EBOLA VIRUS EPIDEMICS. FACTS AND CONTROL CHALLENGES IDENTIFIED DURING GUINEA CONAKRY OUTBREAK.

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June 5th, 2014.

MEDECINS SANS FRONTIERES

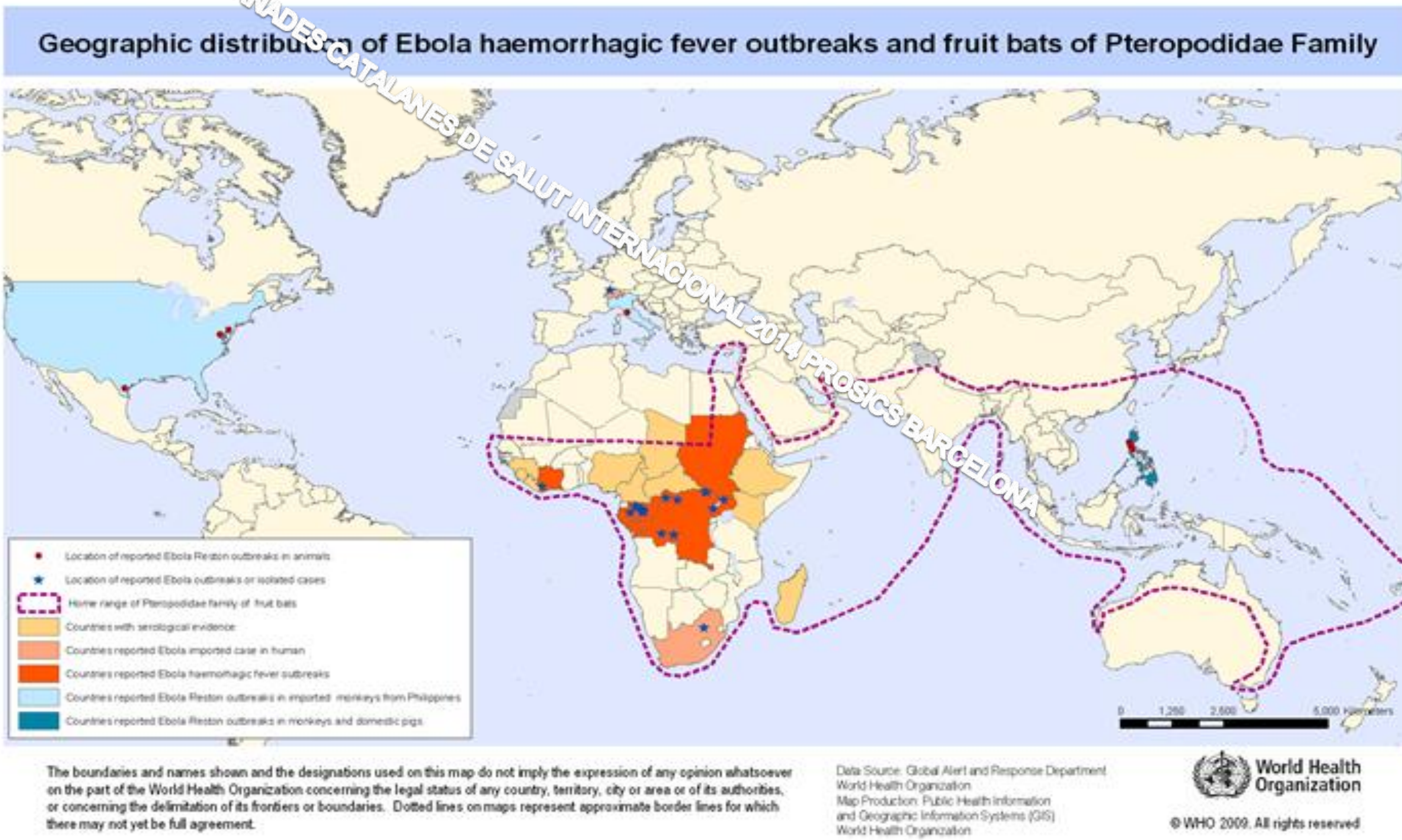
2014. Ebola outbreak in West Africa

The Guinee Outbreak. I

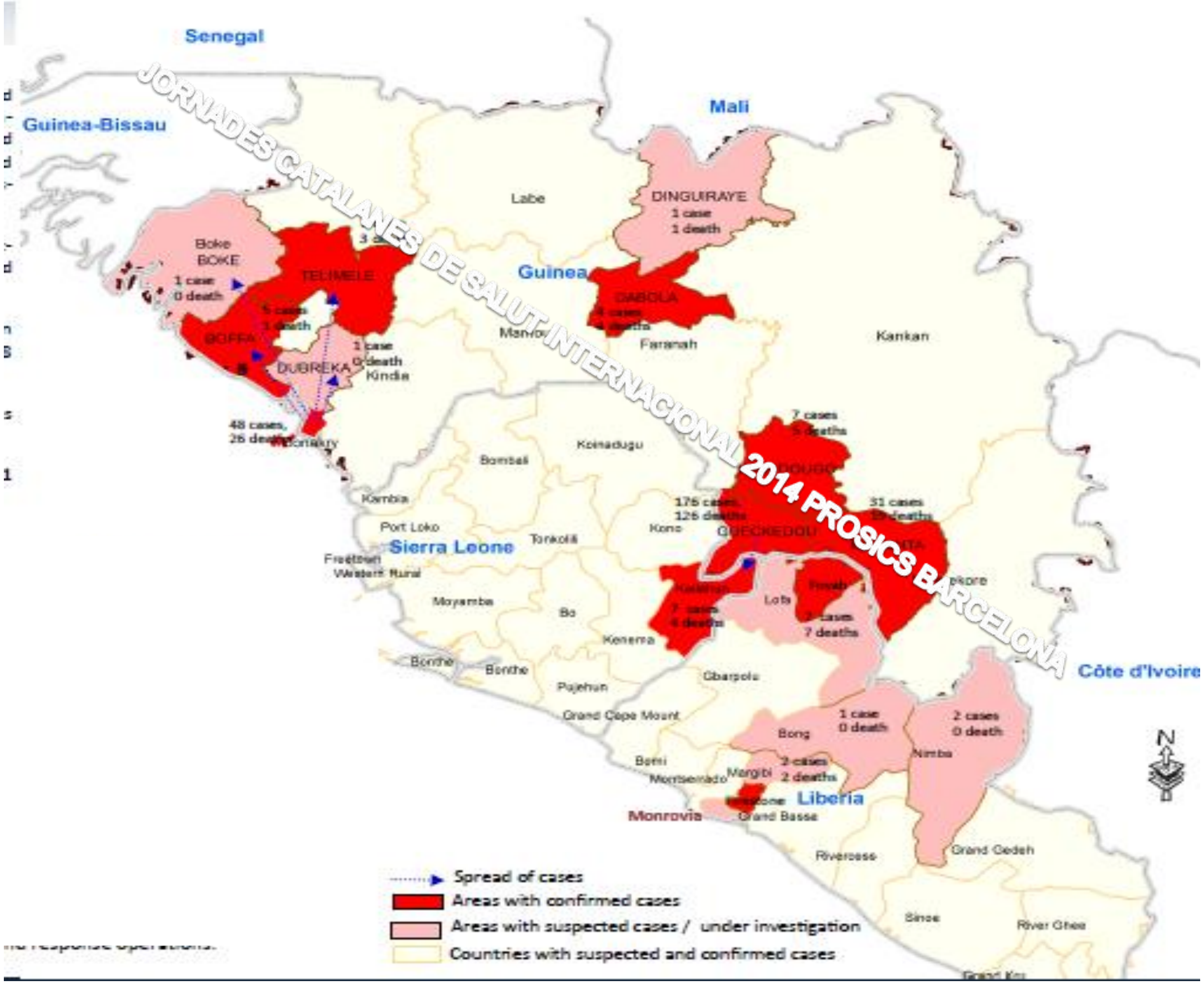
UNCOMMON FEATURES

- Affected areas far from usual ebola outbreak settings. Lassa fever region, not Ebola area.
- Cross-border expansion: Guinee, Liberia, Sierra Leone.
- High caseload.

A non risk area?



Cross border expansion… but near borders.



High caseload, worrying as in the past

	Guinee (June 1st)*		Liberia (May 10th)**		Sierra Leone (May 27th)***	
Cummulative Cases (deaths)	328	(208)	12	(11)	16	(4)
Confirmed (deaths)	193	(114)	6	N/A	7	(2)
Probable (deaths)	80	(71)	6	N/A		
Suspected (deaths)	55	(23)	4	N/A	9	(2)
CFR (confirmed)		5%	N/A			29%
CRF (total)		63%	92%			25%
Date of isolation of last confirmed case	01-06-14					
Date of discharge of last confirmed case	13-05-14		09-04-14			

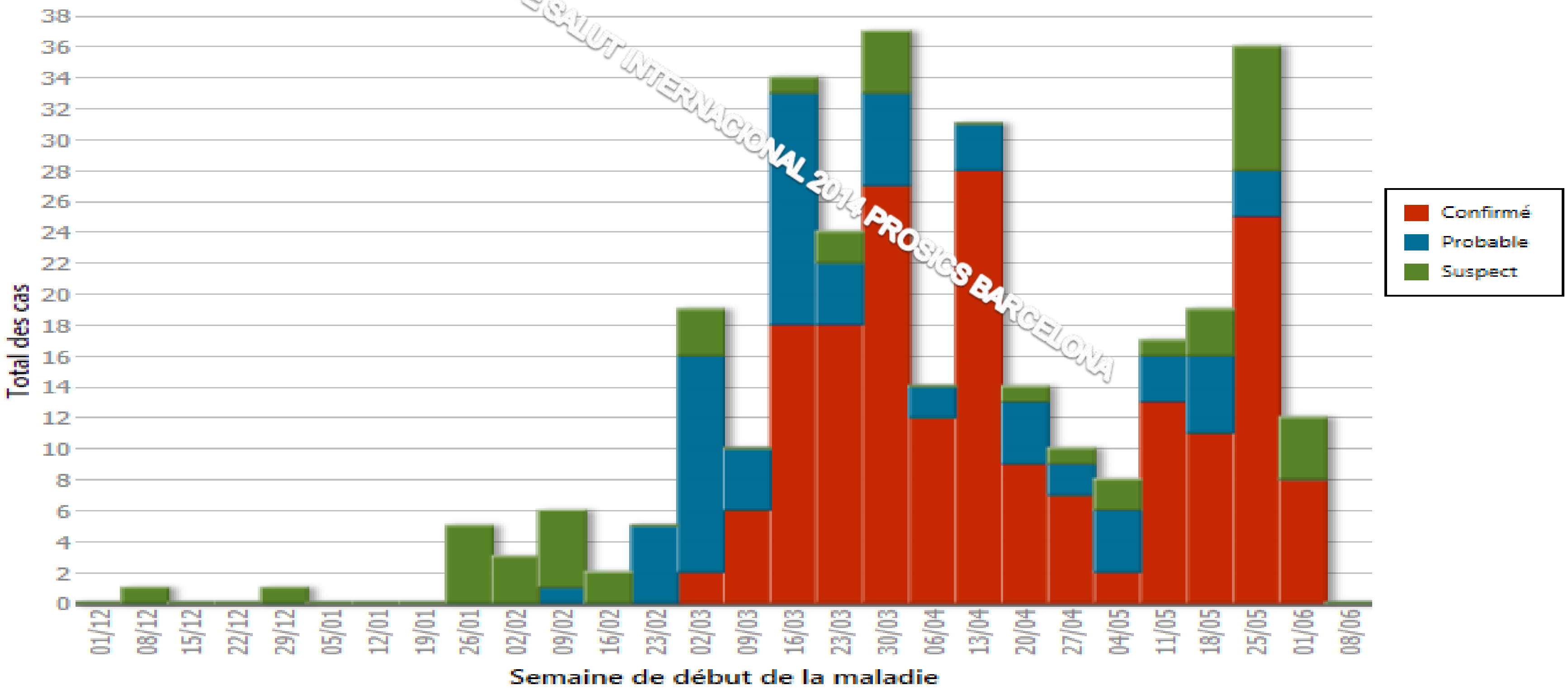
N/A= Not Available

* Source: WHO country SitRep

** Source: PROMED mail

*** Source: MSF internal report

Epidemiological Curve of Ebola Virus Disease Cases in Guinee by Date of Onset of Symptoms. At June 1st 2014.



World Health Organisation (2014) Rapport de la Situation Epidémiologique Guinée, Epidémie de la Fièvre Hémorragique Ebola Situation au 01 juin 2014 18:00 h

Chronology of EVD outbreaks

Année	Pays	Sous-type du virus	Nombre de cas	Nombre de décès	Taux de létalité
1976	Soudan	Ébola Soudan	284	151	53%
1976	R.D. Congo	Ébola Zaïre	318	280	88%
1977	R.D. Congo	Ébola Zaïre	1	1	100%
1979	Soudan	Ébola Soudan	34	22	65%
1994	Côte d'Ivoire	Ébola Côte d'Ivoire**	1	0	0%
1994	Gabon	Ébola Zaïre	52	31	60%
1995	R.D. Congo	Ébola Zaïre	315	254	81%
1996	Afrique du Sud*	Ébola Zaïre	1	1	100%
1996 (Jan-avr)	Gabon	Ébola Zaïre	31	21	68%
1996 (Juil-déc)	Gabon	Ébola Zaïre	60	45	75%
2000	Uganda	Ébola Soudan	425	224	53%
2001-2002	Congo	Ébola Zaïre	59	44	75%
2001-2002	Gabon	Ébola Zaïre	65	53	82%
2003(Jan-avr)	Congo	Ébola Zaïre	143	128	90%
2003 (Nov-déc)	Congo	Ébola Zaïre	35	29	83%
2004	Soudan	Ébola Soudan	17	7	41%
2005	Congo	Ébola Zaïre	12	10	83%

Année	Pays	Sous-type du virus	Nombre de cas	Nombre de décès	Taux de létalité
2007	Ouganda	Ébola Bundibugyo	149	37	25%
2007	R.D. Congo	Ébola Zaïre	264	187	71%
2008	R.D. Congo	Ébola Zaïre	32	14	44%
2011	Ouganda	Ébola Soudan	1	1	100%
2012	Ouganda	Ébola Soudan	24	17	71%
2012	Ouganda	Ébola Soudan	7	4	57%
2012	R.D. Congo	Ébola Bundibugyo	57	29	51%
			2387	**1590**	**67%**

World Health Organisation (2014) Maladie à virus Ebola. Aide-mémoire nº 103. [Online]. Available at: http://who.int/mediacentre/factsheets/fs103/fr/ (Accessed: 10 April 2014)

The Guinee Outbreak. II

COMMON FEATURES

- **Poor resources setting**.
  - Late detection.
  - Complex and costly containment efforts.
- High public concern, fear.
  - Pandemic expansion debate.

Challenges in Ebola Outbreak Response

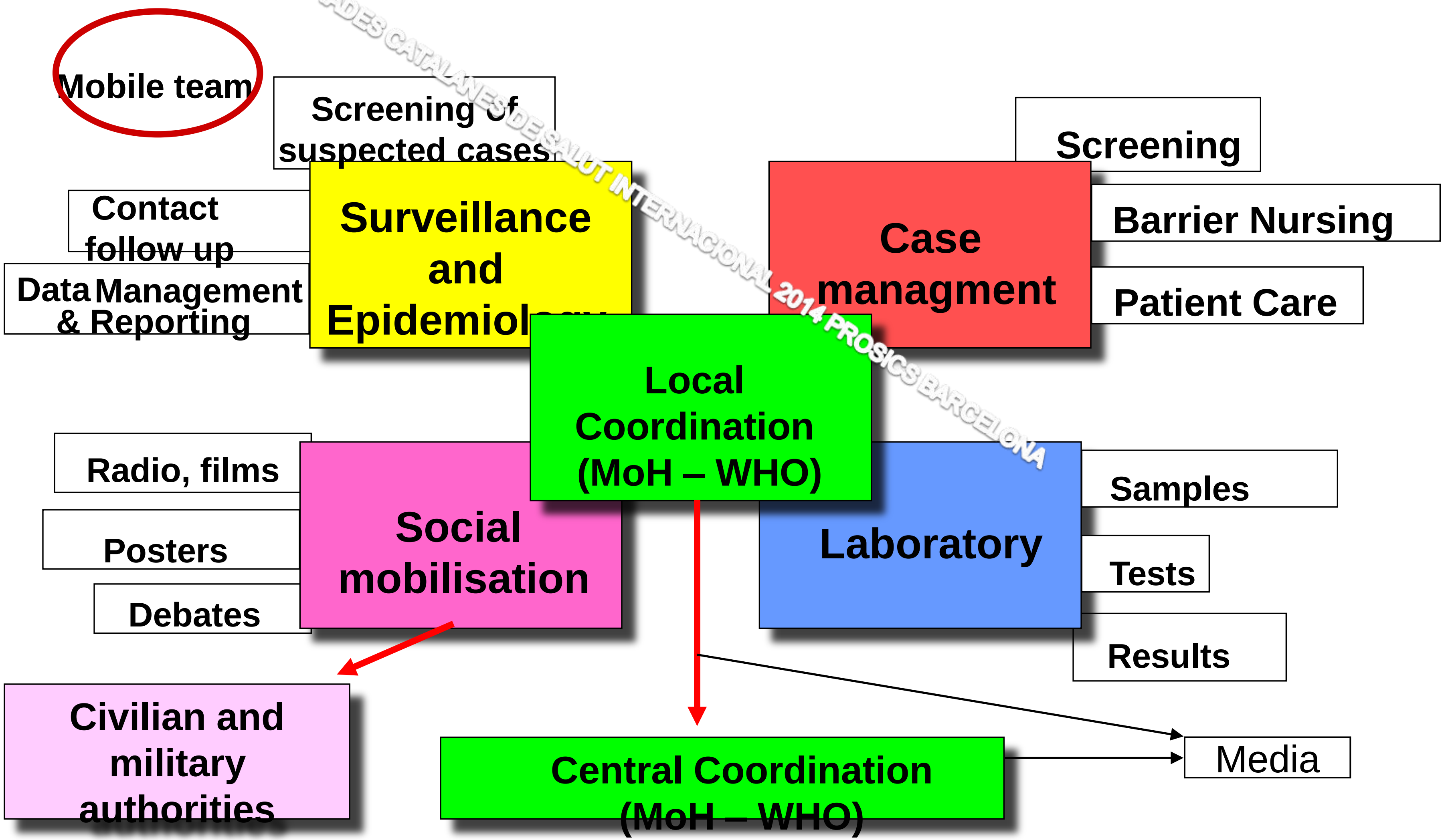
Challenges in Ebola Outbreak Response

- **The (poor) setting**

- **The disease**
  - No treatment.
  - No prophylaxis.
  - High letality.
  - Unclear cycle in nature.

- **COMPLEX response**
- **PATIENT treatment**
- **FEAR management**

A complex response

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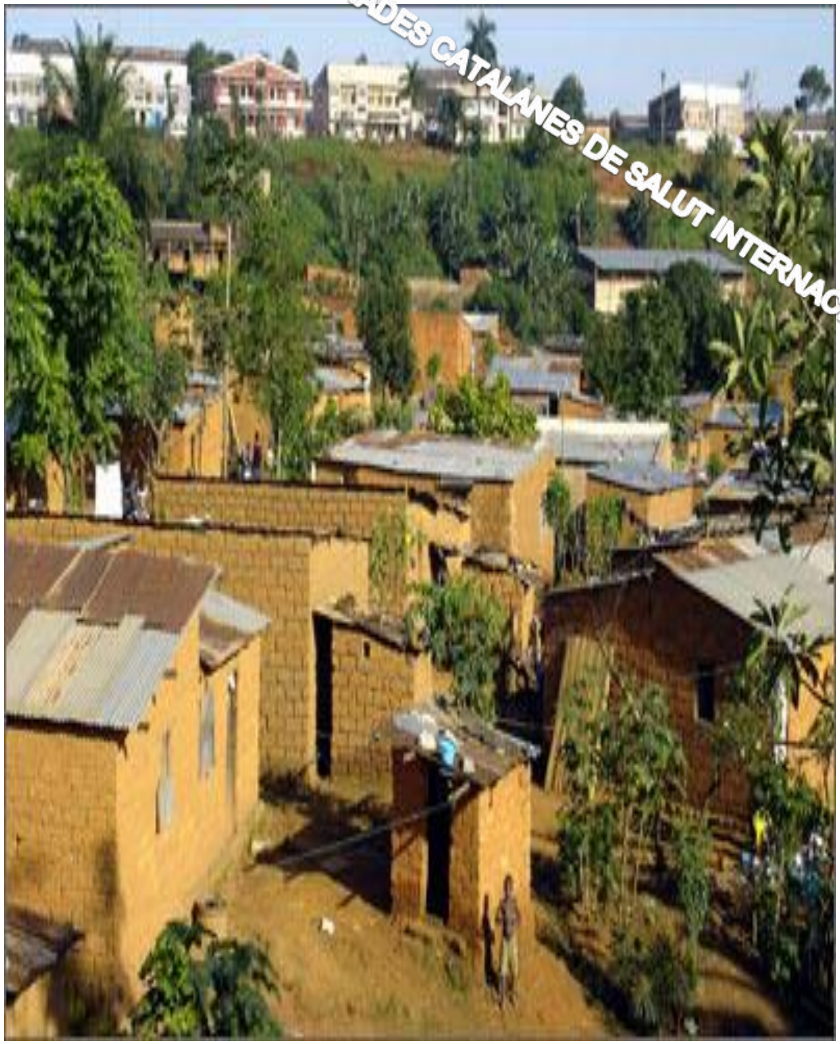
BANCO DE URGENCIA
DO NOT ENTER

In remote and poor settings (urban / rural)



- Lack of minimum barrier nursing measures. GLOVES and GOWNS
- Weak detection capacity. DIAGNOSIS and SURVEILLANCE

Patients

- Patients must receive the best care possible according to the health system resources.
- Families, community and health staff are high risk groups and must all be included in program activities.
- Biosafety measures must serve to provide adequate care.

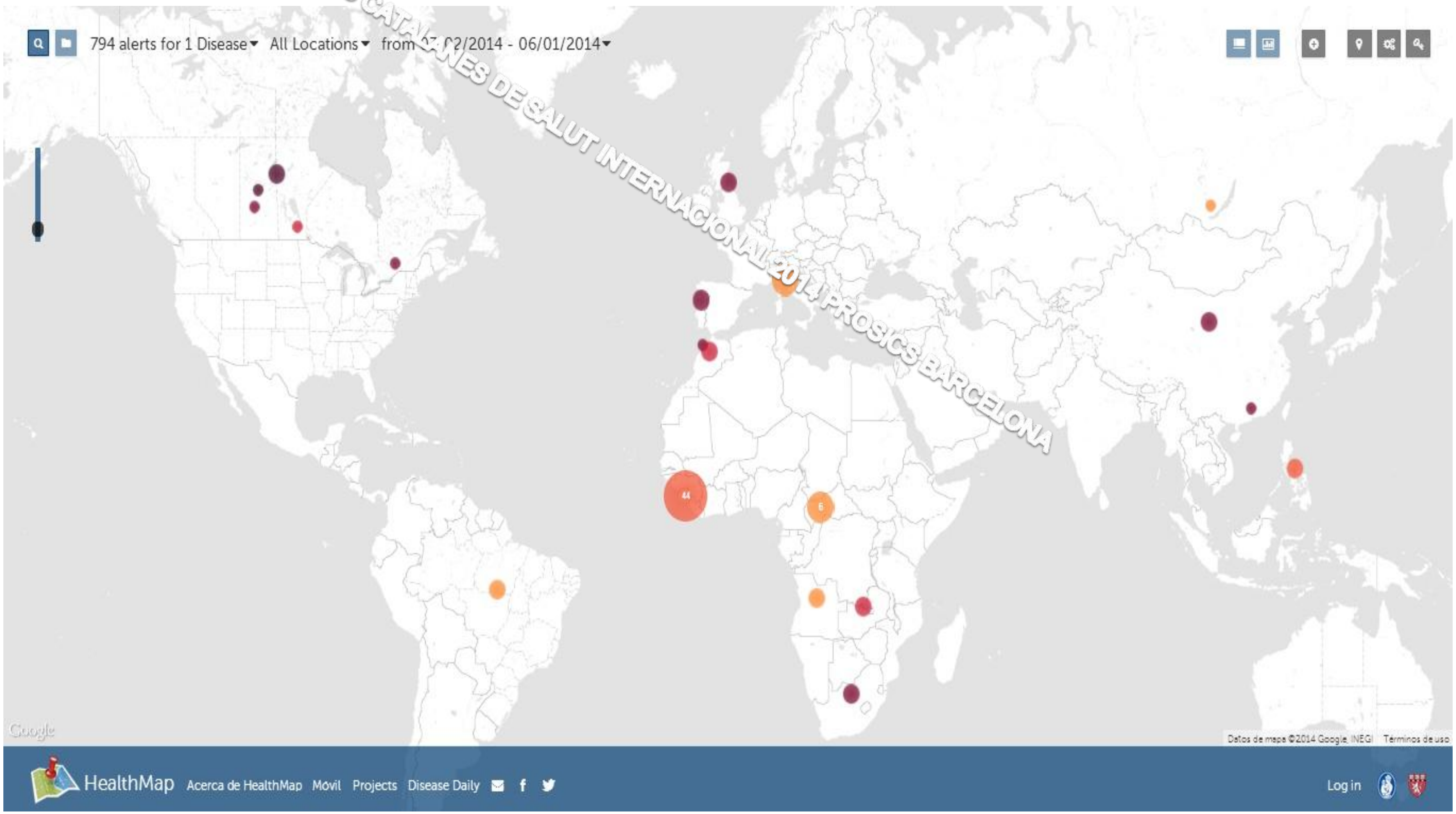
Fear

- Fleing from facilities and unprotected funerals pose a high risk of amplification.

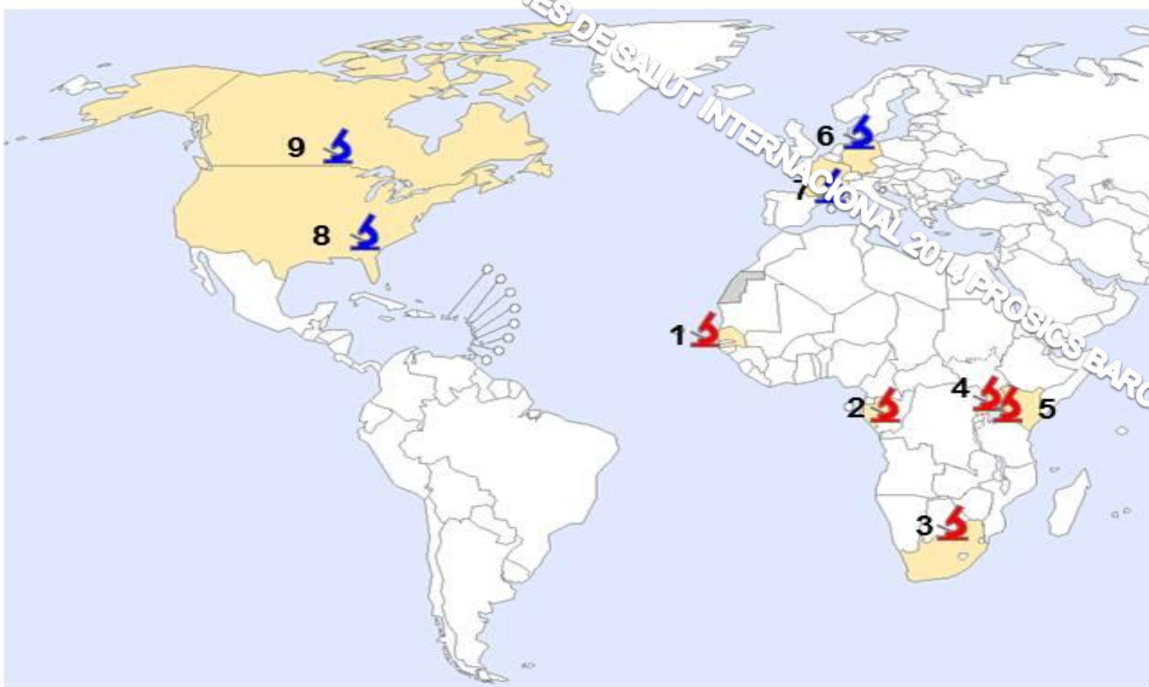
- Personal protective equipment and biosafety protocols increase the fear

The community must be involved in response if the outbreak is to be contained.

Fear management. Alerts



Ebola Virus Disease in West Africa
EDPLN laboratories for Ebola or Marburg virus diagnostic



AFR-EDPLN laboratories with capacity for Ebola or Marburg virus diagnostic

Global EDPLN laboratories supporting the Guinea Ebola outbreak response

EDPLN : Emerging and Dangerous pathogens Laboratory Network

1. **Senegal** Institut Pasteur de Dakar
2. **Gabon** Centre International de Recherches Médicales de Franceville
3. **South Africa** National Institute for Communicable Diseases
4. **Uganda** Uganda Virology Research Institute
5. **Kenya** Kenya Medical Research Institute (KEMRI)
6. **Germany** Bernhard-Nocht-Institut für Tropenmedizin (BNI)
7. **France** Institut Pasteur Lyon et Paris
8. **United States of America** Centers for Disease Control and Infection
9. **Canada** National Microbiology Laboratory Public Health Agency of Canada

Source: WHO, 10 April 2014

A Pandemic Threat?

- Filovirus are **no longer restricted to remote** and scarcely populated areas.
- Reproduction ratio (Ro) high in early stages, but low **(Ro< 1)** when people are aware of risky behaviours.
- **The spread depends on** capacity for diagnosis, surveillance, isolation and barrier nursing, training of staff and availability of PPE, management of funerals, coordination.
- There is **no convincing evidence on genetic selection and variation** of virus in outbreaks that could take to think of possible increase of virulence or adaptation to new ways of transmission.

Byron, E. et al (2009) “Filoviruses”: a real pandemic threat?”. *EMBO Molecular Medicine*, 1, pp. 10-18

- **Guinee Ebola Outbreak has posed some new challenges** for containment efforts, but also some "old" ones.
- Any **Ebola outbreak response is complex**. Complexity is related to the disease, but also to the relationship between poverty and risk of outbreaks and disease.
- Response efforts must **put people at their core**: treatment of patients and prevention of spread to community.
- **Fear management** makes part of the intervention.
- **High resources countries** must do an adapted risk of expansion within their borders, and adopt proportionate measures. Investing can contribute better to the future control of the disease than becoming victims of fear.

THANK YOU

Sam Taylor / MSF