Thank you for joining, the M&RI webinar will begin shortly

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• Dial-in (audio only) is also available
  • Dial: +1-404-553-8912  Conference ID: 6790 2344
  • slides are available at: http://tinyurl.com/ha8e2au
• A link to a recording of the webinar will be distributed soon after the webinar has concluded

If you would like the link to the web survey emailed to you, then please contact: Ms. Natasha McCall (ncz6@cdc.gov)
Housekeeping items for today’s call

• Please put your phone on mute
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• Technical difficulties during the webinar
  • Please email Ms. Natasha McCall ncz6@cdc.gov
  • You can also send messages during the live webinar through the IM/conversation in the web app
• If you have any questions or comments on the process, please contact Gavin Grant (gig9@cdc.gov) and James Goodson (fez9@cdc.gov)
Measles and Rubella Research Prioritization Process

October 17, 2016
Measles & Rubella Initiative Research and Innovation Workgroup
Co-chairs: Gavin Grant and James Goodson
Research and Innovation Workgroup

- Felicity Cutts, Independent Consultant
- David Durrheim, Public Health Australia
- James Goodson, CDC (co-chair)
- Gavin Grant, CDC (co-chair)
- Matt Hanson, BMGF
- Robb Linkins, CDC
- Balcha Masresha, WHO/AFRO
- Bill Moss, JHU
- Mick Mulders, WHO/HQ
- Paul Rota, CDC
Presentation outline

• Global progress toward measles and rubella (MR) elimination
• The MR research and prioritization process
• How you can contribute to this process
Purpose of this webinar

• Prepare participants to provide input to prioritize critical research and innovation needs

• Orient participants to the objectives of the research and innovation prioritization process

• Invite participants to give input through a web survey
  – The link to the survey will be provided at the end of this webinar
Global Progress Update
Vision:
Achieve and maintain a world without measles, rubella and congenital rubella syndrome.

"With strong partnerships, resources and political will, we can, and must work together to achieve and maintain the elimination of measles, rubella and CRS globally."

Margaret Chan, DG, WHO
Anthony Lake, Executive Director, UNICEF
Timothy E. Wirth, President, UNF
Gail J. McGovern, President & CEO, ARC
Thomas R. Frieden, Director, CDC
Strategies

1. High population immunity through vaccination with two doses of M and R containing vaccines
2. Effective surveillance, monitoring and evaluation
3. Outbreak preparedness and response & case management
4. Communication to build public confidence and demand for immunization
5. Research and development
Measles and rubella targets

In 2010, the World Health Assembly set milestones

By 2015:

- MCV1 coverage $\geq 90\%$ national and $\geq 80\%$ in every district
- Measles reported incidence $<5$ cases/million
- Measles mortality reduction of 95% vs. 2000

In 2012, the WHA approved the Global Vaccine Action Plan (GVAP)

By 2020:

- Elimination of measles and rubella in 5 of the 6 WHO Regions

ALL regions have established goals for measles elimination, and 3 regions have established goals for rubella elimination.
94% reduction in global reported measles cases

Annual reported cases and estimated coverage* with the first (MCV1) and (second) MCV2 dose of measles-containing vaccine, 1980–2015

Number of reported cases (millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of cases</th>
<th>MCV1 coverage</th>
<th>MCV2 coverage</th>
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<tr>
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<td>4</td>
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<tr>
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<td>1984</td>
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<td>2014</td>
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*Coverage as estimated by WHO and UNICEF. MCV2 estimates available starting from 2000 when global data collection began; however, some countries had introduced the MCV2 prior to 2000.

Source: JRF from 194 WHO Member States, updated July 18, 2016.
Global Milestone #1:
>90% MCV1 coverage in every country

Vaccination coverage with 1st dose of measles-containing vaccine in infants, 2015

119 (61%) countries have >90% MCV1 coverage

**Milestone #2**
Reported measles incidence
<5 cases/million

*Measles incidence decreased by 75% 36 per million, 2015*

**Milestone #3**
95% reduction in measles deaths

*Measles deaths decreased by 79%*
Estimated coverage with the 2nd dose of measles-containing vaccine (MCV2), 2015

160 (82%) countries have introduced MCV2

66 Measles campaigns in 39 countries in 2015

180 million children reached
40/66 (61%) attained 95% coverage

42 of 66 SIAs integrated 1 or more other interventions

- Measles (21)
- Measles and Rubella (15)
- Measles, Mumps and Rubella (3)
- No SIA in 2015
- Not Applicable

- OPV – 15
- Vitamin A – 15
- De-worming – 8
- Other interventions – 1

Updated on 15 April 2016
The WHO Global Measles and Rubella Laboratory Network, 2016

- National Laboratories
- Regional Reference Labs
- Global Specialised Labs
- Provincial Labs China
- Sub-National Labs

N = 690 labs + 331 Prefect. Labs

Provincial Labs China

141 Sub-National Labs
Measles surveillance system sensitivity
Jun 2015–May 2016 (12M period)

Reporting rate of discarded cases* per 100,000 population**

Target is ≥2 in last 12 month period.
*discarded cases are suspected measles cases which have been investigated and discarded as non-measles cases using laboratory testing and/or epidemiological-linkage.

** World population prospects, 2015 revision.

- ≥2 (56 countries or 29%)
- >1 - <2 (30 countries or 15%)
- ≤1 (50 countries or 26%)
- No case based surveillance or no or insufficient data reported (59 countries or 30%)
- Not applicable

Source: Surveillance data in WHO HQ as of July 4, 2016
Global distribution of measles genotypes, 2010–2015

Reference: MMWR 2016, 65/17, and WER 2016, 91/18
Estimates of the median incidence of congenital rubella syndrome (CRS) per 100,000 live births by country in 2010

Annual reported rubella cases and estimated coverage* with the first dose of rubella-containing vaccine (RCV1), 2000–2015

History of MR Research & Innovation Prioritization
Importance of research and innovation

• Strategies remain the same, but research and innovations can spur progress
• Research questions aim for solutions to overcome programmatic challenges
  • Outbreak investigation
  • Surveillance data analysis
  • Review meetings
• Innovations develop and evaluate new ideas to facilitate implementation of elimination strategies
• Guide investments and resources to focus on important research questions and innovation is key to progress
Measles and rubella research meetings

• **2005**, New Delhi, WHO Steering Committee on research measles and rubella vaccines
• **2008**, Atlanta, Global Measles and Rubella Research External Peer Review
• **2011**, Atlanta, Global Measles and Rubella Research Meeting
• **2013**, Geneva, SAGE MR working group conducted a survey to obtain expert opinion on specific topic areas within the research agenda for further prioritization
• **2016**, *In progress*
Focused on 6 topic areas, and identified several research questions within each of these areas:

- Measles epidemiology
- Vaccine development and effectiveness, and vaccine delivery
- Surveillance and laboratory methods
- Immunization strategies
- Mathematical modeling
- Rubella/CRS control and elimination
2013- SAGE MR workgroup

Prioritized 12 specific topic areas, focused on programmatic needs
1. Strategies to increase coverage in difficult populations
2. Novel strategies to increase vaccine coverage
3. Strategies to address confidence gaps
4. Outbreaks in settings with high coverage
5. Optimal age of measles vaccination
6. Reasons for low confidence in vaccines
7. Outbreak response strategies
8. Strengthen routine immunization and surveillance
9. Susceptibility profiles to measles and rubella
10. Measures of vaccine coverage
11. Epidemiology and surveillance for rubella and CRS
12. Point-of-care diagnostics
• Progress toward measles and rubella elimination may identify new challenges that need to be addressed
• Apply new technologies when they become available
• Account for previous priorities that have been addressed
• Consider novel approaches to elimination/eradication efforts proven successful for other programs that could potentially be applied to MR elimination
Examples of research projects

- Evaluation of MR vaccination at 6m of age
- Development of point-of-care MR diagnostic tests
- Review of literature on improving immunization in low- and middle-income countries
- SMS to increase demand for routine immunizations and during campaign
Research & Innovation Prioritization Process
Goal of research and innovation prioritization

• Identify the critical knowledge and evidence gaps to reach, maintain and verify measles and rubella elimination

• Research priorities must
  – Be feasible
    • A study methodology and analysis can that be described and can answer the question
  – Have impact
    • Overcome bottlenecks or potential bottlenecks to reach elimination goals
The research and innovation prioritization process

Review previous research prioritization activities

Gather operational level perspective
  • Webinar and web survey

Synthesize data
  • Analyze web survey results
  • Review key reports from prior research meetings and SAGE WG

Finalize priorities
  • Panel of experts review the findings
  • Develop plan for implementation
# Areas for prioritization

<table>
<thead>
<tr>
<th>Area</th>
<th>Lead</th>
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<tbody>
<tr>
<td>Epidemiology</td>
<td>Bill Moss</td>
</tr>
<tr>
<td>Surveillance</td>
<td>Paul Rota, Mick Mulders</td>
</tr>
<tr>
<td>Immunization Strategy</td>
<td>Balcha Masresha, Abby Shefer</td>
</tr>
<tr>
<td>Demand Creation and Communications</td>
<td>Saad Omer</td>
</tr>
</tbody>
</table>
Epidemiology

Critical research gaps in our understanding measles and rubella epidemiology that are required to reach elimination

Areas for discussion

• Determination of disease burden
• Outbreak risk assessment
• Modeling  
  – Parameters for improving mathematical modeling  
  – Economic estimates of the impact of measles, rubella and CRS
• Transmission issues  
  – Impact of nosocomial transmission  
  – Role of adults and young infants sustaining transmission
Surveillance

Critical research to effectively monitor measles and rubella disease

Areas for discussion
• Improving surveillance quality and reporting and indicators
• Outbreak investigations
• CRS Surveillance

Critical research for technologies to needed to achieve elimination

Area for discussion
• Vaccine improvements
  – Vaccine stability
  – Vaccine delivery systems
• Improved laboratory diagnostics
  – Algorithms (e.g. refinement and re-infection classification)
  – Point-of-care tests
  – Multiplex assays
Immunization strategy

Critical research to achieve high vaccination coverage with two doses of measles- and rubella-containing vaccines

Areas for discussion

• Immunization service delivery as related to MRCV (included measles second dose)
• Outbreak response immunization (size, scope, age, timing, frequency)
• Immunization campaign planning and implementation
Demand creation and communications

What are the critical research gaps that need to be addressed to communicate and engage the public?

Areas for discussion

• Public confidence in immunization
• Demand for immunization services
• Improving advocacy for elimination
• Messaging that reaches audience with meaningful impact
How **YOU** can help!
Important inputs come from **YOU!**

- Research should focus on ideas that are feasible and improve program
- You are well-positioned to provide input via the web survey
- Please provide your perspective from the region you are most familiar with, and where you can identify research and innovation ideas
Structure of web survey

- Demographics of respondents
- Identify the region which you have the greatest experience
- For each of the 4 topic areas
  - Identify greatest challenges to reaching elimination
  - Rate the importance of pre-identified research questions
  - Suggest new research questions
- Survey closes on October 28, 2016
- Questionnaire takes ~30 minutes to complete
Thank you for your participation!
Web survey

• Link to web survey
  https://www.surveymonkey.com/r/ZGYQFXD
  – Closes on October 28, 2016

• The webinar slides and a recording will be available later this week at:
  http://measlesrubellainitiative.org/research-innovation-meeting-2016/