Annex 5c. Flow Chart for Laboratory Diagnosis of SARS-CoV-2 in Suspected Case of COVID-19 Admitted to the Hospital

1. Suspected Case of COVID-19

2. Specimen Collection (refer to Annex 5b)
   - Place bronchoalveolar lavage, tracheal aspirate, sputum, pleural fluid or nasopharyngeal aspirate / wash in sterile container
   - Place combined NP and OP swabs in VTM
   - Place tissue in VTM or normal saline

3. Send the specimen in cold chain (2-8°C) as soon as possible to the designated laboratory in triple packaging (refer to Annex 5b)

4. Perform RT-PCR test

5. SARS-CoV-2 DETECTED

6. INCONCLUSIVE/INVALID
   - Repeat RT-PCR on same specimen
   - SARS-CoV-2 DETECTED
   - INCONCLUSIVE/INVALID
   - SARS-CoV-2 NOT DETECTED
     - Repeat RT-PCR after 48 – 72 hours if clinically indicated

7. INCONCLUSIVE/INVALID
   - Repeat RT-PCR on new specimen within 24 hours

8. SARS-CoV-2 NOT DETECTED

9. SARS-CoV-2 NOT DETECTED
1 Refer to Annex 1: Case definition of COVID-19 (Updated on 5 October 2020)
2 To send specimen to National Institute of Health (NIH)
3 If transportation of sample is within 72 hours, store at 2-8°C. If transportation of sample is after 72 hours, store at -80°C
4 Use approved RT-PCR kit by MDA. The assay shall have 2 different targets on SARS-CoV-2 genome, of which at least one target confirmatory for SARS-CoV-2, following the recommendations and updates by WHO from time to time. A correlation study is needed if the assay has only one target gene. Follow manufacturer’s kit insert for procedure.
5 For rapid molecular testing and antigen testing, refer to Annex 5e: Laboratory protocol on COVID-19 for the health facilities, Ministry of Health, Malaysia and Annex 4c: Guideline on RTK-Ag Antigen testing
6 Positive result must be informed to Infectious Disease Physician and PKD (Refer Annex 2b)
7 Send serum from confirmed COVID-19 patient on D5-8 and on discharge to NIH
8 Send representative specimens with low Ct value (below 25) for full genome sequencing from any new clusters
9 Send 5 negative samples /month to NIH
10 Refer to Annex 2b: Management of suspected case admitted to ward

All results must be reported in SIMKA OUTBREAK