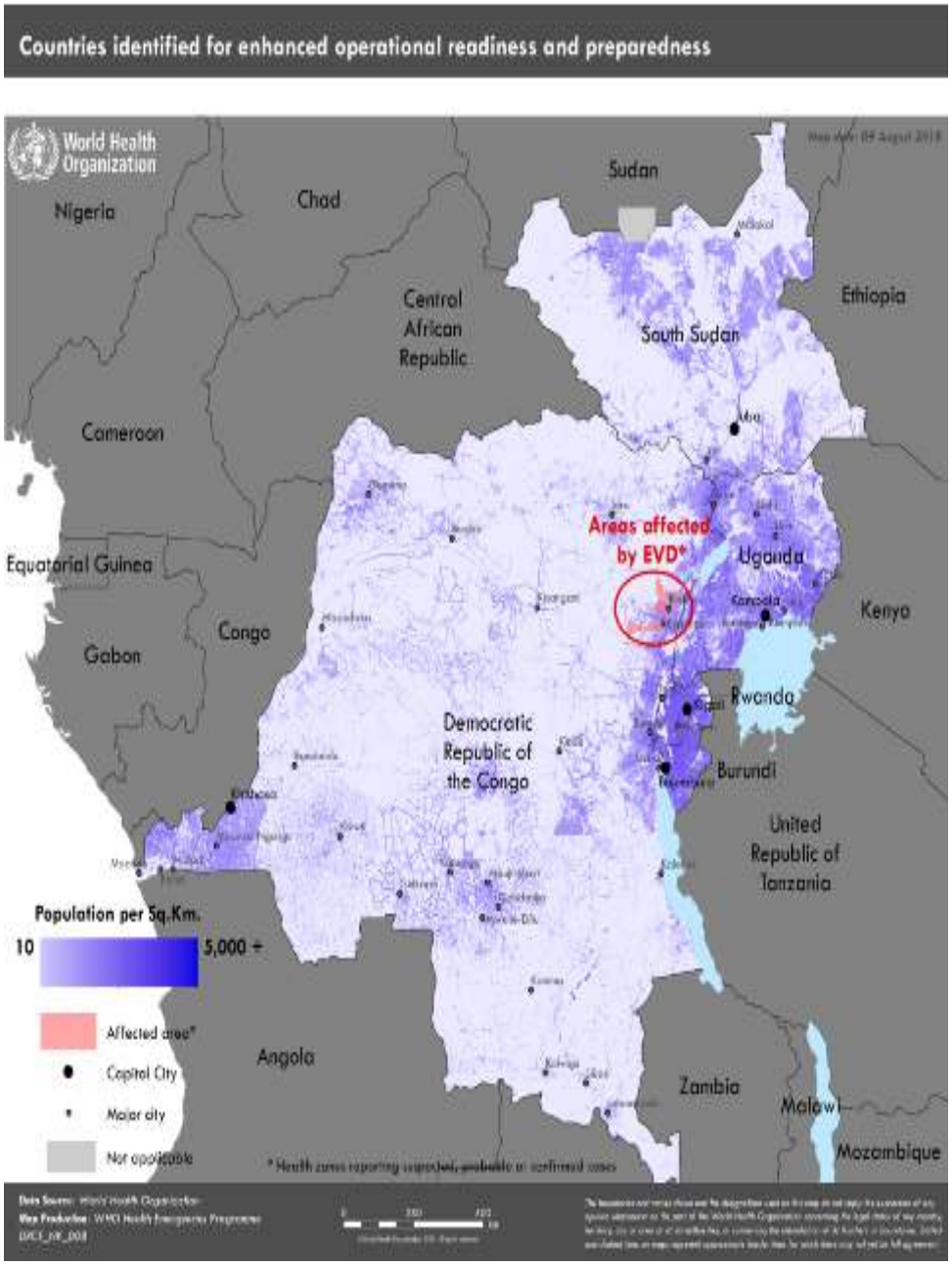
- RVSV-ZEBOV aşısı, DRC'de devam eden 2018-2019 Ebola salgınında kullanılmaktadır
- İlk veriler, aşının oldukça etkili olduğunu göstermektedir

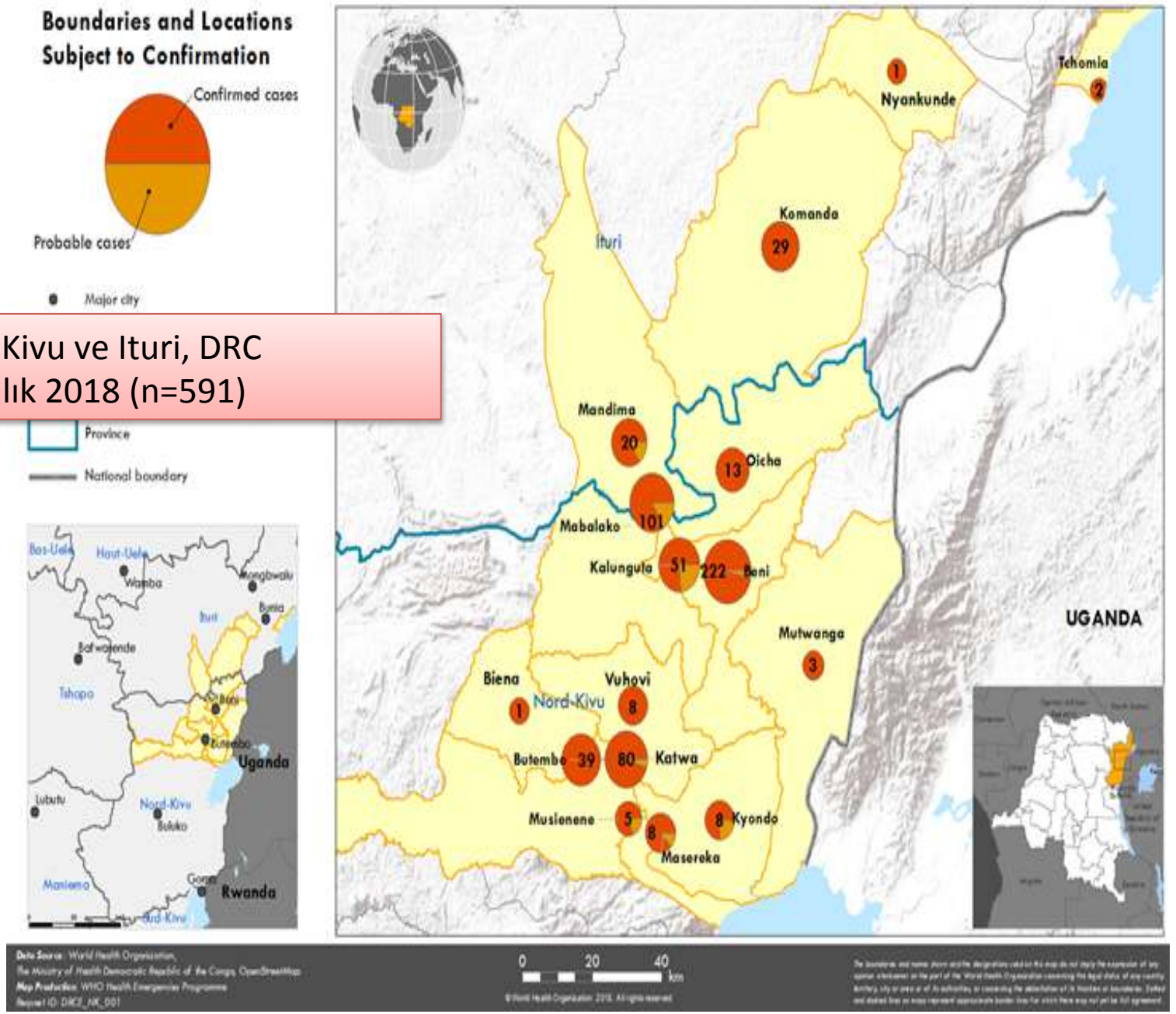
Salgının önlenmesi

- Nisan 2015 tarihinden itibaren Gine'de uygulanmaya başlanan aşı
  - Agnandji ST, Huttner A, Zinser ME, et al. Phase 1 trials of rVSV Ebola vaccine in Africa and Europe. N Engl J Med 2016; 374:1647-60

- Semptomatik hastaların ve temaslıların bulunup toplumdan izole edilmesi
- Hastaların özel ebola tedavi merkezlerine alınması ve destekleyici tedavi kullanılması
- Güvenli ve temkinli cenaze defin işlemlerinin uygulanması

DSÖ 1 Ağustos 2018'de, Demokratik Kongo Cumhuriyeti, Kuzey Kivu Eyaletinde yeni bir Ebola virüsü hastalığı salgını ilan etti

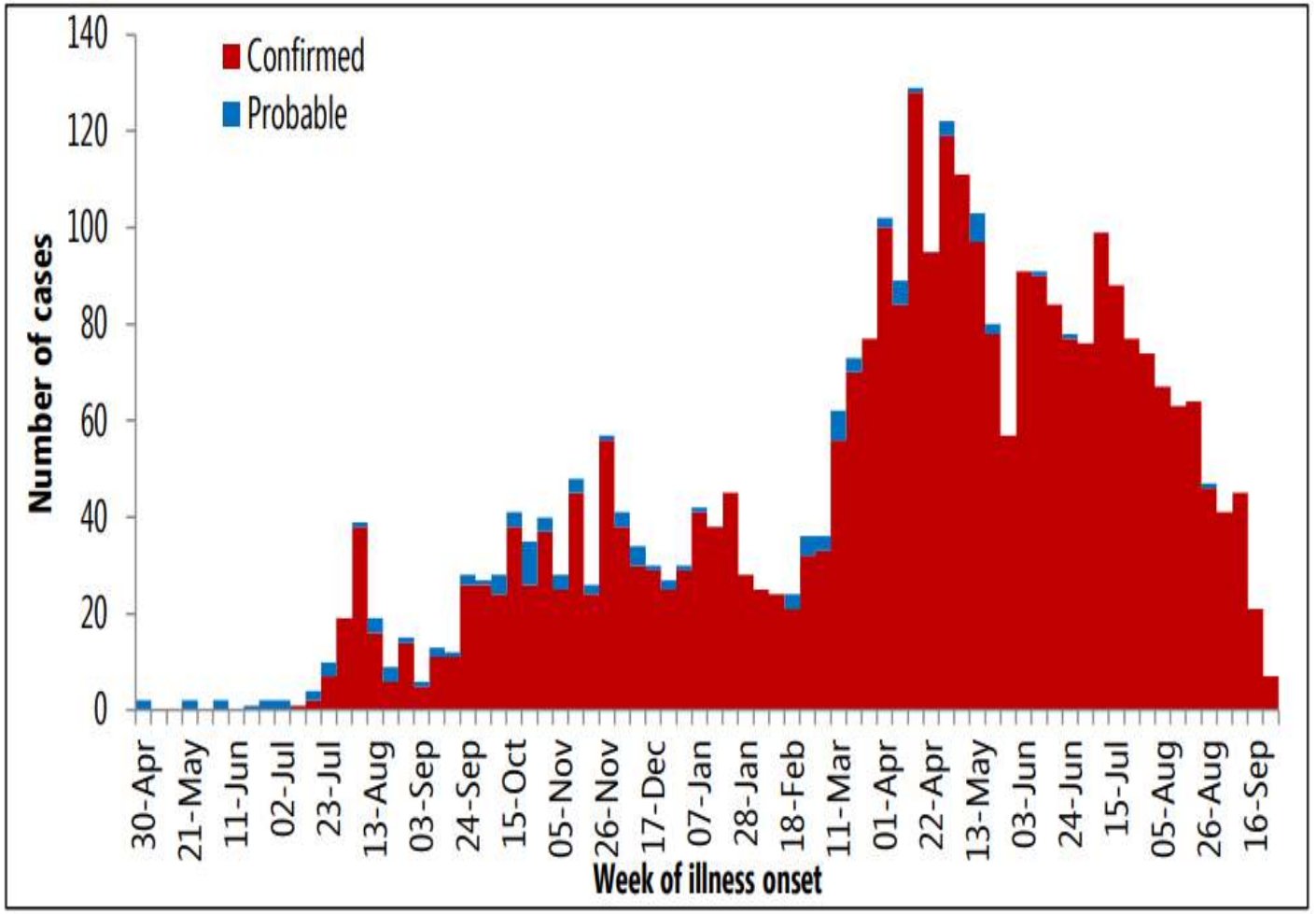



Boundaries and Locations
Subject to Confirmation
Confirmed cases
Probable cases
Major city
Province
National boundary
Kuzey Kivu ve Ituri, DRC
26 Aralık 2018 (n=591)
Ituri
Nord-Kivu
Tshomia
2
Nyankunde
1
Komanda
29
Mandima
20
Oicha
13
Mabalako
101
Kalungula
51
222
Beni
Mutwanga
3
Biena
1
Vuhovi
8
Butembo
39
80
Katwa
Musienene
5
8
Kyondo
Masereka
UGANDA
Rwanda
Uganda
Bas-Uele
Haut-Uele
Wamba
Bunia
Tshopo
Lubutu
Bukavu
Manierna
Goma
0
20
40
km

Ebola Virus Outbreaks by Species and Size, Since 1976

Country	Town	Cases	Deaths	Species	Year
Dem. Rep. of Congo, Uganda	multiple	ongoing	ongoing	*Zaire ebolavirus*	2018-2019
Dem. Rep. of Congo	Bikoro	54	33	*Zaire ebolavirus*	2018
Dem. Rep. of Congo	Likati	8	4	*Zaire ebolavirus*	2017
Dem. Rep. of Congo	multiple, Équateur province	66	49	*Zaire ebolavirus*	2014
Multiple countries	multiple	28652	11325	*Zaire ebolavirus*	2014-2016
Uganda	Luwero District	6*	3*	*Sudan ebolavirus*	2012
Dem. Rep. of Congo	Isiro Health Zone	36*	13*	*Bundibugyo ebolavirus*	2012
Uganda	Kibaale District	11*	4*	*Sudan ebolavirus*	2012
Uganda	Luwero District	1	1	*Sudan ebolavirus*	2011
Dem. Rep. of Congo	Luebo	32	15	*Zaire ebolavirus*	2008
Uganda	Bundibugyo	149	37	*Bundibugyo ebolavirus*	2007
Dem. Rep. of Congo	Luebo	264	187	*Zaire ebolavirus*	2007

Figure 1: Confirmed and probable Ebola virus disease cases by week of illness onset, as of 29 September 2019



**Data in recent weeks are subject to delays in case confirmation and reporting, as well as ongoing data cleaning.*

Table 1: Ebola virus disease cases by classification and health zones in North Kivu and Ituri provinces, Democratic Republic of the Congo, as of 29 September 2019

4 Aralık 2019

3313 olgu

2203 ölüm

1084 yaşayan

%66,5

Ebola's heavy toll on study authors

Science
AAAS

Mohamed Fullah

Alice Kovoma

Sheik Humarr Khan

Alex Moigboi

Mbalu Fonnie

Teşekkürler

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