



EU research response to Ebola

Cornelius Schmaltz, MD

Deputy Head of Unit

**'Fighting infectious diseases and
advancing public health'**

DG Research and Innovation

European Commission

ASTMH

64th Annual Meeting

Philadelphia, PA, USA

October 26, 2015

Main funding instruments for Ebola Research under Health Programme

- **Collaborative research** between Countries, Sectors, Disciplines



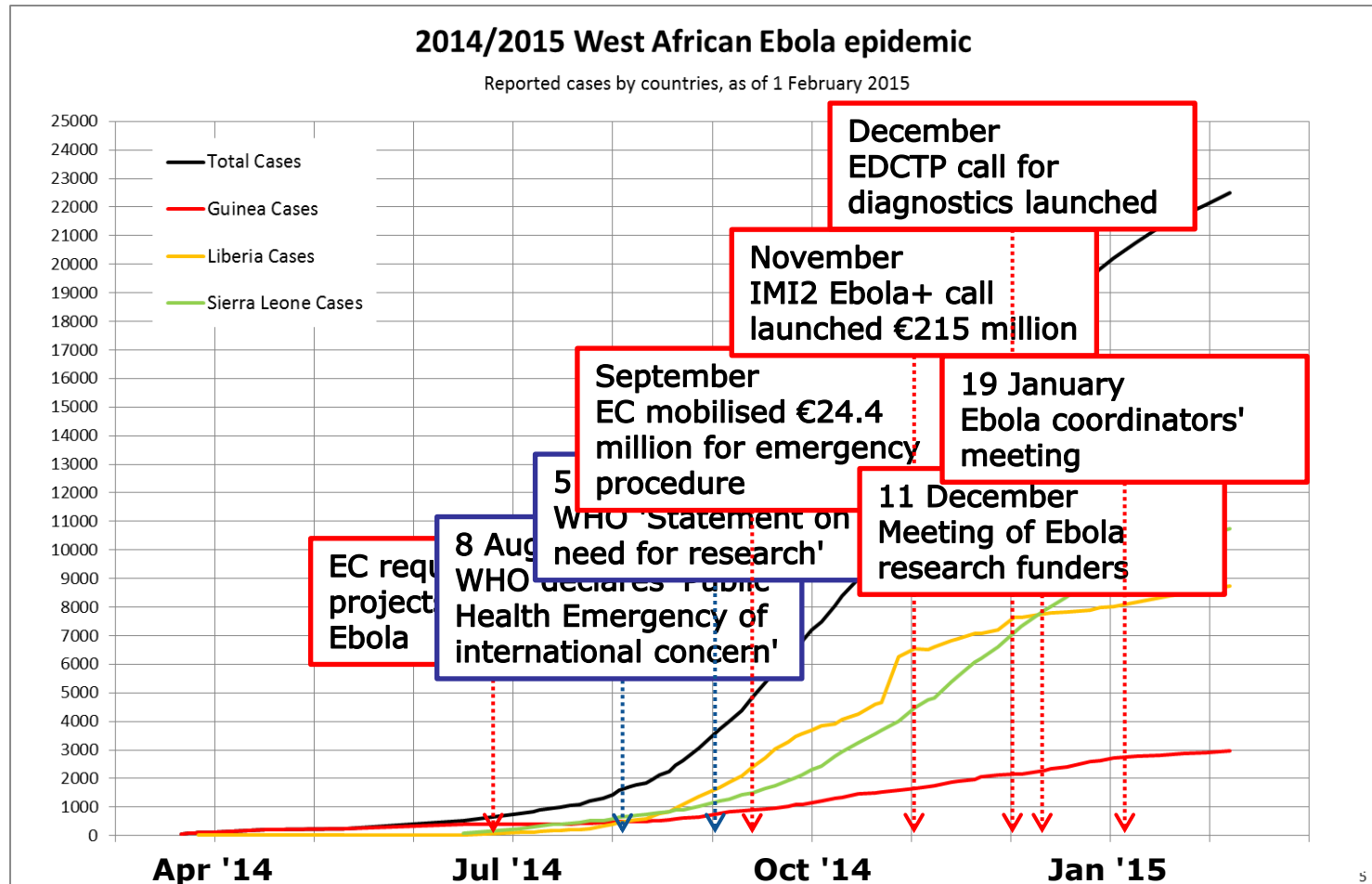
- **Innovative Medicines Initiative (IMI2)**
 - Public-private partnership between **European Commission and pharma industry** in Europe

- **European and Developing Countries Clinical Trials Partnership (EDCTP2)**



- Partnership between **14 European and 13 African** countries

The Research Response to the Ebola Outbreak



Ebola projects funded by Horizon 2020 – emergency procedure/ FP7 and IMI 2

Vaccines:

- *ChAd3-EBOV (GSK):* *EbolaVac (phase II)*
- *VSV- ZEBOV (Merck):* *VSV-EBOVAC*
(analysis of phase I results)
- *Ad26 + MVA (J&J):* *EBOVAC1, EBOVAC2, EBOMAN*
(phase I, II, III, manufacturing)
EBODAC
(community engagement)

Ebola projects funded by Horizon 2020 – emergency procedure/ FP7 and IMI 2

Treatments:

- *Favipiravir: REACTION*
- *Convalescent plasma: Ebola_Tx,*
- *Hyperimmune horse serum: IF-Ebola*

Diagnostics:

- *Mofina (pan-filovirus!), FILODIAG, EbolaMoDRAD*
- *IF-Ebola*

Ebola projects funded by Horizon 2020 – emergency procedure/ FP7, IMI 2 and EDCTP 2

Translational research:

- *EVIDENT*
- *ANTIGONE*

Animal reservoir:

- *ANTIGONE*
- *PREDEMICS*

Preparedness:

- *PREPARE*

Communication:

- *TELL ME*

Capacity building:

6 projects on infectious disease capacity building in Sierra Leone, Uganda, Gabon and Liberia, ranging from phase I trials to clinical management in hospitals, outbreak response, laboratory capacity and vaccine trials and deployment (to be announced soon!)

H2020 Emergency Procedure - Results

- **Favipiravir:** First treatment with preliminary results for efficacy in early Ebola disease announced at CROI in February – final results to be published soon (EU project REACTION)
- **Plasma from Ebola survivors:** testing on patients during Ebola outbreak; results being analysed, to be published soon (EU project Ebola_Tx)
- **Vaccine:** GSK vaccine adult Phase II study ongoing in Senegal, Mali, Nigeria; Paediatric Phase II study has just started (EU project EbolaVac).
- **Genomics:** Temporal and spatial analysis of the 2014 – 2015 Ebola outbreak in West Africa (*Nature* 524, 97–101 August 2015). EU project REACTION.
- More to come... More **Information:**
ec.europa.eu/research/health/infectious-diseases/emerging-epidemics/ebola_en.html

Collaboration among funders

Examples of Results:

- Collaboration of 2 Ebola plasma trials funded by EU and BMGF: plasmapheresis equipment shared, common endpoints
- Joint call on 'Research capacity development in support of the EVD response' between EDCTP, WHO-TDR and UK MRC, in collaboration with similar call of Canadian Institutes of Health Research – joint workshop

The Innovative Medicines Initiative's public-private partnership response : The Ebola+ programme

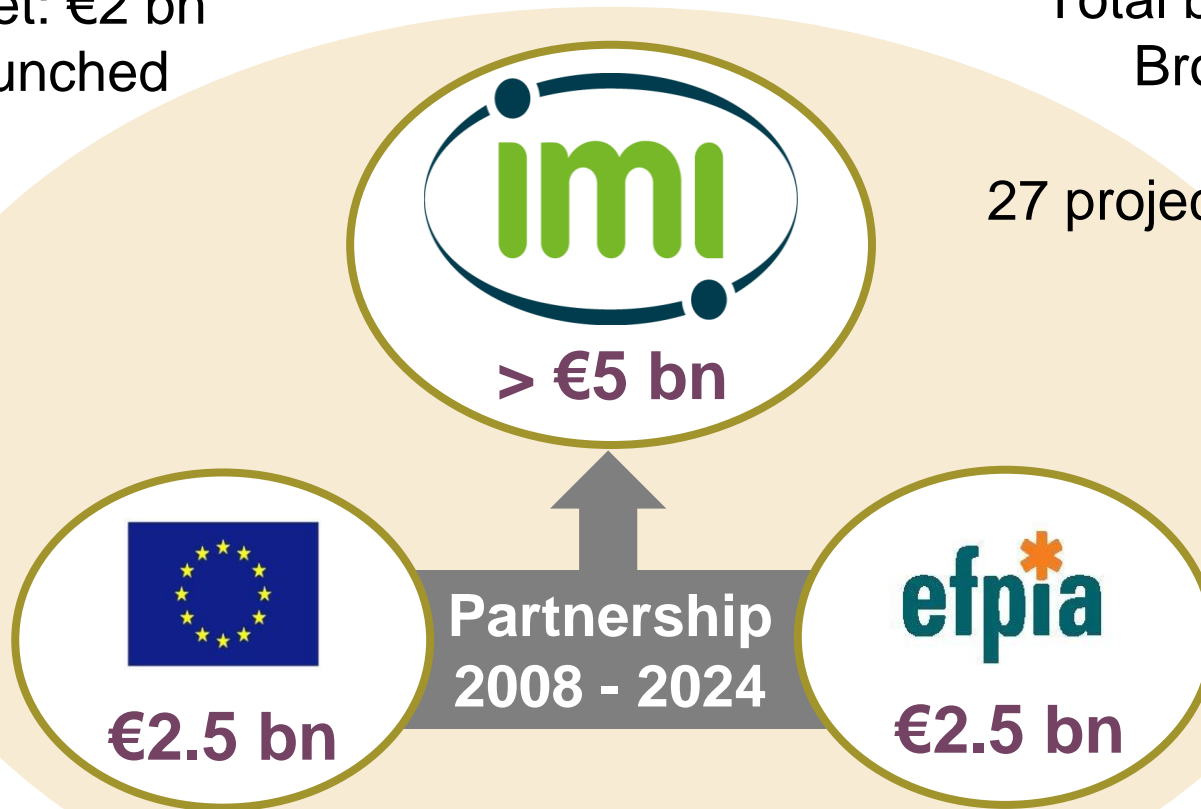
The Innovative Medicines Initiative (IMI)

IMI: 2008-2013

Total budget: €2 bn
11 Calls launched
59 projects

IMI 2: 2014-2024

Total budget: €3.3 bn
Broadened scope
6 Calls to date
27 projects started or in preparation



October/November 2014

European
Commission &
EFPIA

- Other funders
- Situation of current epidemic
- Short term goals
- Long term strategy
- Need for collaboration

A
programmatic
approach in
IMI

- Filoviral haemorrhagic fevers
- Fast impact and longer term
- Broad scope from early discovery to compliance, diagnostics

6 Nov: IMI2 Call 2
launching the Ebola+
programme

Other calls in the future

Why the Innovative Medicines Initiative ?

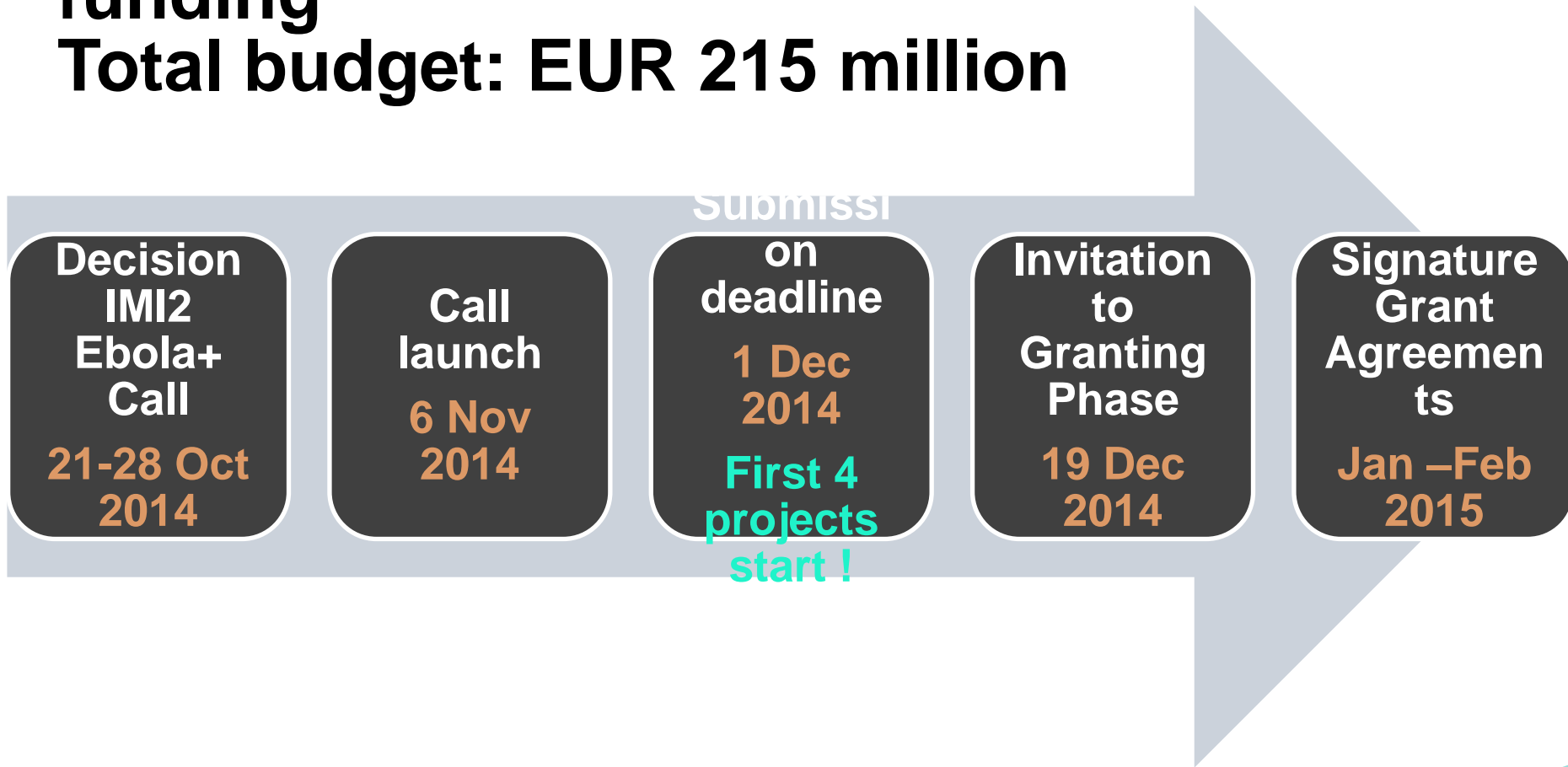
Collaboration between stakeholders and disciplines is a **MUST** to address the threat

Vaccinologists, infectious disease specialists, anthropologists, novel technologies, diagnostics, private industry

A neutral trusted platform facilitates exchange and helps align stakeholder's interests

A fast-track single-stage process resulting in 8 projects selected for funding

Total budget: EUR 215 million



The family of Ebola+ projects

FILODIAG

GNA Biosolutions

Ultra-fast diagnostics based on laser-heated nanoparticles

EbolaMoDRAD

Public Health Institute Sweden

Portfolio of rapid diagnostic tools

EBOVAC 1

LSHTM, Janssen

Phase 1 & 3 trials Janssen prime-boost vaccine

EBOVAC 2

Inserm, Janssen

Phase 2 trials Janssen prime-boost vaccine

EBODAC

LSHTM, Janssen

Deployment & compliance

EBOMAN

Vibalogics, Janssen

Manufacturing challenges

Mofina

Public Health England, Altona

Mobile pan-filovirus nucleic acid test

VSV-EBOVAC

Sclavo Vacc. Assoc

In-depth immunogenicity VSV-ZEBOV

- Joint Information Repository
- Joint Scientific Advisory Board
- Joint Ethics Board

VSV-EBOVAC

- Comprehensive characterization of immune response elicited by the vesicular stomatitis virus (VSV)-vectored Zaire Ebola vaccine candidate (VSV-ZEBOV)
- Extension of Phase I/II trials* in Switzerland, Kenya and Gabon, by addition of M12 timepoint
- Systems analysis of innate and adaptive immune responses
- Comparison of immunity in vaccinated volunteers to survivors
- Beautiful example of complementary support & funding*

*VSV-ZEBOV vaccine originally developed by Public Health Canada, now developed by Merck/NewLink Genetics, Phase I/II trials funded by Wellcome Trust Grant to WHO



Rapid diagnostic tests

- ✓ Very high sensitivity and specificity
- ✓ Ability to be deployed in resource-limited settings
- ✓ Minimal training required to operate
- ✓ Rapid: time to result max 30 min (desirable)

FILODIAG: coordinated by GNA Biosolutions GmbH
IMI JU contribution: € 2.3 million
Ultra-fast technology based on laser-heated nanoparticles

Mofina: coord. by Public Health England/Altona Diagnostics GmbH
IMI JU contribution: € 1.2 million
Combining a validated detection assay with a point-of-care molecular diagnostics platform

EDDIAMODRAD: coordinated by Public Health Institute Sweden
IMI JU contribution: € 4.3 million
Portfolio of multiple novel technologies



Thank you

www.imi.europa.eu

 @IMI_JU