Acute Respiratory Disease Clinical Management and Guidance

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Introduction

Purpose

To outline the general medical management of individual cases of acute respiratory disease (ARD) and the prevention and control of shipboard outbreaks. This policy may need to be enhanced &/or supplemented for a unique global outbreak situation. The goal of this policy is to provide a foundation for the shipboard medical teams on how to manage, prevent and control a shipboard ARD viral outbreak including, yet not limited to, Influenza Like Illness and Covid-19.

Background

We are faced with global human to human virus exposure which causes acute respiratory disease. Influenza, Covid-19, Measles, Chickenpox, SARS, MERS-Cov and Mumps to list a few. Some are more deadly than others, but they all present a serious public health risk to the guests and crew who travel and work on board cruise ships.

Acute Respiratory Disease (ARD)

Definitions

While all conditions should be considered, patients presenting with an ARD may be investigated for and diagnosed with Acute Respiratory Illness (ARI), Influenza-Like Illness (ILI) or suspected Covid-19 using the following criteria as a guidance tool:

- ARI: (Acute Respiratory Illness)
 - o No reported feverishness or recorded fever (< 38°C [100.4°F]) AND
 - o At least one symptom of: cough, sore throat, or rhinorrhea
- ILI: (Influenza Like Illness)
 - Acute respiratory symptoms and a positive influenza test; OR
 - o Reported feverishness or recorded fever (≥38°C [100.4°F]) AND
 - o At least one symptom of: cough, sore throat, rhinorrhea, and muscle aches
- CLI: (Coronavirus Like Illness)
 - At least two of the following symptoms: fever or reported feverish, chills, rigors, myalgia, headache, sore throat, new olfactory and taste disorder OR
 - At least one of the following symptoms: cough, shortness of breath, or difficulty breathing OR
 - Severe respiratory illness with at least one of the following:
 - Clinical or radiographic evidence of pneumonia, OR
 - Acute respiratory distress syndrome (ARDS) AND
 - No alternative more likely diagnosis

ARD Surveillance & Pre-boarding Considerations

- A pre-boarding health declaration is standard practice to implement for all boarding crew, guests, visitors, corporate visitors, vendors and contractors.
- In addition, a crew and contractors traveler's declaration should be implemented prior to departure from their home country.
- If the guest, crew, visitor, vendor or contractor have selected "YES" or reports any of listed medical symptoms in the pre-boarding health declaration they must be asked to immediately don a mask, if not already wearing one and be evaluated and interviewed by the Ship's Medical Team shoreside. The shipboard medical team must immediately consult with the Captain and Vikand Chief Medical Officer if determined that the ill person should be denied boarding. Denial of boarding is at the discretion of the cruise line.

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- VIKAND's emergency phone (754) 715-5026
- Advanced screening measures may be implemented during a world-wide viral outbreak which could include:
 - Modified health screening questionnaires
 - o Temperature checks and/or oxygen saturation checks to screen passengers and crew
 - Medical screening staff should validate if any antipyretic medication has been taken prior to the temperature reading
 - Quarantine periods for joining crew
 - Follow cruise operators procedures for denial of boarding, in the event where a guest or crew member are hospitalized, coordinate with case management and insurance as per company procedures.

Medical Management Onboard

Influenza Like Illness (ILI)

- CDC Guidance for cruise ships on Influenza-Like Illness (ILI)
 - https://www.cdc.gov/quarantine/cruise/management/guidance-cruise-ships-influenzaupdated.html
- European Manual of Hygiene Standards and Communicable Disease Surveillance on Passenger Vessels
 - o http://www.shipsan.eu/Portals/0/docs/EU Manual Second Edition.pdf
- All patients who report to the Medical Center with ARD symptoms should be triaged appropriately and precautions undertaken to prevent illness transmission such as donning surgical masks and separating from other patients.
- In any semi enclosed environment where illness can spread readily, oseltamivir treatment should be considered for all patients who meet the ILI case definition and who present within 48 hours of symptom onset. Priority should be given to patients in high risk groups and with severe or progressive illness.
- All patients who meet the ILI case definition and are diagnosed with ILI should be isolated for at least 24 hours following resolution of the fever and other major symptoms not influenced by the use of antipyretics. However, if Covid-19 has not been ruled out, isolation procedures for Covid-19 should be followed until a formal diagnosis can be identified and Covid-19 can be ruled out.

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- Conduct rapid flu testing as clinically indicated and during outbreaks to establish cause and influenza type. Consider repeat test after 24 hours if initial test is negative and clinical picture indicates diagnosis of influenza.
- Isolation is not required for patients who meet the ARI case definition however precautionary quarantine may be considered if Covid-19 cannot be ruled out.
- For all cases of pneumonia (clinical or X-ray confirmed) who had a confirmed rapid negative influenza test, should be tested for Legionnaires' disease.

Suspected Covid-19

- CDC interim clinical guidance for management of patients with confirmed Coronavirus disease (COVID-19)
 - o https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html
- Covid-19 may present both asymptomatically and symptomatically with a large range of symptoms experienced. Additionally, Covid-19 may present as mild, severe or critical in various patients.
 - Mild to Moderate Disease: unless clinically indicated these patients should be medically stable to be isolated in a single berth cabin rather than a ship medical ward for the duration of the 14-day incubation or until Covid-19 can be ruled out by approved testing.
 - Severe Disease: Patients with severe disease will likely need hospitalization and potential disembarkation for supportive management. Potential complications include pneumonia, hypoxemic respiratory failure/ARDS, sepsis and septic shock, cardiomyopathy and arrhythmia, and acute kidney injury.
 - Covid-19' incubation period is believed to be as long as 14-days and therefore any
 patient suspected to have Covid-19 or with respiratory symptoms not yet diagnosed
 must be isolated for the full incubation period or until Covid-19 can be ruled out with
 diagnostic testing.
 - All guest disembarkations suspected to have Covid-19 are to be managed at the direction of the local health authorities.

Managing Passengers or Crew with ILI or CLI

 Upon the presence of a suspected or confirmed case of Covid-19 immediate implementation of the VIKAND COVID-19 Shipboard Quarantine Protocol must be implemented until further testing can be conducted.

High Risk Populations

Influenza Like Illness

- People at high risk for developing flu-related complications include:
 - Children <5 years of age
 - Adults >65 years of age
 - Pregnant women
 - Persons with serious chronic pulmonary (including asthma), cardiovascular, renal, hepatic, hematological, metabolic disorders, autoimmune diseases or multiple systemic diseases.
 - Antiviral treatment is most effective if initiated within 48 hours of symptom onset and prescribed for 5 days.
- High risk patients should be counseled about the benefits and adverse effects of antivirals, the potential for continued susceptibility to influenza virus infection after treatment is completed, and the need to urgently seek medical care should symptoms persist or worsen.

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• Documentation should be kept for any patients who decline antiviral medication.

Covid-19 Illness

- a. People at higher risk of severe illness related to Covid-19 include:
 - i. Adults >65 years of age
 - ii. Persons with the following comorbidities:
 - 1. Cardiovascular Disease
 - 2. Diabetes
 - 3. Chronic Respiratory Disease
 - 4. Hypertension
 - 5. Cancer

Diagnostic Testing

Influenza Like Illness

- Rapid influenza testing should be conducted as clinically indicated to confirm the diagnosis.
- Reference U.S. CDC's Guidance for Clinicians on the Use of Rapid Influenza Diagnostic Tests:
 - http://www.cdc.gov/flu/professionals/diagnosis/clinician guidance ridt.htm
- Or in Europe refence:
 - o http://ecdc.europa.eu/en/healthtopics/seasonal_influenza/basic_facts/Pages/factshee
 t professionals seasonal influenza.aspx
- Medical staff should maintain a minimum PAR level of influenza diagnostic tests (RIDTs) on each ship. Ship specific par levels should be based on total population, usage and itinerary.
 Additionally, consideration for increases when reaching outbreak levels should be discussed with the Manager, Shipboard Medical Operations.
- Rapid molecular assays can provide results in approximately 15-30 minutes.
- Influenza A and B testing may be repeated at 24 and 48 hours if influenza is clinically suspected yet first assay negative. It is well known that not all individuals convert to have influenza antibodies at the same time after the onset of symptoms. If a person initially tests negative, and later is found to be positive, the case must be handled as a Seasonal Influenza infection case.
 - It the influenza test is negative, COVID-19 must be ruled out by way of completing a COVID-19 swab test.

Covid-19 Illness

- Diagnosis of Covid-19 requires detection of SARS-CoV-2 RNA by reverse transcription polymerase chain reaction (RT-PCR).
- Detection of SARS-CoV-2 viral RNA is better in Nasopharynx samples compared to throat samples.
- Infection with both SARS-CoV-2 (COVID-19) and with other respiratory viruses such as influenza has been reported and detection of another respiratory pathogen does not automatically rule out Covid-19.

- The CDC categorizes Patients into two categories for testing purposes: https://www.cdc.gov/coronavirus/2019-nCoV/hcp/clinical-criteria.html
 - High Priority includes hospitalized patients with symptoms, healthcare workers with symptoms and residents of long-term care facilities with symptoms.
 - Priority Patients include persons with symptoms of potential Covid-19 infection, including fever, cough, shortness of breath, chills, muscle pain, new loss of taste or smell, vomiting, diarrhea and/or sore throat. Or persons without symptoms who are prioritized by clinicians

Specimen Collection, Labelling, Storage and Handling

Influenza Like Illness

- Nasopharyngeal viral swabs may be requested by regulatory authorities in certain circumstances, such as in patients with severe ILI or for typing outbreak strains.
- Swabs should be stored at 4°C [39.2°F] and only be sent to a designated laboratory if instructed.
- For ships calling into the United States follow CDC link for guide on specimen collection if required.
 - o https://www.cdc.gov/flu/professionals/diagnosis/info-collection.htm.
- CDC guide for influenza virus diagnostic tests in investigating outbreaks in institutional or other closed settings¹
 - https://www.cdc.gov/flu/professionals/diagnosis/guide-virus-diagnostic-tests.htm
- For Ships calling into Europe follow the Shipsan link for guide on specimen collection
 - o http://www.shipsan.eu/Home/EuropeanManual.aspx
- Contact Vikand Chief Medical Officer with any questions regarding the need or how to do sample testing.
- When diagnosis for Influenza has not been confirmed, to rule out Covid-19 consider requesting testing specific to Covid-19 as per the below guidance.

Covid-19 Illness

- For initial diagnostic testing for SARS-CoV2, CDC recommends a PCR swab test from an upper respiratory specimen. The following specimens are appropriate:
 - o A nasopharyngeal (NP) specimen collected by a healthcare professional
 - o An oropharyngeal (OP) specimen collected by a healthcare professional
 - A nasal mid-turbinate swab collected by a healthcare professional or by a supervised onsite self-collection (using a flocked tapered swab)
 - An anterior nares (nasal swab) specimen collected by a healthcare professional or by onsite or home self-collection
 - Naropharyngeal wash/aspirate or nasal wash/aspirate specimen collected by a healthcare professional
- Swabs are to be placed into a sterile transport tube with 2-3mL of either viral transport medium, amies transport medium, or sterile saline, unless using a test designed to analyze a specimen directly.
- For guidance on proper collection of specimens refer to
 - o https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html
- Store specimens at 2-8°C for up to 72 hours after collection
- Please contact the shoreside lab who will perform the test as they may have specific specimen kits they require to be used for collection of the sample.
- When a commercially available point of care PCR test becomes available a new policy & procedure will be developed.
- Point of care rapid coronavirus <u>antibody</u> tests are commercially available and may be part of the ship's medical formulary. These tests are not designed to diagnose an active coronavirus infection but rather test for antibodies from a past coronavirus infection. A policy and procedure should be in place for when and how to use these test kits.

Treatment Options

Influenza Like Illness

- https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm
- Confirmation of influenza virus infection by diagnostic testing is not required for decisions to
 prescribe antiviral medication. Decision-making should be based upon signs and symptoms
 consistent with influenza illness and epidemiologic factors. If clinically indicated, initiation of

empiric antiviral treatment (Tamiflu) while influenza testing results are pending. Antiviral treatment is clinically most beneficial when started as close to illness onset as possible. Influenza vaccine effectiveness is moderate and so a history of current season influenza vaccination does not exclude a diagnosis of influenza.

- Antiviral treatment is recommended as early as possible for any patient with confirmed or suspected influenza who:
 - is <u>hospitalized</u>
 - o has severe, complicated, or progressive illness; or
 - is at higher risk for influenza complications.
- Antiviral chemoprophylaxis should be administered within 48 hours of exposure to a patient with ILI and prescribed for up to 10 days.
- Post exposure antiviral chemoprophylaxis is recommended for the following groups:
 - People in a high-risk group for complications of influenza and who are a close contact of a person with influenza during that person's infectious period.
 - Medical staff who have had high risk close contact exposure to a person with influenza during that person's infectious period.
 - Consideration should be given to all medical staff during significant ILI outbreaks, irrespective of whether they have previously received the seasonal influenza vaccination.
 - Cabin mates of persons with active ILI symptoms.
- Antiviral agents should not be used for post exposure chemoprophylaxis in healthy children or adults based on potential exposures.
- A minimum set par level of influenza antiviral treatment doses should always be maintained onboard each ship.
- Decisions about starting antiviral treatment should not depend solely upon laboratory confirmation of influenza.
- For outpatients with acute uncomplicated influenza, Tamiflu may be used for treatment.

Covid-19 virus

• Currently no singular treatment option has been identified to successfully treat Covid-19 however many treatment options are the focus of research.

- Many patients presenting with mild to moderate disease will be able to manage their illness in their cabins with minimal treatment.
- Those with severe disease will require supportive management of the common complications of severe Covid-19, pneumonia, hypoxemic respiratory failure/ARDS, sepsis and septic shock, cardiomyopathy and arrhythmia and acute kidney injury.

Close Contact Tracing and Follow-up

- CDC close contacts of an Acute Respiratory Disease including influenza and Covid-19 is defined as:
 - Persons within approximately 2 meters (6 feet) or within the room or care area of a confirmed or probable influenza or Covid-19 case patient for a prolonged period of time, or
 - Persons with direct contact with infectious secretions while the case patient was likely to be infectious (beginning 1 day prior to illness onset and continuing until resolution of illness).
 - Close contacts should be identified and interviewed to determine their symptoms and medical risk factors.
 - Close contacts must be informed to telephone the Medical Center to report the onset of any new symptoms.
 - Implementation of close contact tracing should be managed in accordance with the VIKAND Close Contact Tracing Protocol

Documentation and Reporting

Medical Records

Records

- The following records must be maintained onboard the vessel for 12 months or in compliance with the company specific retention policy:
 - Influenza-like-Illness (ILI) Surveillance Log
 - ARD Clinical Records
 - Covid-19 Surveillance Log and Clinical Records

Documentation/Reporting/Notification:

• CDC requests ships calling into the US to report total ILI/respiratory cases (including zero) for each voyage by using the Enhanced Data Collection During Covid-19 Pandemic Form at:

- https://airc.cdc.gov/surveys/?s=PNFPJY8MJT.
- An outbreak is occurring if the total number of cases of ILI on a cruise ship among passengers
 OR crew exceeds the threshold of 1.380 cases per 1,000 person-days, as calculated per this CDC
 link:
 - https://www.cdc.gov/quarantine/cruise/reporting-deaths-illness/how-calculateinfluenza-influenza-like-illness-case-outbreak-threshold-cumulative-reports.html
- Shipsan request ships calling into Europe to calculate the ILI/respiratory threshold levels with the same formula as the CDC.
 - https://www.landlaeknir.is/servlet/file/store93/item29900/EU_Manual_Second_Edition_ .pdf
- A shipboard Health Advisory must be provided to guests and crew once the shipboard threshold is reached. At minimum the advisory must contain guidance on reporting illness, limiting contact with those who may be affected, and personal hygiene advice including coughing/sneezing etiquette, disposal of tissues, hand washing and use of hand sanitizers.
- A Maritime Declaration of Health is required by many countries for vessels, upon arrival to the first port of call in that country or territory.
- Some countries and ports have specific reporting requirements and documents.
 - o If in doubt, check with the Vikand Manager, Shipboard Medical Operations regarding forms and required reporting times.
- If an infection or death other than as a result of accident has occurred on board a ship on an international voyage, the master is required to inform the next port of call according to the IHR. In the event of an outbreak, the competent authority staff may request to see the ship's surveillance data whilst undertaking a risk assessment.
 - If they consider that there is a risk of transmission of the infection in their country, they
 may alert their national surveillance center and/or National Focal Point. It is important,
 therefore, that accurate ARD surveillance logs are maintained by the ship
- A standardized ARD log for each voyage must be maintained daily by the on-board Medical Staff.
- The Acute Respiratory Disease log should list:
 - Name of the ship
 - Voyage dates and the voyage identification code
 - All passengers and crew who were dispensed medication by designated crew member
- The Acute Respiratory Disease log entry for each passenger or crew member should contain the following information:

- Date of the first clinic visit or when the illness was reported to a crew member
- Person's Initials
- Age and gender
- Nationality
- Designation as either a passenger or crew member
- Crew member position or job on the ship, if applicable
- Cabin number
- Date and time of illness onset
- Symptoms of their illness (Sore Throat, Rhinorrhea, Cough, SOB, Fever, Muscle Aches)
- Use of medication
- Presence of any underlying medical conditions or medication side effects, allergies or other comments
- History of seasonal vaccination
- Laboratory Results & Tests Performed
 - Influenza A, B, AB
 - CXR
 - Viral Culture taken
 - Legionella Urine Antigen
 - 24-hour Legionella Antigen
 - Coronavirus PCR or antibody if available
- Close contact list & if they received Tamiflu
- The ship's ARD log, surveillance forms and questionnaires should be maintained on the ship for at least 12 months or as per the company specific retention policy.
- Electronic versions of these records are acceptable as long as the data is complete and can be retrieved during inspections.
- The ships illness medical log, surveillance forms and questionnaires including all completed copies should be available for review by the authorities conducting inspections and outbreak investigations.

Prevention and Response

Prevention/Outbreak Control/Isolation

- Maintain a distance of 6 feet or more from the ill person.
- If you do not have a hand-held infrared thermometer, then another modality such as an ear thermometer or oral thermometer is acceptable. Always ensure you are wearing appropriate PPE and practicing good universal precautions when dealing with an ARD case

- Keep interactions with ill persons as brief as possible.
- Medical team must wash hands rigorously immediately after doffing latex gloves. If soap and water are not available, use an alcohol-based hand sanitizer.
- Wear appropriate PPE as per medical policy.
- Ask the ill person to follow good cough etiquette and hand hygiene and to wear a facemask.
- Where workers cannot avoid close contact with persons with ILI, workers must wear the appropriate PPE.
- All patients who are considered suspected Covid-19 cases must be isolated for 14 days or until Covid-19 can be ruled out.
 - For patients with a fever that Covid-19 is ruled out, the isolation procedures for ILI must be maintained for at least 24 hours post resolution of symptoms, not influenced by the use of antipyretics, and major symptoms.
- Patients should be isolated in their cabin; however, severely ill patients may require admission in the Medical Center.
- If Covid-19 cannot be ruled out, full implementation of the VIKAND Isolation and Quarantine Plan should be implemented, until the ship is cleared from all suspected Covid-19.
- Encourage guests and crew to wash their hands often with soap and water. If soap and water are not available, use an alcohol-based hand sanitizer.
- A brand specific isolation letter and advice fact sheet should be provided to all isolated patients addressing Influenza and Covid-19.
- Crew members should receive an annual influenza vaccine.

Standard Precautions & PPE

https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm

- During the care of any patient, all healthcare providers (HCP) in every healthcare setting should adhere to standard precautions, which are the foundation for preventing transmission of infectious agents in all healthcare settings.
- **Hand Hygiene**: Practice consistent hand hygiene with soap and water or using alcohol-based hand rubs, before and after all patient contact or contact with potentially infectious material.
- Gloves: Wear gloves for any contact with potentially infectious material or patient
- **Gowns**: Wear gowns for any patient-care activity when contact with blood, body fluids, secretions (including respiratory), or excretions is anticipated. Remove gown and perform hand hygiene before leaving the patient's environment. Do not wear the same gown for care of more than one patient.
- **Masks**: Don a facemask when entering the room of a patient with suspected or confirmed influenza. Remove the facemask when leaving the patient's room, dispose of the facemask in a waste container, and perform hand hygiene.
- Full PPE should be donned when entering the room of a patient with suspected or confirmed Covid-19. Removal of PPE when leaving the patient's room, dispose of the PPE in a designated waste container, and perform hand hygiene.
- Use the VIKAND training video for correct technique for donning and doffing PPE to ensure the entire medical team are competent in the process of donning and doffing.

Ship Sanitation

- Viruses can persist on nonporous surfaces for 24 hours or more, but quantities of the virus enough for human infection are likely to persist for shorter periods.
- Although the relative importance of virus transfer from inanimate objects to humans in spreading influenza and Covid-19 is not known, hand transfer of the virus to the mucous membranes of the eyes, nose, and mouth resulting in infection is likely to occur.
- Hand hygiene, cough etiquette and respiratory hygiene are the principal means of interrupting this transmission. Routine cleaning and disinfection practices also play a role in minimizing the spread of influenza.
 - o https://www.cdc.gov/flu/pandemic-resources/archived/cleaning-vessels.html
- Follow the Company Outbreak Prevention Response Plan (OPRP)

Roles and Responsibilities

Doctor

- Ensure full compliance with international health reporting requirements.
- Ensure all patients isolated with ILI & CLI are managed appropriately.
- Ensure illness surveillance logs are completed accurately by Medical Staff.
- Notify the medical and public health leads when ILI outbreaks are reached or when there is a suspected coronavirus case
 - Follow Company OPRP Plan.
 - o Ensures compliance to HIPAA, GDPR.

Nurses

- Ensure correct medical and logistical management of cases of ARD.
- Follow Company OPRP Plan.
 - Ensures compliance to HIPAA, GDPR.

Heads of Department

- Ensure procedures related to elevated levels of ILI are implemented in their area of responsibility when directed by the Company.
 - Ensure all patients isolated with ILI are managed appropriately.
 - o Follow Company OPRP plan.

Company

- Assure the OPRP plan reflects up to date information on the ship administration and management of ARD.
- Establish thresholds for determining response actions.

Medical Management Company

- Provide medical consultation support.
- Provide policy guidance and updates.
- Ensures compliance to HIPAA, GDPR and VIKAND confidentiality policies.

• Monitors various worldwide information sources for outbreaks, health alerts, change in travel requirement, etc. for purposes of client communications.

References & Links

- Shipsan
 - http://www.shipsan.eu/Home/EuropeanManual.aspx
 - CDC Enhanced Data Collection during Covid-19 Pandemic:
 - https://airc.cdc.gov/surveys/?s=PNFPJY8MJT
 - CDC National Notifiable Diseases Surveillance System
 - https://wwwn.cdc.gov/nndss/conditions/coronavirus-disease-2019-covid-19/case-definition/2020/
 - Guidance for Cruise Ships on ILI Management:
 - https://www.cdc.gov/quarantine/cruise/management/guidance-cruise-shipsinfluenza-updated.html
 - WHO Influenza:
 - o https://www.who.int/influenza/en/