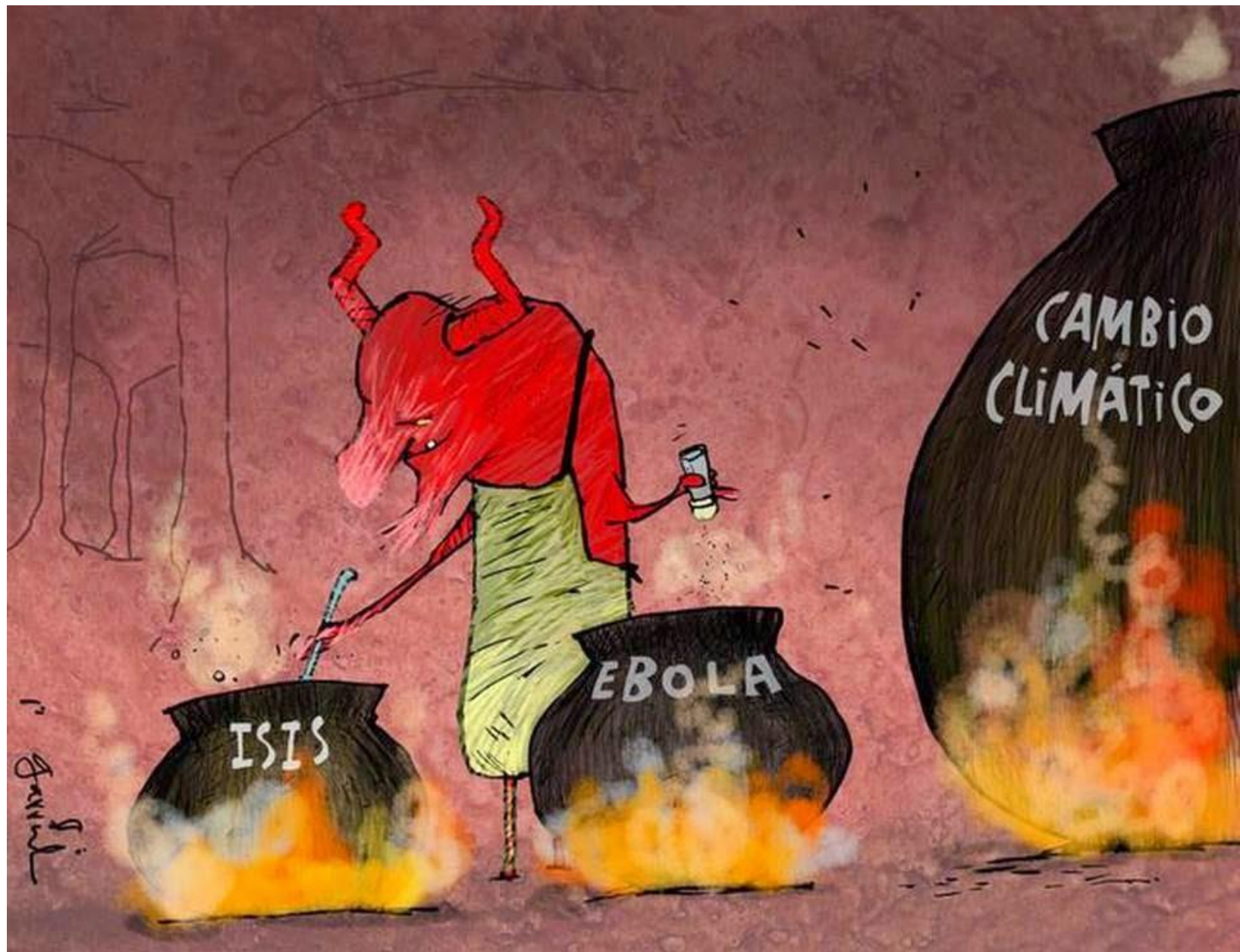


EBOLA & MEDICINA TRANSFUSIONAL

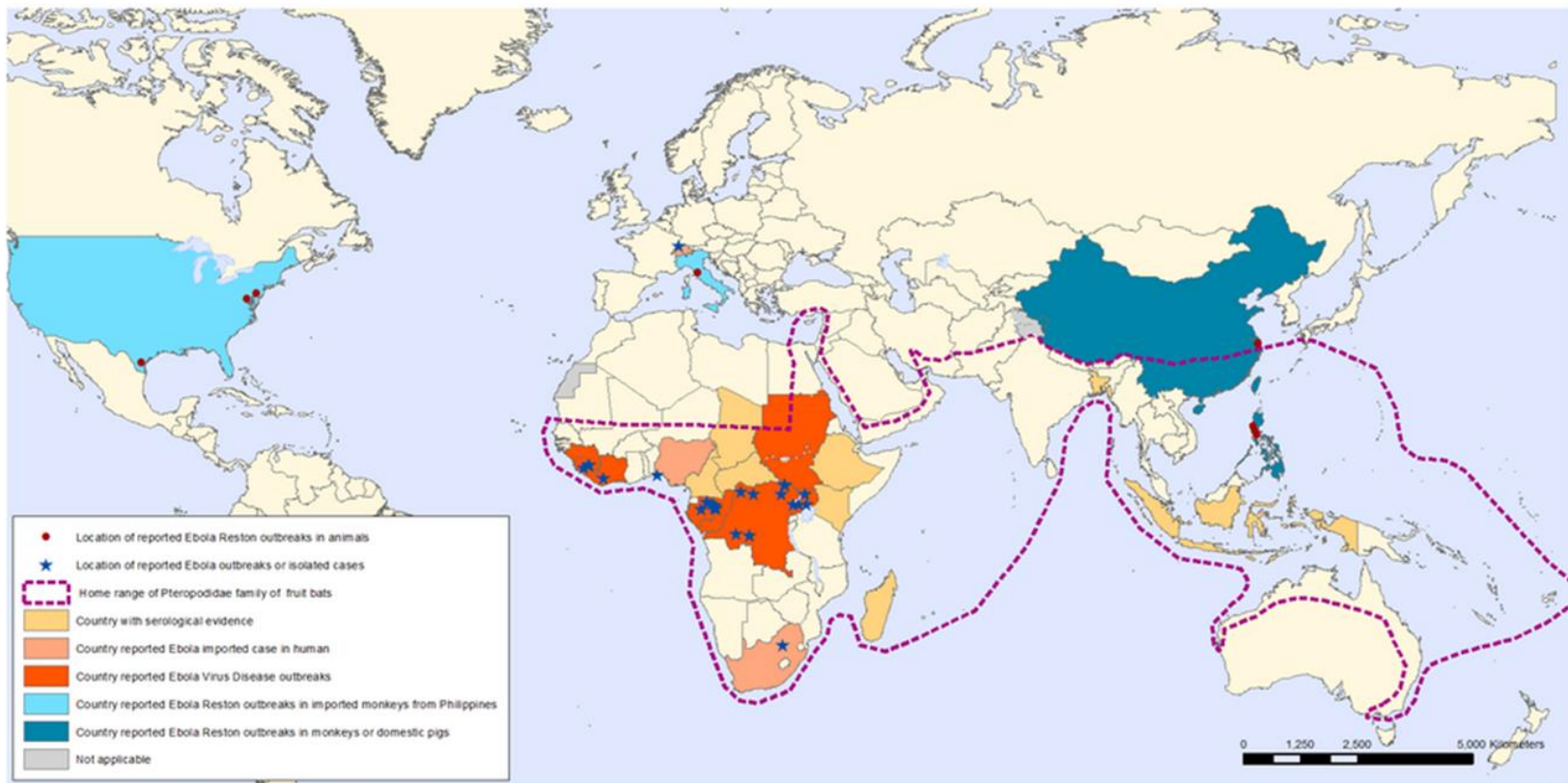
DRA. SANDRA MELLADO

CLINICA SANTA MARIA

NOV.2014



DISTRIBUCION DE BROTES DE EBOLA EN HUMANOS Y ANIMALES



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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CASOS DE ENFERMEDAD VIRUS EBOLA EN AFRICA 1976-2014



EBOLAVIRUS OUTBREAKS BY SPECIES AND SIZE, 1976 - 2014

Species

- Zaire ebolavirus
- Sudan ebolavirus
- Tai Forest ebolavirus
- Bundibugyo ebolavirus

Number of Cases

- 1 - 10
- 11 - 100
- 101 - 300
- Greater than 300 reported cases



Country	Town	Cases	Deaths	Species	Year
Dem. Rep. of Congo	multiple	66	49	Zaire ebolavirus	2014
Multiple countries	multiple	13540	4941	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	Gulu	425	224	Zaire ebolavirus	2000
South Africa	Johannesburg	2	1	Zaire ebolavirus	1996
Gabon	Booue	60	45	Zaire ebolavirus	1996
Gabon	Mayibout	37	21	Zaire ebolavirus	1996
Dem. Rep. of Congo	Kikwit	315	250	Zaire ebolavirus	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

*Numbers reflect laboratory confirmed cases only.

Ebola sigue sin control según los MSF

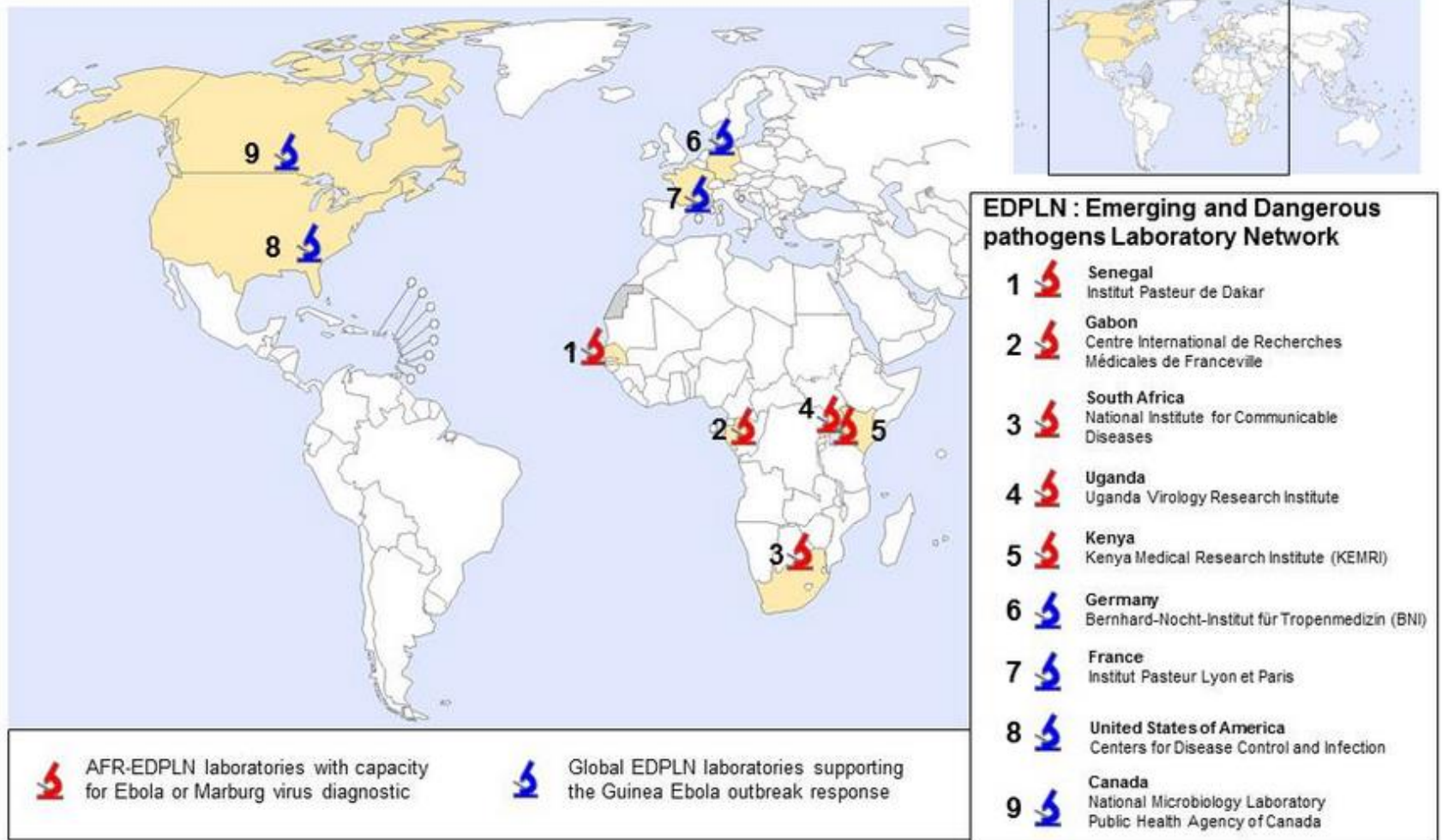
Ébola en África Occidental: MSF reclama una movilización regional excepcional para controlar la epidemia

El brote de Ébola sigue propagándose en Guinea, Sierra Leona y Liberia. Médicos Sin Fronteras (MSF) alerta que para poner la epidemia bajo control se requiere un despliegue masivo de recursos por parte de los gobiernos de África Occidental y de las organizaciones de ayuda. MSF advierte, además, que sus equipos han llegado al límite de su capacidad de respuesta.



Ebola Virus Disease in West Africa

EDPLN laboratories for Ebola or Marburg virus diagnostic



Source: WHO, 10 April 2014

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COMPROMETIDOS

ORGANIZACIONES

- OMS
- CDC
- MSF
- UNICEF
- IFRC
- BANCO MUNDIAL
- INSTITUTO PASTEUR de DAKAR
- “SAVE THE CHILDREN”
- PLAN GUINEA

PAISES

- LIBERIA
- GUINEA
- SIERRA LEONA
- ESTADOS UNIDOS
- GRAN BRETAÑA
- ALEMANIA
- FRANCIA
- ESPAÑA

CENTRO DE CONTROL Y PREVENCIÓN DE ENFERMEDADES (CDC)

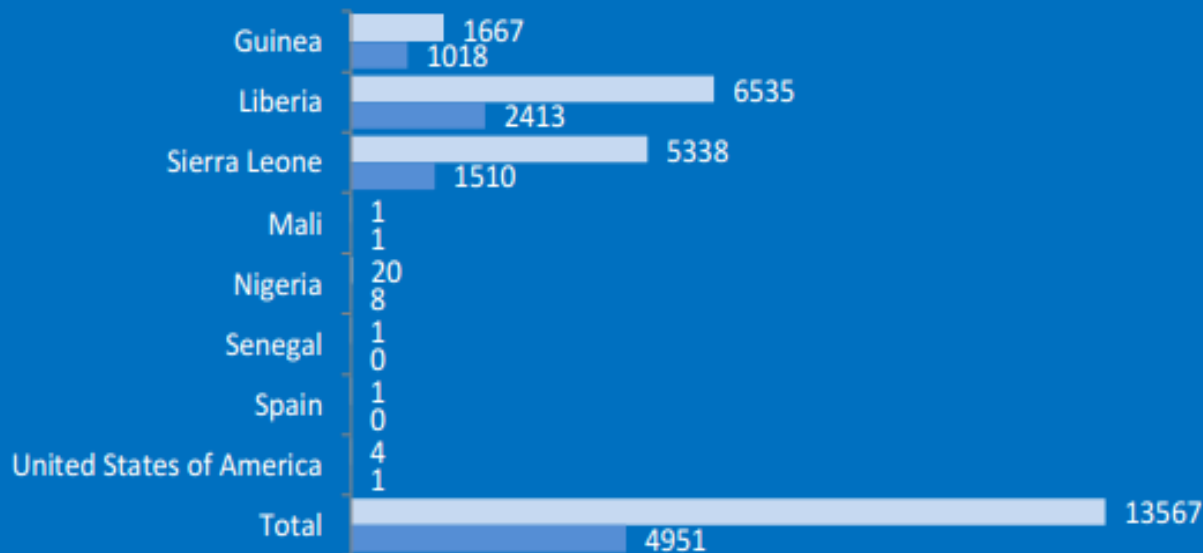
– “BROTE SIN PRECEDENTES”



HIGHLIGHTS

- There have been 13 567 reported Ebola cases in eight affected countries since the outbreak began, with 4951 reported deaths.
- Intense transmission continues in Guinea, Liberia and Sierra Leone.
- All 83 contacts of the health-care worker infected in Spain have completed the 21-day follow-up period.

CASES / DEATHS



Emergencia sanitaria internacional

La OMS declara una situación de emergencia internacional en África occidental

MARÍA TERESA BENÍTEZ DE LUGO / GINEBRA | Día 08/08/2014 - 21:05h

- Supondrá restricciones de viaje y análisis de sangre obligatorios para las personas que vayan a viajar desde países de riesgo. Estados Unidos declaró ayer el estado de máxima alerta sanitaria en el país

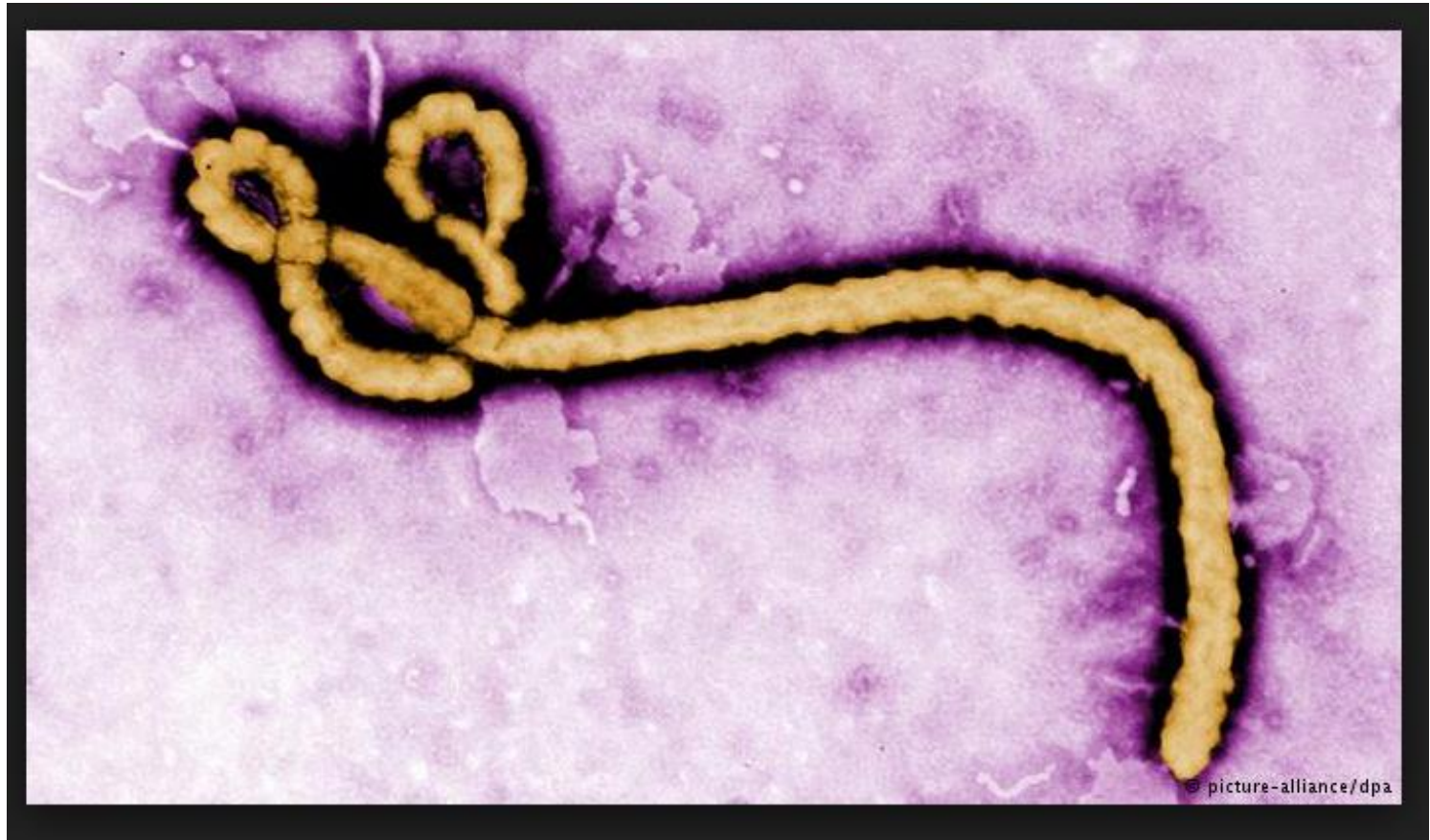


AFP

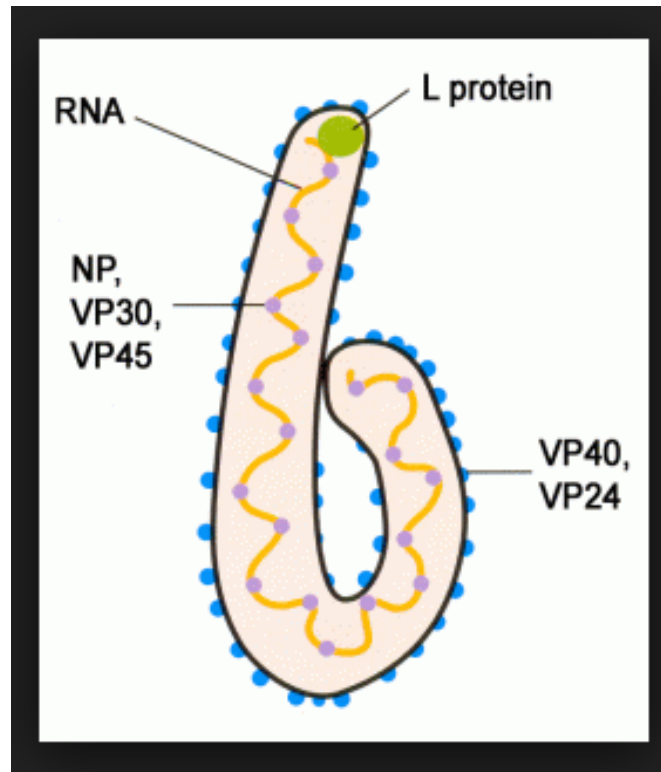
Margaret Chan, en el centro, es la directora de la Organización Mundial de la Salud (OMS)

EL VIRUS

VIRUS EBOLA



Cómo está conformado Virus Ebola



VIRUS EBOLA

- Familia *Filoviridae*; Genus: *Ebolavirus*
- ARN 19,900 kb
- Propiedades fisicoquímicas:
 - estable a temperatura ambiente
 - resistente a desecación
 - se inactiva a 60°C x 30 min.
 - Reducción infectividad o destrucción por:
 - luz UV e irradiación gamma,
 - solventes lípidicos,
 - b-propiolactona, formaldehído, hipoclorito de sodio y desinfectantes fenólicos

- Tiene un Virus gemelo Marburgo
- Ebola infecta endotelio capilar y células inmunes
- 5 especies diferentes de Ebola
- Incubación 5 a 10 días.
- Descubrimiento y 1° brote Sudan y Zaire (1976)
- Reservorio Murciélagos de la fruta
- Ha habido 10 brotes de Marburgo y 26 de Virus Ebola.

La epidemia del virus del ébola

Es uno de los más contagiosos y mortales para el hombre

Se transmite por:
contacto directo con la sangre, los líquidos biológicos o los tejidos de sujetos infectados y las vías respiratorias.

Especies del ébola:

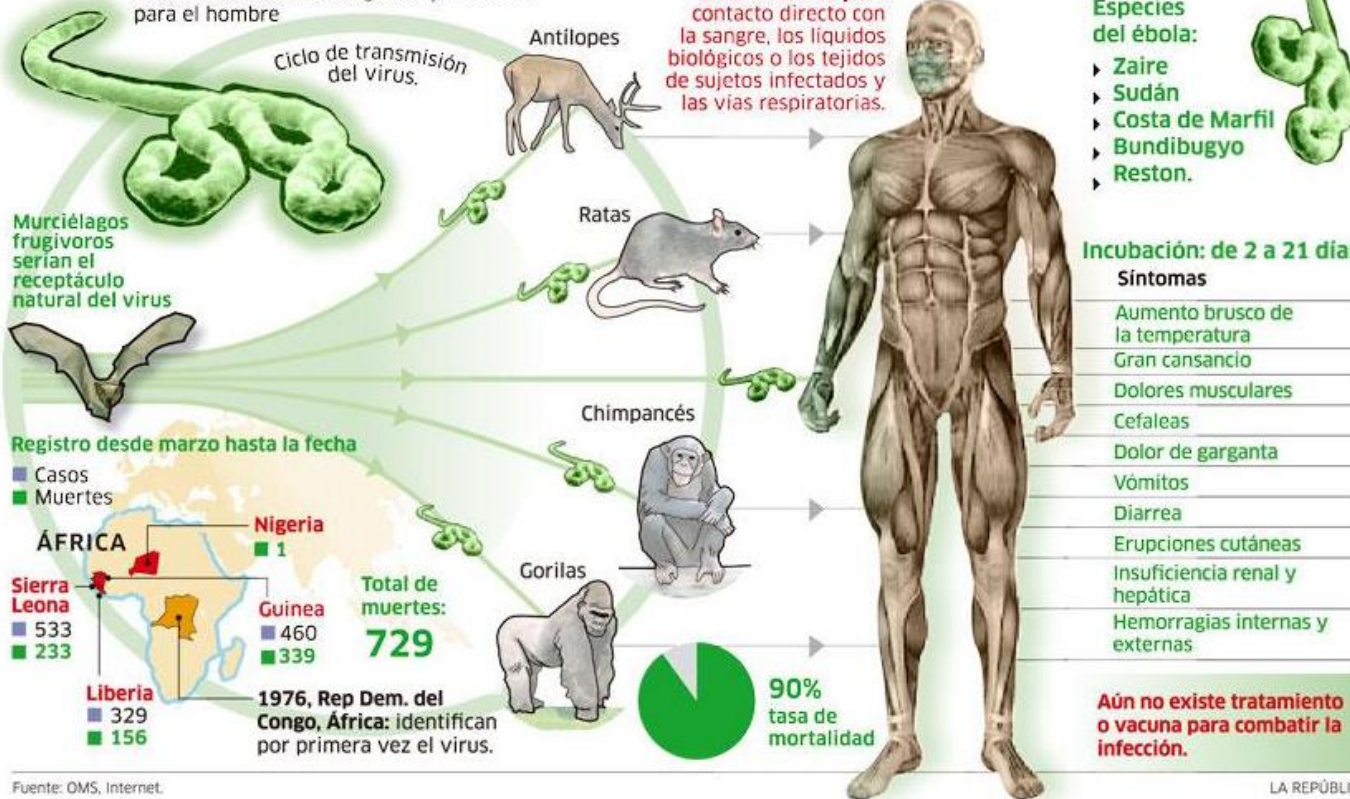
- ▶ Zaire
- ▶ Sudán
- ▶ Costa de Marfil
- ▶ Bundibugyo
- ▶ Reston.

Incubación: de 2 a 21 días

Síntomas

- Aumento brusco de la temperatura
- Gran cansancio
- Dolores musculares
- Cefaleas
- Dolor de garganta
- Vómitos
- Diarrea
- Erupciones cutáneas
- Insuficiencia renal y hepática
- Hemorragias internas y externas

Aún no existe tratamiento o vacuna para combatir la infección.



Fuente: OMS, Internet.

LA REPÚBLICA

CLINICA

EBOLA FIEBRE HEMORRAGICA

- Exposición:
 - Contacto con piel o mucosas
 - Materiales en contacto con pacientes enfermos
 - Materiales cortopunzante
 - Contacto con monos enfermos o muertos
- Alta viremia presente en sangre durante fase aguda de la enfermedad (21 días del contagio)
- Virus presente en secreción vaginal y semen (> 100 días)



- Enfermedad viral grave
- Aparicion subita fiebre
- Debilidad intensa
- Dolor muscular, cabeza, garganta
- Vomitos y dirrea
- Erupciones cutaneas
- Disfuncion renal y hepatica
- Hemorragias internas y externas
- PERIODO DE INCUBACION 21 dias

- Letalidad: 25 y 90%, este borte de Ebola 55%
- Como se diagnostica:
 - E.L.I.S.A para detección de anticuerpos
 - PCR para detección material genómico.
- Medidas en uso
 - Controlar personal medico
 - Control de trafico de pasajeros en aeropuertos
 - Cierres de pasos fronterizos
 - Manejo seguro de cadáveres



- Uso de guantes, mascarilla, gafas, trajes
 - Aislamiento
 - Incineración de cadáveres
 - Entierro profundo de cadáveres
-
- Contagio en personal de salud a la fecha 521
 - Fallecimiento 272 (52%)

Preparación tradicional fallecidos



TRANSPORTE CORRECTO DE FALLECIDOS POR VIRUS EBOLA



ESTADISTICAS

	INFECTADOS	FALLECIDOS	
2014	13.703	4.922 (>5.000)	36%

INFECTADOS AL 29 OCTUBRE

LUGAR	INFECTADOS
GUINEA	1.906
SIERRA LEONA	5.235
LIBERIA	6.535

- Sobre el número de fallecidos, la OMS indicó que todavía no se ha concluido el recuento y que la cifra definitiva será publicada en las próximas horas, aunque el director adjunto de la organización, Bruce Aylward, indicó previamente que “probablemente el número de muertos ha superado los 5.000”.

TERAPIA

- No existe tratamiento específico
- Rehidratación por vía intravenosa u oral.
- Evitar el colapso cardiovascular e insuficiencia renal.
- Tratamiento sintomático.
- Interferon.
- Transfusiones con sangre donada de pacientes convalescientes según necesidad.
- Transfusion con plasma de convalesciente.

[Ebola](#) survivor Dr. Kent Brantly has donated the plasma in his blood to three patients in the last month, echoing what one of his former patients did for him before he left [Liberia](#).



Brantly estaba cuidando a los pacientes enfermos de Ébola del grupo de ayuda del samaritano en Monrovia, Liberia, se convirtió en el primer estadounidense con Ébola (julio 2014). Por empeoramiento de su condición antes de retornar a EEUU, recibió 1 Unidad de sangre de uno de sus pacientes sobreviviente del Ébola (14 años).

Brantly dono sangre a los pacientes de Ebola:

- * Enfermera Nina Pham
- * Misionero Dr. Rick Sacra
- * Camarógrafo NBC Ashoka Mukpo.



PRIMERA SOBREVIVIENTE FUERA DE AFRICA TPM. TERESA ROMERO



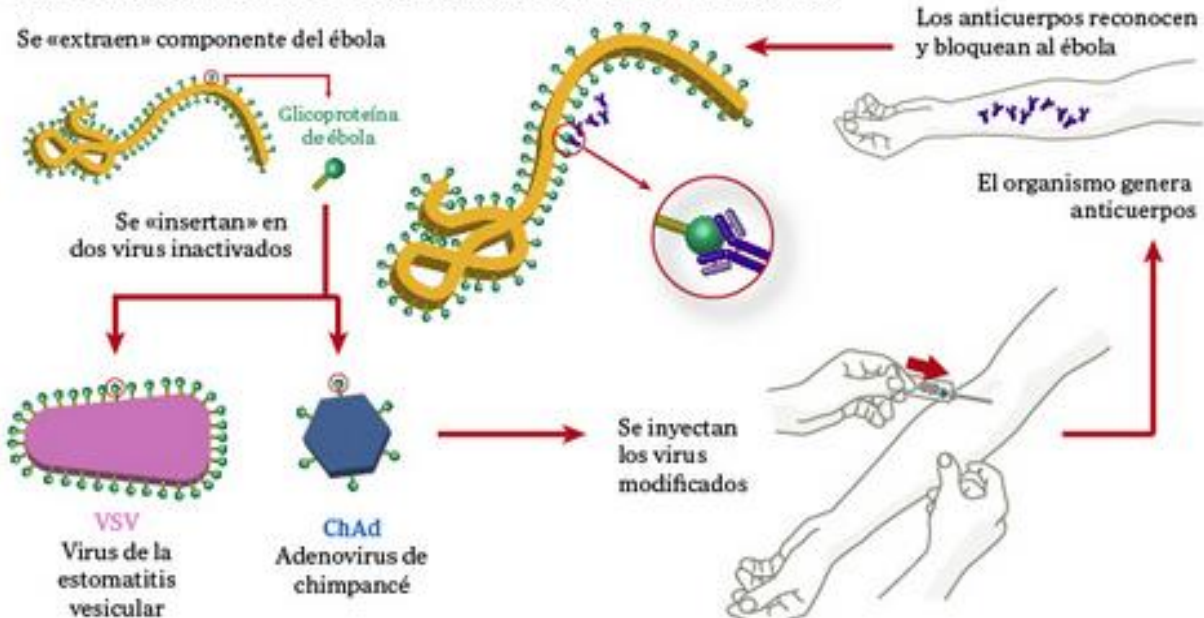
“Si mi contagio sirve para algo, para conocer más la enfermedad, o si mi sangre sirve para curar a otras personas, aquí estoy hasta quedarme seca”,

Sin vacuna para el ébola hasta el 2015

GONZALO LÓPEZ SÁNCHEZ / MADRID | Día 15/10/2014 - 17.26h

- Su desarrollo podría haberse completado hace años, pero no encontró apoyo económico suficiente. Ahora se fuerzan las máquinas en investigaciones costosas y complejas

Mecanismo de actuación de las vacunas



ABC

Dos virus modificados portan un componente del ébola que activa la producción de anticuerpos y la inmunidad

INFORMACION PARA PERSONAL DE SALUD



Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

SEARCH



CDC A-Z INDEX ▾

Ebola (Ebola Virus Disease)

Ebola (Ebola Virus Disease)

About Ebola +

2014 West Africa Outbreak +

2014 Democratic Republic of the Congo Outbreak +

Outbreaks +

Signs and Symptoms

Transmission +

Risk of Exposure +

Prevention

Diagnosis

Treatment

Healthcare Workers -

Non-U.S. Healthcare Settings +

Guidance for Personal Protective Equipment (PPE)

Caring for Suspect or Confirmed Patients with Ebola

Environmental Infection Control in Hospitals for Ebola Virus

Infection Prevention and Control Recommendations for Hospitalized Patients with Known or Suspected Ebola Virus Disease in U.S. Hospitals

Safe Handling of Human Remains in U.S. Hospitals and Mortuaries

Ebola-Associated Waste Management +

Emergency Department

[CDC](#) > [Ebola \(Ebola Virus Disease\)](#)

Information for Healthcare Workers and Settings

[Recommend](#) [Tweet](#) [Share](#)

Language: English ▾

Infection control is a key strategy in stopping the spread of Ebola and identifying and managing patients with the Ebola virus. These pages provide healthcare workers in different settings with basic disease information, guidance documents, diagnostic tools, and job aids to help safely identify and care for patients with Ebola.

Guidance - U.S. Healthcare Settings

Emergency Departments

- Background and Triage Recommendations
- Algorithm (PDF - 1 page)

Ambulatory Care

- Algorithm (PDF - 1 page)

Management of Hospitalized Ebola Patients

- Infection Prevention and Control
- Personal Protective Equipment (PPE)
- Acute Hemodialysis
- Handling Human Remains

Medical Transport

- Emergency Medical Services and 9-1-1 Public Safety Answering Points
- Air Medical Transport

Laboratories

- Specimen Collection, Transport, Testing, and Submission or as a PDF (PDF - 1 page)
- Diagram: Packaging and Shipping Clinical Specimens
- FAQs: Safe Specimen Management
- Select Agent Regulations

Environmental Infection Control

- Guidance
- Waste Management



Web-Based PPE Training

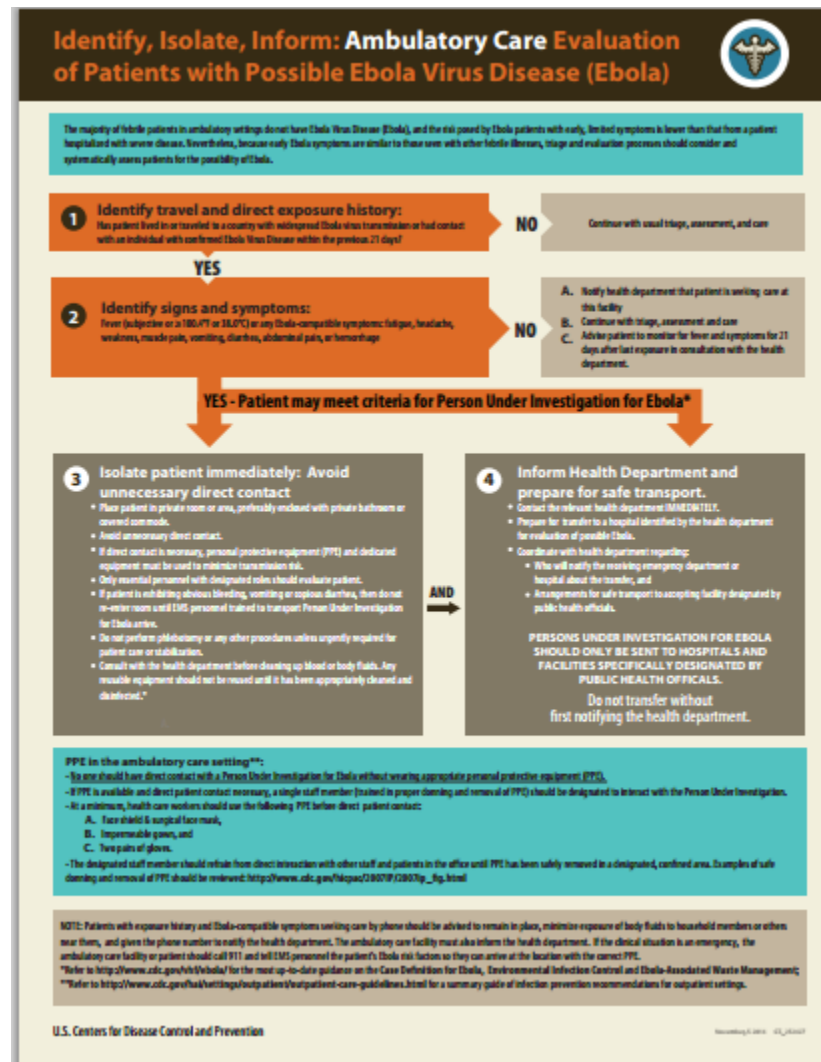


Medscape: PPE Donning and Doffing Demonstration (N95/Gown)

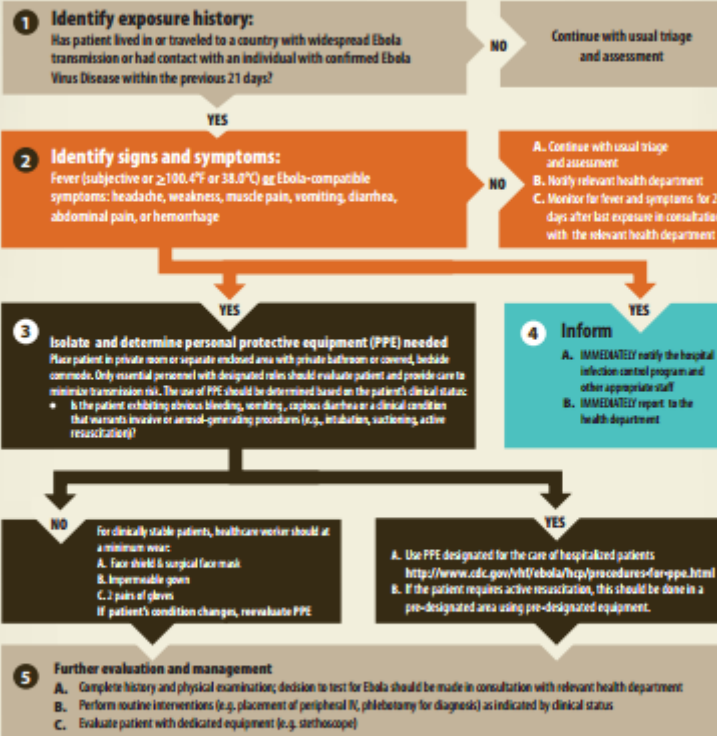


New York City Ebola Training

EVALUACION PACIENTES CON POSIBLE EBOLA VIRUS DISEASE (EVD)



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



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

November 2014 | 10 | 101017

TRANSPORTE Y CONSERVACION DE MUESTRAS

INTERIM GUIDANCE FOR
Specimen Collection, Transport, Testing, and Submission
for Patients with Suspected Infection with Ebola Virus Disease

NOTIFICATION & CONSULTATION

Hospitals should follow their state and/or local health department procedures for notification and consultation for Ebola testing requests before contacting CDC.
CDC cannot accept any specimens without prior consultation.

FOR CONSULTATION, CALL THE CDC EMERGENCY OPERATIONS CENTER AT **770-488-7100**

WHEN SPECIMENS SHOULD BE COLLECTED FOR EBOLA TESTING

Ebola virus is detected in blood only after the onset of symptoms, usually fever. It may take up to 3 days after symptoms appear for the virus to reach detectable levels. Virus is generally detectable by real-time RT-PCR from 3-10 days after symptoms appear.

Ideally, specimens should be taken when a symptomatic patient reports to a healthcare facility and is suspected of having an Ebola exposure. However, if the onset of symptoms is <3 days, a later specimen may be needed to completely rule-out Ebola virus, if the first specimen tests negative.

3 days

PREFERRED SPECIMENS FOR EBOLA TESTING

A minimum volume of 4 milliliters of whole blood preserved with EDTA is preferred but whole blood preserved with sodium polyanthrol sulfonate (SPS), citrate, or with clot activator can be submitted for Ebola testing.

Specimens should be shipped at 2-8°C or frozen on cold-packs to CDC. Do not submit specimens to CDC in glass containers. Do not submit specimens preserved in heparin tubes.

2-8°C

Specimens other than blood may be submitted upon consult with CDC.

Standard labeling should be applied for each specimen. The requested test needs to be identified only on the regulation and CDC specimen submission forms.

DIAGNOSTIC TESTING FOR EBOLA PERFORMED AT CDC

Several diagnostic tests are available for detection of Ebola virus disease. Acute infections will be confirmed using a real-time RT-PCR assay (CDC test directory code CDC-15008 Ebola Identification) in a CLIA-accredited laboratory. Virus isolation may also be attempted. Serologic testing for IgM and IgG antibodies will be completed for certain specimens and to monitor the immune response in confirmed Ebola virus disease patients (CDC-15010 Ebola Serology).

Lesser fever is also endemic in certain areas of West Africa and may show symptoms similar to early Ebola virus disease. Diagnostic tests available at CDC include but are not limited to RT-PCR, antigen detection, and IgM serology, all of which may be utilized to rule out Lesser fever in patients who test negative for Ebola virus disease.

TRANSPORTING SPECIMENS WITHIN THE HOSPITAL/INSTITUTION

In compliance with 29 CFR 1910.1030, specimens should be placed in a durable, leak-proof secondary container for transport within a facility. To reduce the risk of breakage or leaks, do not use any pneumatic tube system for transporting suspected Ebola virus disease specimens.

PACKAGING & SHIPPING CLINICAL SPECIMENS TO CDC

TRIPLE PACKAGING SYSTEM

Specimens collected for Ebola virus disease testing should be packaged and shipped without attempting to open collection tubes or aliquot specimens.

Specimens for shipment should be packaged following the basic triple packaging system which consists of a primary container (a sealable specimen bag) wrapped with absorbent material, secondary container (watertight, leak-proof), and an outer shipping package.

THE SUBMISSION PROCESS

Contact your state and/or local health department and CDC (770-488-7100) to determine the proper category for shipment based on clinical history and risk assessment by CDC and to obtain detailed shipping guidance and required CDC submission documents. State guidelines may differ and state or local health departments should be consulted before shipping.

INFORMATION ON SHIPPING & TRACKING IS AVAILABLE AT
www.cdc.gov/ebola

CDC

MEDICINA TRANSFUSIONAL

- Se asume que Ebola es transmisible por la sangre
- Transmision por transfusion sanguinea no ha sido reportada.
- Leucorreduccion no seria efectiva.
- Eficacia en al reduccion de patogenos para derivados plamaticos metodos existentes efectivos.

DONANTES DE SANGRE

- Se recomienda diferir >28 días a donantes que han estado en contacto con paciente contagiado con Ebola, dado que a los 21 días debería dar manifestaciones clínicas si estuviera infectado.



Advancing Transfusion and
Cellular Therapies Worldwide

Association Bulletin #14-08

Date: October 14, 2014

To: AABB Members

From: Graham Sher, MD, PhD – President

Miriam A. Markowitz – Chief Executive Officer

Re: Deferral for Blood Donation of Persons Under Public Health Surveillance for Possible Exposure to Ebola Virus

This Association Bulletin was approved by the AABB Board of Directors on October 13, 2014.

Summary

This bulletin was developed by the AABB Transfusion Transmitted Diseases Committee to provide information on managing presenting donors who have been identified during public health investigations in the United States (U.S.) as possible contacts of patients who have Ebola virus disease.

Background

The risk of transmitting Ebola virus by transfusion from donors who were infected in Africa is remote because such individuals are deferred due to potential malaria exposure. However, recent contact by people in the U.S. and Europe with patients incubating and subsequently becoming ill with Ebola raises concern that such contacts may be incubating the infection.

Recommendation

Although asymptomatic Ebola viremia has not been demonstrated, available evidence cannot prove it is not present during a brief interval after exposure and before the onset of symptoms. Therefore, it is prudent for collection facilities to provide that information to presenting donors throughout the U.S. Individuals identified as possible contacts during public health investigations should refrain from donating until 28 days (seven days longer than the maximal incubation period) or longer after their last possible direct contact with an index patient.

Provision of this information can be accomplished by using signage in donor sites and/or handouts given to presenting donors bearing the following message:

“Ebola virus has never been transmitted by blood transfusion, but we are being very cautious while the epidemic unfolds in Africa. If you have been told by public health authorities that you may have been exposed to a patient with Ebola virus disease, do not donate blood for 28 days following your last contact with the infected person.”

Ebola virus has never been transmitted by blood transfusion, but we are being very cautious while the epidemic unfolds in Africa. If you have been told by public health authorities that you may have been exposed to a patient with Ebola virus disease, do not donate blood for 28 days following your last contact with the infected person.



Advancing Transfusion and
Cellular Therapies Worldwide

**Use of Convalescent Whole Blood or Plasma
Collected from Patients Recovered from Ebola Virus
Disease for Transfusion, as an Empirical Treatment
during Outbreaks**

**Interim Guidance for National Health Authorities and Blood
Transfusion Services**

Version 1.0 September 2014



CONSIDERACIONES USO PLASMA DE CONVALESCIENTE

- Transfundir con PC a pacientes en etapas tempranas de la enfermedad.
- 400 a 500 ml de PC dividido en 2 dosis de 200 ml c/u debería ser la dosis a administrar a paciente adulto.
- La necesidad de repetir la transfusión debería ser basada en la respuesta clínica.

- Donante de PC debiera ser screening microbiológico negativo
- Almacenamiento del plasma -30°C
- Procesamiento de muestras (tubos) con equipamiento automatizado.
- Eliminación y posterior incineración de residuos y productos.

GRACIAS

