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COVID-19 Preparedness for Nuclear Cardiology Laboratories

Insights from the US, China and Singapore

March 24/25, 2020

@MyASNC

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@DorbalaSharmila
Global Pandemic:
>390,000 cases and > 17,000 deaths as of 3/24/2020


No vaccine or effective antiviral: Prevention of spread is critical to control this pandemic

ASNC in 62 Countries

Sijin Li, MD, Ph.D
President, CSNM
President, Shanxi Medical University
Professor and Director
Dept. of Nuclear Medicine
The First Hospital of Shanxi Medical University
Molecular Imaging Precision Medical Collaborative Innovation Center
COVID-19 March.24, in China

<table>
<thead>
<tr>
<th>Confirmed</th>
<th>recovered</th>
<th>death</th>
</tr>
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<tbody>
<tr>
<td>81773</td>
<td>73301</td>
<td>3283</td>
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Not recovered: 5189
Severe case: 1573
Input case: 427

Confirmed cases of the new coronavirus (2019-nCoV)

Jan.26

COVID-19 GLOBAL SPREAD

Expert consensus on the safety prevention and control of nuclear medicine diagnosis and treatment during the outbreak of COVID-19 (1st edition)

Protection management and procedures of nuclear medicine imaging during COVID 2019 epidemic
COVID-19 Preparedness for Nuclear Cardiology Laboratories:
Insights from the US, China and Singapore

MODERATOR

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Jolene Fantony, RT(N), CNMT  
Brigham and Women’s Hospital, USA
COVID-19 Preparedness for Nuclear Cardiology Labs: Insights from the US, China and Singapore

OBJECTIVE
To discuss best practices to mitigate COVID-19 risk for patients and staff in the nuclear cardiology laboratory

Patient Journey Through the Nuclear Cardiology Lab

1) Before Arrival of Patient 1) Arrival of Patient 1) Radiotracer Injection / Imaging 1) Stress Testing 1) Interpretation / Reporting
Before arrival of patient

- Nuclear imaging should only be performed if it is expected to provide clinical benefit.
- Nuclear testing should be postponed until a later date if possible. Most elective studies can be postponed to a later time.
- Any elective patient recently exposed to someone with the virus or has symptoms of the virus should be canceled or rescheduled if possible.
- If the outbreak worsens, as is expected, urgent tests may need to be prioritized by the physician.
- All outpatients scheduled for nuclear testing should be screened for infection according to local protocols and methods for quarantine (e.g., separate room, one particular machine for patients with suspected or confirmed infection).

Patient screening

Inquiry about epidemiological history:
1. Whether there is a history of travel or residence in Wuhan and surrounding areas or other communities with case reports within 14 days.
2. Whether he/she have contact patient with new coronavirus infection (positive nucleic acid test) within 14 days.
3. He/she is the staff exposed to patients from Wuhan or surrounding areas, or other communities within case reports within 14 days.
4. Whether there is clustering in the place where he/she lives.

Ask about clinical manifestations:
2. Imaging examination: imaging features of new coronavirus pneumonia.
3. Laboratory examination: whether the total number of white blood cells is normal or decreased, and the lymphocyte count is decreased.

No epidemiological history and clinical manifestations:
- Ordinary Patients

Any epidemiological history, without clinical manifestations:
- Potential Risk Patients

Suspected Patients
- positive result of the nucleic acid or virus gene sequence test.

Confirmed Patients
At the time of patient arrival

- Front desk to screen
  - patients, accompanying person
- Segregation / social distancing
  - staff, patients, accompanying person
  - patients based on risk stratification for COVID-19
  - cardiology and oncology patients
  - rotating staff teams (may not be sustainable in long run)
- Meticulous hygiene
  - waiting areas, stress test room, imaging room, recovery area, restrooms, radiopharmacy...

Felix Keng, MBBS, FASNC

Protecting technologists

- Proper screening: pre appointment, entrance of healthcare facility, front desk.
- Working with physicians to reduce non-urgent testing
- Limiting time with patients: Explaining exams takes a lot of time!
- Working in technologist teams: limiting staff exposure.
- Conserving PPE
- Management huddles and distancing staff members.
- Changing physical workspaces

Jolene Fantony, CNMT
During stress testing

- Consider verbal consent instead of written
  - If institutional policy allows
- Avoid exercise stress testing
  - Exercise: increases risk of droplet exposure
- Preferentially use vasodilator testing
  - Shorter test: reduce exposure time
  - Blood pressure monitoring with automatic equipment: allows for distancing

Personnel protection

Actions taken in some important sites prevent virus spread: Zhongshan Hospital Fudan University

- Infection control experts evaluate the infection risk during NM exam on site
- Chair distributed in one meter distance from each other
- Air disinfectant spray in waiting area
- Clean the keyboard using disinfecting wipes
- Fresh air system and air conditioning system disinfection every other day
- Clear the doorknob
- Spray air disinfectant in control room
Telehealth explodes with COVID-19 pandemic but regulation is evolving.

Congressional leaders have agreed on a massive funding bill to address the concerns that authorities Medicare to waive geographical restrictions on telehealth.

"The emergency spending deal, announced today and pending vote in both the House and Senate, will waive Medicare's geographical restrictions on telehealth during a public health emergency, enabling providers to use telehealth in urban and rural areas as well as in the patient's home, to protect both patients and providers," House Speaker Nancy Pelosi said in a statement released today.

**Image interpretation/reporting**

- Avoid presence of multiple persons in the reading room.
- Use remote viewing and screen sharing software for image interpretation.
- Review CT obtained for attenuation correction (SPECT/CT or PET/CT) for possible COVID-19 findings before patient’s leaves the department.
- Perform electronic reporting and communication of results.
- Use screen sharing software or phone to review images with referring clinicians.
ASNC COVID-19 resources

• ASNC COVID Preparedness Webinar Archived
• ASNC/SNMMI Information Statement on Best Practices for Nuclear Cardiology Laboratories
• ASNC Website: https://www.asnc.org/news

Sharmila Dorbala, MD, MPH, FASNC

ASNC Best practices for nuclear cardiology testing during the COVID19 pandemic

Follow Latest CDC/ Local and Institutional Infection Control Policies

- Postpone ALL nonurgent tests
- Screen patients by phone before arrival
- Selective testing for COVID-19+ patients
- Maintain safe distance between patients and staff
- Use protective equipment as indicated
- Minimize use of exercise stress
- Interpret and report images remotely
- Perform virtual imaging consults
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No CME or CE credit is provided.
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### Objectives and Principles

- **Achieve “zero infection” of medical staff and prevent cross infection.**

  - **01 Control Source**: Classify all patients with relevant management.
  - **02 Cut Off Transmission**: Wear masks and wash hands frequently.
  - **03 Standardize Measures**: Use prevention and control products correctly.
  - **04 Strengthen Disinfection**: Disinfect the operating table, instruments and the environment promptly.
Personnel protection

- Physician need to clean the keyboards, monitors, mouse and phones which he or she will use on working day using hydrogen peroxide disinfecting wipes.
- Bed linen is replaced for every patient.
- All equipment including keyboards, monitors, chairs, phones, doorknobs, stethoscopes, exam table, gantry, etc. should be cleaned after every patient’s test for moderate group pts or every three hours a time for minimal risk group pts.
- Air disinfectant spray used to clear the air in waiting area.