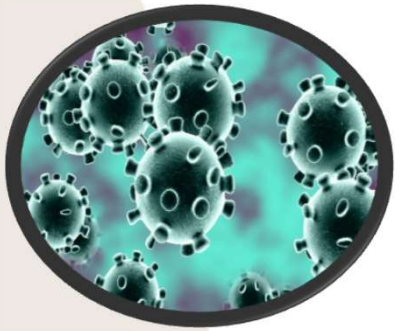

Strategic Agenda for Filoviruses Research and Monitoring (AFIRM)

WHO-AFIRM Strategy Roadmap 2021-2031

César Muñoz-Fontela, Bernhard Nocht Institute for Tropical Medicine and WHO R&D Blueprint

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R&DBlueprint
Powering research
to prevent epidemics

WHO R&D Blueprint

A WHO-Strategic Research Agenda for Filovirus

Research and Monitoring (WHO-AFIRM)

WHO-AFIRM Strategy Roadmap 2021-2031

Version 4.0

WHO reference number

R&DBlueprint
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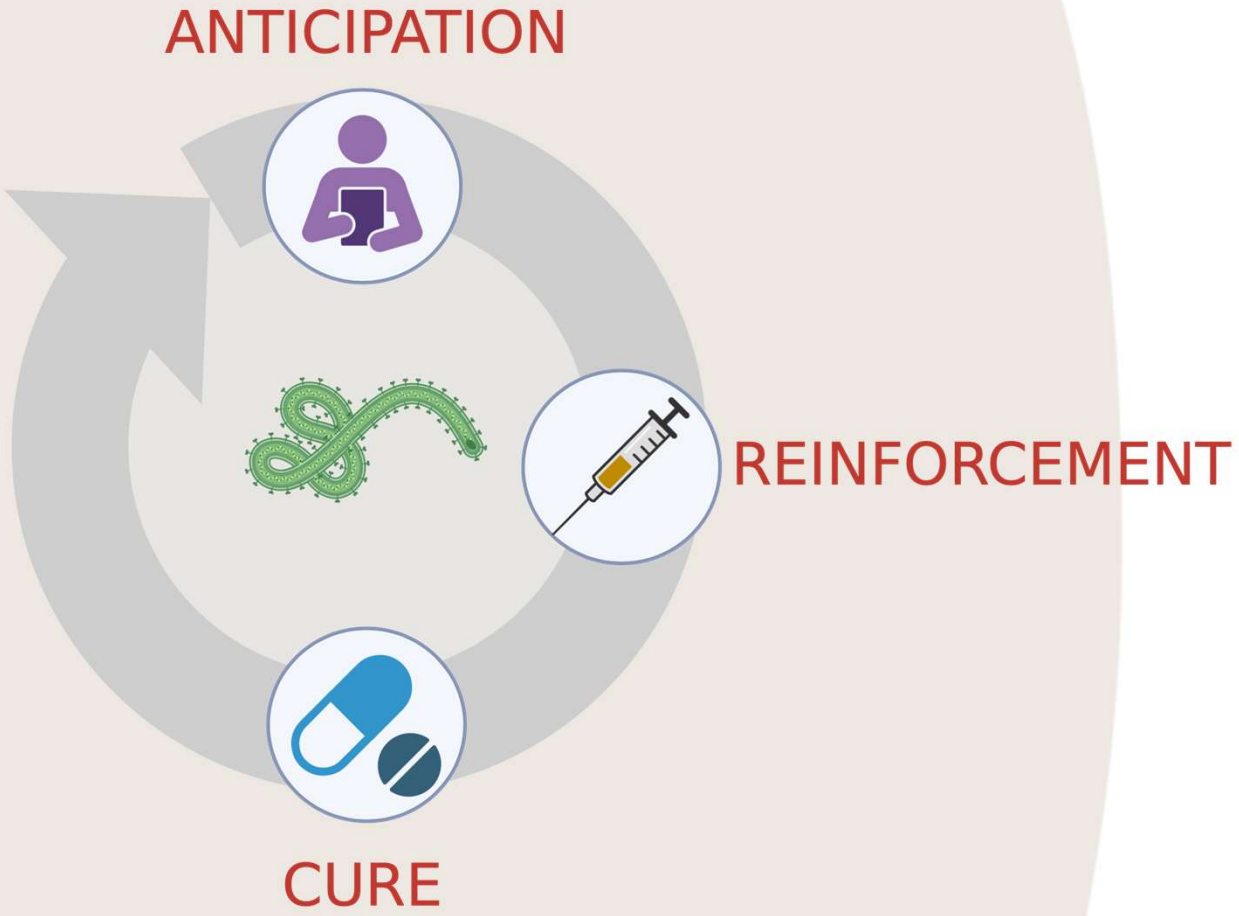
https://cdn.who.int/media/docs/default-source/blue-print/afirm-roadmap_2021_2031

AFIRM



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AFIRM= WHO Expert Consultation

Key knowledge gaps

1- Lack of MCM for MARV and SUDV

2- Poorly characterized filoviruses (Tai forest virus, Lloviu virus, Bombali virus)

3- Mechanisms of virus persistence, implications for public health

4- Virus ecology, wildlife surveillance and prediction tools

5- Integrated social science research on sociocultural and behavioral factors pertaining to the development and deployment of socially acceptable Ebola/Marburg MCMs. Strategies for designing socially acceptable field research are also needed.

1- Strategic goals

1- To enhance coordination on research across endemic countries by establishing a WHO-coordinated multi-country research network (e. g. sharing of ecological and genomic data)

2- To strengthen efforts to develop and evaluate additional diagnostics tools, including filovirus rapid tests, and to expand research related to genomic sequencing.

3- To stimulate research into novel diagnostic approaches, including prognostic biomarkers

4- To strengthen laboratory infrastructure and capacity to enable rapid evaluation of diagnostic specimens

5- To strengthen community engagement: carcass surveillance, survivor networks, serosurveillance, grasroot campaigns.

1- Strategic goals

2- Milestones

1- By 2025, develop a network that spans countries where filovirus outbreaks have occurred as well as partner countries, to facilitate the sharing of i) biological samples/data ii) ecological, epidemiological and genomic data.

2- By 2025 develop a framework for the testing, validation, standardization and comparison of novel diagnostic assays with multiplex capacity.

3- By 2030, develop a plan to improve laboratory infrastructure and potentially the construction of a reference diagnostic laboratory capable of handling BSL-4 samples in outbreak prone countries

1- Strategic goals

1- To establish a platform trial design for vaccines against Marburg and Sudan virus

2- To setup a WHO-coordinated consortium including regulators, developers and members of academia to accelerate the development of filovirus vaccines (WHO-MARVAC)

3- To foster the exploration of different vaccine platforms that incorporate different targets with the goal of developing multivalent vaccines.

4- To compile data on the duration of protective immunity after vaccination with EBOV vaccines and identify the correlates of protection involved to facilitate faster evaluation of promising vaccine candidates against other filoviruses.

1- Strategic goals

PLOS PATHOGENS

PEARLS

An introduction to the Marburg virus vaccine consortium, MARVAC

Robert W. Cross[1]*, Ira M. Longini[2], Stephan Becker[3], Karin Bok[4], David Boucher[5], Miles W. Carroll[6], Janet V. Díaz[7], William E. Dowling[8], Ruxandra Draghia-Akli[9], James T. Duworko[10], John M. Dye[11], Michael A. Egan[12], Patricia Fast[13], Amy Finan[14], Courtney Finch[14], Thomas R. Fleming[15], Joan Fusco[16], Thomas W. Geisbert[1], Anthony Griffiths[17], Stephan Günther[18], Lisa E. Hensley[19], Anna Honko[17], Ruth Hunegnaw[20], Jocelyn Jakubik[14], Julie Ledgerwood[4], Kerstin Luhn[21], Demetrius Matassov[12], Jeffrey Meshulam[12], Emily V. Nelson[18], Christopher L. Parks[13], Roxana Rustomjee[14], David Safronetz[22], Lauren M. Schwartz[7], Dean Smith[23], Paul Smock[14], Ydrissa Sow[24], Christina F. Spiropoulou[25], Nancy J. Sullivan[4], Kelly L. Warfield[26], Daniel Wolfe[23], Courtney Woolsey[1], Roland Zahn[21], Ana María Henao-Restrepo[7], César Muñoz-Fontela[18], Andrea Marzi[27]*

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SAGE journals

Design

A platform trial design for preventive vaccines against Marburg virus and other emerging infectious disease threats

Ira M Longini[1], Yang Yang[1], Thomas R Fleming[2], César Muñoz-Fontela[3,4], Rui Wang[5,6], Susan S Ellenberg[7], George Qian[8], M Elizabeth Halloran[2,9], Martha Nason[10], Victor De Gruttola[6], Sabue Mulangu[11], Yunda Huang[8], Christl A Donnelly[12,13], and Ana-Maria Henao Restrepo[14]

2- Milestones

1- By 2025, clinical evaluation for vaccine candidates against Marburg and Sudan virus.

2- By 2030, obtain licensure for at least one vaccine against Marburg virus or Sudan virus.

3- By 2030, develop a broad-spectrum filovirus vaccine that is low cost, efficacious and safe.

CURE

1- Strategic goals

1- To establish a common, publicly available reference protocol for the treatment of filovirus diseases.

2- To accelerate the development and testing of filovirus post-exposure therapies

3- To obtain, compile and compare data on the safety, efficacy and tolerability of currently available therapeutics and evaluate the benefit of combinations thereof.

4- To create tools and networks to enable better surveillance of survivors including regular sampling and assessment of blood, semen etc. where possible in order to facilitate the early detection of sequelae.

5- To evaluate laboratory-measured molecular biomarkers that can predict clinical outcomes and that can inform on the efficacy of therapeutic interventions.

6- To foster research on immunotherapies that can be used as post-exposure therapies and that are capable of eliminating viral sequelae.

7- To develop guidelines and establish rigorous procedures for supportive care taking into account the economic capacity of the affected countries.

CURE

2- Milestones

1- By 2024, assess the safety, efficacy, pharmacokinetics and pharmacodynamics of selected drugs intended for therapeutic use.

2- By 2025, identify and develop therapeutics against Marburg virus and conduct preliminary investigational studies to determine their efficacy.

3- By 2025, determine the contribution of different viral epitopes to pan-ebolavirus responses and foster more research on the development of pan-filoviral antibodies.

4- By 2024, establish a system for the exchange of data obtained from pre-clinical studies.

Thank you

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