

Presentation by Sean Leng, MD, PhD

**WEBINAR: *COVID-19: Can the Science of Aging move us Forward?***

*March 24, 2020*



american federation  
for aging research

# COVID-19 pandemic and older adults

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# COVID-19: A global pandemic

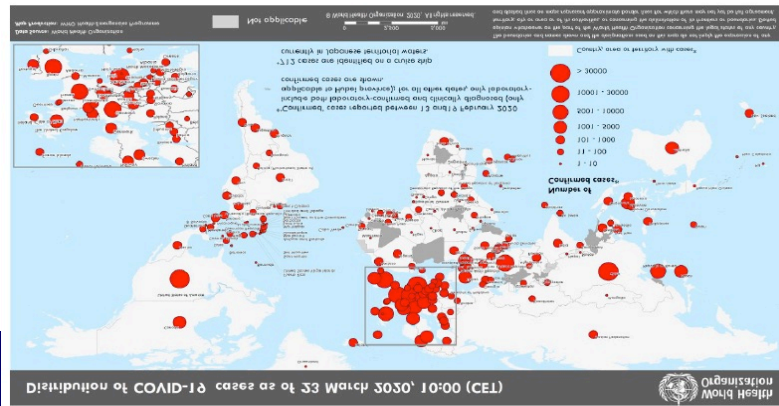
## Coronavirus disease 2019 (COVID-19) Situation Report – 63



Data as reported by national authorities by 10:00 CET 23 March 2020

### HIGHLIGHTS

- Three new countries/territories/areas from the African Region [1], Region of the Americas [1], and Eastern Mediterranean Region [1], have reported cases of COVID-19.
- The number of COVID-19 cases surpassed 300,000 globally.
- Data reported are based on information received from national authorities by 10:00 AM CET, 23 March 2020.
- Diagnostic testing for COVID-19 is critical to tracking the virus, understanding epidemiology, informing case management, and to suppressing transmission. WHO has updated the [Laboratory Testing Strategy document](#) according to the 4Cs transmission scenarios. All technical guidance can be found [here](#).



### SITUATION IN NUMBERS total (new) cases in last 24 hours

#### Globally

332 930 confirmed (40 788)  
14 510 deaths (1727)

#### Western Pacific Region

95 637 confirmed (850)  
3473 deaths (35)

#### European Region

171 424 confirmed (20 131)  
8743 deaths (1318)

#### South-East Asia Region

1776 confirmed (519)  
58 deaths (13)

#### Eastern Mediterranean Region

25 375 confirmed (1706)  
1741 deaths (145)

#### Region of the Americas

37 016 confirmed (17 331)  
465 deaths (213)

#### African Region

990 confirmed (251)  
23 deaths (3)

#### WHO RISK ASSESSMENT

Global Level Very High



WJZ 13  
ON AIR

## Baltimore Mayor Beggars Residents To Stop Shooting Each Other So Hospital Beds Can Be Used For Coronavirus Patients

March 18, 2020 at 11:30 pm



Johns Hopkins Coronavirus Resource Center:  
<https://coronavirus.jhu.edu/map.html>

Friday, March 20, Palm Beach, FL

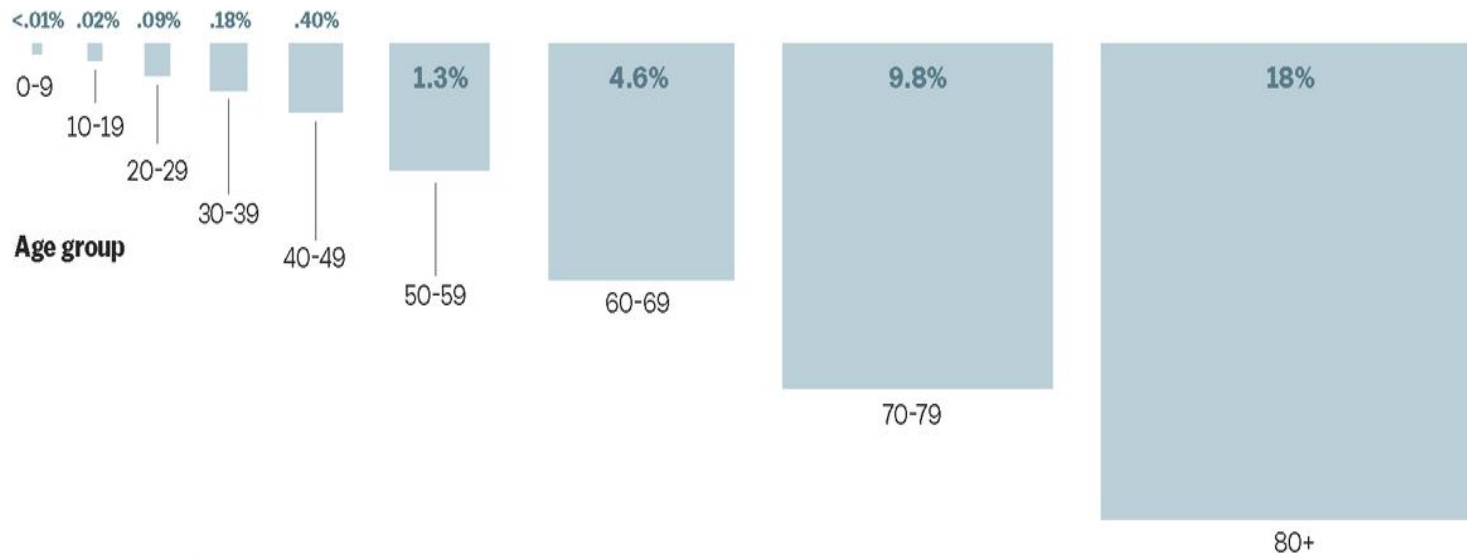
# Older adults are most vulnerable

## - Case-fatality data from China -

### Covid-19's case fatality rate increases with age, according to China's data

*Estimated case fatality risk in Hubei, China, January-February 2020*

**Case fatality ratio\***



\*Among all symptomatic and asymptomatic infections

Source: *Adjusted age-specific case fatality ratio during the Covid-19 epidemic in Hubei, China, January and February 2020*, medRxiv

**Vox**

# Older adults are most vulnerable

## - Data from EU -

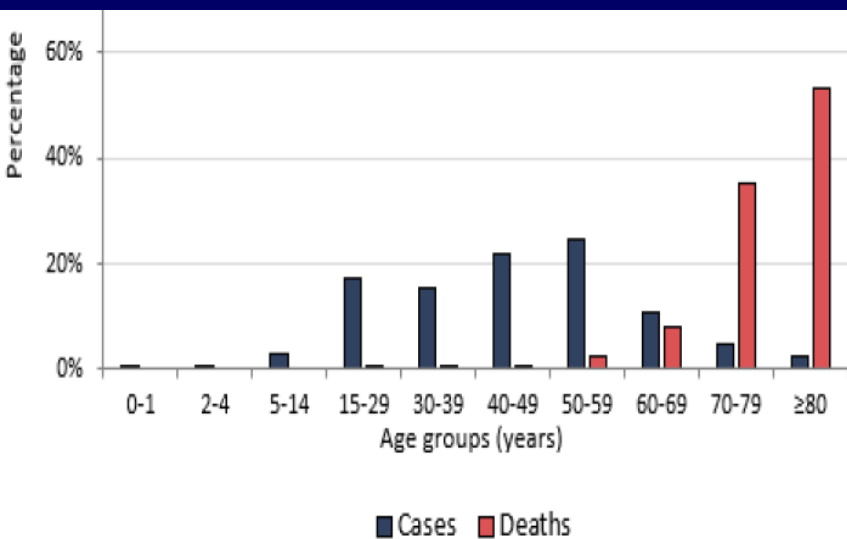


Table. Case-Fatality Rate by Age Group in Italy and China<sup>a</sup>

	Italy as of March 17, 2020		China as of February 11, 2020	
	No. of deaths (% of total)	Case-fatality rate, % <sup>b</sup>	No. of deaths (% of total)	Case-fatality rate, % <sup>b</sup>
All	1625 (100)	7.2	1023 (100)	2.3
Age groups, y				
0-9	0	0	0	0
10-19	0	0	1 (0.1)	0.2
20-29	0	0	7 (0.7)	0.2
30-39	4 (0.3)	0.3	18 (1.8)	0.2
40-49	10 (0.6)	0.4	38 (3.7)	0.4
50-59	43 (2.7)	1.0	130 (12.7)	1.3
60-69	139 (8.6)	3.5	309 (30.2)	3.6
70-79	578 (35.6)	12.8	312 (30.5)	8.0
≥80	850 (52.3)	20.2	208 (20.3)	14.8

Proportion of  
older adults in  
the population

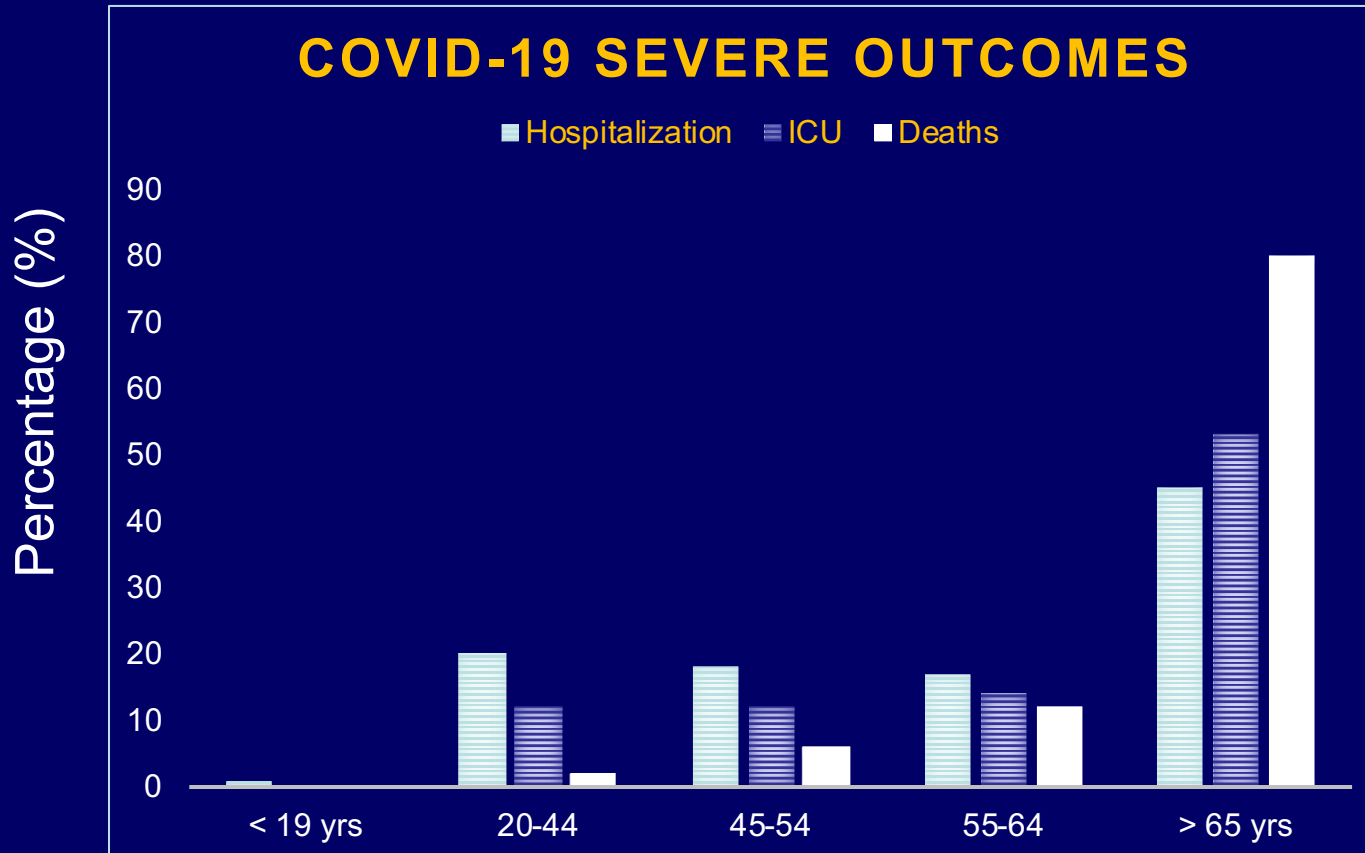
22.8%

11.9%

# Older adults are most vulnerable

## - Data in the US -

- First outbreak: Life care center, Kirkland, WA
- First death in New York: an 82 y/o in Brooklyn
- First death in Maryland: an 82 y/o in Howard county



As of  
March 16, 2020

CDC  
MMWR



# COVID-19

## ... Clinical features & Geroscience approach ...

- Aging is the greatest risk for severe COVID-19 and deaths
- Immunosenescence may be a major mechanism for this risk (Dr. George Kuchel)
- Adverse impact on immunity:
  - Cytokine storm
  - Kills CD4 and CD8 T cells (lymphopenia nadir at Day 4-6)  
(Some on the frontline consider COVID-19 as SARS+HIV?)
- Lung damage and fibrosis early on (CT scan characteristic ground-glass opacification)
- Multi-organ failure, virus no longer detected
- Traditional paradigm:
  - Focusing only on individual pathogens or diseases
- Geroscience approach:
  - Address healthy aging, resilience, and older adults' ability to fight against infections and diseases

# Geroscience going global

## International Geroscience Symposium in China

May 24-25, 2019



### EDITORIAL

Aging Medicine WILEY

## Global calling to develop geroscience research and promote healthy aging—Key discussion points from the International Geroscience Symposium in Shenzhen, China

### 1 | INTRODUCTION

With the support from the National Institute on Aging (NIA) Nathan Shock Centers and Milstein Medical Asian American Partnership (MMAAP) Foundation and in collaboration with the American Federation for Aging Research (AFAR) as well as Chinese Medical Association Geriatrics Branch and China National Center on Geriatrics and Gerontology, an International Geroscience Symposium, the first of a series of seven geroscience conferences worldwide, was successfully held on May 24-25, 2019, at Marco Polo Hotel in Shenzhen, China. This was held in conjunction with the 2019 annual scientific conference of Chinese Medical Association Geriatrics Branch. The symposium mainly covered the following seven scientific areas in focus: (a) Principles of geroscience; (b) Pillars of aging, resilience, and immune aging; (c) Anti-aging research and translation; (d) Traditional Chinese Medicine and aging; (e) Stem cell research and regenerative medicine; (f) Artificial intelligence and aging; and (g) Infrastructure and platform building for geroscience. Over 40 speakers from inside China as well as around world with expertise in aging and related research fields participated and presented at the Symposium. In addition to a 45-minute discussion scheduled at the end of each scientific session, there was a closed executive session among the speakers at the end of the Symposium to discuss the state of the field as well as ways and strategies to further promote and build geroscience both in China, Southeast Asia and around the world. The following is a brief summary of key points from a number of leading participants in this session.

study the natural history and pathology of Alzheimer's disease using the brain of an aging mouse. One aspect of the real impact that geroscience can have is to make older people more active and engaging rather than merely healthier. If an older person only sits in the room watching TV, his or her health, psychological well-being, and social interaction are probably not good. S/he would miss a huge opportunity to apply his/her wisdom, skills, and experiences to contribute to the society as well. A concept of the fourth age life where we re-engage older individuals after retirement, train them for new skills and keep them active has developed. Similarly, re-engaging them to create a third demographic dividend not only enables healthy aging, but also strengthen intergenerational well-being in ways that deeply matter.

Normally, geriatricians screen patients in many aspects to find evidences of a disease. Instead of this disease-oriented approach, however, a solid, strong and realistic age-oriented approach is needed to be implemented in the near future, and there is a need to educate physicians, researchers and other thinkers on the concept that an age-oriented approach is more helpful to promote health. What we need to do is to collect the evidence supportive of benefits from this age-oriented approach in both animal models and human studies. For example, exercise is proven to be an effective intervention on aging, and substantial evidence has shown that exercise improves health via a number of pathways. With growing evidence supporting the great beneficial impact derived from an age-oriented approach, scientific communities, politicians as well as government and funding agencies may realize that this is a different, better and more efficient approach.

American Federation for Aging Research (AFAR), NIA Nathan Shock Center, and Milstein Medical Asian American Partnership (MMAAP) Foundation