KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ

İZMİR AYLIK BİLİMSEL TOPLANTILARI

EBOLA (HEMORAJİK) VİRUSU HASTALIĞI

Yrd. Doç. Dr. Sema ALP ÇAVUŞ

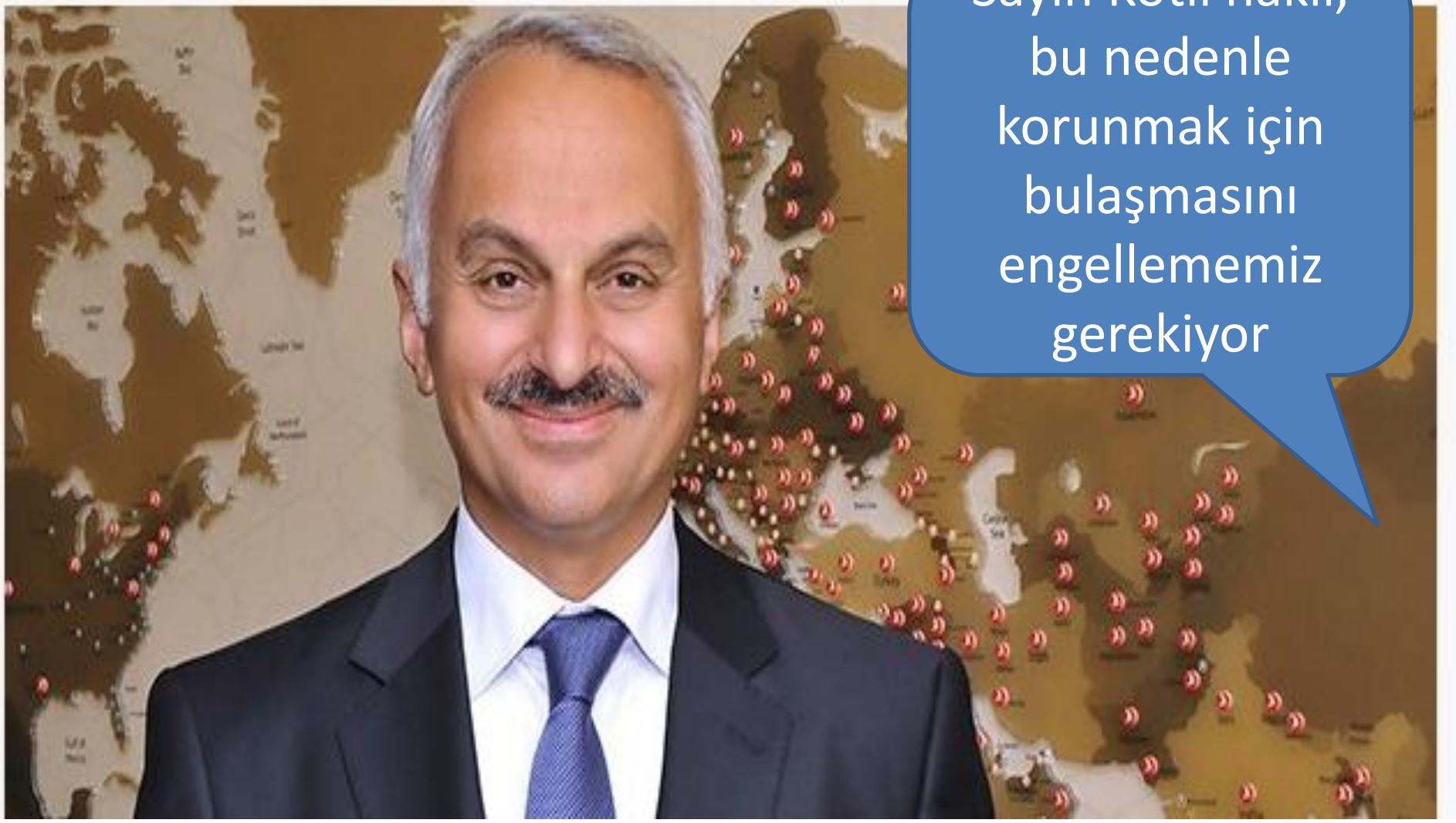
Dokuz Eylül Üniversitesi Hastanesi Enfeksiyon Hastalıkları ve Klinik Mikrobiyoloji AD İzmir

30 Ekim 2014

- Tarihteki en büyük Ebola virusu hastalığı salgını yaşanıyor
- Bugüne dek orta Afrika'da görülen hastalık ilk kez Batı Afrika'da görülmeye başlandı
- Salgının aktif olarak yaşandığı ülkeler gelişmişlik endeksinde en alt sıralarda yer alan ülkeler
- Salgından etkilenen olgu sayısı 30-35 günde ikiye katlanarak ilerliyor
- Salgının kontrol altına alınabilmesi için malzeme ve sağlık çalışanı desteğine gereksinim var

Kotil: Ebola o kadar da kötü değil bulaşınca öldürüyor

CİHAN



- Dünya Sağlık Örgütü
- 23 Mart 2014'de Batı Afrika'da Ebola salgını varlığını duyurdu
- 8 Ağustos 2014 de alarm verdi

World Health Organization

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Global Alert and Response (GAR)

Ebola virus disease in Guinea

Disease Outbreak News

23 MARCH 2014 - The Ministry of Health (MoH) of Guinea has notified WHO of a rapidly evolving outbreak of Ebola virus disease (EVD) in forested areas of south-eastern Guinea. As of 22 March 2014, a total of 49 cases including 29 deaths (case fatality ratio: 59%) had been reported.

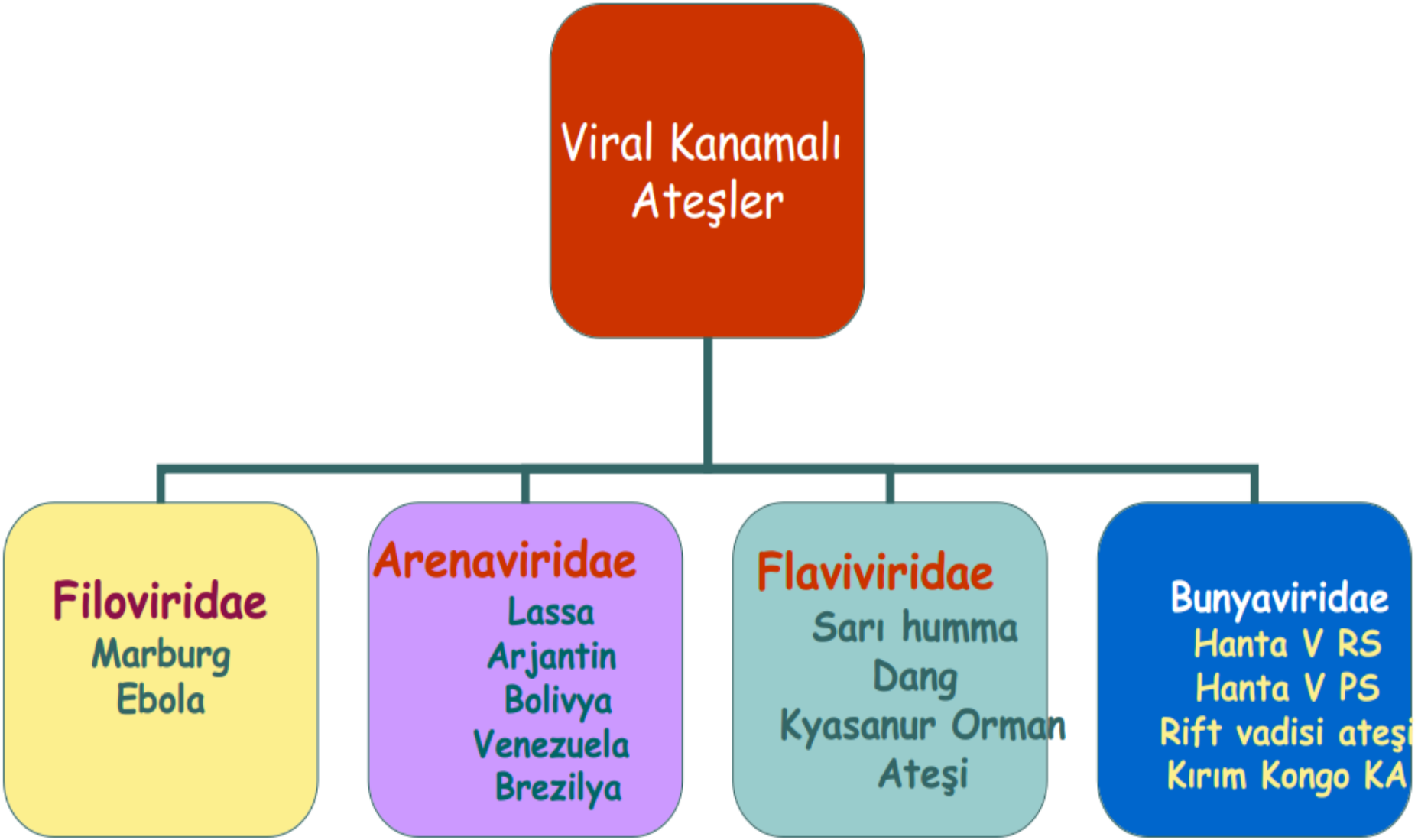
World Health Organization

a centre | Publications | Countries | Programmes | About WHO

Media centre

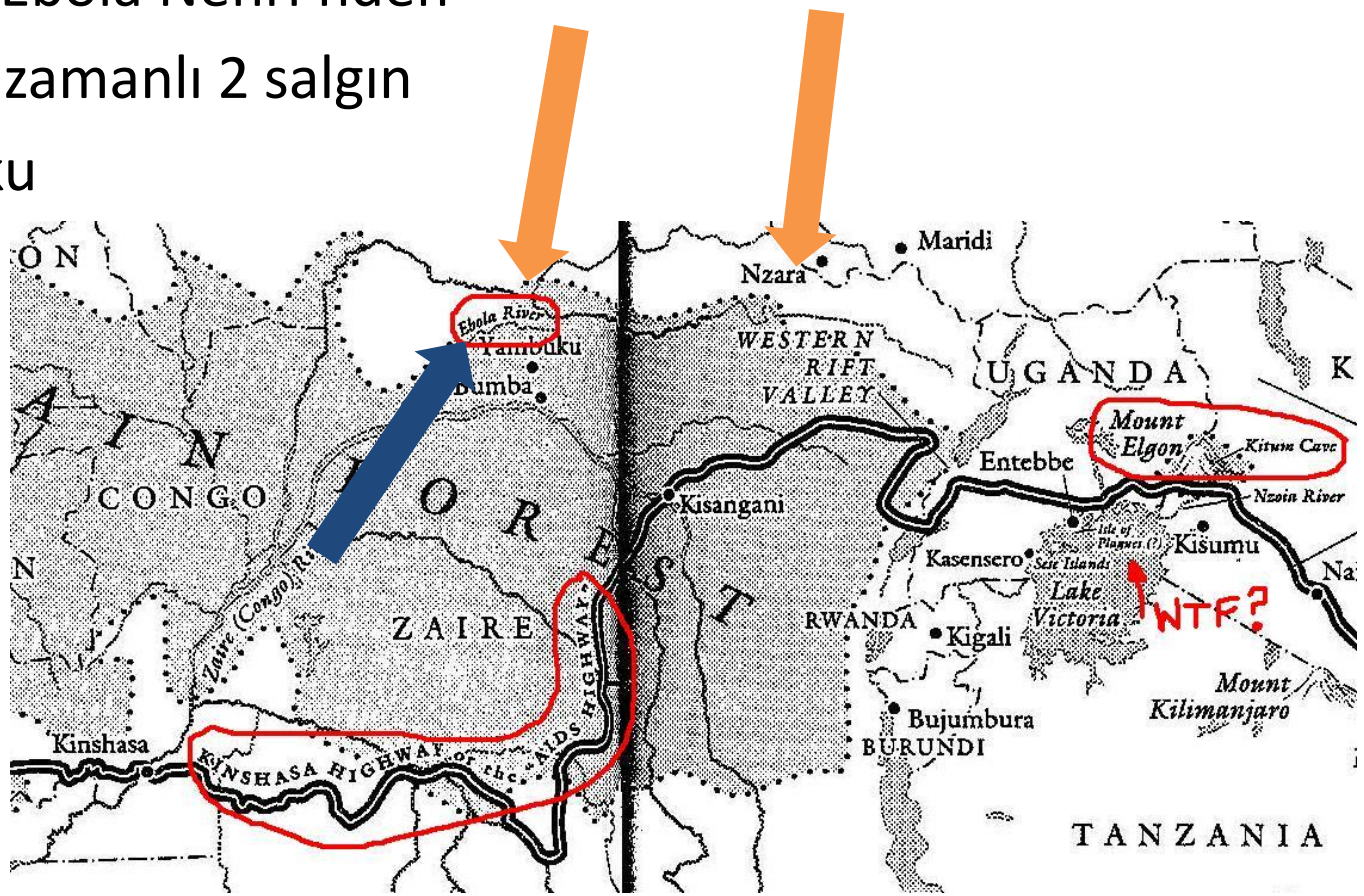
WHO Statement on the Meeting of the International Health Regulations Emergency Committee Regarding the 2014 Ebola Outbreak in West Africa

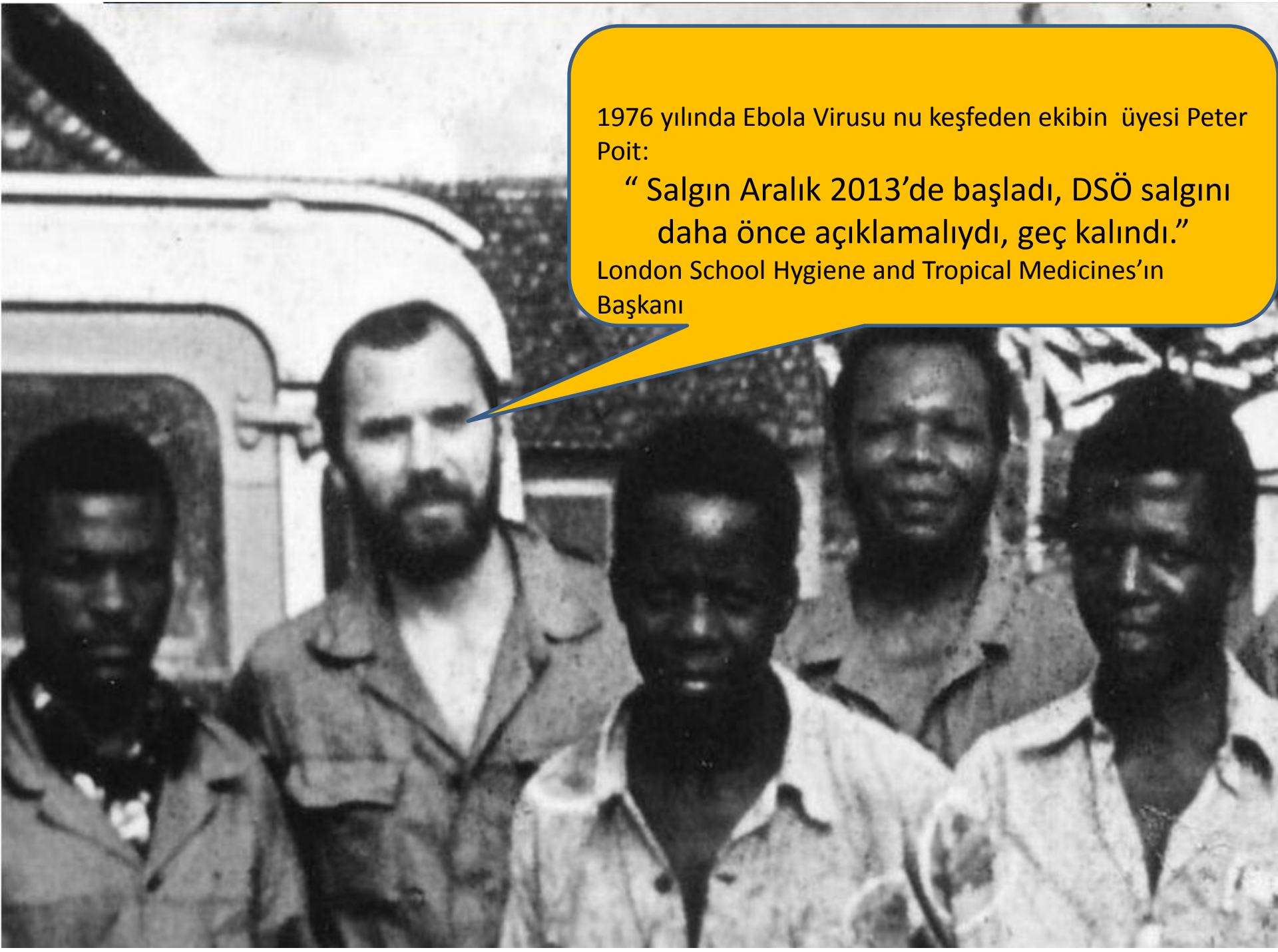
WHO statement
8 August 2014


Viral Kanamalı Ateşler
Filoviridae
Marburg
Ebola
Arenaviridae
Lassa
Arjantin
Bolivya
Venezuela
Brezilya
Flaviviridae
Sarı humma
Dang
Kyasanur Orman Ateşi
Bunyaviridae
Hanta V RS
Hanta V PS
Rift vadisi ateşi
Kırım Kongo KA

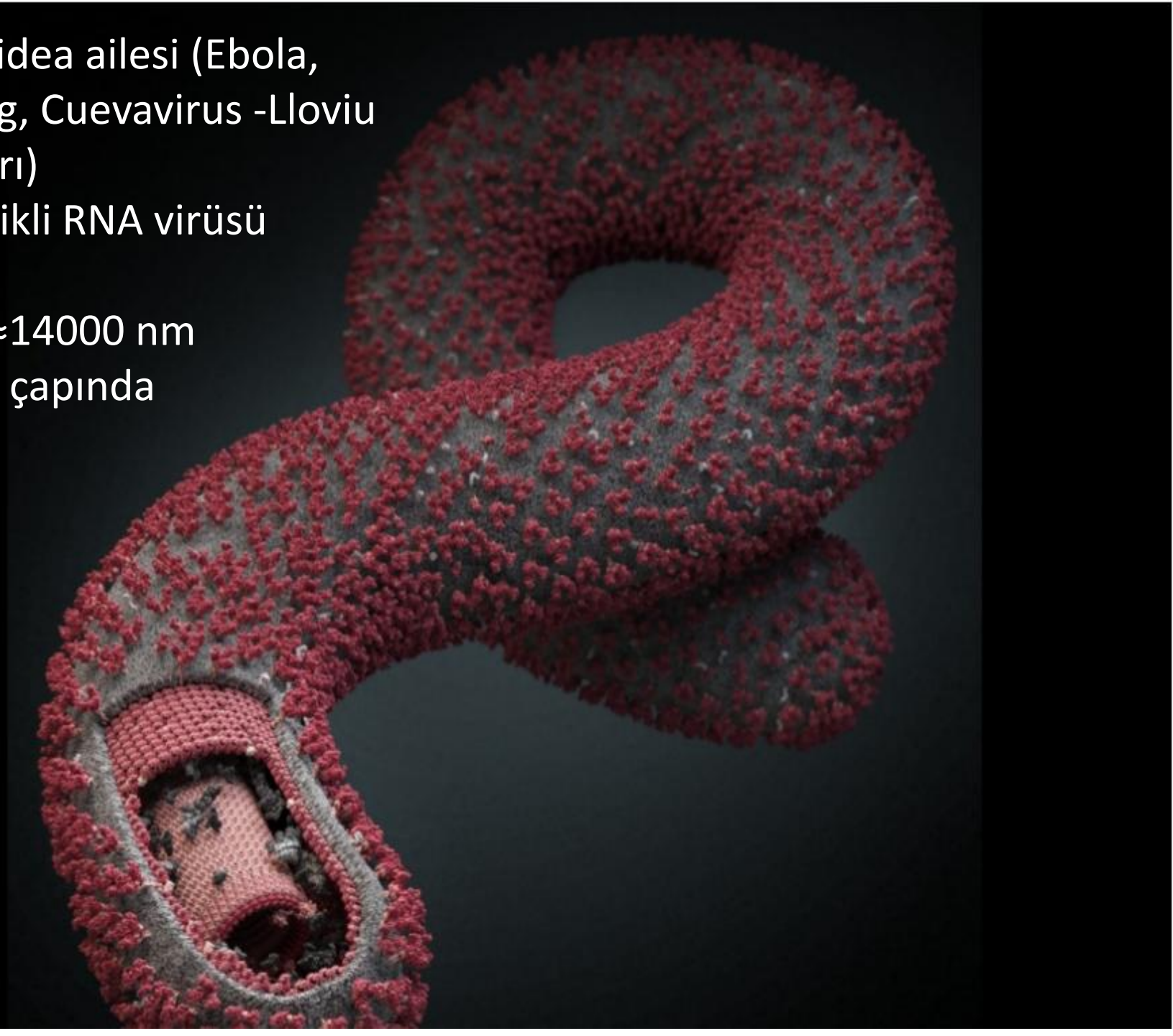
Ebola Virüs Ateşi

- Ebola virüslerinin yol açtığı bir insan hastalığı
- Adı Kongo'daki Ebola Nehri'nden
- 1976 yılında eş zamanlı 2 salgın
- Kongo -Yambuku
- Sudan -Nzara




1976 yılında Ebola Virusu nu keşfeden ekibin üyesi Peter Poit:
“ Salgın Aralık 2013’de başladı, DSÖ salgını daha önce açıklamalıydı, geç kalındı.”
London School Hygiene and Tropical Medicines’ın Başkanı

- Filoviridea ailesi (Ebola, Marburg, Cuevavirus -Lloviu genusları)
- Tek iplikli RNA virüsü
- Zarflı
- Boyu ≈14000 nm
- 80 nm çapında



Journal of Autoimmunity xxx (2014) 1–9

Contents lists available at ScienceDirect

Journal of Autoimmunity

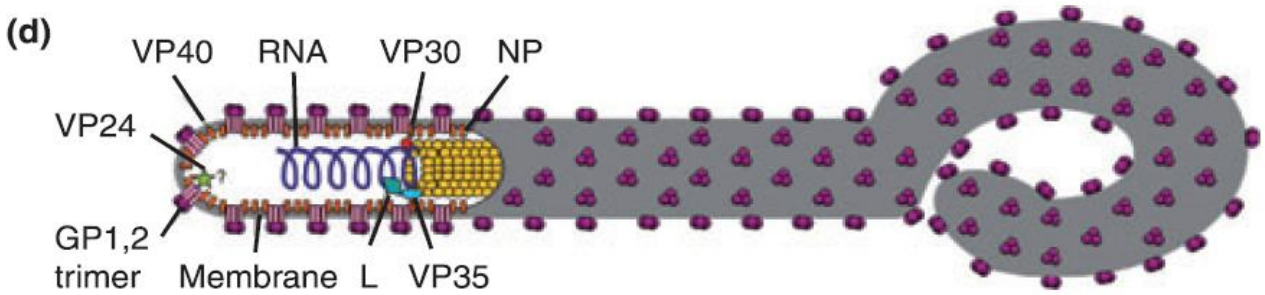
journal homepage: www.elsevier.com/locate/jautimm

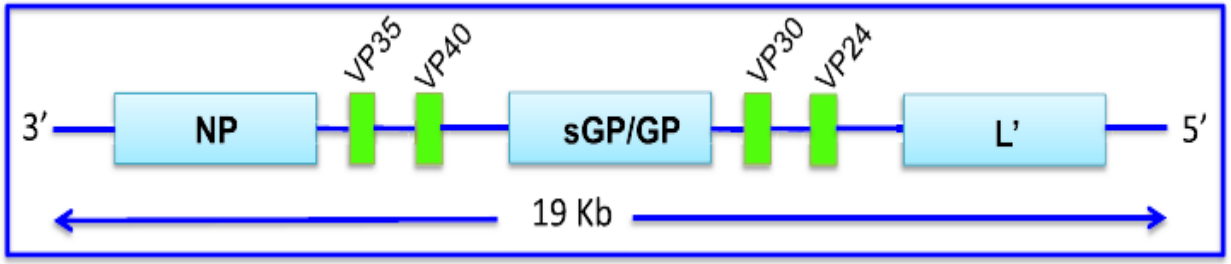
Review

Clinical features and pathobiology of Ebolavirus infection☆

Aftab A. Ansari

Department of Pathology & Laboratory Medicine, Emo





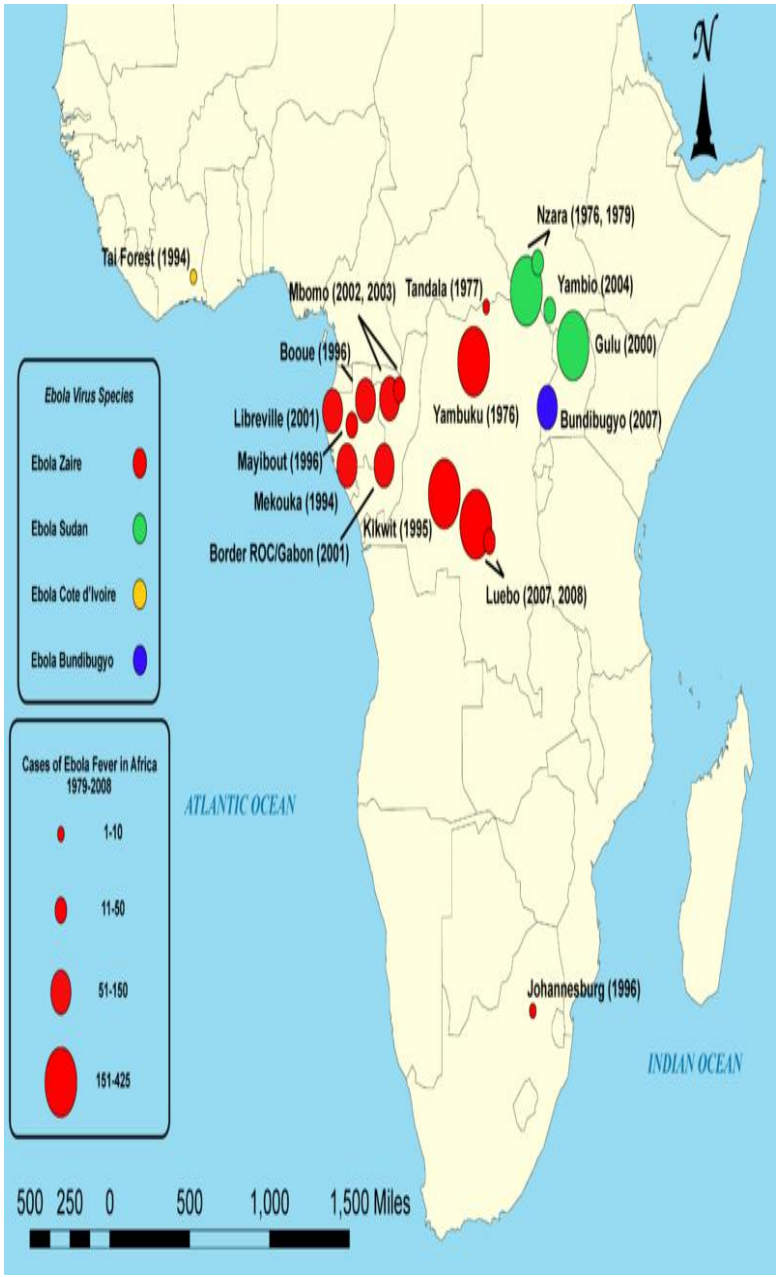
- Nükleoprotein (NP)
- Glikoprotein (GP), solubl glikoprotein (sGP)
- RNA bağımlı RNA polimeraz (L)
- Yapısal proteinler (VP24, VP30, VP35, VP40)

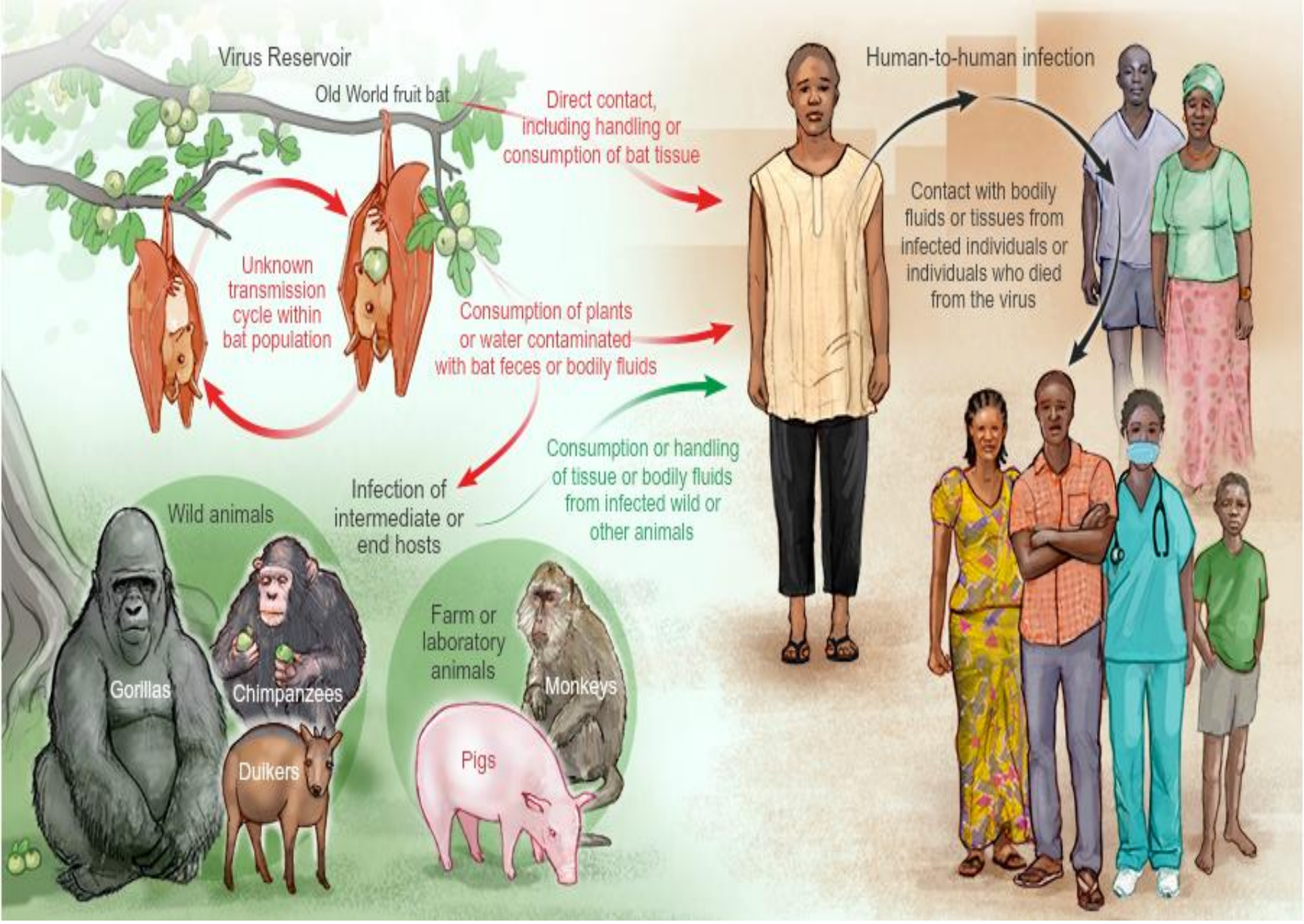
- Ebola virüsünün 5 alt türü var

- Zaire
- Sudan
- Bundibugyo
- Tai Forest
- Reston

Afrika

Filipinler, Çin





http://www.nejm.org/doi/full/10.1056/NEJMp1410741

Batı Afrika'da neden görüldü?

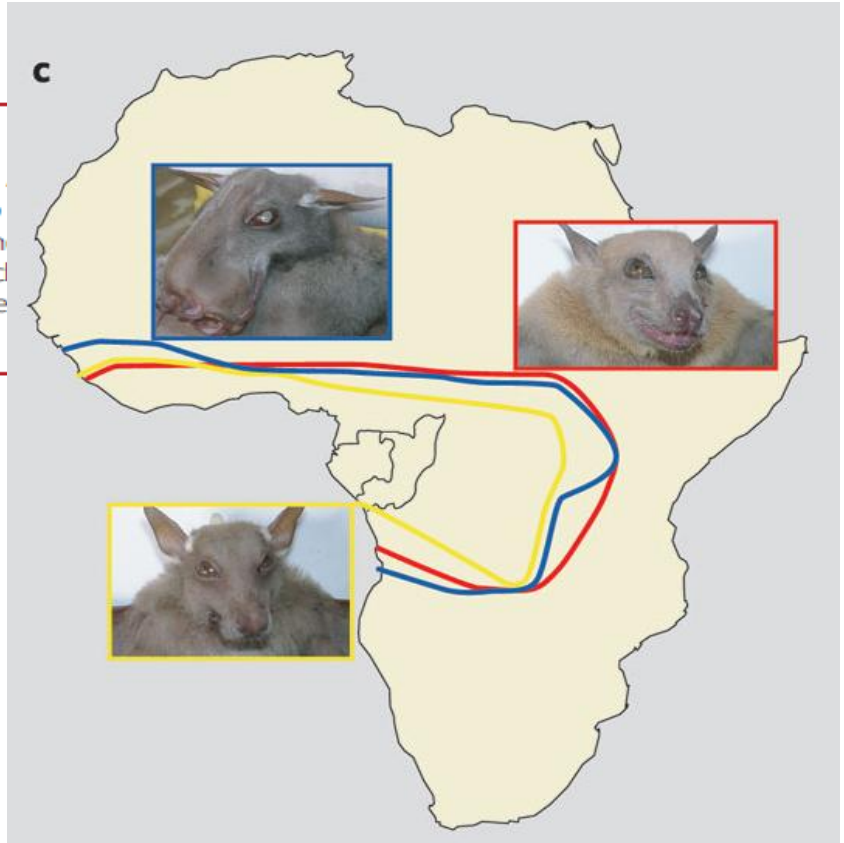
Chippaux *Journal of Venomous Animals and Toxins including Tropical Diseases* 2014, **20**:44
http://www.jvat.org/content/20/1/44

Journal of
Venomous Animals and Toxins
including Tropical Diseases

REVIEW **Open Access**

Outbreaks of Ebola virus disease in Africa: the beginnings of a tragic saga

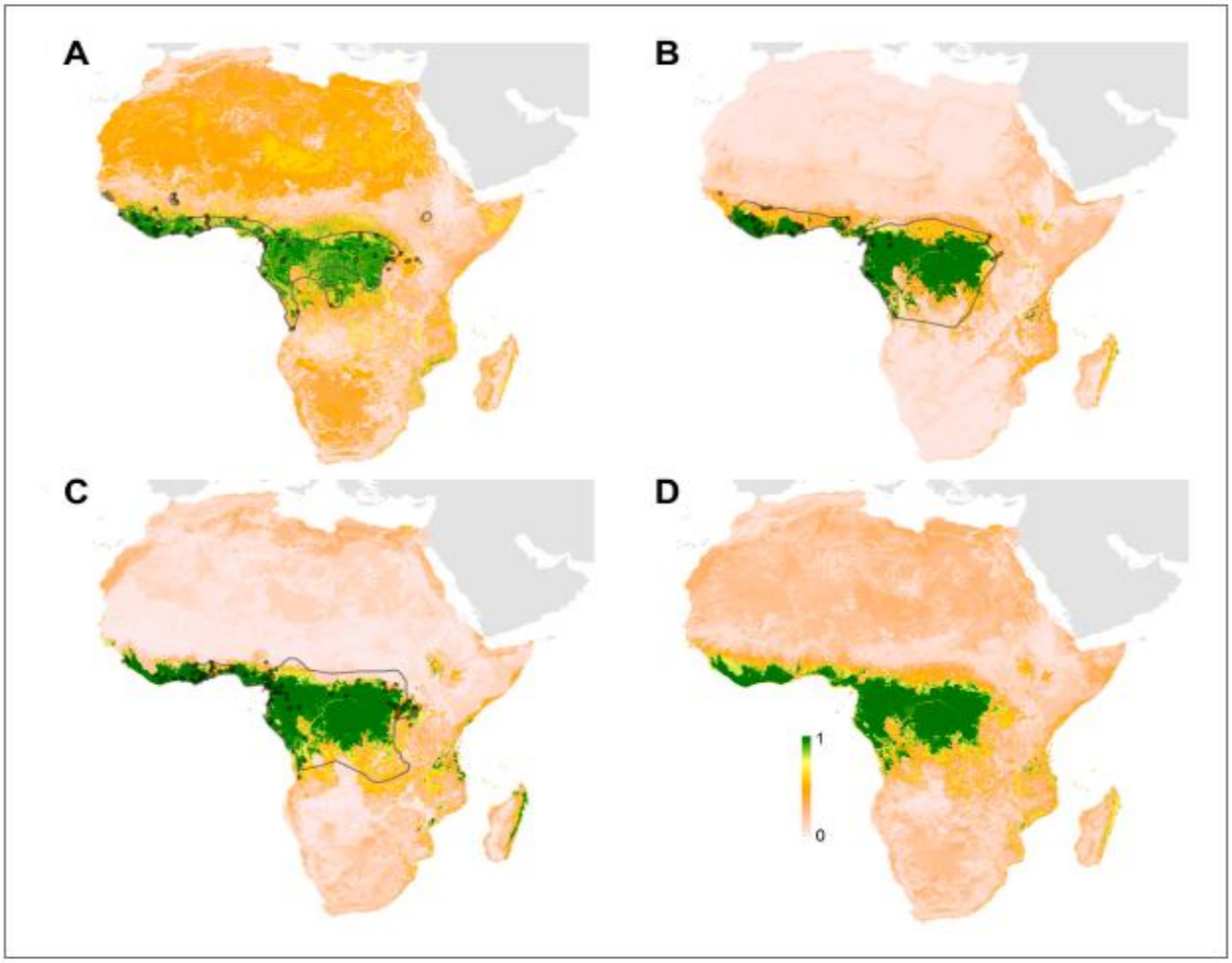
Jean-Philippe Chippaux[1,2]



Mapping the zoonotic niche of Ebola virus disease in Africa

David M Pigott[1†], Nick Golding[1†], Adrian Mylne[1], Zhi Huang[1], Andrew J Henry[1], Daniel J Weiss[1], Oliver J Brady[1], Moritz UG Kraemer[1], David L Smith[1,2], Catherine L Moyes[1], Samir Bhatt[1], Peter W Gething[1], Peter W Horby[3], Isaac I Bogoch[4,5], John S Brownstein[6,7], Sumiko R Mekaru[8], Andrew J Tatem[9,10,13], Kamran Khan[4,11], Simon I Hay[1,12*]

- *Hypsignathus monstrosus*
- *Myonycteris torquata*
- *Epomops franqueti*



Pigott *et al.* eLife 2014;3:e04395. DOI: 10.7554/eLife.04395

Batı Afrika'da neden şimdi görüldü?

PLOS | NEGLECTED TROPICAL DISEASES

Editorial

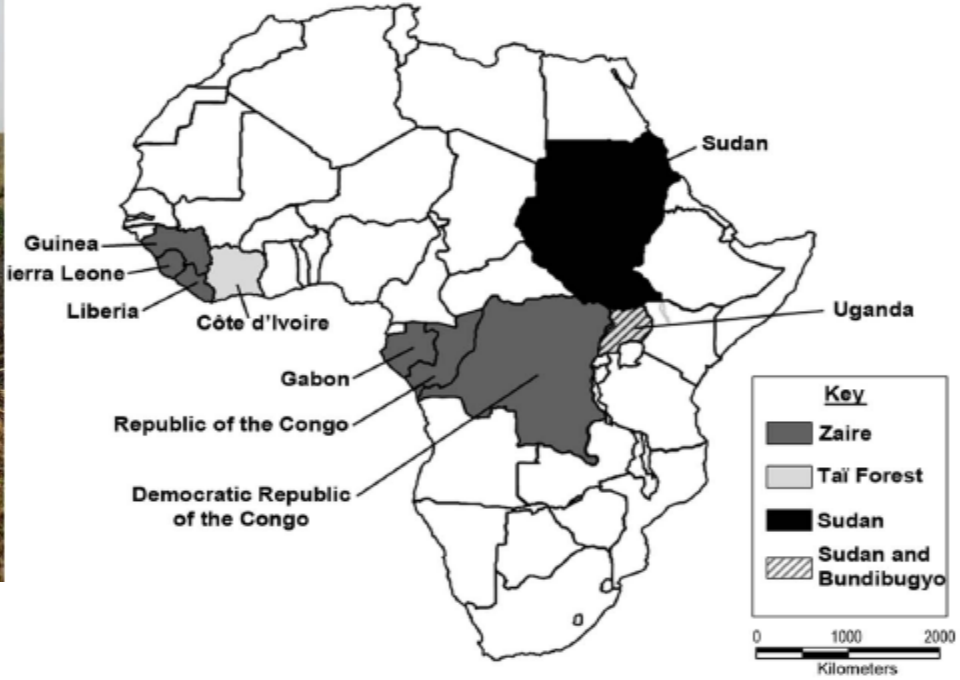
doi:10.1371/journal.pntd.0003056.g003
PLOS Neglected Tropical Diseases | www.plosntds.org

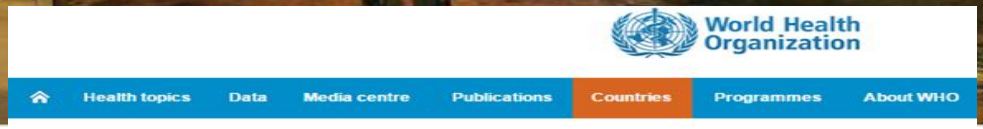
Outbreak of Ebola Virus Disease in Guinea: Where Ecology Meets Economy

Daniel G. Bausch[1,2*], Lara Schwarz[3]

1 Tulane School of Public Health and Tropical Medicine, New Orleans, Louisiana, United States of America, **2** United States Naval Medical Research Unit No. 6, Lima, Peru, **3** McGill University, Montreal, Canada

Orman yıkımı





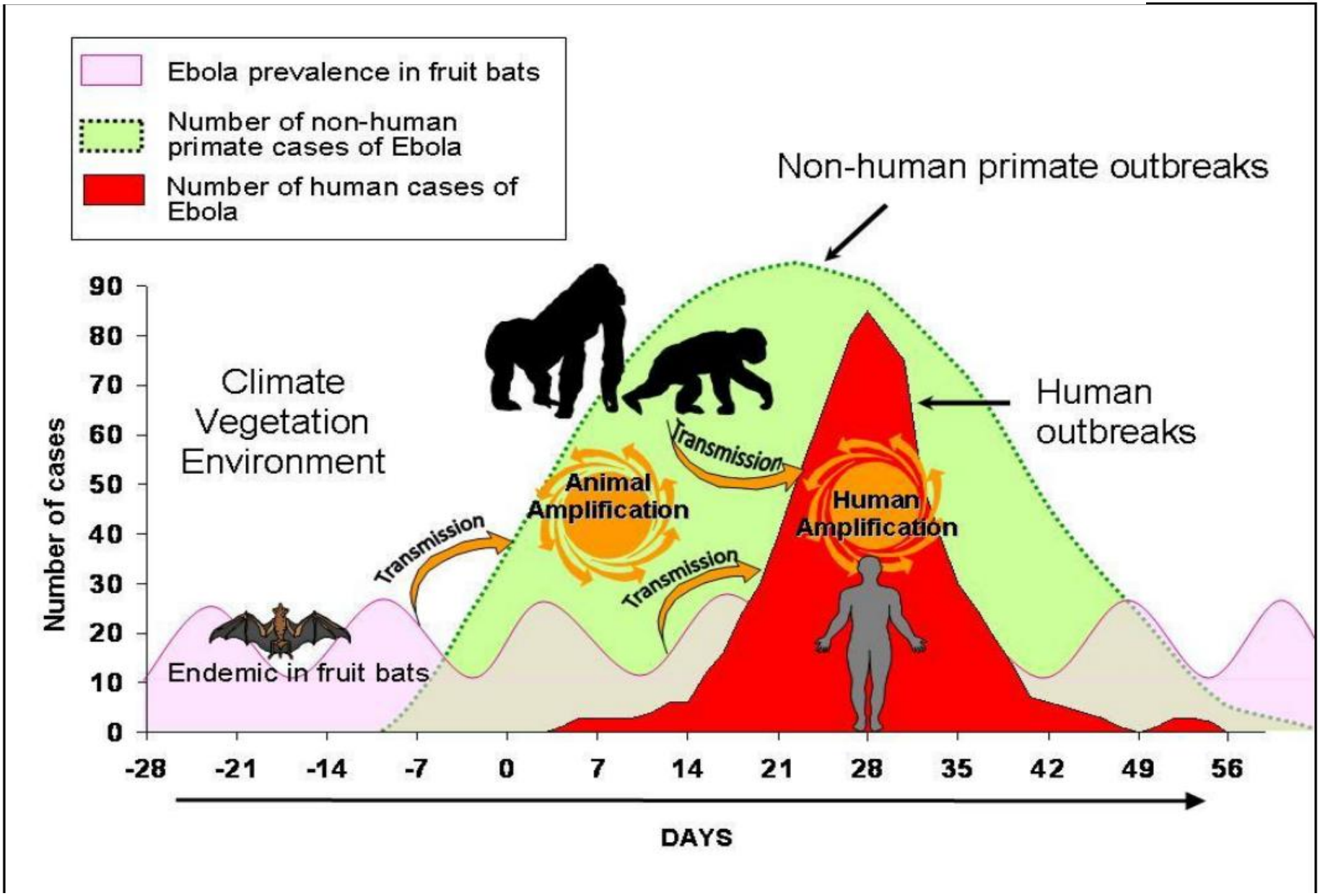
- İnsani gelişim indeksi (187 ülke sıralamasında)
- Gine 178.
- Sierra Leone 177.
- Liberya 174.sırada

doi:10.1371/journal.pntd.0003056.g004

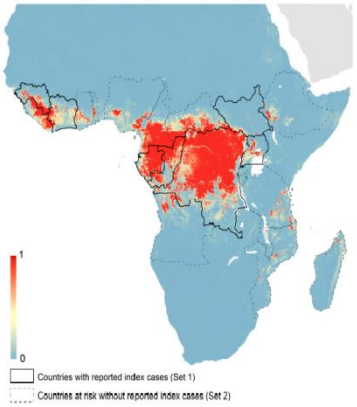
Kişi başına düşen yıllık sağlık harcaması (2012)

Gine	67 $
Liberya	102 $
Sierra Leone	205 $
Türkiye	1144 $
İsviçre	4158 $

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



- Aralık 2013'e kadar 40 yılda toplam olgu sayısı 2322
- 1979-1994 arasında 15 yıl salgın görülmedi ancak serolojik bulgular devam etti
- 2000 yılından sonra salgınlar arttı

Outbreak	Countries	Date range	Location	Species	Reference
1	South Sudan	Jun–Nov 1976	Nzara	SUDV	(WHO International Study Team, 1978)
2	DRC	Sep–Oct 1976	Yambuku	EBOV	(International Commission, 1978)
3	DRC	Jun 1977	Bonduni	EBOV	(Heymann et al., 1980)
4	South Sudan	Jul–Oct 1979	Nzara	SUDV	(Baron et al., 1983)
5	Côte d'Ivoire	Nov 1994	Tai Forest	TAFV	(Le Guenno et al., 1995; Formenty et al., 1999)
6	Gabon	Nov 1994–Feb 1995	Makouka and Andock mining camps	EBOV	(Amblard et al., 1997; Georges et al., 1999; Milolini et al., 2004)
7	DRC	Jan–Jul 1995	Mwembe Forest	EBOV	(Muyembe and Kipasa, 1995; Khan et al., 1999)
8	Gabon	Jan–Mar 1996	Mayibout 2	EBOV	(Georges et al., 1999; Milolini et al., 2004)
9	Gabon	Jul 1996–Jan 1997	Booue	EBOV	(Georges et al., 1999; Milolini et al., 2004)
10	Uganda	Oct 2000–Feb 2001	Rwot-Obillo	SUDV	(WHO, 2001; Okware et al., 2002; Lamunu et al., 2004)
11	Gabon & ROC	Oct 2001–Mar 2002	Mamdemba Entsiami, Abolo and Amboni	EBOV	(WHO, 2003; Milolini et al., 2004; Nkoghe et al., 2005; Pourrut et al., 2005)
			Ekata		
			Oloba		
			Etakangaye		
			Grand Etoumbi		
12	ROC	Dec 2002–Apr 2003	Yembelangoye	EBOV	(WHO, 2003; Pourrut et al., 2005)
			Nearby hunting camp		
			Mvoula		
13	ROC	Oct–Dec 2003	Mbandza	EBOV	(Boumandouki et al., 2005)
14	South Sudan	Apr–Jun 2004	Forests bordering Yambio	SUDV	(WHO, 2005; Onyango et al., 2007)
15	ROC	Apr–May 2005	Odzala National Park	EBOV	(Nkoghe et al., 2011)
16	DRC	May–Nov 2007	Mombo Mounene 2 market	EBOV	(Leroy et al., 2009)
17	Uganda	Aug–Dec 2007	Kabango	BDBV	(Towner et al., 2008; MacNeil et al., 2010; Wamala et al., 2010)
18	DRC	Nov 2008–Feb 2009	Luebo	EBOV	(Grard et al., 2011)
19	Uganda	May 2011	Nakisamata	SUDV	(Shoemaker et al., 2012)
20	DRC	July–Nov 2012	Isiro	BDBV	(CDC, 2014; WHO, 2012b)
21	Uganda	July–Oct 2012	Nyanswiga	SUDV	(CDC, 2014; WHO, 2012a)
22	Uganda	Nov 2012–Jan 2013	Luwero District	SUDV	(WHO, 2012c; CDC, 2014)
23	Guinea	Dec 2013 -	Meliandou	EBOV	(Baize et al., 2014; Bausch and Schwarz, 2014)

Pigott *et al.* eLife 2014;3:e04395. DOI: 10.7554/eLife.04395

SON DURUM

24 Ekim 2014

Countries with Widespread Transmission

Country	Total Cases	Laboratory-Confirmed Cases	Total Deaths
Guinea	1553	1312	926
Liberia	4665	965	2705
Sierra Leone	3896	3389	1281
Total	**10114**	**5666**	**4912**

Countries with Travel-associated Cases

Country	Total Cases	Laboratory-Confirmed Cases	Total Deaths
Mali	1	1	1
Senegal	1*	1*	0
Total	**2**	**2**	**1**

Countries with Travel-associated Cases and Localized Transmission

Country	Total Cases	Laboratory-Confirmed Cases	Total Deaths
Nigeria	20*	19*	8
Spain	1	1	0
United States	4	4	1
Total	**25**	**24**	**9**

World Health Organization
REGIONAL OFFICE FOR Africa

OUTBREAK SUMMARY

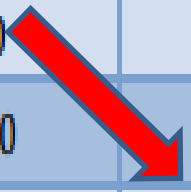
WHO Response to the Ebola Virus Disease outbreak

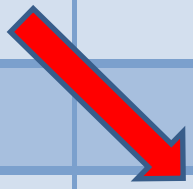
UPDATE BY THE WHO REGIONAL DIRECTOR FOR AFRICA

As of 20 September 2014

A. INTRODUCTION

Countries	New cases and deaths of EVD on 18 Sep 2014		Cumulative number of EVD Cases and deaths		Cumulative number of cases and deaths of EVD in Health Care Workers	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Guinea	6	0	965	623	66	35
Liberia	93	39	3022	1578	174	85
Sierra Leone	41	4	1753	584	96	61
Nigeria	0	0	21	8	11	5
Senegal	0	0	1	0	0	0
DR Congo	3	2	71	40	8	8
Total	**143**	**45**	**5833**	**2833**	**355**	**194**





Global Alert and Response (GAR)

Senegal is now free of Ebola virus transmission

Credit: WHO

17 October 2014 -- WHO officially declares the Ebola outbreak in Senegal over and commends the country on its diligence to end the transmission of the virus. Senegal's response is a good example of what to do when faced with an imported case of Ebola. However, Senegal remains vigilant for any suspected cases by strict compliance with WHO guidelines.

- Read the statement by WHO
- Read about Senegal's success
- Ebola virus disease - website

عربي

World Health Organization

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News and top stories

WHO declares end of Ebola outbreak in Nigeria

20 October 2014 -- WHO officially declares that Nigeria is now free of Ebola virus transmission. This is a spectacular success story that shows that Ebola can be contained. The story of how Nigeria ended what many believed to be potentially the most explosive Ebola outbreak imaginable is worth telling in detail.

Read the statement by WHO

Read the situation assessment: Nigeria free of Ebola virus transmission

WHO/Andrew Esiebo

Liberia: Ebola clinic fills up within hours of opening

September 2014

Last week saw a welcome boost to numbers of treatment places available to people with Ebola in Monrovia, Liberia. The Island Clinic, a private clinic refurbished as an Ebola Treatment Unit by the Ministry of Health and Social Welfare with support from WHO and other partners, opened its doors on Sunday 21 September, adding another desperately needed 120 Ebola treatment beds to the 240 available in Monrovia.

Centers for Disease Control and Prevention
MMWR
Morbidity and Mortality Weekly Report
Early Release / Vol. 63
October 28, 2014

Update: Ebola Virus Disease Outbreak — West Africa, October 2014

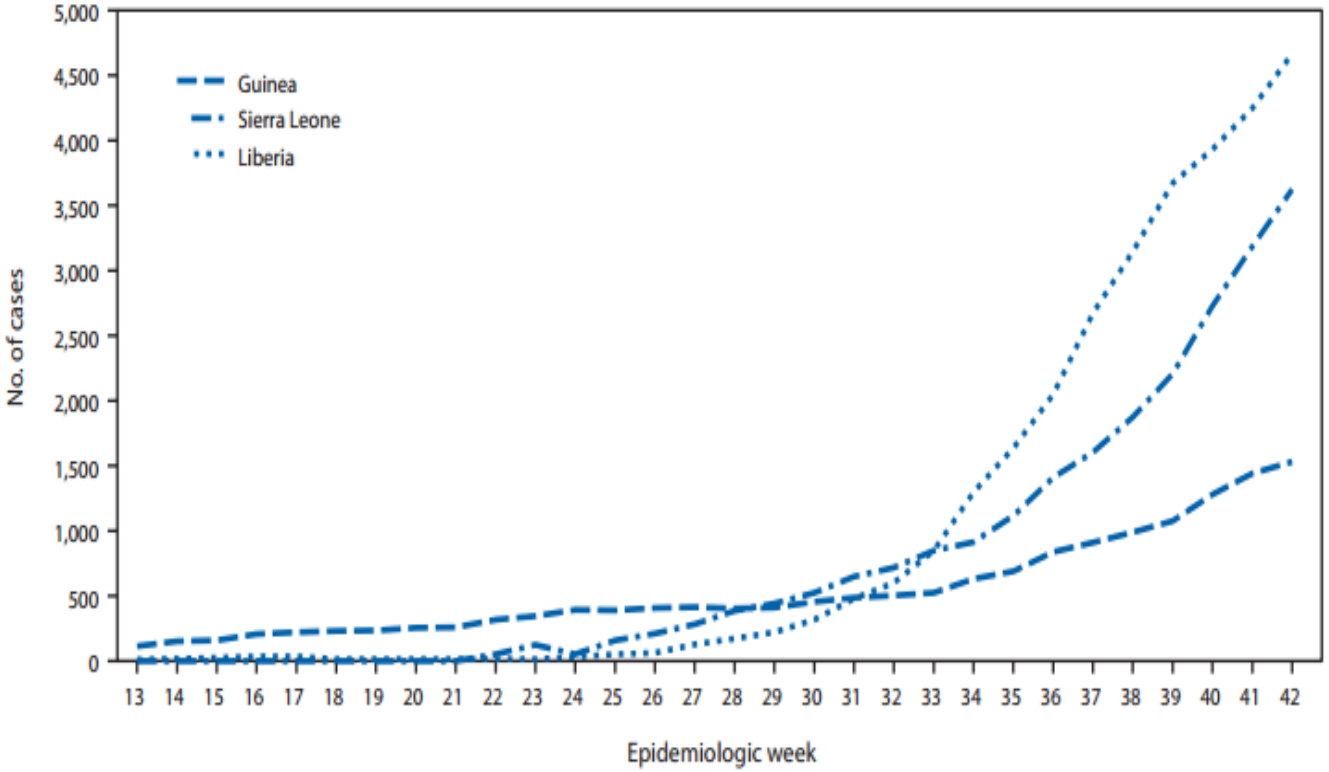
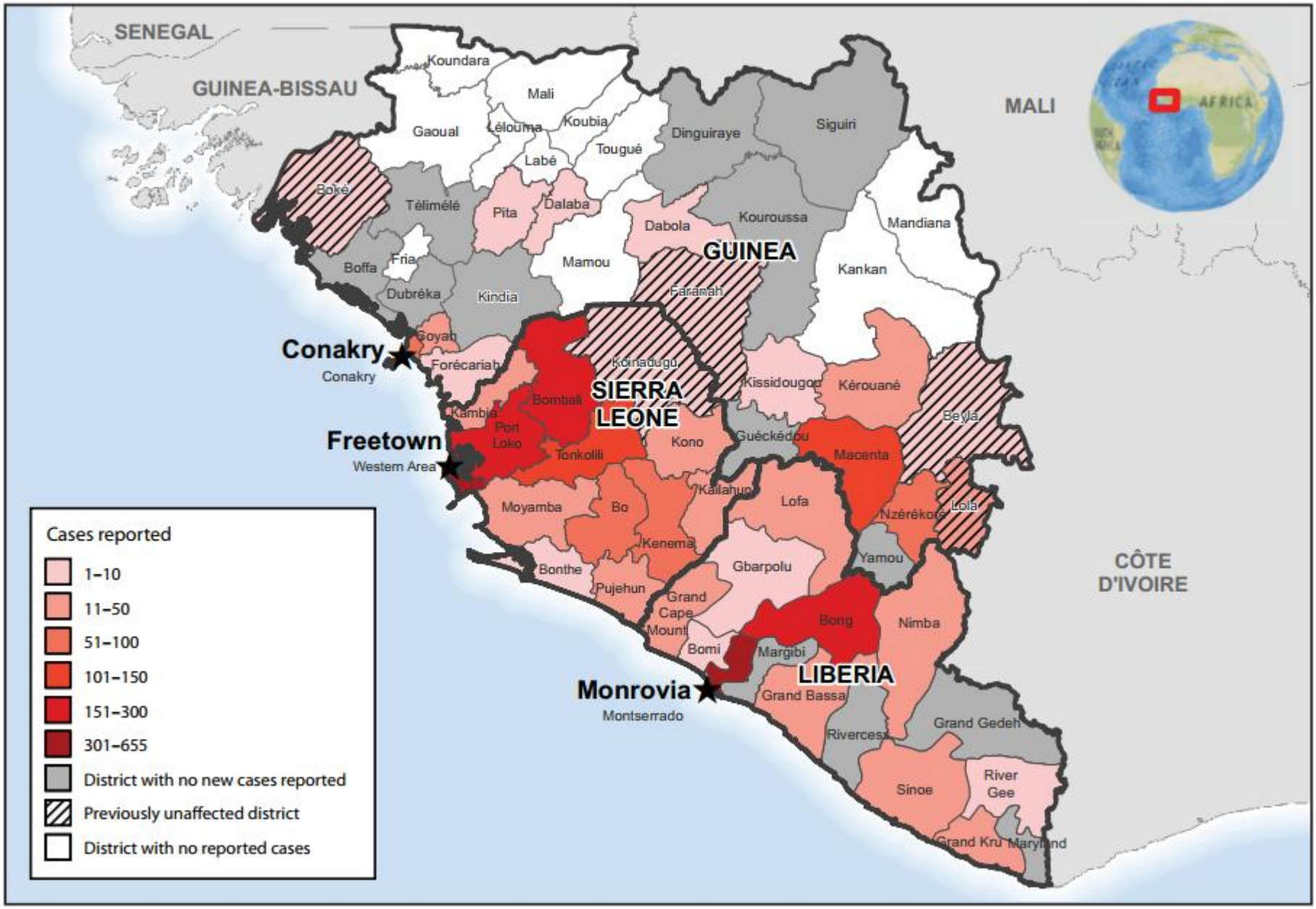


FIGURE 1. Cumulative number of Ebola virus disease cases reported, by epidemiologic week — three countries, West Africa, March 29–October 18, 2014

FIGURE 2. Number of new cases of Ebola virus disease reported — West Africa, September 28–October 18



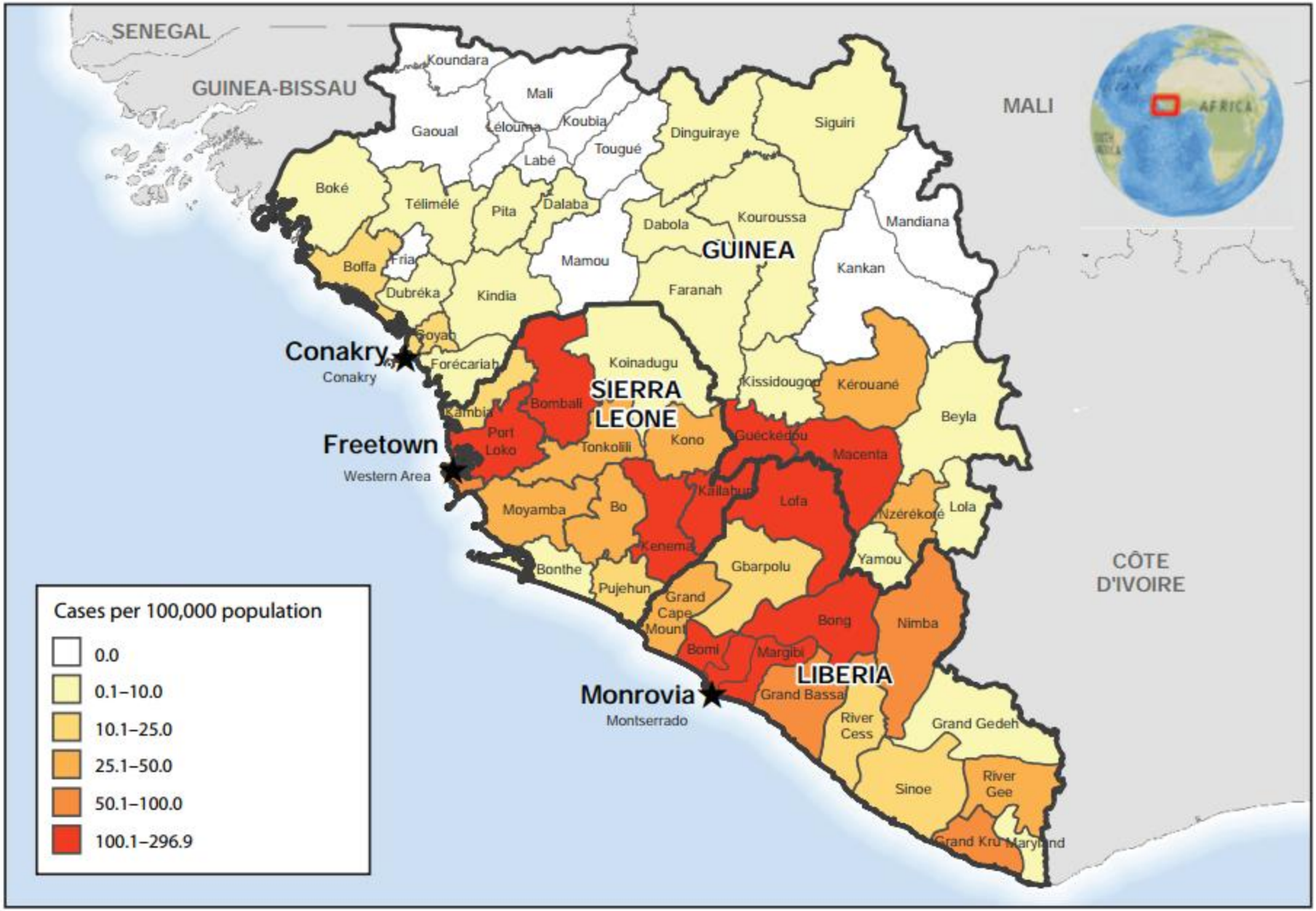


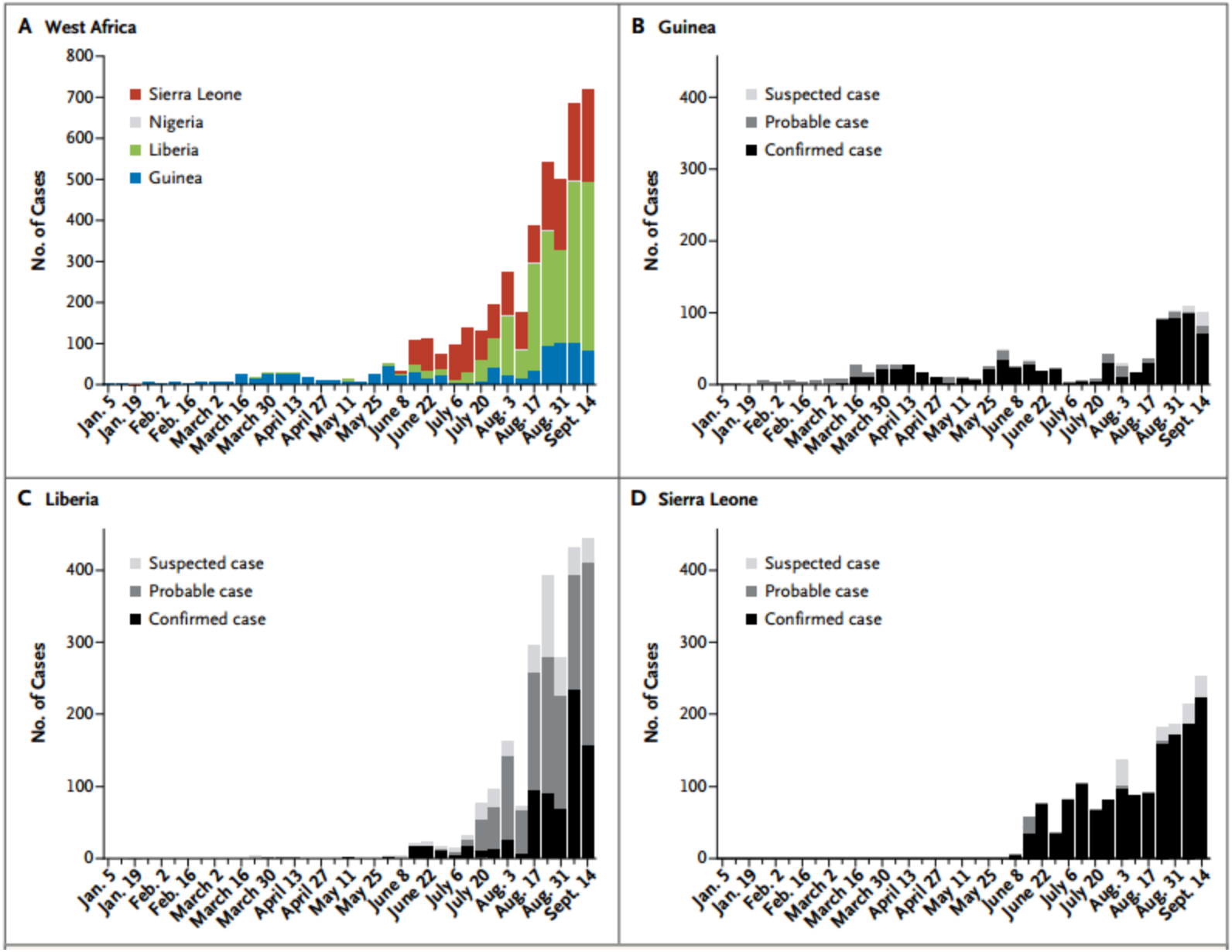
FIGURE 3. Ebola virus disease cumulative incidence — West Africa, October 18, 2014*

The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 16, 2014 VOL. 371 NO. 16

Ebola Virus Disease in West Africa — The First 9 Months of the Epidemic and Forward Projections

WHO Ebola Response Team*


A West Africa
No. of Cases
800
700
600
500
400
300
200
100
0
Sierra Leone
Nigeria
Liberia
Guinea
Jan. 5
Jan. 19
Feb. 2
Feb. 16
March 2
March 16
March 30
April 13
April 27
May 11
May 25
June 8
June 22
July 6
July 20
Aug. 3
Aug. 17
Aug. 31
Sept. 14
B Guinea
No. of Cases
400
300
200
100
0
Suspected case
Probable case
Confirmed case
C Liberia
No. of Cases
400
300
200
100
0
Suspected case
Probable case
Confirmed case
D Sierra Leone
No. of Cases
400
300
200
100
0
Suspected case
Probable case
Confirmed case

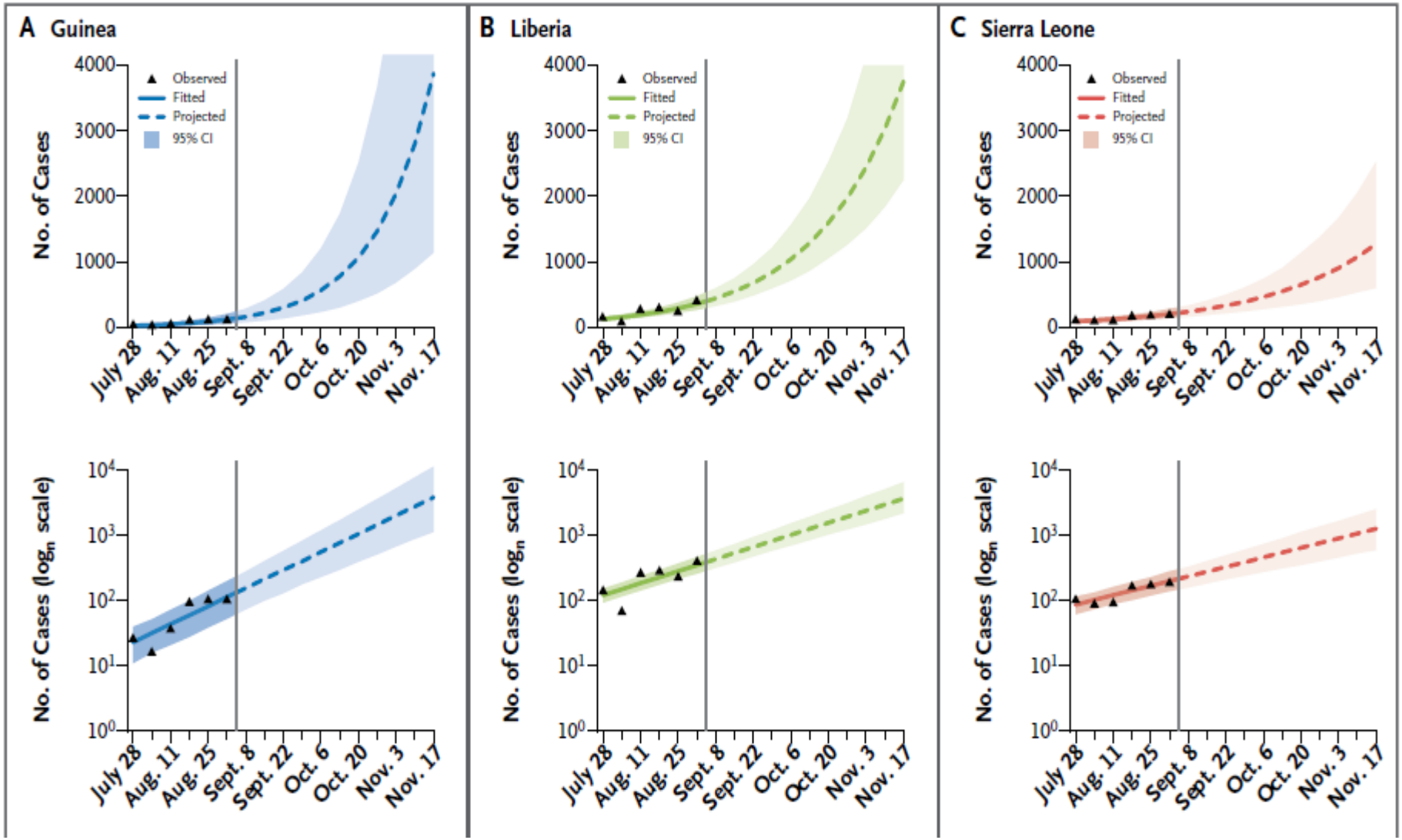
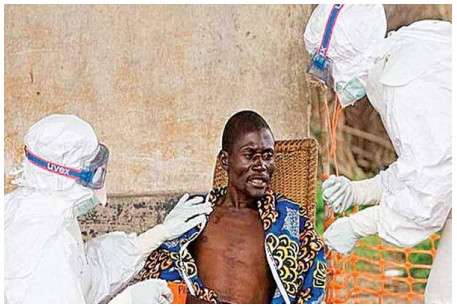


Figure 4. Observed and Projected Case Incidence.

Observed and projected weekly case incidence in Guinea (Panel A), Liberia (Panel B), and Sierra Leone (Panel C) are shown on linear (upper panels) and logarithmic (lower panels) scales

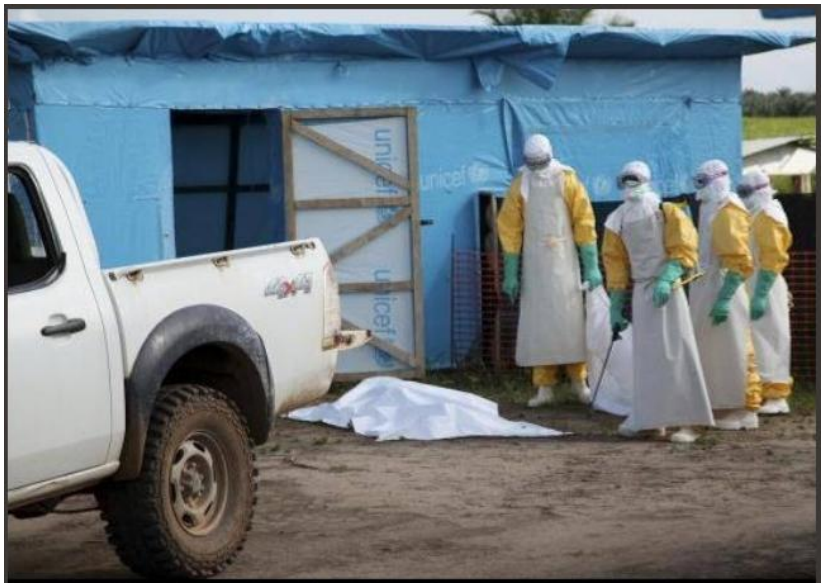
Bulaş Yolu



- Temas
- Damlacık yolu
- Parenteral yol

- Enfekte hayvan ve insanların vücut sıvıları
- Bütünlüğü bozulmuş cilt ve mukozalardan giriyor
  - Kan
  - Tükrük
  - Ter
  - Gözyaşı
  - Semen
  - Kusmuk
  - Balgam
  - İdrar
  - Dışkı

Risk altındakiler



- Ev halkı
- Cenaze defin işlemini yapanlar
- Sağlık çalışanları

- İnkübasyon 2-21 gün (ortalama 8-10 gün)

- Belirtisi olmayan kişi bulaştırıcı değil
- Bulaşıcılık ateş ve diğer belirtiler ortaya çıkınca başlar
- Hastalığın şiddeti ile bulaştırıcılık doğru orantılı

- İyileşenlerin vücut sıvılarında 3 aya kadar kalabiliyor

- Aynı havayı solumakla bulaşmaz

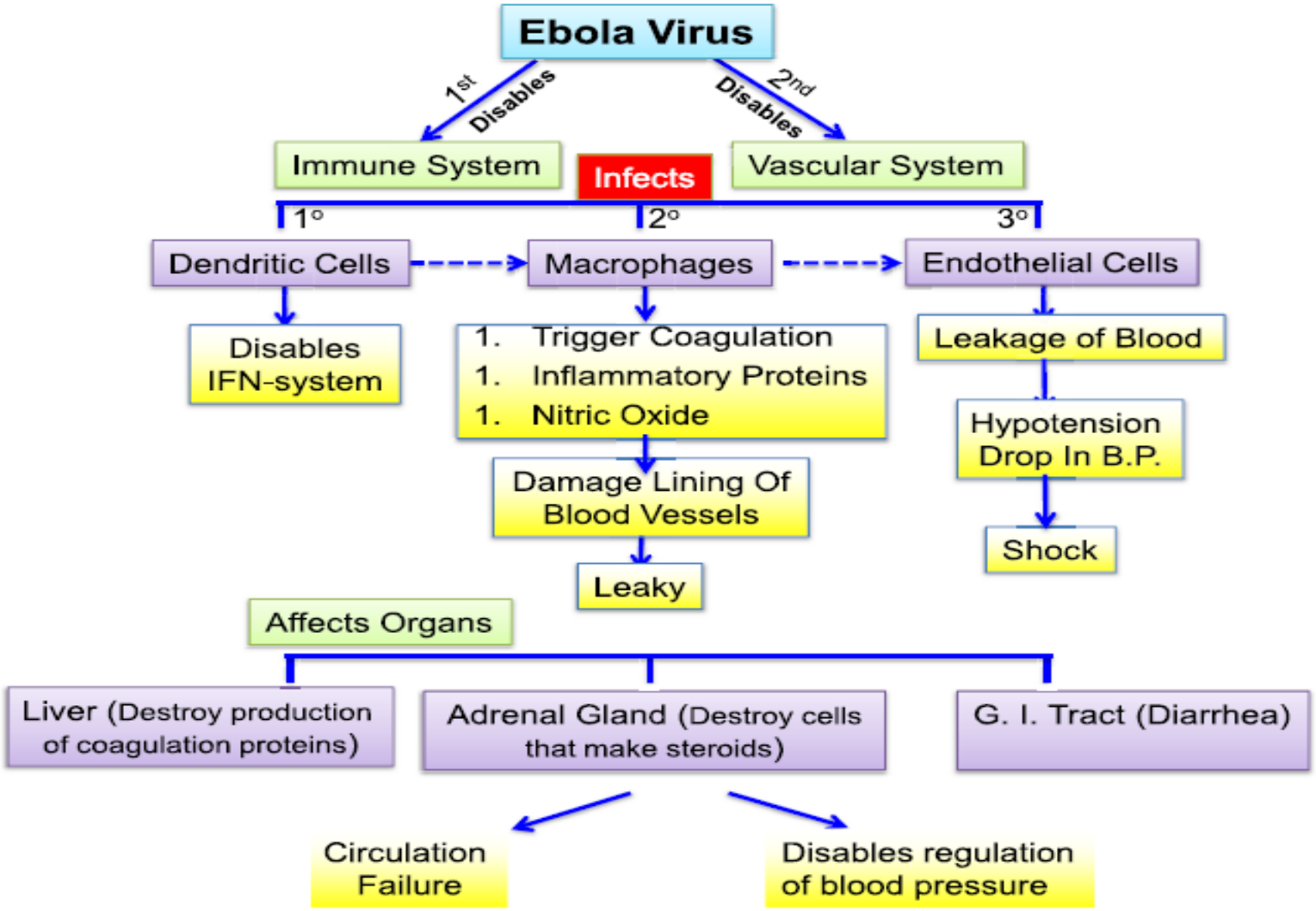
- Su ve gıdalarla bulaşmaz
- Çiğ maymun eti ile temas bulaşıcı

Virus vücut sıvılarında ne kadar süre bulunuyor?

Body Fluid	Acute phase of illness number detected/number tested (percent)	Convalescent phase of illness number detected/number tested (percent)	Last day detected after symptom onset described in the literature	Comments
Skin	1/8 (13%)	0/4 (0%)	6	
Saliva	8/12 (67%)	0/4 (0%)	8	
Urine	0/7 (0%)	0/4 (0%)	23	Ebola virus antigen has been detected in the urine in other studies[20]
Stool / Feces	2/4 (50%)	n/d	29	
Breast milk	1/1 (100%)	1/1 (100%)	15	Ebola infects circulating macrophages which are present in breast milk[16]
Semen	n/d	1/2 (50%)	101	Sexual transmission of Marburg virus (but not Ebola virus) has been described[36]
Vaginal fluid	n/d	n/d	33	

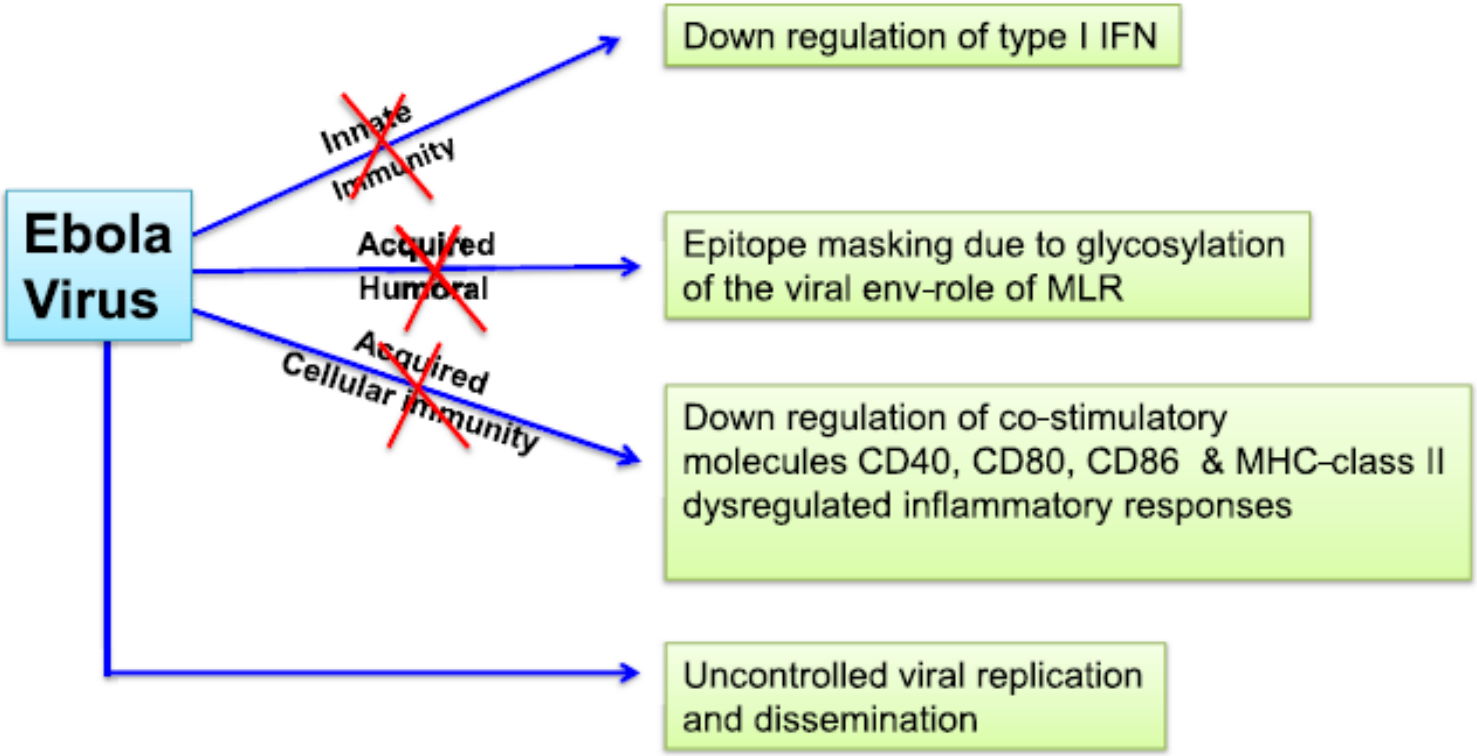
http://www.cdc.gov/vhf/ebola/transmission/human-transmission.html

Ebola Virus enfeksiyonu patofizyolojisi



Ansari AA, Clinical features and pathobiology of Ebolavirus infection, Journal of Autoimmunity (2014), http://dx.doi.org/10.1016/j.jaut.2014.09.001

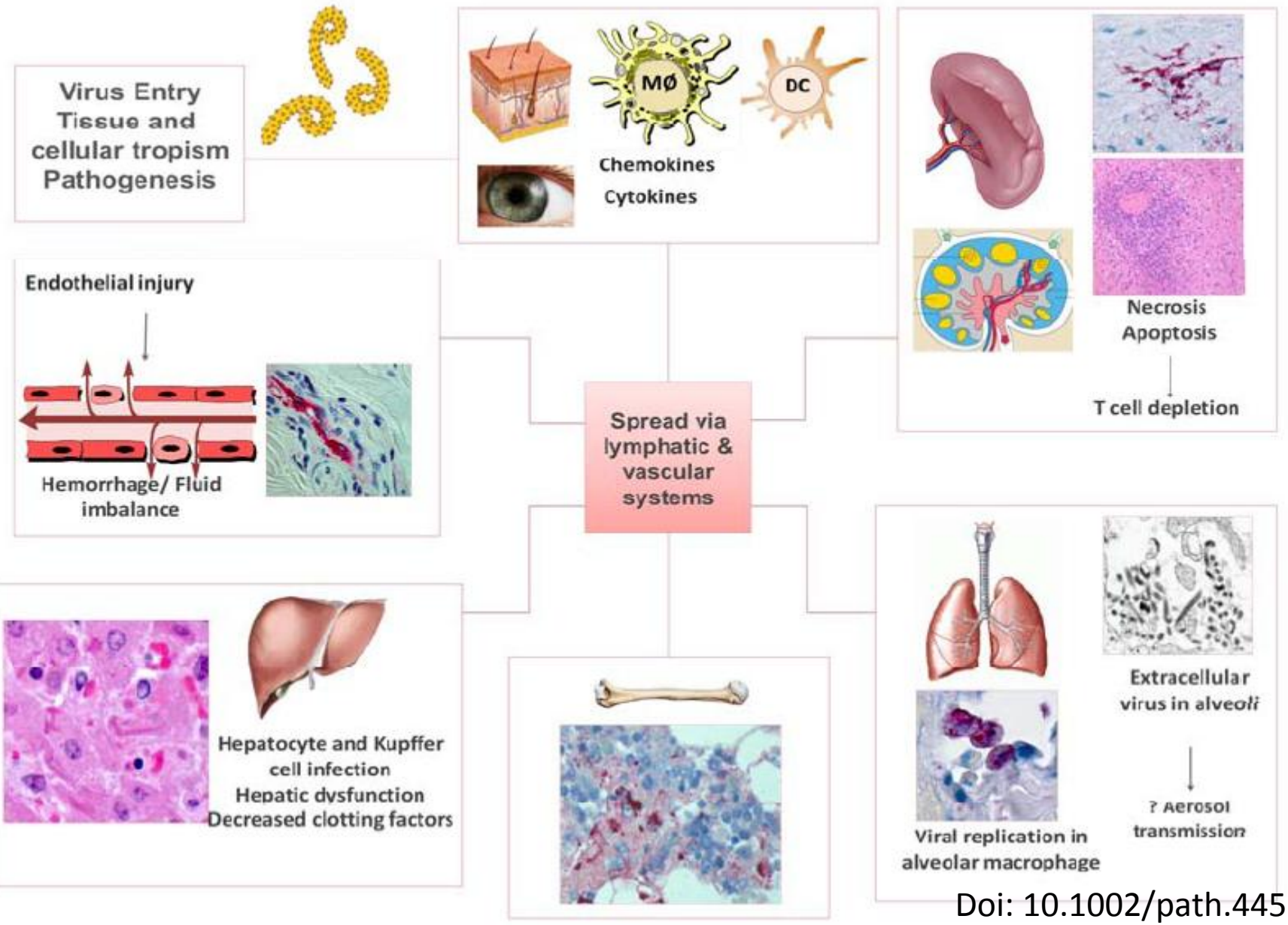
Ebola virusun immün sistem üzerine etkisi



Ansari AA, Clinical features and pathobiology of Ebolavirus infection, Journal of Autoimmunity (2014), http://dx.doi.org/10.1016/j.jaut.2014.09.001

Tissue and cellular tropism, pathology and pathogenesis of Ebola and Marburg Viruses

Roosecelis Brasil Martines[#], Dianna L. Ng[#], Patricia W. Greer[#], Pierre E. Rollin[*], and Sherif R. Zaki[#].



Doi: 10.1002/path.4456

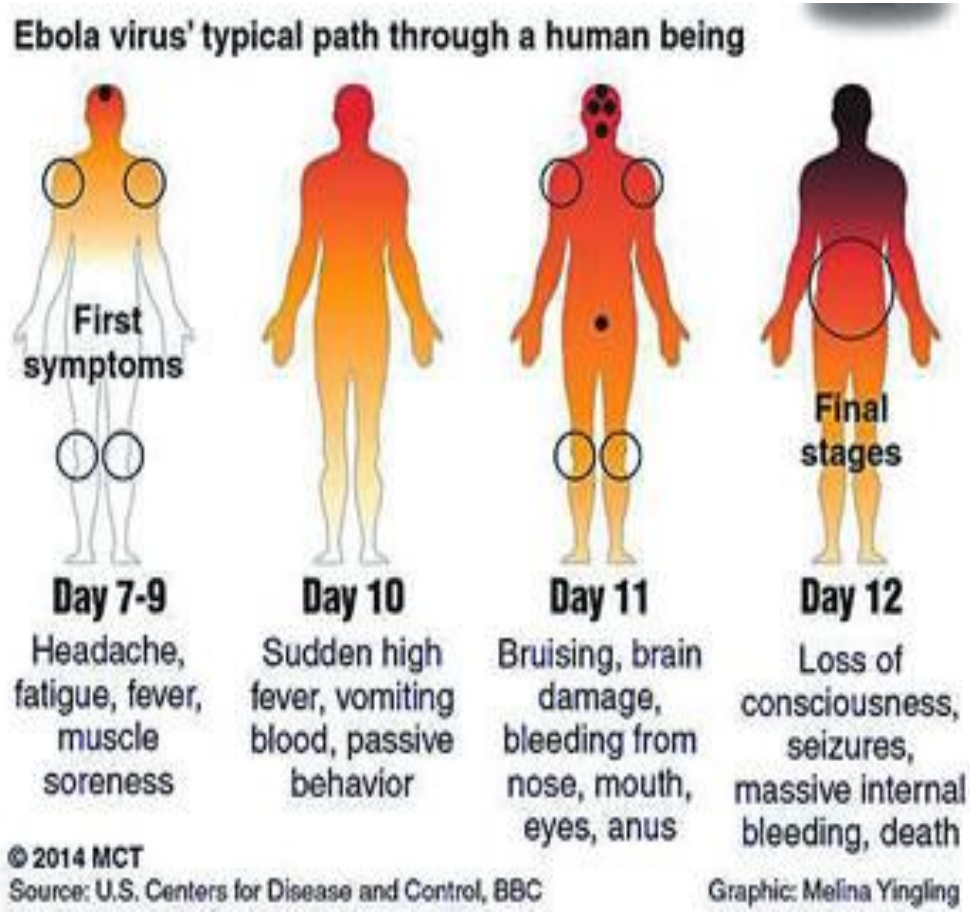
Belirtiler

Başlangıç “flu like”

- Ateş
- Başağrısı
- Boğaz ağrısı
- Eklem ve kas ağrısı

Sonra semptomlar ağırlaşır

- Kusma
- İshal
- Konjunktivit
- Döküntüler
- Kanamalar



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 OCTOBER 16, 2014 VOL. 371 NO. 16

Ebola Virus Disease in West Africa — The First 9 Months of the Epidemic and Forward Projections

WHO Ebola Response Team*

Demographic characteristics				
Male sex	685/1415 (48.4)	515/1056 (48.8)	170/359 (47.4)	0.93 (0.73–1.19)
Age group				
<15 yr	190/1378 (13.8)	145/1021 (14.2)	45/357 (12.6)	1.18 (0.83–1.71)
15–44 yr	838/1378 (60.8)	577/1021 (56.5)	261/357 (73.1)	0.48 (0.36–0.62)
≥45 yr	350/1378 (25.4)	299/1021 (29.3)	51/357 (14.3)	2.47 (1.79–3.46)
Health care worker	158/1429 (11.1)	112/1067 (10.5)	46/362 (12.7)	0.86 (0.60–1.27)

General symptoms	
Fever‡	1002/1151 (87.1)
Fatigue	866/1133 (76.4)
Loss of appetite	681/1055 (64.5)
Vomiting	753/1114 (67.6)
Diarrhea	721/1099 (65.6)
Headache	553/1035 (53.4)
Abdominal pain	439/992 (44.3)
Muscle pain	385/990 (38.9)
Joint pain	374/950 (39.4)
Chest pain	254/686 (37.0)
Cough	194/655 (29.6)
Difficulty breathing	155/665 (23.3)
Difficulty swallowing	169/514 (32.9)
Conjunctivitis	137/658 (20.8)
Sore throat	102/467 (21.8)
Confusion	84/631 (13.3)
Hiccups	108/947 (11.4)
Jaundice	65/627 (10.4)
Eye pain	48/622 (7.7)
Rash	37/642 (5.8)
Coma or unconsciousness	37/627 (5.9)

Laboratuvar Bulguları

- Lökopeni
- Lenfopeni
- Trombositopeni
- AST, ALT yüksekliği
- PT, aPTT'de uzama
- Fibrin yıkım ürünlerinde artış

Tanı

- ELISA (Biyogüvenlik Düzeyi 3)
- PCR (Biyogüvenlik Düzeyi 3)

- Virus kültürü (Biyogüvenlik düzeyi 4)

Figure 3 Study of Ebola virus in a high-security laboratory BSL-4 (photo by IRD, ©IRD).

Tissue and cellular tropism, pathology and pathogenesis of Ebola and Marburg Viruses

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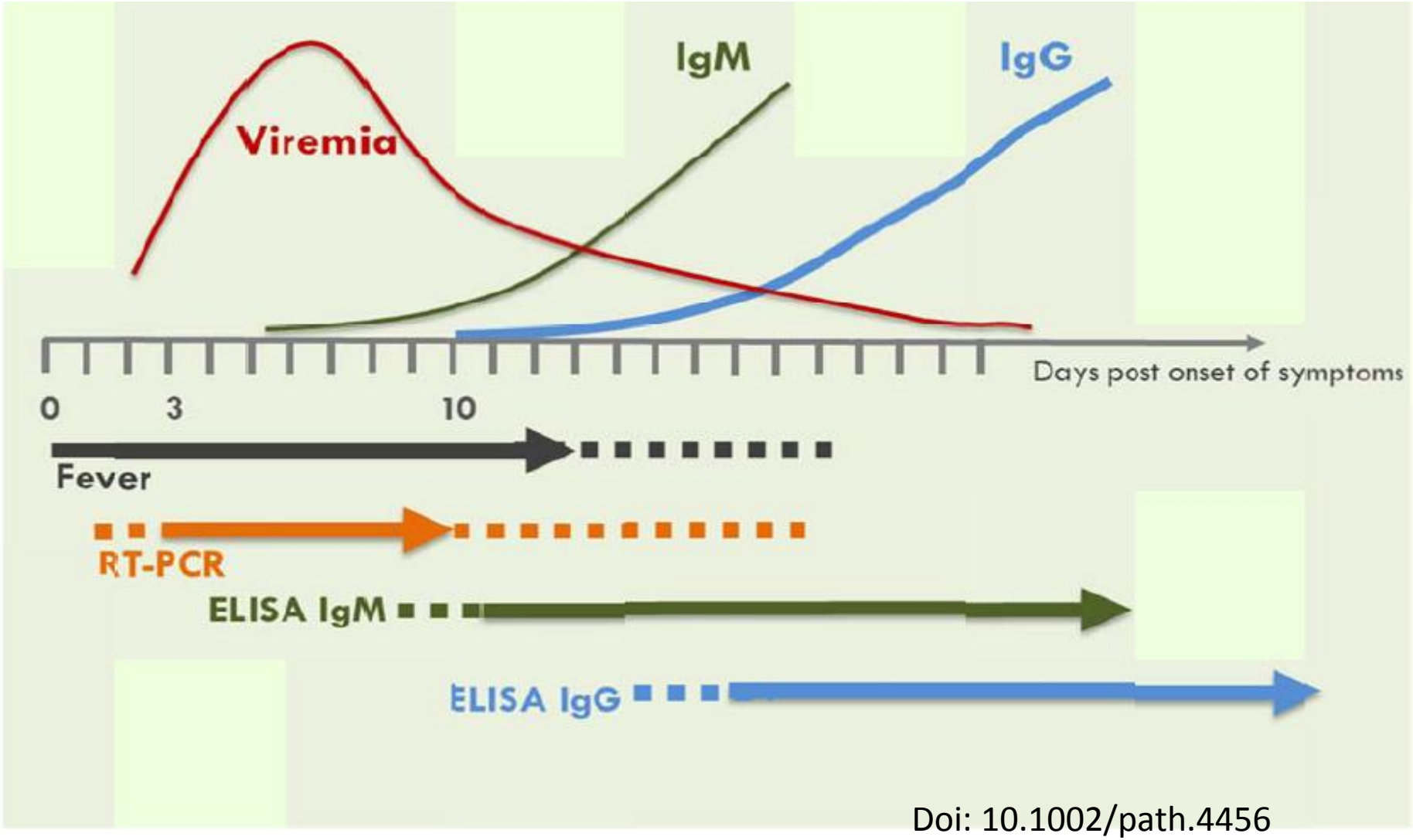

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Tissue and cellular tropism, pathology and pathogenesis of Ebola and Marburg Viruses

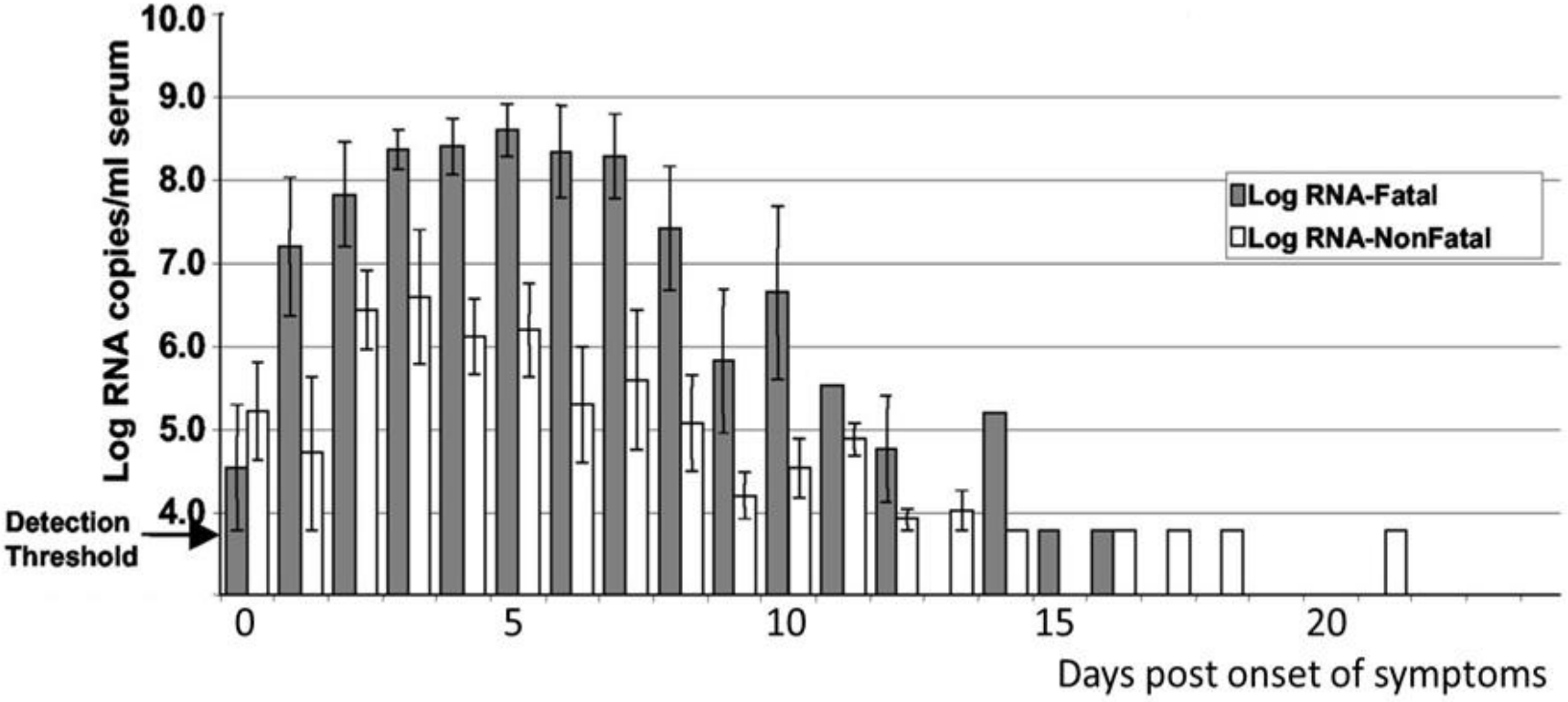
Roosecelis Brasil Martines[#], Dianna L. Ng[#], Patricia W. Greer[#], Pierre E. Rollin[*], and Sherif R. Zaki[#].

Timeline of infection	Diagnostic tests available
Within a few days after symptoms begin	• Antigen-capture enzyme-linked immunosorbent assay (ELISA) testing • IgM ELISA • Polymerase chain reaction (PCR) • Virus isolation
Later in disease course or after recovery	• IgM and IgM antibodies
Retrospectively in deceased patients	• Histopathology • Immunohistochemistry testing • PCR • Virus isolation • Electron microscopy

Doi: 10.1002/path.4456

Figure 2 Ebola virus blood testing by government health workers in the Kenema district, Sierra Leone, June 25, 2014.

Ebola virus RNA kopya düzeyleri (27 fatal, 18 sağ kalan hasta)



http://www.cdc.gov/vhf/ebola/transmission/human-transmission.html

Ayırıcı tanı, salgın bölgesinde diğer hastalıklar ne durumda?

Ebola obstructs malaria control

Outbreak is shutting down prevention and treatment programmes in West Africa.

BY ERIKA CHECK HAYDEN

As the Ebola death toll spirals into the thousands in West Africa, the outbreak could have a spillover effect on the region's deadliest disease. The outbreak has virtually shut down malaria control efforts in Liberia, Guinea and Sierra Leone, raising fears 6,300 people in those countries in 2012, most of them young children. Overall, malaria deaths have fallen by about 30% in Africa since 2000 thanks to national programmes supported by international funding agencies such as the Global Fund to Fight AIDS, Tuberculosis and Malaria, the US Agency for International Development and the WHO's Roll Back Malaria Partnership, based in Geneva, Switzerland.

He says that malaria drugs are sitting in government warehouses, especially in Liberia and in Guinea, where medical supply trucks have been attacked by people angry with the government's handling of the Ebola outbreak. Liberia had planned a national campaign to

Tedavi

- “No cure”
- Destek tedavi
- Oksijen
- İv sıvı desteği
- Kan transfüzyonu
- Şok medikasyonu
- Ağrı medikasyonu

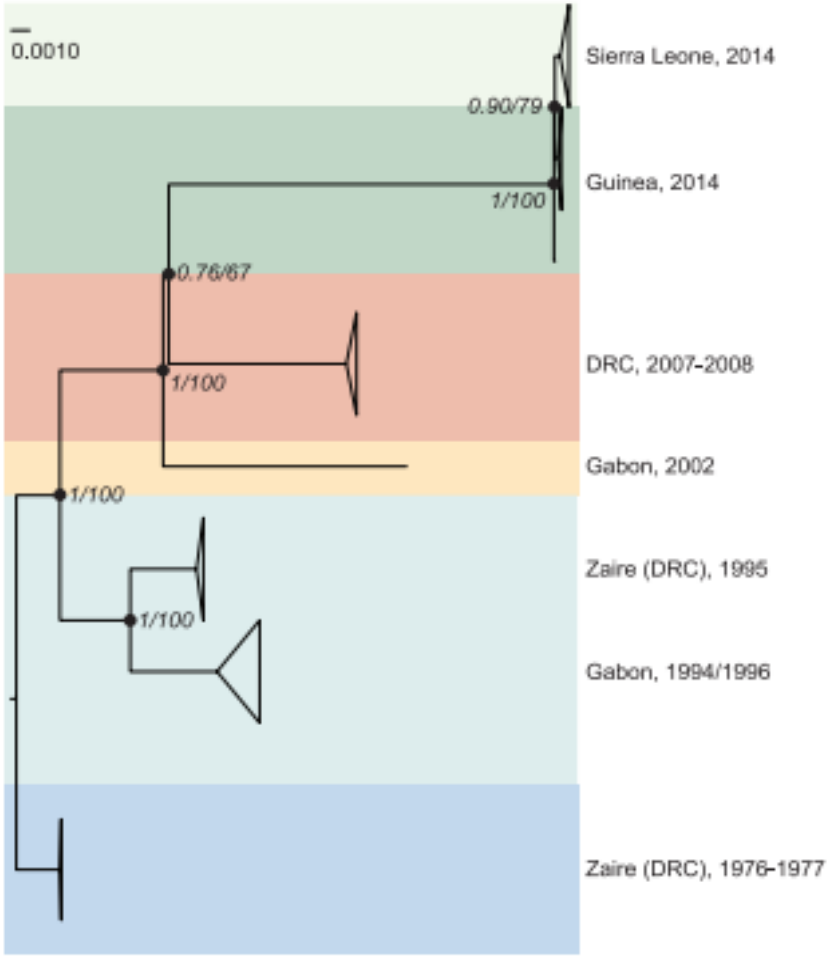
- Monoklonal antikor (?)
- Nükleozid analoğu (?)

Virus genetik değişikliğe mi uğradı?

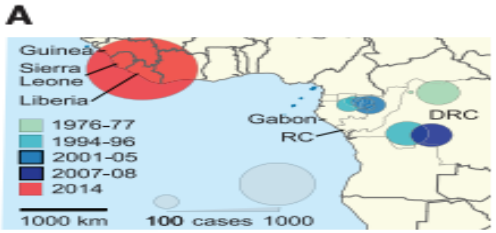
Genomic surveillance elucidates Ebola virus origin and transmission during the 2014 outbreak

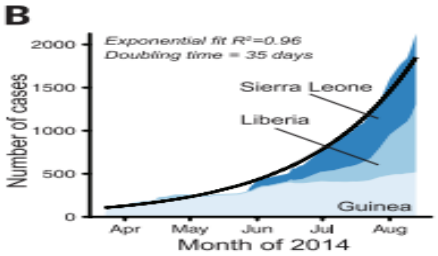
Stephen K. Gire,[1,2*] Augustine Goba,[3*†] Kristian G. Andersen,[1,2*†] Rachel S. G. Sealfon,[2,4] Daniel J. Park,[2*] Lansana Kanneh,[3] Simbirie Jalloh,[3] Mambu Momoh,[3,5] Mohamed Fullah,[3,5‡] Gytis Dudas,[6] Shirlee Wohl,[1,2,7] Lina M. Moses,[8] Nathan L. Yozwiak,[1] Sarah Winnicki,[1,2] Christian B. Matranga,[2] Christine M. Malboeuf,[2] James Qu,[2] Adrianne D. Gladden,[2] Stephen F. Schaffner,[1,2] Xiao Yang,[2] Pan-Pan Jiang,[1,2] Mahan Nekoui,[1,2] Andres Colubri,[1] Moinya Ruth Coomber,[3] Mbalu Fonnie,[3‡] Alex Moigboi,[3‡] Michael Gbakie,[3] Fatima K. Kamara,[3] Veronica Tucker,[3] Edwin Konuwa,[3] Sidiki Saffa,[3‡] Josephine Sellu,[3] Abdul Azziz Jalloh,[3] Alice Kovoma,[3‡] James Koninga,[3] Ibrahim Mustapha,[3] Kandeh Kargbo,[3] Momoh Foday,[3] Mohamed Yillah,[3] Franklyn Kanneh,[3] Willie Robert,[3] James L. B. Massally,[3] Sinéad B. Chapman,[2] James Bochicchio,[2] Cheryl Murphy,[2] Chad Nusbaum,[2] Sarah Young,[2] Bruce W. Birren,[2] Donald S. Grant,[3] John S. Scheiffelin,[8] Eric S. Lander,[2,7] Christian Happi,[10] Sahr M. Gevao,[11] Andreas Gnirke,[2§] Andrew Rambaut,[6,12,13§] Robert F. Garry,[8§] S. Humarr Khan,[3‡§] Pardis C. Sabeti[1,2†§]

12 SEPTEMBER 2014 • VOL 345 ISSUE 6202 **1369**



- Orta Afrika kökenli





Stephen K. Gire *et al.*
Science **345**, 1369 (2014);
DOI: 10.1126/science.1259657

Genomic surveillance elucidates Ebola virus origin and transmission during the 2014 outbreak

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Adrianne D. (
Mahan Nekou
Alex Moigboi
Edwin Konuv
James Konin
Mohamed Yil
Sinéad B. Cha
Sarah Young,
Christian Hap
Robert F. Gar

KLİMİK TÜRK KLİNİK MİKROBİYOLOJİ VE İNFEKSİYON HASTALIKLARI DERNEĞİ

İLETİŞİM ÜYE GİRİŞİ YENİ ÜYE SİTE HARİTASI

DERNEK | YETERLİK KURULU | ÇALIŞMA GRUPLARI | TOPLANTILAR | KLİMİK DERGİSİ | KLİMİK BÜLTENİ

HABERLER »

ÇALIŞMANIN BEŞ YAZARI EBOLA'DAN ÖLDÜ

Ebola's heavy toll on study authors

Etkinlikler

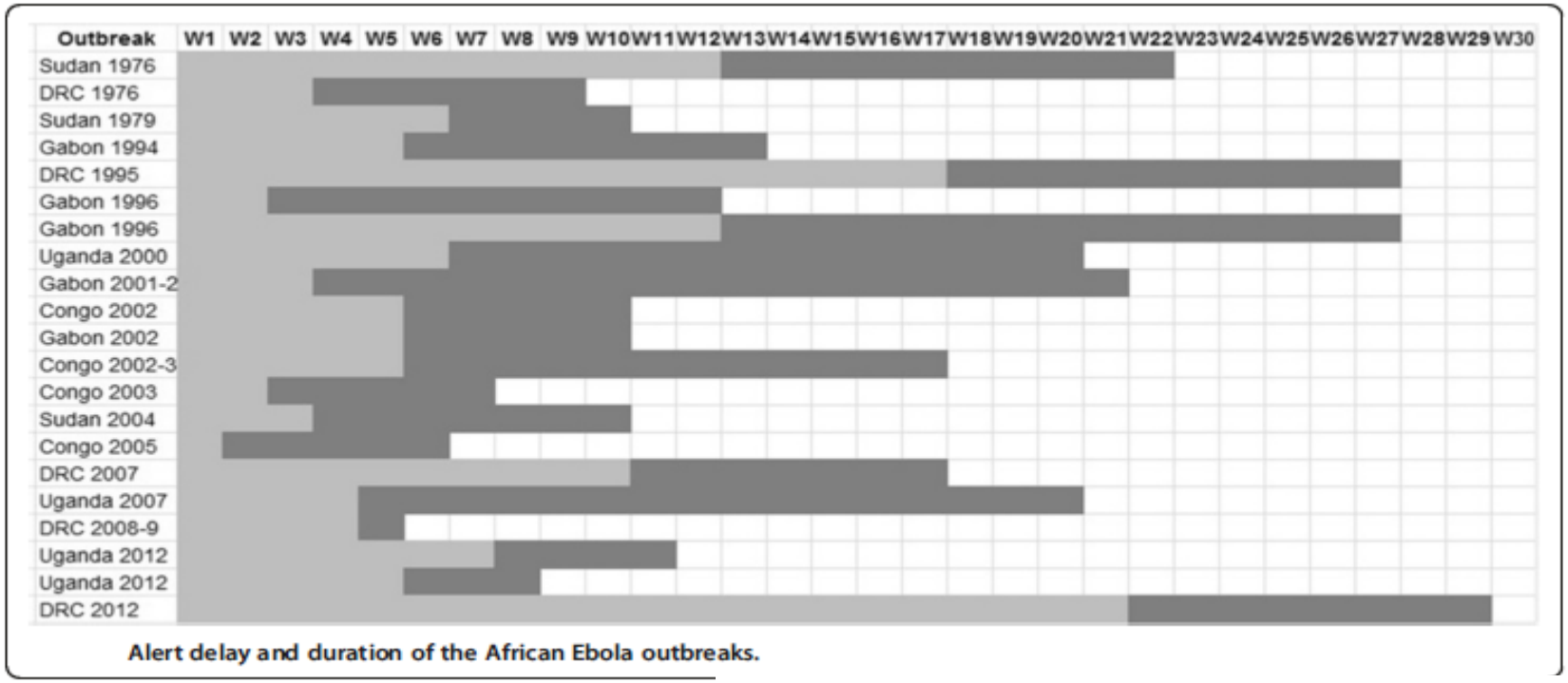
Duyurular

Haberler

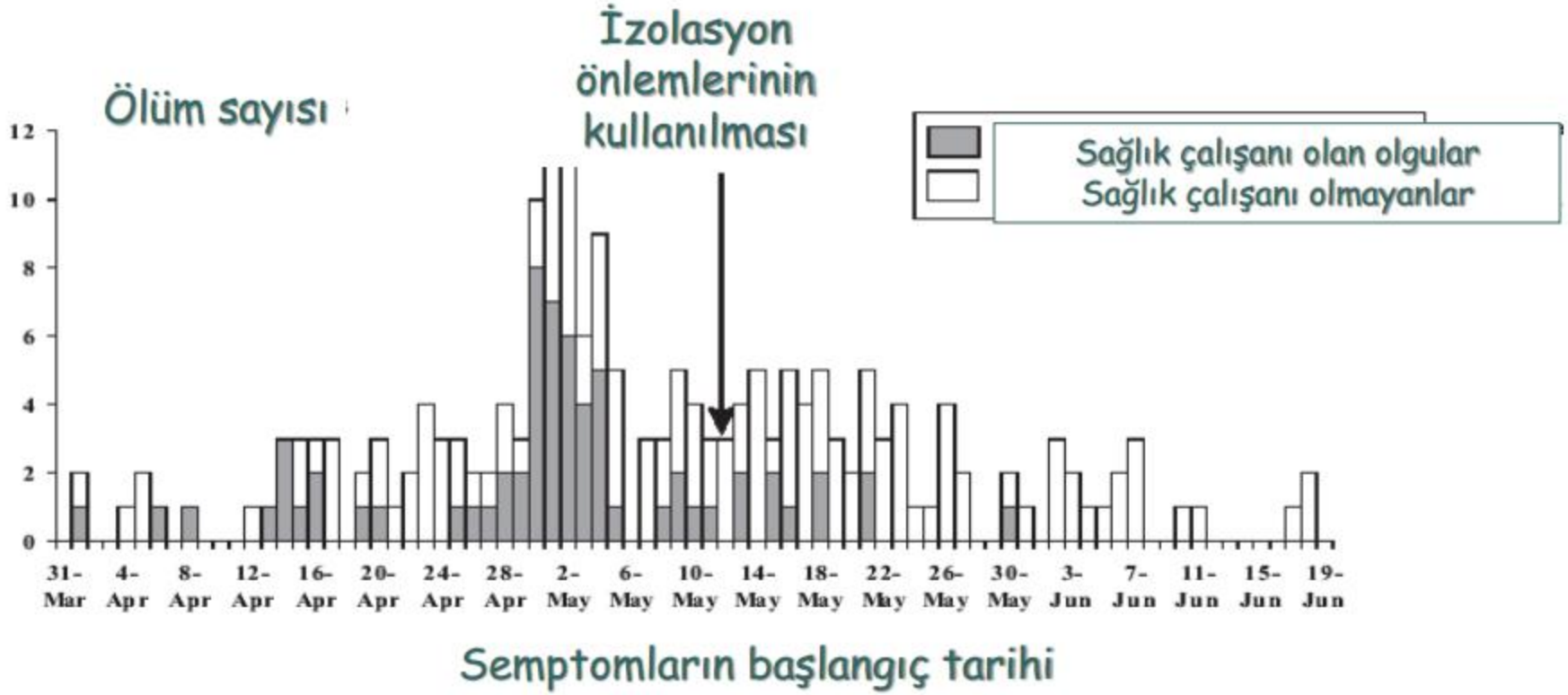
Korunma

Salgın Kontrolü

- Hızlı tanı sağlanması
- İzolasyonun sağlanması (İzolasyon bölgelerinin planlanması
- Uygun koruyucu ekipman kullanımı
- Temaslıların belirlenmesi ve izlemi



Alert delay and duration of the African Ebola outbreaks.



Khan AS. The reemergence of Ebola haemorrhagic fever, Democratic Republic of Congo 1995. J Infect Dis 1999;179(1): 76-86

http://www.klimik.org.tr/wp-content/uploads/2013/03/ayselkocagulcelikbas.pdf

Effect of Ebola Progression on Transmission and Control in Liberia

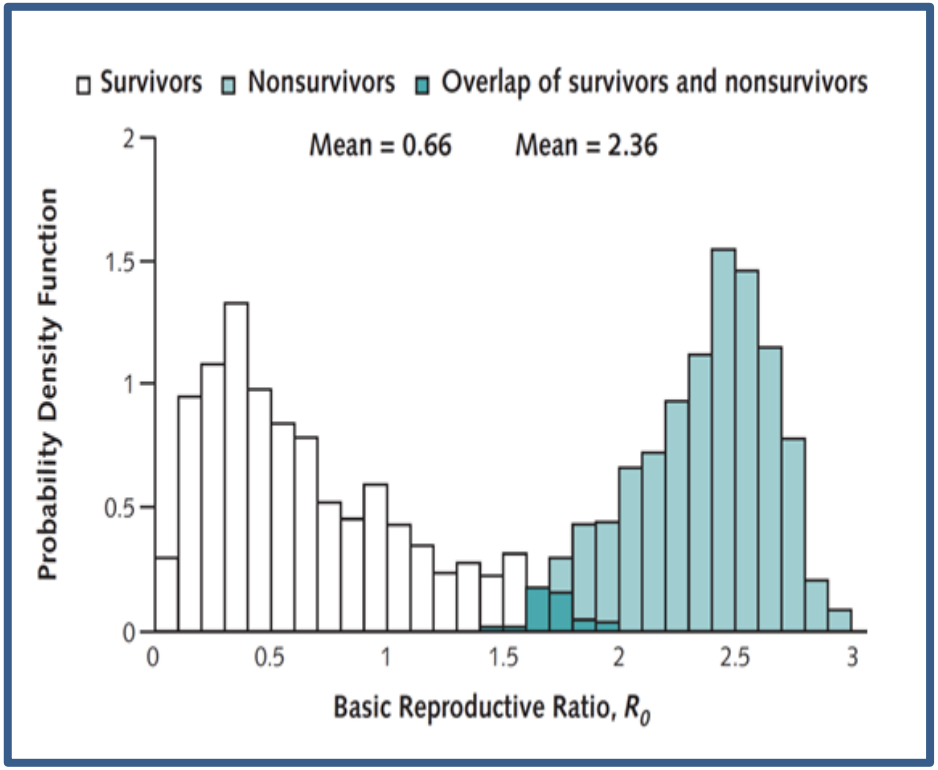
FREE ONLINE FIRST

Dan Yamin, PhD; Shai Gertler; Martial L. Ndeffo-Mbah, PhD; Laura A. Skrip, MPH; Mosoka Fallah, PhD; Tolbert G. Nyenswah, MPH; Frederick L. Altice, MD, MA; and Alison P. Galvani, PhD

Ann Intern Med. Published online 28 October 2014 doi:10.7326/M14-2255

- Temmuz-Eylül 2014 Liberya

- R_0 1.73 (95% CI, 1.66 to 1.83)
- $R_0^{\text{Survivors}}$ 0.66 (95%CI, 0.10 to 1.69)
- $R_0^{\text{Nonsurvivors}}$ 2.36 (95%CI, 1.72-2.80)



Estimating the Reproduction Number of Ebola Virus (EBOV) During the 2014 Outbreak in West Africa

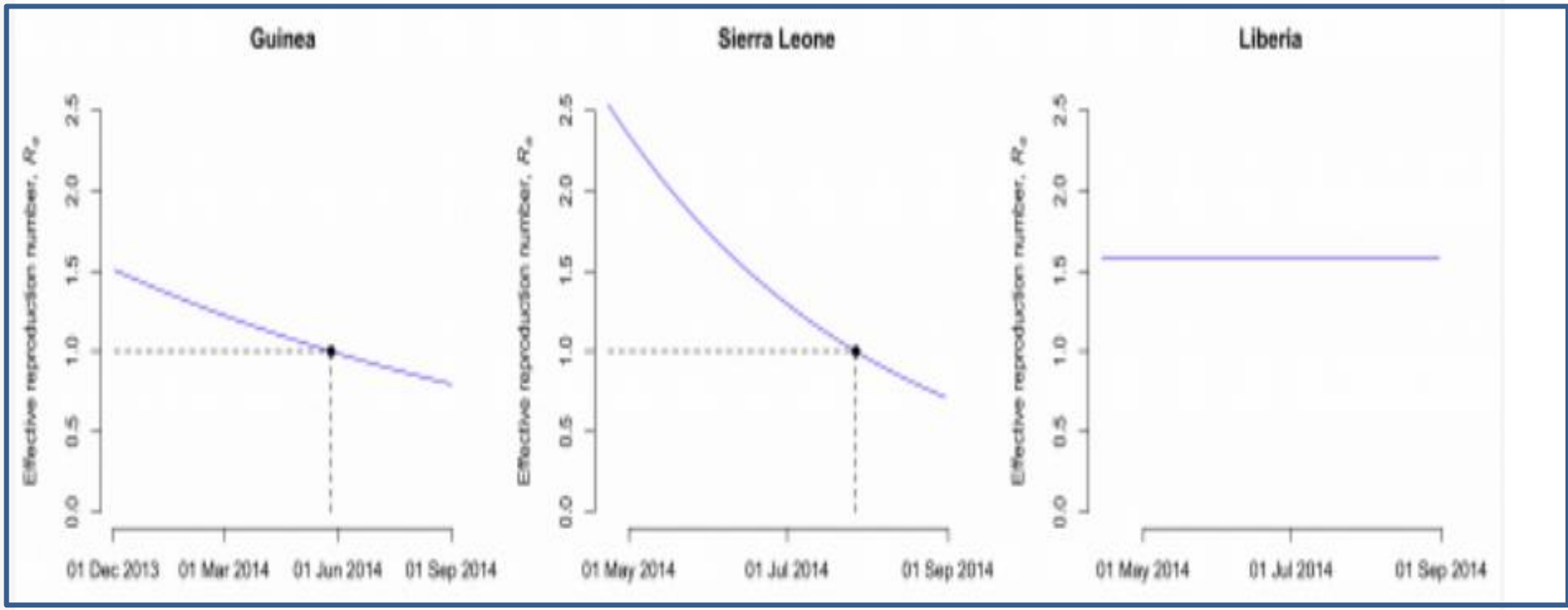
PLOS CURRENTS OUTBREAKS

İndeks olgunun hastalığı bulaştırdığı sekonder olgu sayısı

R0: Basic reproduction number, kontrol önlemleri yokken

Re: Effective reproduction number, kontrol önlemleri alınmışken

Re, Gine ve S.Leone'de azalırken Liberya'da değişmiyor



Althaus CL. Sep 2014 doi: 10.1371/currents.outbreaks.91afb5e0f279e7f29e7056095255b288.

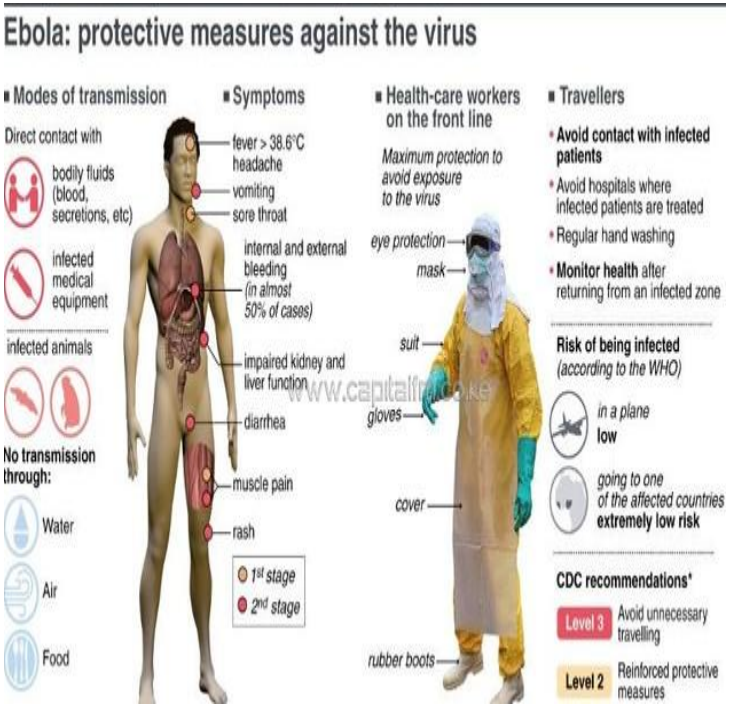
R0 Değeri

- Önceki Ebola salgınlarında Kongo ‘da 1.3 ve Uganda’da 2.7
- Gine 1.51 (95% CI: 1.50-1.52)
- Sierra Leone 2.53 (95% CI: 2.41-2.67)
- Liberya 1.59 (95% CI: 1.57-1.60)

Olgu/fatalite oranı

- Gine %74 (95% CI: 72%-75%)
- Sierra Leone %48 (95% CI: 47%-50%)
- Liberya %71 (95% CI: 69%-74%)

Ağustos 2014



EBOLA VİRÜS HASTALIĞI

VAKA YÖNETİMİ

(Bilim Kurulu Çalışması)

2014

T.C. SAĞLIK BAKANLIĞI

Semptomlar ortaya çıkmadan önceki 21 gün içinde;

- Doğrulanmış veya şüpheli Ebola Virüs Hastalığı vakasının kan veya diğer vücut sıvıları ile temas veya
- Ebola Virüs Hastalığının aktif olarak yayılımının olduğu bölgede yaşıyor olmak veya
- Bulaşın aktif olduğu bölgeye seyahat etmek veya
- Endemik bölgede yarasa, kemirgen veya maymun, şempanze gibi primatlar ile doğrudan temas (dokunma, ısırılma, etini yemek vb).

HAYIR

Kliniği açıklayacak başka bir tanı yönünden değerlendirilir

1. Hasta yatırılır, standart önlemlere ek olarak temas ve damlacık izolasyonu uygulanır
2. Hastaya bakan, klinik numuneleri alan ve analizini yapacak personel bulaşı engellemek için gerekli kişisel koruyucu donanım kullanmalıdır **
3. Sıtma hastalığı yönünden değerlendirilir
4. Ebola Virüs Hastalığı tanısı için kan alınır, Halk Sağlığı Müdürlüğü aracılığıyla referans laboratuvara gönderilir
5. Eş zamanlı olarak diğer ayırıcı tanılar yönünden değerlendirilir
6. Destek tedavisi verilir

4. EBOLA VİRÜS HASTALIĞI İZOLASYON ÖNLEMLERİ

- Bulaşıcı hastalıklar yönünden nakli yapılacak şüpheli vakalarla ilgili sağlık personelinin bilgilendirilmesi gerekmektedir. Vaka hakkında ön bilgi verilmeli ve en az sayıda sağlık personeli ile çalışılmalıdır.
- Hastaya ulaşmadan önce sağlık çalışanları koruyucu önlemleri almalıdır.
- Şüpheli vakanın götürüleceği hastane, uygun enfeksiyon kontrol önlemlerini alması için önceden bilgilendirilmelidir.
- Kurum ve kuruluşlarla gerekli işbirliği sağlanmalı, vaka takipleri ve hasta transferleri titizlikle takip edilmelidir.

HASTANIN YATIRILACAĞI ODANIN ÖZELLİKLERİ

1. Ebola virüs hastalığı şüpheli veya kesin vakalarının hastaneye yatışlarında standart, temas ve damlacık önlemlerinin alınması gerekmektedir.
2. Ebola virüs hastalığı vakalarının negatif basınçlı odada takibi şart değildir.
3. Tek kişilik, özel banyosu ve tuvaleti olan, kapatılabilir kapı içeren bir oda olmalıdır.
4. Hastanın odasına girişler sınırlandırılmalı mümkün olduğunca en aza indirilmeli, giriş-çıkışlar kayıt altına alınmalıdır. Özellikle, sağlık personeli açısından odaya girenler sadece hastanın bakımından sorumlu olan personel ile sınırlandırılmalıdır.
5. Kullanılacak tıbbi malzemeler hastaya özel olmalıdır. Oda dışına çıkarılmamalıdır. Hastalar arasında ortak malzeme kullanımına izin verilmemelidir.

KİŞİSEL KORUYUCU MALZEMELER

1. Eldiven,
2. Sıvı geçirimsiz önlük,
3. Sıvı geçirimsiz tulum,
4. Koruyucu gözlük,
5. Yüz kalkanı/siperi,
6. N95 maske,
7. Cerrahi maske,
8. Su geçirmez ayak koruyucu,
9. Alkol bazlı el dezenfektanı.

Enfeksiyon Kontrol Önlemleri

Enfeksiyon Kontrol Önlemleri

- El yıkama

- İzolasyon Önlemleri
  - Standart
  - Temas
  - Damlacık

World Health Organization

Health topics | Data | Media centre | Publications | Countries | Programmes | About WHO | Search

News and top stories

WHO convenes industry leaders and key partners to discuss trials and production of Ebola vaccine

24 October 2014 -- WHO convened a high-level emergency meeting on 23 October to look at the many complex policy issues that surround access to Ebola vaccines. Ways to ensure the fair distribution and financing of these vaccines were discussed, as well as plans for the different phases of clinical trials to be performed concurrently rather than consecutively, partnerships for expediting clinical trials, and proposals for getting all development partners moving in tandem and at the same accelerated pace.

WHO/M. Missioneiro

- Read the press release
- Read full report of the meeting

Higher burden of tuberculosis | Nigeria Ebola-free | Lead poisoning | Health care in Tunisia

Improved data reveals higher global burden of tuberculosis

22 October 2014 -- Recent intensive efforts to improve collection and reporting of data are shedding new light on the epidemic, revealing almost half a million more cases than previously estimated. WHO's *"Global tuberculosis report 2014"* shows that 9 million people developed TB in 2013, and 1.5 million died, including 360 000 people who were HIV positive.

Read the note for the media

Ebola outbreak

- Ebola virus disease - website
- Evolution of Ebola response - e[illegible]s
- Situation assessments
- Ebola response roadmap
- Situation reports
- Ebola vaccines, therapies [illegible] diagnostics
- Recruitments for Ebola

Ebola: What yo[illegible]ed to know

Share:

- Messages on Ebola for the general public
- Protective measures for the general public
- Protective measures for medical staff

İzolasyon Önlemleri

1- Standart /universal önlemler

2- Bulaşma yoluna yönelik önlemler
  - Temas yoluyla bulaş önlemleri
  - Damlacık yoluyla bulaş önlemleri

Standart Önlemler

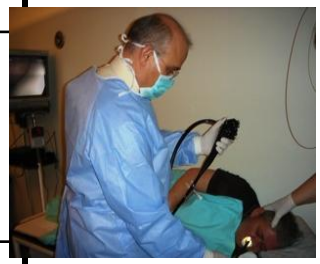
- Hastanın tanısına ve infeksiyonu olup olmadığına bakılmaksızın bütün hastalara uygulanan önlemler




HICPAC Standart Önlemler

(Healthcare Infection Control Practices Advisory Committee)

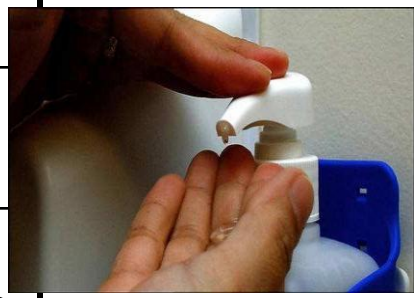
Hasta odası	Standart
Eldiven	Kan, vücut sıvısı, çıkartıları, her tür sekresyon, mukozalar, deri bütünlüğünün bozulduğu bölgeler için
El yıkama	Eldiven çıkarılınca, hastalar arasında
Önlük ve maske	Sıçrama potansiyeli olan Kan, vücut sıvı-çıkartıları ile temas bekleniyorsa
Koşul	**TÜM HASTALAR İÇİN**



Infect Control Hosp Epidemiol 1996;17:5380

HICPAC Temas Önlemleri

Hasta odası	Özel
Eldiven	Odaya girmeden önce
El yıkama	Eldiven çıkarılınca, hastalar arasında **EL DEZENFEKTANI**
Önlük	Hasta veya odasındaki eşyalarla temas olacaksa veya hastanın inkontinansı, ishali, ileostomisi,kolostomisi, akıntılı yarası varsa
Maske	Standart
Diğer	Hasta transferi sınırlı, kritik olmayan cihazlar sadece hasta için kullanılır.



Damlacık Yoluyla Bulaş Önlemleri

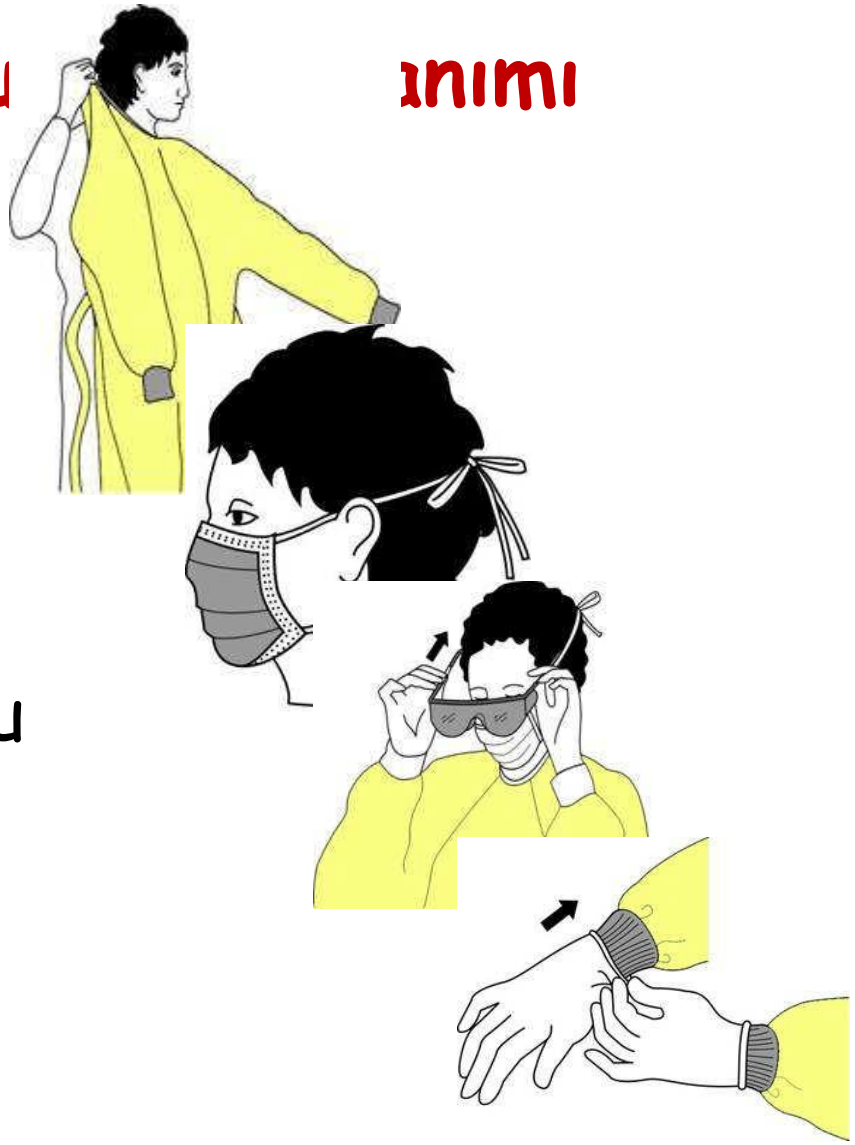
Hasta odası	Özel
Eldiven	Standart
El yıkama	Standart
Önlük	Standart
Maske	Hastaya 1 metreden fazla yaklaşılacaksa
Diğer	Hasta transferi sınırlandırılır. Mutlaka gerekliyse hastaya maske takarak çevre korunur.

Kişisel Koruyucu Ekipman Kullanımı

Koruyucu ekipmanın u ınımı

Giyme sırası

1. Önlük
2. Maske
3. Gözlük-yüz koruyucu
4. Eldiven



Koruyucu ekipmanın uygun kullanımı

Çıkarma sırası

1. Eldiven
2. Gözlük-yüz koruyucu
3. Önlük
4. Maske

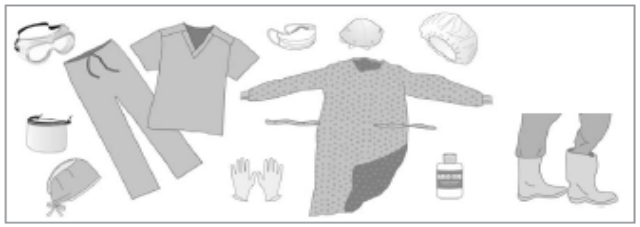
Ebola VH tanılı/ kuşkulu hastada koruyucu ekipman

Steps to put on personal protective equipment (PPE)

1 Always put on essential required PPE when handling either a suspected, probable or confirmed case of viral haemorragic fever.

2 The dressing and undressing of PPE should be supervised by another trained member of the team.

3 Gather all the necessary items of PPE beforehand. Put on the scrub suit in the changing room.



4 Put on rubber boots. If not available, make sure you have closed, puncture and fluid resistant shoes and put on overshoes.

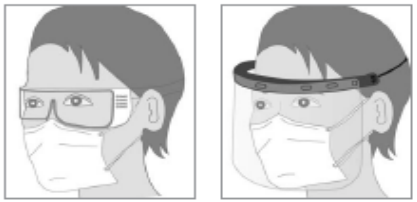
OR, IF BOOTS UNAVAILABLE

5 Place the impermeable gown over the scrubs.

6 Put on face protection:

6a Put on a medical mask.

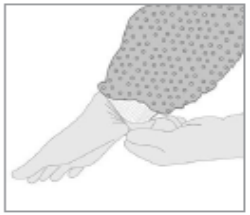
6b Put on goggles or a face shield.



7 If available, put a head cover on at this time.

8 Perform hand hygiene.

9 Put on gloves* (over cuff).



10 If an impermeable gown is not available, place waterproof apron over gown.

While wearing PPE:

- Avoid touching or adjusting PPE
- Change gloves between patients
- Remove gloves if they become torn or damaged
- Perform hand hygiene before putting on new gloves

* Use ***double gloves*** if any strenuous activity (e.g. carrying a patient or handling a dead body) or tasks in which contact with blood and body fluids are anticipated. Use ***heavy duty/rubber gloves***

World Health Organization

Ebola VH tanılı/ kuşkulu hastada koruyucu ekipman

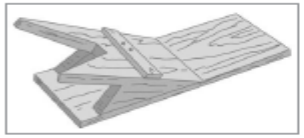
Steps to remove personal protective equipment (PPE)

1 Remove waterproof apron and dispose of safely. If the apron is to be reused, place it in a container with disinfectant.

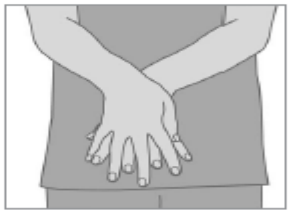
2 If wearing overshoes, remove them with your gloves still on (If wearing rubber boots, see step 4).

3 Remove gown and gloves and roll inside-out and dispose of safely.

4 If wearing rubber boots, remove them (ideally using the boot remover) without touching them with your hands. Place them in a container with disinfectant.



5 Perform hand hygiene.



6 If wearing a head cover, remove it now (from behind the head).

7 Remove face protection:

7a Remove face shield or goggles (from behind the head). Place eye protection in a separate container for reprocessing.

7b Remove mask from behind the head. When removing mask, untie the bottom string first and the top string next.

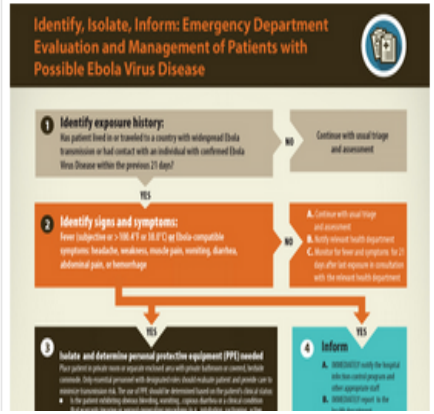
8 Perform hand hygiene.

Source: Modified from Clinical Management of Patients with Viral Haemorrhagic Fever: A pocket Guide for the Front-line Health Worker. World Health Organization, 2014

World Health Organization

Identify, Isolate, Inform: Emergency Department Evaluation and Management for Patients Who Present with Possible Ebola Virus Disease

Background: The procedures in the accompanying algorithm provide guidance on the Emergency Department (ED) evaluation and management of patients who present with possible Ebola Virus Disease. The guidance in this document reflects lessons learned from the recent experiences of U.S. hospitals caring for Ebola patients.



The risk of transmission of Ebola virus from a patient to a healthcare worker depends upon the likelihood that the patient will have confirmed Ebola Virus Disease combined with the likelihood and degree of exposure to infectious blood or body fluids. That risk depends on the severity of disease;

Maruziyet öyküsünü belirle:
Son 21 gün içinde Ebola'nın yaygın olduğu ülkelerden gelmiş olma ya da doğrulanmış Ebola hastası ile temas

Belirti ve bulguları sorgulayın:
Ateş (>38 C) ya da Ebola'yı düşündüren belirtiler :Başağrısı, halsizlik, kas ağrısı, kusma, ishal, karın ağrısı, kanamalar

İzole et ve gerekli olan koruyucu ekipmanı belirle
Ayrı bir girişi olan kendine ait banyosu olan özel odaya al. Sadece gerekli olan temel personel hastayı değerlendirsin. Hastanın kanaması, kusması, ishali var mı ya da klinik durumu invaziv işlem ya da aerosol oluşturan işlem (entibasyon, resüstasyon vb) gerektiriyor mu?

Klinik olarak stabil hastada minimum gerekli olan giysiler:
1. **Yüz koruyucu cerrahi maske**
2. **Sugeçirmez önlük**
3. **2 çift eldiven**
4. **Hastanın durumu değişirse PPE ihtiyacını tekrar değerlendir**

Hastanın kanaması, kusma ya da ishali varsa ya da klinik durumu stabil değilse aerosol oluşturan işlemler gerekiyorsa ya da resüstasyon gerekecekse: EBOLA için gerekli PPE kullan

http://www.cdc.gov/vhf/ebola/hcp/ed-management-patients-possible-ebola.html


HIGH RISK
ZONE
SUSPECT

http://www.slideshare.net/guimera/ebola-virus-disease-37751985?related=1

A health worker removes his protective suit as he emerges from an isolation area at the Medecins sans Frontieres Ebola treatment center in Kailahun, Sierra L

Health workers carry the body of an Ebola virus victim in Kenema, Sierra Leone June 25, 2014.

Sonuç

- Vaka yönetimi
- Koruyucu ekipman temini
- Tüm sağlık çalışanlarının bilgilendirilmesi
- Koruyucu ekipman kullanımı konusunda eğitim


PROTECT YOURSELF
PROTECT YOUR FAMILY
PROTECT YOUR COMMUNITY
Ebola