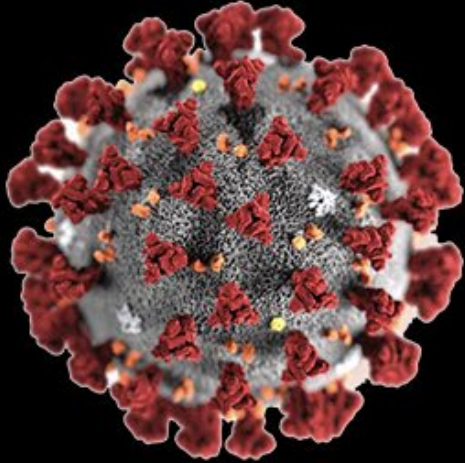
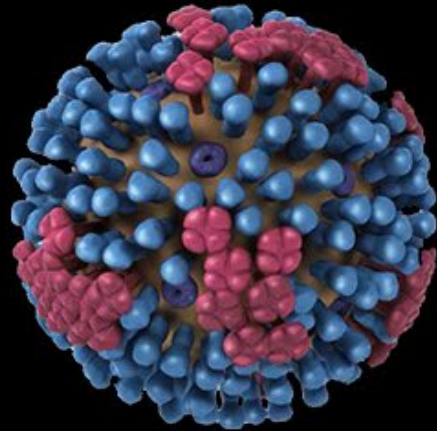


# COMBATING INFECTIOUS DISEASE CHALLENGES

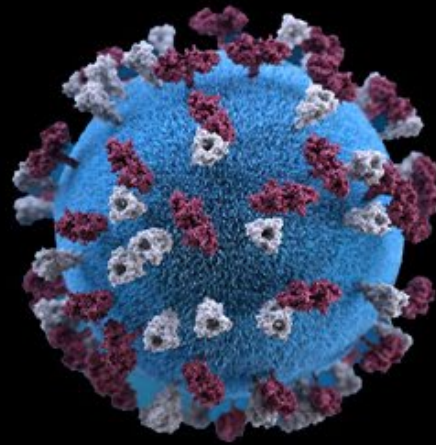
Have we gone twenty steps forward or backwards?



**SARS-CoV-2**



**H5N1 (Bird Flu)**



**Measles**



**Bacteriophages**

**Kevin T. Kavanagh, MD, MS**

Introduction & Conference Overview



# Public Health is Under Attack.

Oversimplification and misrepresentations of complex issues and strategies have led to public mistrust and even violence.

<https://www.ajc.com/news/2025/08/details-emerge-about-cdc-shooter-rfk-jr-visits-campus-developing-updates/>

METRO ATLANTA

## Details emerge about CDC shooter, RFK Jr. visits campus: Developing updates



Bullet holes are visible in a CDC building on Saturday, August 9, 2025, after a deadly shooting Friday. A man opened fire on the Centers for Disease Control and Prevention on Friday, killing a police officer who tried to stop him, authorities said. (Hyosub Shin / AJC)

# In the News – This Week



## White House fires CDC director who says RFK Jr. is ‘weaponizing public health’

Susan Monarez was confirmed as the CDC’s director in July. Three top agency officials announced resignations as the Trump administration moved to oust her.

<https://www.washingtonpost.com/health/2025/08/27/susan-monarez-cdc-director-ousted/>



## CDC director is out after less than a month; other agency leaders resign

<https://www.npr.org/2025/08/27/g-s1-85911/cdc-director-susan-monarez-ousted-leaders-resign>

"When CDC Director Susan Monarez refused to rubber-stamp unscientific, reckless directives and fire dedicated health experts, she chose protecting the public over serving a political agenda. For that, she has been targeted," attorneys Mark Zaid and Abbe David Lowell wrote in a statement.

# 5 big collisions between RFK Jr. and CDC scientists before director was fired

- **Mass HHS layoffs and restructuring purge ranks of CDC**
- **Kennedy replaces members of independent vaccine committee with his appointees**
- **Two CDC experts quit, cite changes at agency**
- **Kennedy orders CDC to promote vitamin as measles treatment**
- **CDC shooting leaves employees angry at Kennedy, Trump**

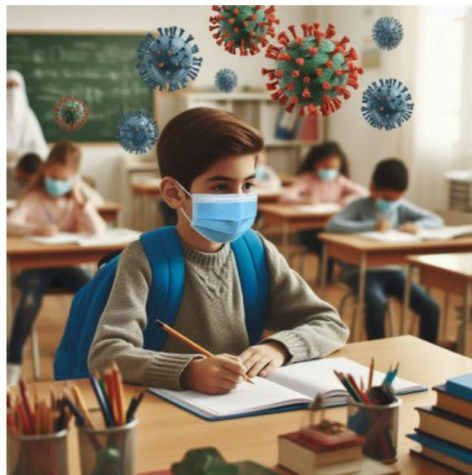
<https://www.washingtonpost.com/health/2025/08/28/cdc-rfk-jr-susan-monarez-tensions-vaccines/>



# Recent Resignation of CDC Officials

- Dr. Debra Houry, the CDC's Deputy Director.
- Dr. Daniel Jernigan, Head of the CDC's National Center for Emerging and Zoonotic Infectious Diseases.
- Dr. Jennifer Layden, Director of the Office of Public Health Data, Surveillance, and Technology.
- Dr. Demetre Daskalakis, Head of the CDC National Center for Immunization and Respiratory Diseases. <https://www.yahoo.com/news/articles/breaking-cdc-vaccine-chief-resigns-025218794.html>

# Combating Infectious Disease Challenges: Have we gone 20 steps forward or backward?



***This webinar will attempt to address a number of topics and strategies, including:***

1. The importance of vaccinations and other strategies for the promotion of worker safety.
2. The spread of airborne pathogens and the need for clean air.
3. The importance of elimination strategies to stop the spread of dangerous pathogens.
4. The impact of bird flu on our food chain and its potential to directly infect humans.
5. The post-pandemic reemergence of other respiratory pathogens.
6. The impact of misinformation and disinformation on implementing public health strategies. Disinformation is often spread to achieve social, political and economic goals.

# Combating Infectious Disease Challenges: The strategy of masking



***I would like to briefly touch on the strategy of masking and the difficulties faced with its implementation.***

***Similar barriers found with face mask adoption can also be found with other Public Health Strategies.***





# Vinay Prasad – June 11, 2024

## **Two Important Observations regarding the strategy of masking – Exposure Dosage & Compliance.**

- “...poor compliance can thwart bio plausibility.”
- “...prolonged exposure time can thwart a marginal change in particle exposure.”

<https://www.drvinayprasad.com/p/update-on-cochrane-review-of-masks>





- A virus does not have eyes or the ability to move. Its encounter with a cell and the cell receptor is entirely random.
- Similar to a battlefield, where a single blind gunman tries to hit a target. It is unlikely to happen. But with a million blind gunman, one may hit its mark.

**DOSAGE IS IMPORTANT !!!**



# Simply Translated

- ***If you do not wear a mask it will not work.***
- ***Dosage is important.***

“Compared to short airline flights without masking, medium and long flights without masking were associated with 4.66-fold increase ( $p < 0.0001$ ) and 25.93-fold increase in SARS-CoV-2 case incidence rates ( $p < 0.0001$ ), respectively;

-- However, no transmission was observed with long flights with enforced masking.

-- A 1 h increase in flight duration was associated with 1.53-fold increase in the rate of transmission (incidence rate ratio of cases).

-- Masking should be considered for long flights.”

Zhao D, Cheng S, Tsui FR, et al. The Risk of Aircraft-Acquired SARS-CoV-2 Transmission during Commercial Flights: A Systematic Review. Int J Environ Res Public Health. 2024 May 21;21(6):654. doi: 10.3390/ijerph21060654. <https://www.mdpi.com/1660-4601/21/6/654>

# Exposure Dosage as a function of the Time of Exposure and Type of Mask.

		Receiver Is Wearing (% inward leakage)				
Source Is Wearing (% outward leakage)		Nothing	Typical cloth mask	Typical surgical mask	Non-fit-tested N95 FFR <sup>†</sup>	Fit-tested N95 FFR
		100%	75%	50%	20%	10%
Nothing	100%	15 min.	20 min.	30 min.	1.25 hours	2.5 hours
Typical cloth mask	75%	20 min.	26 min.	40 min.	1.7 hours	3.3 hours
Typical surgical mask	50%	30 min.	40 min.	1 hour	2.5 hours	5 hours
Non-fit-tested N95 FFR <sup>†</sup>	20%	1.25 hours	1.7 hours	2.5 hours	6.25 hours	12.5 hours
Fit-tested N95 FFR	10%	2.5 hours	3.3 hours	5 hours	12.5 hours	25 hours

<sup>†</sup> FFR = filtering facepiece respirator; N95 = not oil-proof, 95% efficient at NIOSH filter test conditions





# **Layered Approach**

## **– You must do more than one thing**

- Scoffed at by some. They want a single step solution.
- But everything from treatment of complex cancers to a simple cold is a layered approach.
  - My mother would recommend: Keep warm, Rest, Vit-C, Chicken Soup.
- Everything in medicine is a layered approach.

# A Major Review Was Unable To Document Effectiveness of Masking.

- Jefferson T, Dooley L, Ferroni E, et al. Physical interventions to interrupt or reduce the spread of respiratory viruses. Cochrane Database Syst Rev. 2023 Jan 30;1(1):CD006207. doi: 10.1002/14651858.CD006207.pub6. PMID: 36715243; PMCID: PMC9885521.

This review has a major caveat: “Relatively low numbers of people followed the guidance about wearing masks or about hand hygiene, which may have affected the results of the studies.” [Physical interventions to interrupt or reduce the spread of respiratory viruses - Jefferson, T - 2023 | Cochrane Library](#)

For example: In one highly quoted article Loeb, 2009 it is stated: *“use of such a surgical mask was required by the Ministry of Health and Long-Term Care when providing care to or when within 1 m of a patient”* <https://jamanetwork.com/journals/jama/fullarticle/184819>



# Two Major Reviews Found Masks Reduce Transmission.

- Boulos L, Curran JA, Gallant A, et al. Effectiveness of face masks for reducing transmission of SARS-CoV-2: a rapid systematic review. Philos Trans A Math Phys Eng Sci. 2023 Oct 9;381(2257):20230133. doi: 10.1098/rsta.2023.0133. Epub 2023 Aug 23.  
<https://royalsocietypublishing.org/doi/10.1098/rsta.2023.0133>
- Greenhalgh T, MacIntyre CR, Baker MG, et al. Masks and respirators for prevention of respiratory infections: a state of the science review. Clin Microbiol Rev. 2024 Jun 13;37(2):e0012423. doi: 10.1128/cmr.00124-23. Epub 2024 May 22. <https://journals.asm.org/doi/10.1128/cmr.00124-23>
  - First, there is strong evidence for airborne transmission of SARS-CoV-2.
  - Second, masks if worn correctly and consistently are effective in reducing transmission risk and show a dose-response effect.
  - Third, respirators (N95) are significantly more effective than medical or cloth masks.
  - Fourth, mask mandates are, overall, effective in reducing community transmission of respiratory pathogens.





## **The Statement: “More high-quality RCTs are needed..” is true,**

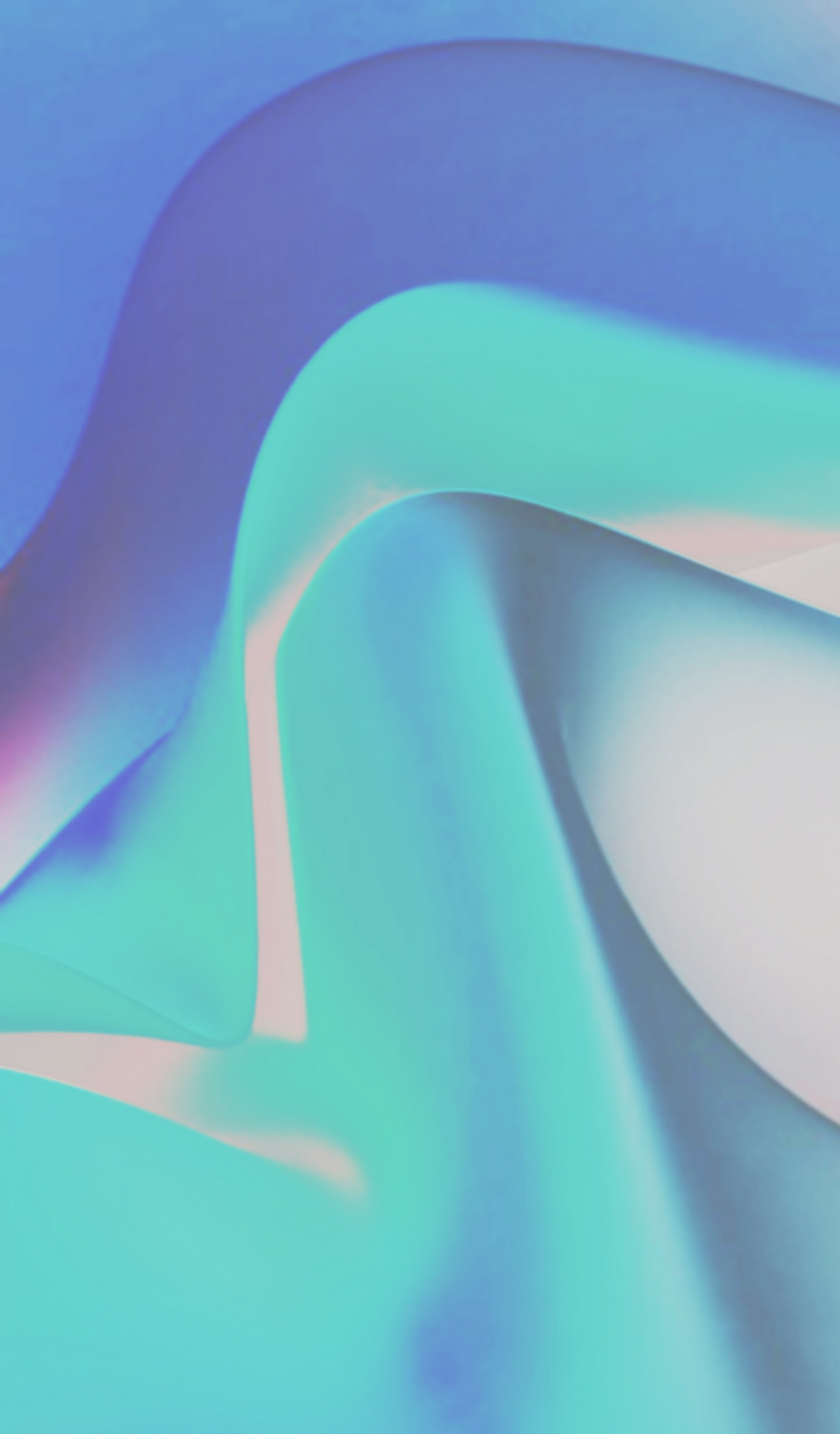
<https://www.sensible-med.com/p/the-cochrane-mask-fiasco>

-- Vinay Prasad,

1. But to be high quality a Randomized Controlled Trials must be double-blinded or significant biases can occur.
2. And with public health, RCT often cannot be ethically performed. Take for example the effectiveness of parachutes; which was the subject of the famous BMJ article regarding ethical implications of RCTs.

Smith GC, Pell JP. Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials. BMJ. 2003 Dec 20;327(7429):1459-61. doi: 10.1136/bmj.327.7429.1459.

<https://www.bmj.com/content/327/7429/1459.long>



# The Demand for Randomized Controlled Trials

“You can’t have a double standard for evidence. Masks and ivermectin both have no evidence to justify them, and both “don’t work” until that evidence is marshaled. You can’t say ivermectin doesn’t work, but masks might.”

## **The Cochrane Mask Fiasco**

Parsad V. A Cochrane Report Tells the Truth, But Many Are not Ready to Hear It . Mar. 15, 2023. <https://www.sensible-med.com/p/the-cochrane-mask-fiasco>





# Comparing Apples and Oranges

- This analogy compares the evaluation of a public health strategy to that of drug trial.
- Drug trials require subject compliance as little as 5 to 10 minutes per day when one takes the drug. Clinical trials involving public health strategy sometimes require compliance 8 hours a day for at least 5 days week.
- Drug trials can be easily double-blinded, but this is next to impossible with public health strategy trials such as those involving masking. Biases are frequently present and often permeate non-blinded public health trials.





# Masking – RCT, Non-Blinded

- In Bangladesh a large community level study involving over 340,000 adults was conducted. The trial was designed to determine the effectiveness of surgical and cloth mask distribution, along with education. Both arms masked which would be expected to blunt the results. The rate of proper mask wearing in the study's arms was 13.3% in the control group and 42.3% in the intervention group, or a 29-percentage point difference. Surgical masks resulted in an 11% reduction in symptomatic SARS-CoV-2 seroprevalence.

Abaluck J, Kwong LH, Styczynski A, et al. Impact of community masking on COVID-19: A cluster-randomized trial in Bangladesh. *Science*. 2022 Jan 14;375(6577):eabi9069. doi: 10.1126/science.abi9069. Epub 2022 Jan 14. <https://www.science.org/doi/10.1126/science.abi9069>



# Masking – RCT, Non-Blinded

**A number of studies have shown a positive effect in schools.**

- 2021, Sept: Association Between K–12 School Mask Policies and School-Associated COVID-19 Outbreaks – Maricopa and Pima Counties, Arizona, July–August 202.  
<https://www.cdc.gov/mmwr/volumes/70/wr/mm7039e1.htm>
- 2021, Sept: Pediatric COVID-19 Cases in Counties With and Without School Mask Requirements – United States, July 1–September 4, 2021.  
<https://www.cdc.gov/mmwr/volumes/70/wr/mm7039e3.htm>
- 2022 June: School Masking Policies and Secondary SARS-CoV-2 Transmission.  
<https://publications.aap.org/pediatrics/article/149/6/e2022056687/185379/School-Masking-Policies-and-Secondary-SARS-CoV-2>
- 2022, Nov: Mass Schools Found to have an increase in COVID-19 cases in Caregivers and Children once masking requirements were lifted.  
NEJM: <https://www.nejm.org/doi/10.1056/NEJMoa2211029>





# Ivermectin – Double-Blind RCTs

Three double blind randomized controlled trials with negative results.

- 1. Naggie S, Boulware DR, Lindsell CJ. Et al. Effect of Ivermectin vs Placebo on Time to Sustained Recovery in Outpatients With Mild to Moderate COVID-19: A Randomized Clinical Trial. JAMA. 2022 Oct 25;328(16):1595-1603. doi: 10.1001/jama.2022.18590. PMID: 36269852; <https://jamanetwork.com/journals/jama/fullarticle/2797483>

Naggie S, Boulware DR, Lindsell CJ, et al. Effect of Higher-Dose Ivermectin for 6 Days vs Placebo on Time to Sustained Recovery in Outpatients With COVID-19: A Randomized Clinical Trial. JAMA. 2023 Mar 21;329(11):888-897. doi: 10.1001/jama.2023.1650. <https://jamanetwork.com/journals/jama/fullarticle/2801827>

- 2. Vallejos, J., Zoni, R., Bangher, M. et al. Ivermectin to prevent hospitalizations in patients with COVID-19 (IVERCOR-COVID19) a randomized, double-blind, placebo-controlled trial. BMC Infect Dis 21, 635 (2021). <https://doi.org/10.1186/s12879-021-06348-5>
- 3. Mikamo H, Takahashi S, Yamagishi Y, et al. Efficacy and safety of ivermectin in patients with mild COVID-19 in Japan and Thailand. J Infect Chemother. 2024 Jun;30(6):536-543. doi: 10.1016/j.jiac.2023.12.012. [https://www.jiac-j.com/article/S1341-321X\(23\)00316-1/fulltext](https://www.jiac-j.com/article/S1341-321X(23)00316-1/fulltext)





# Concluding Observation

- In clinical trials in healthcare settings compliance was often suboptimal and masks are sometimes used as the sole strategy to prevent transmission.
- Maybe the reason so many trials in healthcare settings have not been able to show a beneficial effect with masking is because the viral dosage and exposure times are too high and too long, which can lead to an infection with even one lapse in protocol.



- Thus, using a surgical or even an N95 mask as the main strategy in a healthcare setting may not be adequate. Other strategies to lower viral dosage and contact with airborne pathogens are needed. This includes clean air and increased ventilation.
- However, during a pandemic advising the public to wear an N95 mask for short exposures, such as going into a restaurant to pick up a takeout order, is a sound strategy.

# ANCC Credits

**Disclosures:**  
Combating  
Infectious Disease  
Challenges: Have  
we gone twenty  
steps forward or  
backwards?

Participants must attend 100% of this activity for ANCC Credits and complete an evaluation form at the conclusion of the webinar. A certificate will be emailed once the evaluation is completed.

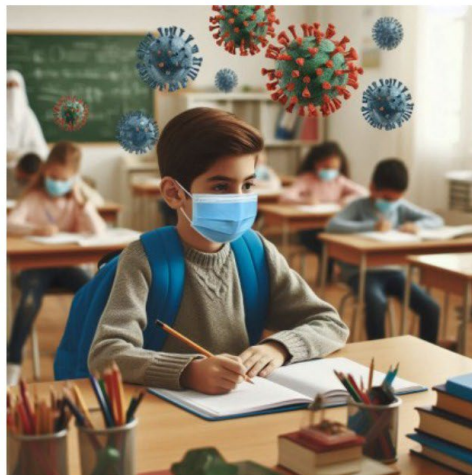
Ambassador Deborah Birx, MD is a consultant for Abbott. The relevant financial relationship has been mitigated.

No other relevant financial relationships were identified for any other individuals with the ability to control content of the activity.

This nursing continuing professional development activity was approved by Connecticut Nurses' Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.



# Combating Infectious Disease Challenges: -- Southern Kentucky AHEC Credits



1. Partial credit can be given for educational credits through AHEC (Area Health Education Centers), including AMA Cat 1 credits.  
\*\* However, you can only declare credits through AHEC for the portion of the course you attended.
2. A course evaluation is required for all AHEC administered continuing education credits.

# Combating Infectious Disease Challenges:

## -- Housekeeping



1. If you wish both ANCC and AHEC credits you must complete both course evaluation forms.
2. A link to the evaluation forms will be displayed at the end of the course.
3. The Southern Kentucky AHEC form does not reliably work with Internet Explorer or Edge.
4. You must use the same email address for you course evaluation as you used to registered and view this webinar.

If there are any problems in receiving Continuing Education Credits: E-mail [healthwatchusa@gmail.com](mailto:healthwatchusa@gmail.com)



# ► Disclaimer



*All information presented at this conference is the express opinion of the presenters, moderators and/or participants; and not necessarily that of Health Watch USA<sup>sm</sup> or of our partnering organizations. Nothing in the presentations should be construed as medical advice. One should always consult your healthcare provider before making treatment and healthcare decisions.*



# Strategic Partners



- Massachusetts Nurses Association



- Connecticut Nurses Association



- Southern Kentucky AHEC



# Combating Infectious Disease Challenges



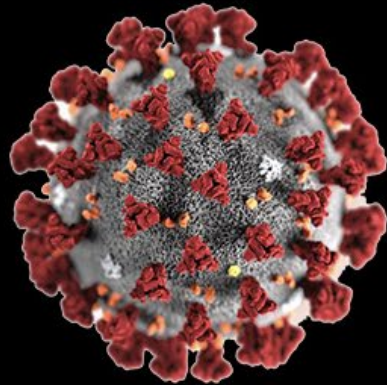
Presenter / Moderator	Topic	Eastern Time	Country
Kevin Kavanagh, MD, MS	Introduction & Housekeeping	2:30 PM	USA
Jeannie Cimiotti, PhD, RN	Afternoon Moderator		USA
William Schaffner, MD	Communication and pandemic mitigation strategies	2:45 PM	USA
Wilmore Webley, PhD	Measles, 50 years later	3:15 PM	USA
Lisa Buam, MA	A View from the Frontlines: The Current State of Infection Control in U.S. Healthcare Facilities	3:45 PM	USA
Ambassador Deborah Birx, MD	Bacteriophages, a New and Old Treatment for Antibiotic Resistant Bacteria	4:15 PM	USA
	BREAK	4:45 PM	
Noel Eldridge, MS	Evening Moderator		USA
Michael Baker, MBChB	Why 'elimination' should be the default strategy for future severe pandemics	5:00 PM	New Zealand
Richard Webby, MD	Bird Flu, the risks and prevention of a future pandemic	5:30 PM	USA
Lidia Morawska, PhD	Understanding and reducing the spread of respiratory pathogens through the air	6:00 PM	Australia
Matthias Maiwald, MD	Unusual re-emergence of respiratory pathogens after lifting of COVID-19 restrictions in Singapore	6:30 PM	Singapore
Cynda Crawford, DVM, PhD	H5N1 - Bird Flu in Domestic Farm Animals & Pets	7:00 PM	USA
Carol Cardona, DVM, PhD	Bird Flu and its Impact on Agriculture and Food Supply	7:30 PM	USA



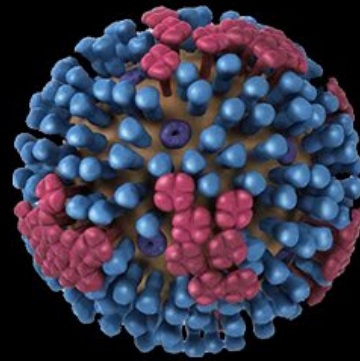
Jeannie Cimiotti, PhD, RN  
Aug. 29, 2025

# COMBATING INFECTIOUS DISEASE CHALLENGES

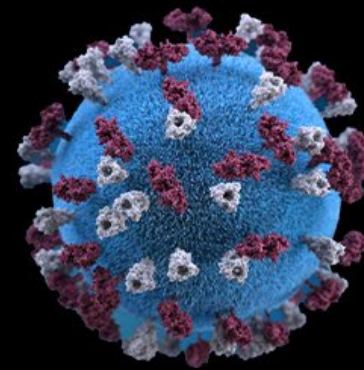
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## Jeannie Cimiotti, PhD, RN

- Afternoon Moderator



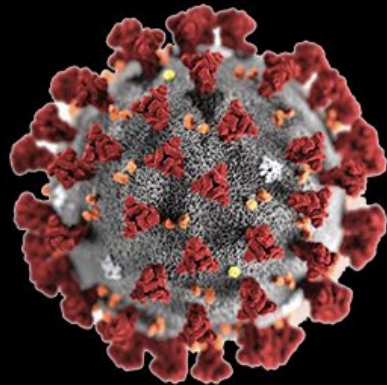




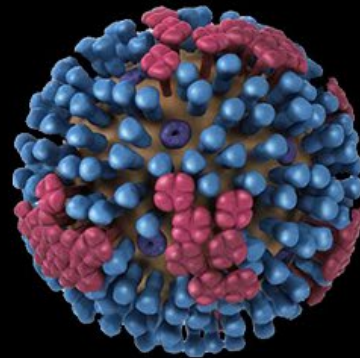
Noel Eldridge, MS  
Aug. 29, 2025

# COMBATING INFECTIOUS DISEASE CHALLENGES

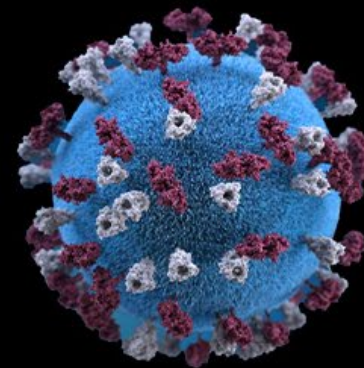
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H5N1 (Bird Flu)



Measles



Bacteriophages

## Noel Eldridge, MS

- Evening Moderator

