



**COVID-19 Preparedness for
Nuclear Cardiology Laboratories**

Insights from the US, China and Singapore


March 24/25, 2020
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American Society of Nuclear Cardiology

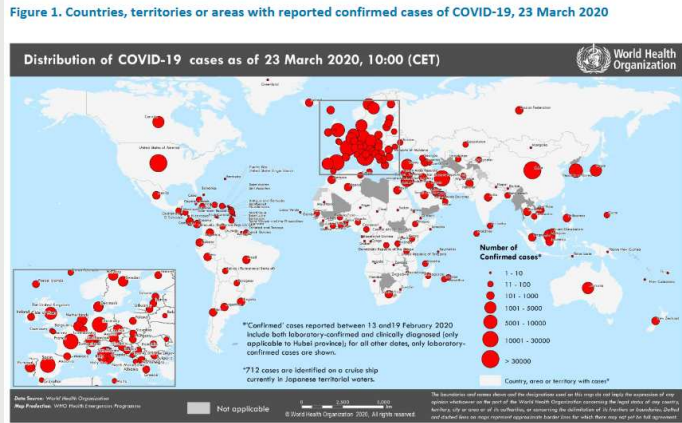


Sharmila Dorbala, MD, MPH, FACC
Director, Nuclear Cardiology,
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@DorbalaSharmila

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



<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>

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

Centers for Disease Control and Prevention
CDC.gov: Saving Lives. Protecting People™

Search Coronavirus

Coronavirus Disease 2019 (COVID-19)

Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings

Key Concepts in This Guidance

- **Limit how germs can enter the facility.** Cancel elective procedures, use telemedicine when possible, limit points of entry and manage visitors, screen patients for respiratory symptoms, encourage patient respiratory hygiene using alternatives to facemasks (e.g., tissues to cover cough).
- **Isolate symptomatic patients as soon as possible.** Set up separate, well-ventilated triage areas, place patients with suspected or confirmed COVID-19 in private rooms with door closed and private bathroom (as possible), prioritize AIIRs for patients undergoing aerosol-generating procedures.
- **Protect healthcare personnel.** Emphasize hand hygiene, install barriers to limit contact with patients at triage, cohort COVID-19 patients, limit the numbers of staff providing their care, prioritize respirators and AIIRs for aerosol-generating procedures, implement PPE optimization strategies to extend supplies.



<https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html>

ASNC in 62 Countries



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President, CSNM
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Confirmed cases of the new coronavirus (2019-nCoV)

Jan. 26

Confirmed	recovered	death
81773	73301	3283
Not recovered	Severe case	Input case
5189	1573	427

COVID-19 GLOBAL SPREAD

	CONFIRMED CASES	RECOVERED	DEATHS
China	81,397	72,392	3,285
Italy	59,138	7,024	7,024
United States	32,057	176	400
Spain	28,603	2,576	1,756
Germany	23,974	266	92
Iran	21,638	7,931	1,685
France	14,485	12	162
South Korea	8,897	2,909	104
Switzerland	7,014	131	85
United Kingdom	5,071	67	234

AS OF MARCH 23, 2020

COVID-19 March.24, in China

全国疫情	查看输入疫情	进入山西疫情
昨日 -318 5189 现存确诊	昨日 -176 1573 现存重症	昨日 +74 427 境外输入
昨日 +147 81773 累计确诊	昨日 +498 73301 累计治愈	昨日 +7 3283 累计死亡

截止: 2020.3.24 18:20 | 数据说明

中华医学会核医学分会
CHINESE SOCIETY OF NUCLEAR MEDICINE

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

2019 新型冠状病毒感染疫情期间核医学诊疗安全防控专家共识(第一版)

Protection management and procedures of nuclear medicine imaging during COVID 2019 epidemic

新型冠状病毒疫情期间核医学影像防护管理工作流程及防护分区

CHINESE JOURNAL OF NUCLEAR MEDICINE AND MOLECULAR IMAGING



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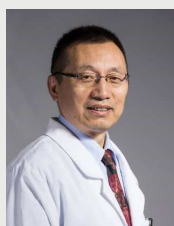
MODERATOR



Hicham Skali, MD, MSc, FACC
Assistant Professor of Medicine
American Society of Nuclear Cardiology



Faculty: China



Hongcheng Shi, MD, PhD

Vice-president of CSNM
Chairperson
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Xiaoli Lan, MD, PhD

Professor, Chief physician
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Member and Secretary of Chinese Society of Nuclear Medicine





Faculty: Singapore



Felix Keng, MBBS, FASNC

National Heart Center, Singapore
Director, Nuclear Cardiology, National Heart Centre, Singapore
Adjunct Associate Professor
Yong Loo Lin School of Medicine, National University of Singapore
& DUKE-NUS Medical School

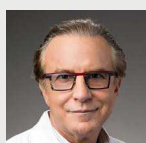


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Faculty: USA



Stephen Bloom, MD, FASNC – ASNC Board of Directors

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Integrative Cardiology Center of Long Island, USA



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







Stephen A. Bloom, MD, FASNC

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).





Dr. Xiaoli Lan

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 patients with new coronavirus infection (positive nucleic acid test) within 14 days
- ③ Has he/she been exposed to patients from Wuhan and surrounding areas, or other communities with case reports within 14 days.
- ④ Whether there is clustering in the place where he/she lives.

↓

Ask about clinical manifestations:

- ① Clinical symptoms: fever, respiratory symptoms
- 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

① Any epidemiological history and 2 clinical manifestations
② 3 clinical manifestations.

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




Jolene Fantony, CNMT

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



 Hicham Skali, MD, FACC

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




 Hongcheng Shi, MD, PhD

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


 Regina Druz, MD

Expanding Role of Tele-Health Applications in Radiology

Friday March 6, 2020

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

**Reimbursement
Telehealth explodes
with COVID-19
pandemic but
regulation is evolving**



The emergency spending deal, announced today and pending a 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 - all defined within the scope of an "emergency area." It also loosens restrictions on the use of a telephone to deliver care, as long as that phone has audio-visual capabilities.

"To protect public health, the bill will allow Medicare providers to extend telemedicine services to seniors regardless of where they live, at an estimated cost of \$500 million," House Speaker Nancy Pelosi said in a statement released today.




 Hicham Skali, MD, FACC

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



 Sharmila Dorbala, MD, MPH, FASNC

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>



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



Journal of Nuclear Cardiology

Official Publication of the American Society of Nuclear Cardiology



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No CME or CE credit is provided.



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Extra Slides





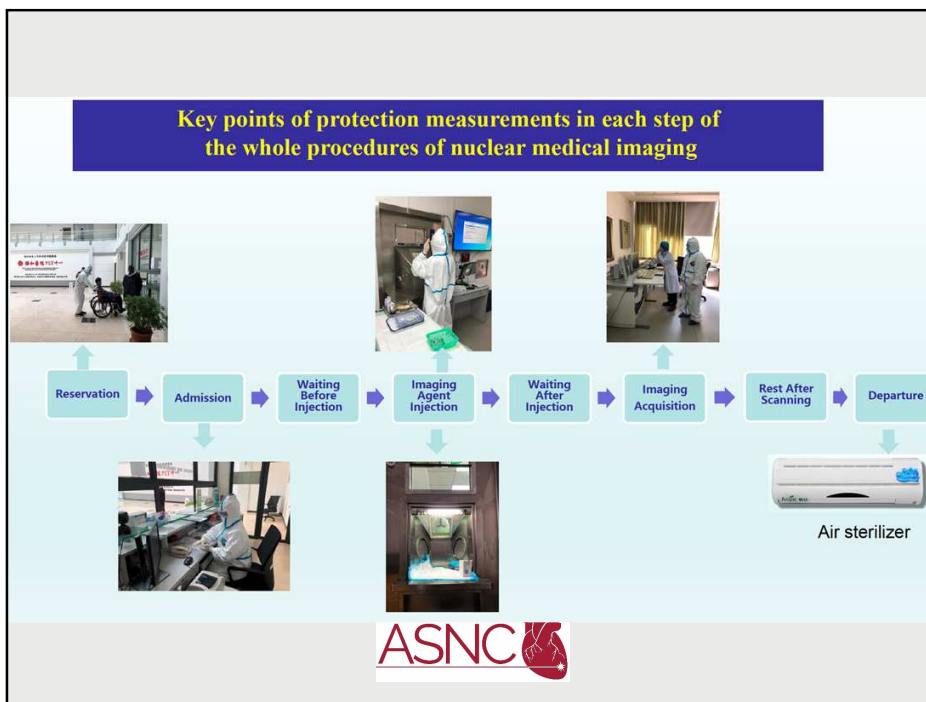
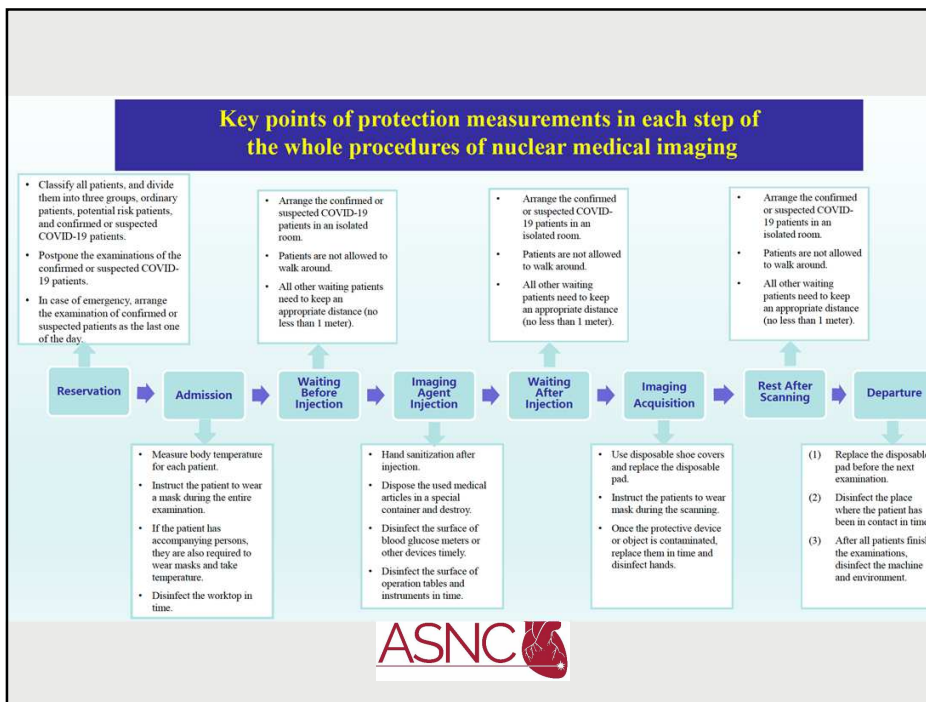
The American Society of Nuclear Cardiology is dedicated to continuous quality improvement and patient-centered imaging. ASNC’s commitment to its members and their patients has positioned the Society as a leader in quality assurance within the nuclear cardiovascular community.

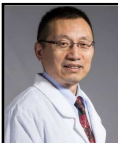
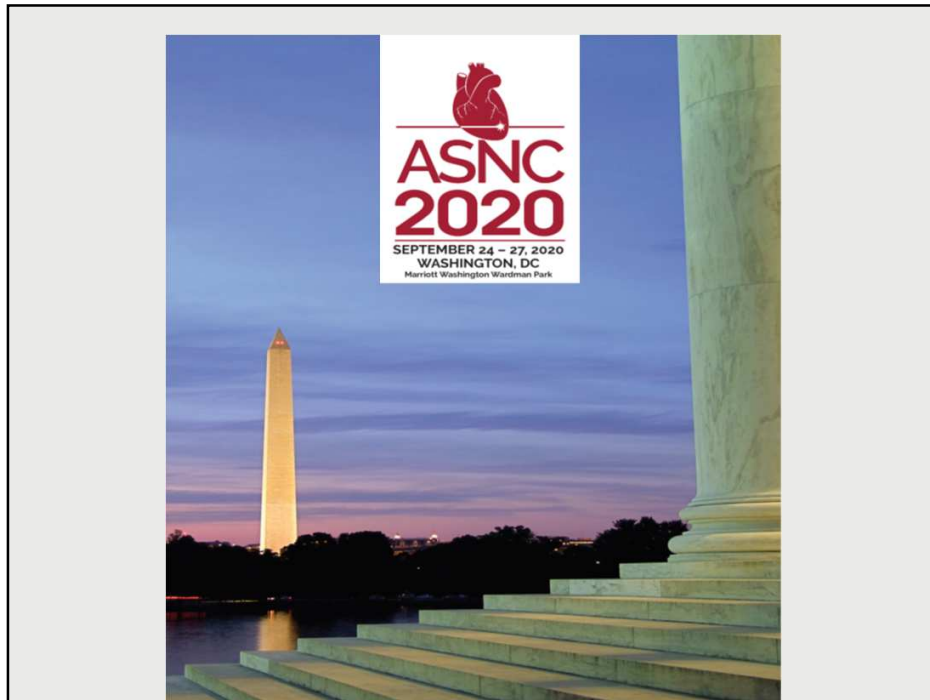
Objectives and Principles

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.







Hongcheng Shi, MD, PhD

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.

