The 9th Global Measles and Rubella Laboratory Network Meeting  
19-21 September 2011

Recommendations

1. Much progress has been made towards collecting genetic data from currently circulating measles and rubella viruses which has helped map transmission pathways and document progress towards measles and rubella elimination and control. However there are still gaps in molecular surveillance and/or delays in reporting these data to the control programme and WHO. Reference labs and coordinators are encouraged to request countries to collect molecular data from representative outbreaks (in geography and time) and report to WHO, with a focus on those countries which have yet to establish regular sequence data collection and reporting. **Action: All LabNet. Timeline: On going**

2. Oral fluid has been validated as an adequate sample for detection of IgM to measles and rubella for case confirmation and this sample can be used for molecular surveillance. However, field experience in several countries has shown that training in collection procedures is critical to ensure good correlation with serum. LabNet will further develop training materials and consider electronic media such as video to assist in improving sample adequacy. **Action: CDC, WHO, HQ. Timeline: End of 2011**

3. Reconciliation of data between epidemiologic surveillance and laboratory case based surveillance is strongly encouraged to ensure accurate monitoring of progress in measles and rubella elimination and to meet verification criteria. LabNet and Regional Coordinators should set up monthly (or weekly where feasible) meetings with surveillance data colleagues to encourage reconciliation between laboratory and surveillance data, and meeting completeness and timeliness indicators. **Action: WHO RCs LabNet. Timeline: On going**

4. The measles and rubella accreditation checklist will be revised to account for those national laboratories which act as reference labs for sub-national level laboratories, as found in some large countries in the region of the Americas, and other regions, including China, India, Indonesia, Russian Federation and Turkey. The changes will include the requirement for national level labs to monitor and report on the workload and performance of the SNLs and provide timely feedback on the quality of their test results. **Action: WHO HQ and RCs Timeline: End of 2011**

5. The LabNet has an important role to play in monitoring the progress of measles and rubella control and elimination and is encouraged to review and comment on the draft measles and rubella strategic plan. The next version will be sent out for comment to meeting participants by mid October 2011. **Action: WHO HQ, LabNet. Timeline: Draft distributed by mid October, comments returned by end of October.**
6. GSLs and RRLs should take advantage of collaborative opportunities that would increase the number of full length measles and rubella genomic sequences available for analysis. Efforts should be made to obtain genomic sequences from a variety of strains that represent the known extent of genetic diversity present among these viruses. Laboratories performing cell culture are encouraged to submit measles and rubella isolates to the WHO Strain Banks to be available for whole genome sequencing and a “virtual strain bank” is being considered for MeaNS. As an example, CDC reported their collaboration with J. Craig Venter Institute in sequencing the genomes of measles and rubella viruses. Laboratories submitting strains for genomic sequencing will be made aware of any required data reporting mechanisms. **Action: LabNet. Timeline: Ongoing**

7. The validation data on the Point of Contact rapid field test assay (POC) developed by HPA looks very promising and further development and field testing of the device is warranted. The LabNet will develop a proposal for programmatic evaluation of the POC once the formatted product is available. **Action: HPA, HQ, LabNet. Timeline: First quarter 2012**

8. The draft proposal for developing an agenda for the research activities required for the elimination of measles and rubella should be shared with the LabNet meeting participants for comment and for identifying opportunities for supporting the key laboratory based research activities. Comments should be forwarded to WHO HQ and CDC for consideration in the next version of the document. **Action: LabNet, HQ, CDC. Timeline: Comments submitted to WHO HQ and CDC by 14 October 2011.**

9. The Global IgM PT results showed the quality of the LabNet but identified some issues with individual laboratory's sensitivity in a small proportion of results. Laboratory coordinators and RRLs should investigate the laboratories which report nonconforming results to address possible laboratory or assay issues. **Action: WHO RCs, HQ, LabNet. Timeline: Ongoing**

10. For the global molecular PT to be standardized and be of consistent high quality, it was recommended to be optimally produced in one global laboratory. CDC has offered to produce the panels but it is recommended that the regional reference laboratories should assist with the validation and quality control of the kits and the regional coordinators and RRLs support their distribution to the molecular labs under their responsibility, where possible. Testing of the PT kits should be included as a follow up activity for all regional training courses on molecular methods. Analysis of the results from the panels will be completed by CDC, where practical, and follow-up will be the responsibility of the RRL and RCs. RRLs should report results to CDC and provide feedback on kit performance. A summary should be presented at the next global LabNet meeting. **Action: CDC, RRLs, WHO RCs, HQ. Timeline: Ongoing. Review to be reported at global LabNet meeting 2012.**
11. LabNet should develop a draft guidance document for determining options for performing serosurveillance studies for vaccine preventable diseases. In addition to a published document, other formats should be considered including developing test algorithms and an e-learning package to permit easier decision making when planning serosurveys. **Action:** HPA, CDC, WHO HQ. **Timeline:** Mid 2012, Presentation at global LabNet meeting.

12. CRS surveillance is being considered as an indicator for monitoring rubella control. The LabNet countries which have introduced CRS surveillance should report on their experiences at the next LabNet meeting. **Action:** LabNet. **Timeline:** 3rd quarter 2012

13. The Americas are close to completing the documentation and verification of measles and rubella elimination in their region. Members of the Americas' LabNet should summarize the upcoming year’s laboratory activities in documenting and verifying the elimination of rubella, CRS and measles. **Action:** AMR LabNet. **Timeline:** 3rd quarter 2012

14. The workload and costs of running the LabNet continues to increase as throughput expands and timeliness of reporting improves. The LabNet is requested to work with WHO member states and partners to ensure sufficient resources, both financial and staffing, are allocated to the support of laboratory-based surveillance. **Action:** WHO, LabNet. **Timeline:** Ongoing

15. An update of the nomenclature for describing the genetic characteristics of wild-type measles viruses is planned for early 2012, covering the following topics:
   a. Concept and utility of genotypes
      i. Redefinition of limits of intragenotype diversity
      ii. Revised criteria for establishing a new genotype
      iii. Decision on use of terminology such as “sub-genotype” or “lineage/MV variant” to describe virus variability and transmission patterns
   b. Updating of reference strains, update list of active and inactive genotypes (possibly include date of last reported detection for genotypes that have not been detected the last 5 years)
   c. WHO name: reinforce requirements and describe procedure to calculate Epidemiological week.
   d. Describe MeaNS and WHO genotype databases including protocols on the SharePoint site with an alert generated when new or changes in documents are created.

**Action:** LabNet, CDC, HPA, LabNet, WHO. **Timeline:** Publication in WER, first quarter 2012.

16. Further review of the recommended protocols for describing the genetic characteristics if wild-type measles viruses is needed and this will encompass:
a. A protocol to name clusters/lineages of wild-type measles viruses with regular reporting of active lineages (quarterly) in a format to be decided

b. Assessing the use of additional sequence information to map transmission pathways
   i. A standard protocol to be developed
   ii. Decision on whether this will be for viruses from routine surveillance or for selected strains

c. Choice of strains for whole genome sequencing and developing a “virtual strain bank” (2nd quarter 2012)

d. Evaluation of sequencing methods, including next generation sequencing

e. Determining whether to sequence isolates only or include clinical samples (2nd quarter 2012)

f. Coordination with WHO Strain Banks

g. Data reporting

**Action:** MeaNS steering group, GSLs RRls and WHO LCs. **Timeline:** as above or by 3rd quarter 2012

---

17. For rubella viruses, determination of whole genome sequences of all reference viruses should be completed in order to base the nomenclature on whole genomes rather than the SP coding region.

   a. Establish accepted method(s) of subdividing the widely distributed genotypes in order to track viruses.

   b. The LabNet should continue to try to establish a rubella sequence database and immediately establish a method for sharing sequences (at least of reference/standard sequences).

   c. Establish a simple system for establishing and communicating nomenclature changes (e.g. upgrades to recognized genotype).

   d. Use of at least the standard 739 window is a necessity.

   e. Upgrading of the provisional genotypes which have adequate documentation to full status

**Action:** CDC, HQ, LabNet. **Timeline:** Submission of proposed changes to WER first quarter 2012

---

18. To avoid having to continually update the WHO Laboratory Manual for Diagnosis of Measles and Rubella, individual laboratory protocols will now be posted on the WHO SharePoint site for the LabNet. This will allow for efficient distribution of the most recent version of the protocols. WHO will develop a list of requestors for certain protocols that may require frequent updates to be able to quickly notify the users. **Action:** HQ, GSLs, RRls, **Timeline:** Ongoing