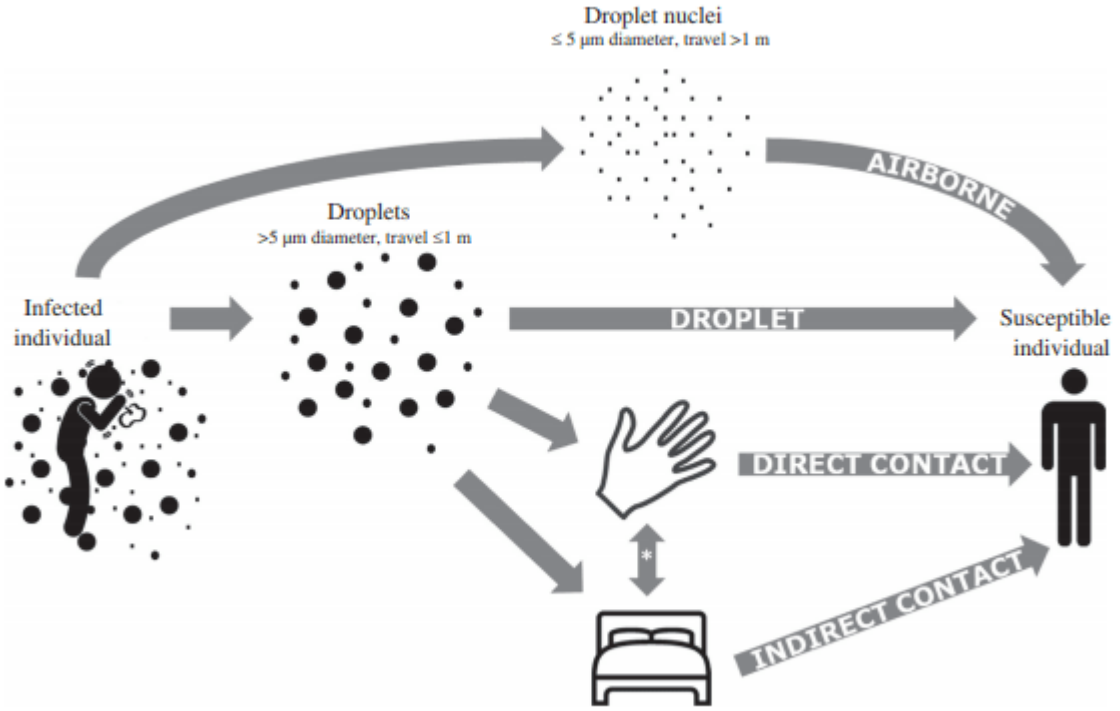
The **Science** and **Practice** of Infection Prevention during the COVID-19 Pandemic

UNC HEALTH℠

5/28/20

Science-Based Practices for Prevention

1. Wellness
2. Universal Precautions
3. Hand Hygiene
4. Disinfection
5. Physical Distancing

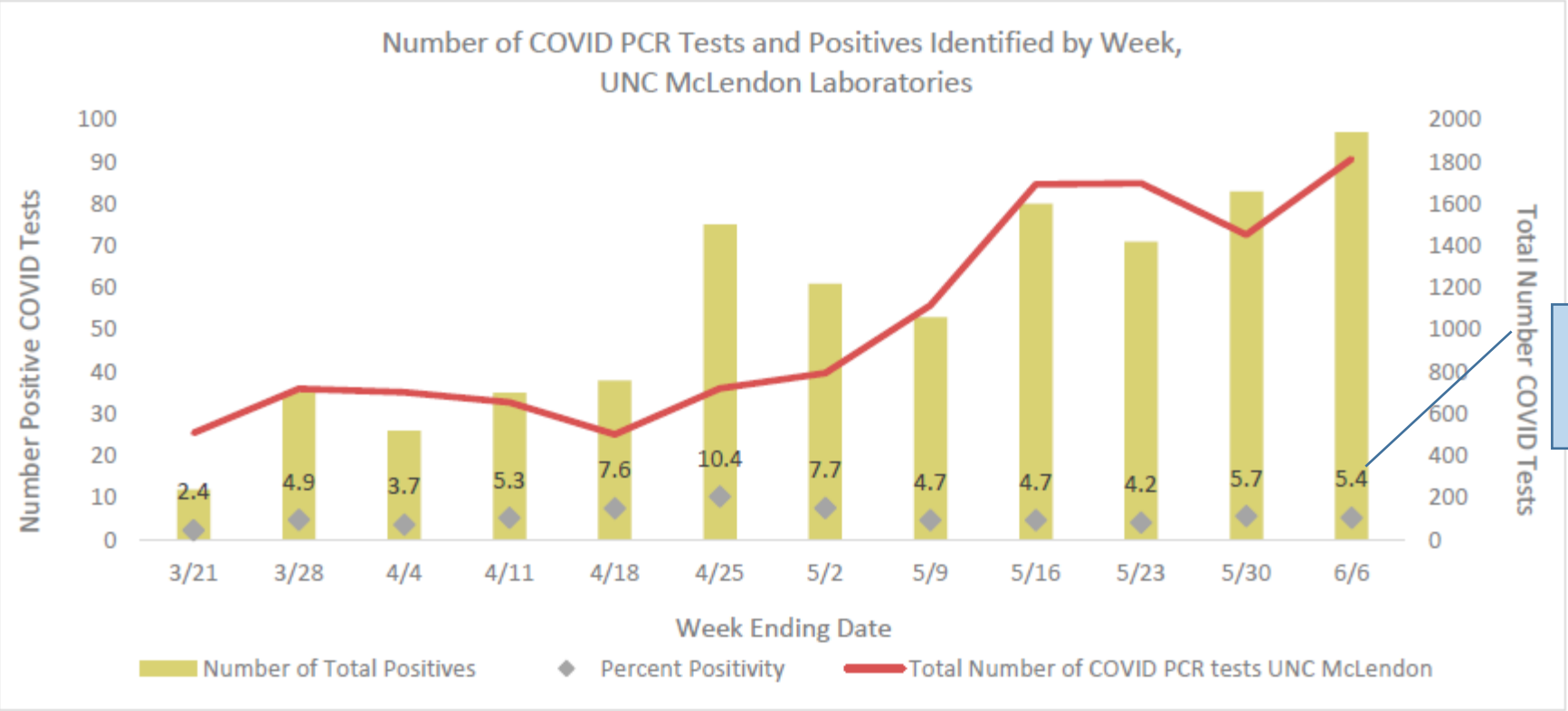


* Transmission routes involving a combination of hand & surface = indirect contact.

Increasing numbers of COVID+ in our community

UNCH Infection Prevention COVID-19 Weekly Data Report

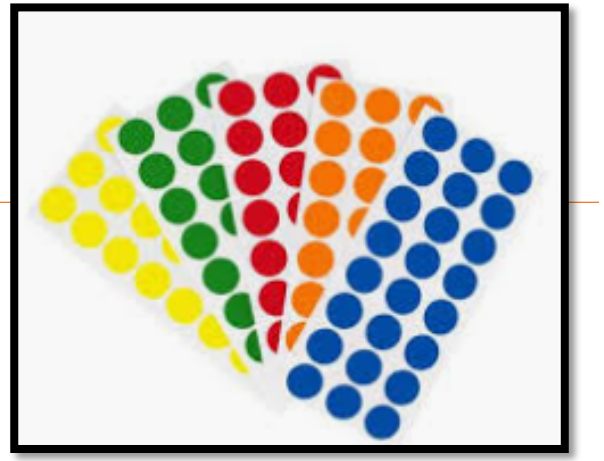
Reporting for week ending: 6/06/2020



10.8% positivity among symptomatic testing

Data represents COVID-19 tests performed by UNC McLendon labs for UNC Hospitals' facilities and includes re-tests.
Note: Testing of asymptomatic persons in certain populations was expanded beginning 5/3.

COVID-19 Pre-Shift Wellness Check



1. **If you are sick, do not come to work.**
   Immediately contact your occupational health provider:
   - UNC Employee 24/7 COVID-19 Hotline (984) 215-5668
   - Students - Campus Health Services (919) 966-2281

2. **Upon arrival to work all personnel and students will be subject to a wellness check.**
   Example Wellness Check:
   - *Do you have new muscle aches not related to another medical condition or another specific activity (e.g. due to physical exercise)? (If so, take temperature)*
   - *Do you feel like you may have a temperature of greater than 100.0°F? (If so, take temperature)*
   - *Do you have sore throat not related to another medical condition (e.g. allergies)?*
   - *Do you have a new or worsening cough that is not related to another medical condition?*
   - *Do you have shortness of breath that is not attributable to another medical condition?*
   - *Do you have recent (<5 days) loss of smell and taste?*
   - *Do you have new onset of vomiting or diarrhea not related to another medical condition?*
   - *Do you have repeated shaking chills not related to another medical condition?*

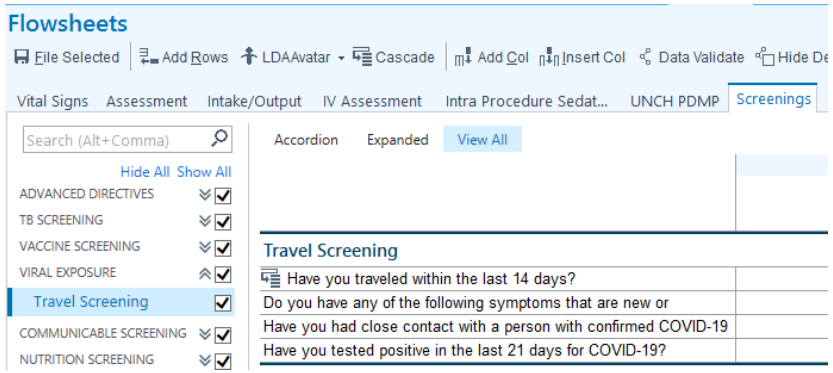
3. **Those with symptoms consistent with COVID-19 will immediately leave the work environment and contact their occupational health provider.**

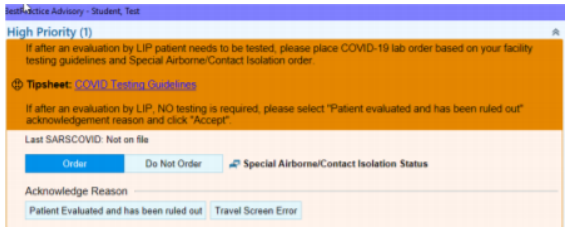
4. **Those who pass the daily wellness check will have a colored dot placed on their shirt/badge to outwardly demonstrate they have been screened for the day**

Patient Screening

- At scheduling and registration/check-in, all patients must complete a “travel screen” that includes:
  - Travel history
  - Symptom screen for COVID-19
  - COVID-19 testing and exposure history

- If Patient screens positive, follow the BPA prompts.



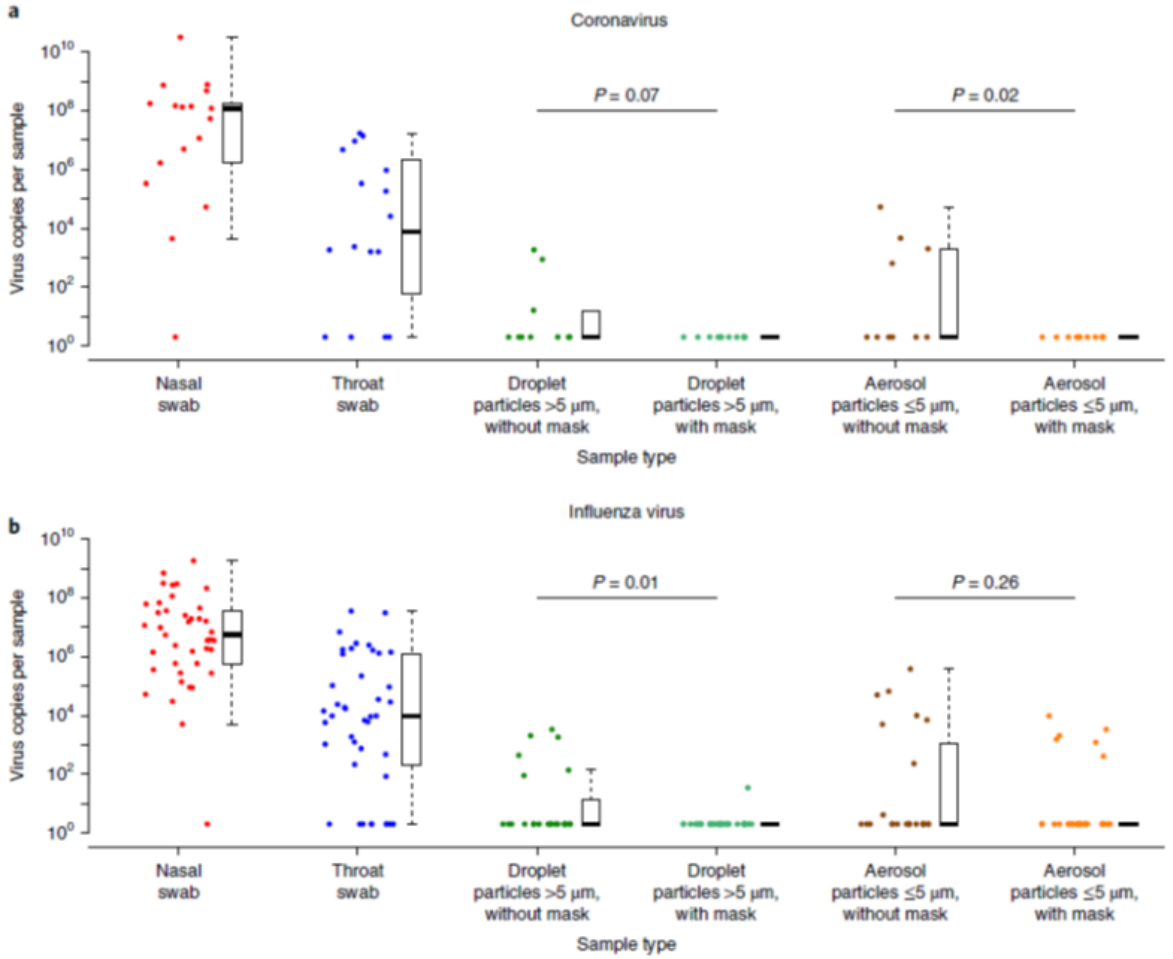


Visitor Restrictions

- N**o visitors will be permitted** at UNC Health until further notice, with limited exceptions.
- Approved visitors must pass a health screening.
- UNC personnel are not permitted to visit patients unless there is a business need to do so.
- See policy for additional information: Visitor Policy

Surgical face masks prevent transmission of coronaviruses

- Design: 246 subjects with a viral URI by RT-PCR enrolled; 50% randomized to either wearing or not wearing a face mask during first exhaled breath collection
- Subjects has coronavirus (N=17), flu (N=43), rhinovirus (N=54)
- Results:
  - Viral shedding higher in nasal than throat swabs
  - Coronavirus RNA detected in respiratory droplets and aerosols in 3/10 (30%) and 4/10 (40%) of samples collected without a face mask, respectively but in no samples with a face mask
- Conclusion: Surgical face masks aid in prevention of transmission of human coronaviruses and influenza from symptomatic persons



Leung NHL, et al. Nature Med 2020;26:676

Use of routine masking of patients and HCP effective in COVID prevention

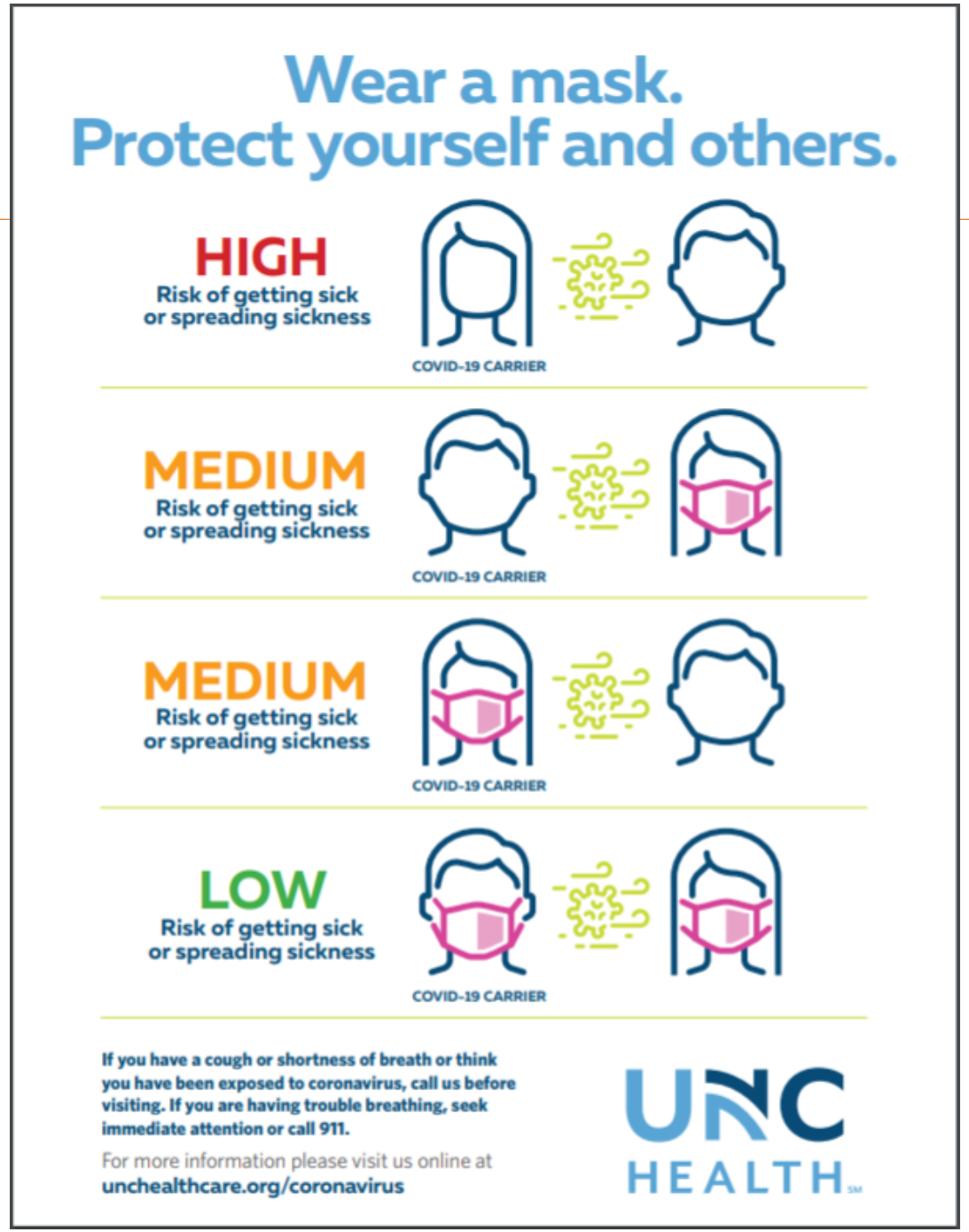
- Outbreak investigation in a COVID-19 patient housed in an open cubicle of a general hospital ward for 35 hours (patient had “severe pneumonia” and was on oxygen)
- Results:
  - A total of 71 HCP and 49 exposed patients identified (10 patients and 7 HCP had close contact); at the end of a 28-day surveillance period
  - Hospital used universal masking of HCP, patients and visitors
  - No infections among HCP or patients were identified

Wong S.C,-Y, et al.
JHI 2020;27 March

Universal Masking

- All UNC Health personnel are required to wear a mask provided by UNC Health while at work, regardless of location, role or ability to engage in physical distancing.
  - Masks should be discarded if soiled, damaged, or become hard to breathe through.
  - No home-made or additional masks may be worn.
  - See policy for additional information: Individual Extended Use Mask Policy
  - Video: How to Wear a Mask

- Patients, visitors, vendors and anyone else entering any UNC Health facility are required to wear a facemask.
  - See policy for additional information: Universal Mask Policy



Physical distancing, face masks and eye protection prevent person-to-person transmission of SARS-CoV-2

	Studies and participants	Relative effect (95% CI)	Anticipated absolute effect (95% CI), eg, chance of viral infection or transmission		Difference (95% CI)	Certainty*
			Comparison group	Intervention group		
Physical distance ≥1 m *vs* <1 m	Nine adjusted studies (n=7782); 29 unadjusted studies (n=10736)	aOR 0·18 (0·09 to 0·38); unadjusted RR 0·30 (95% CI 0·20 to 0·44)	Shorter distance, 12·8%	Further distance, 2·6% (1·3 to 5·3)	−10·2% (−11·5 to −7·5)	Moderate†
Face mask *vs* no face mask	Ten adjusted studies (n=2647); 29 unadjusted studies (n=10170)	aOR 0·15 (0·07 to 0·34); unadjusted RR 0·34 (95% CI 0·26 to 0·45)	No face mask, 17·4%	Face mask, 3·1% (1·5 to 6·7)	−14·3% (−15·9 to −10·7)	Low‡
Eye protection (faceshield, goggles) *vs* no eye protection	13 unadjusted studies (n=3713)	Unadjusted RR 0·34 (0·22 to 0·52)¶	No eye protection, 16·0%	Eye protection, 5·5% (3·6 to 8·5)	−10·6% (−12·5 to −7·7)	Low‖

Chu DK, Akl EA, Duda S, et al. *Lancet*. 2020;S0140-6736(20)31142-9

CDC DEFINITION OF EXPOSURE TO COVID FOR HCP

Exposure	Personal Protective Equipment Used	Work Restrictions
HCP who had prolonged[1] close contact[2] with a patient, visitor, or HCP with confirmed COVID-19[3]	• HCP not wearing a respirator or facemask[4] • HCP not wearing eye protection if the person with COVID-19 was not wearing a cloth face covering or facemask • HCP not wearing all recommended PPE (i.e., gown, gloves, eye protection, respirator) while performing an aerosol-generating procedure[1]	• Exclude from work for 14 days after last exposure[5] • Advise HCP to monitor themselves for fever or symptoms consistent with COVID-19[6] • Any HCP who develop fever or symptoms consistent with COVID-19[6] should immediately contact their established point of contact (e.g., occupational health program) to arrange for medical evaluation and testing.

https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html

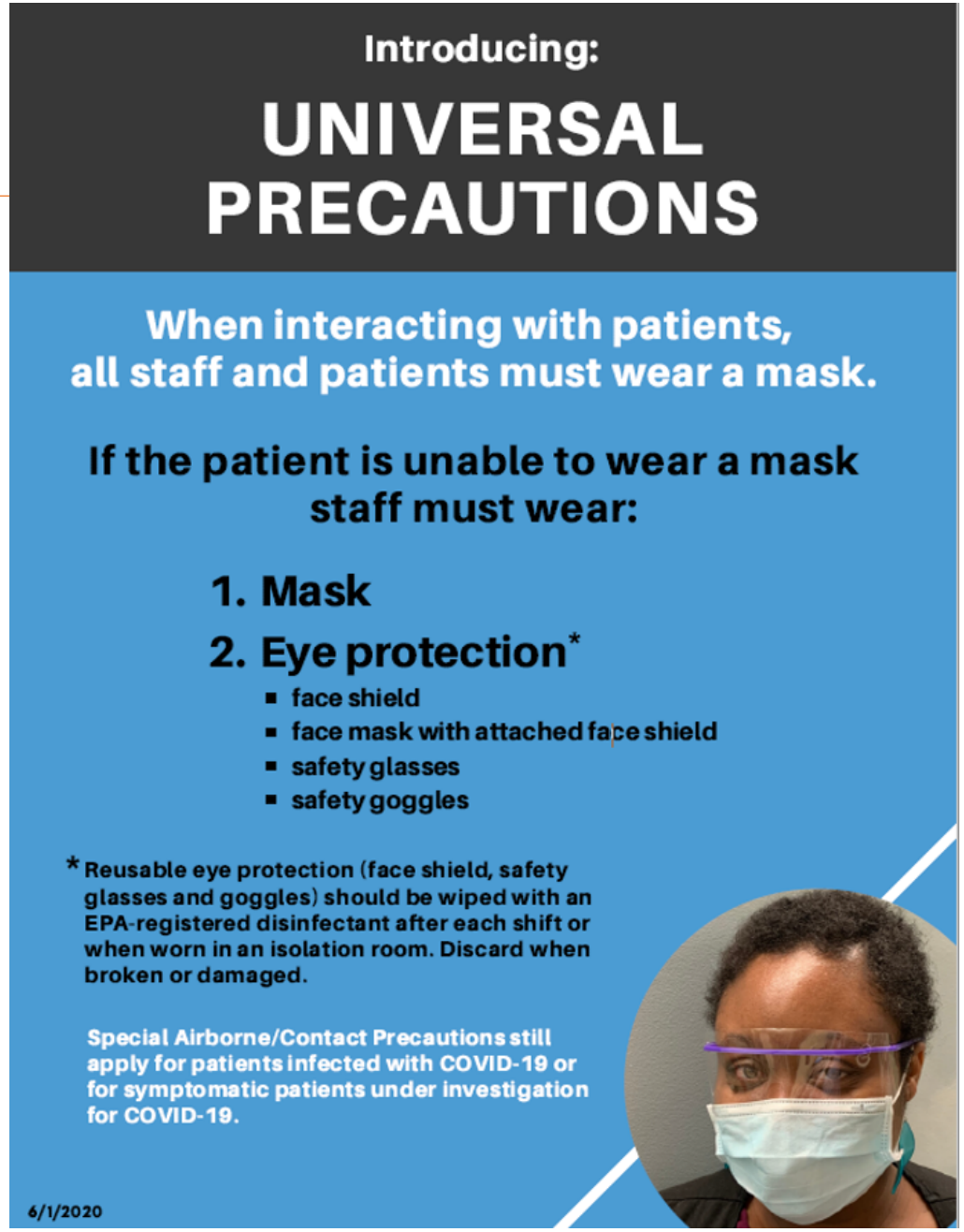
New Universal Precautions

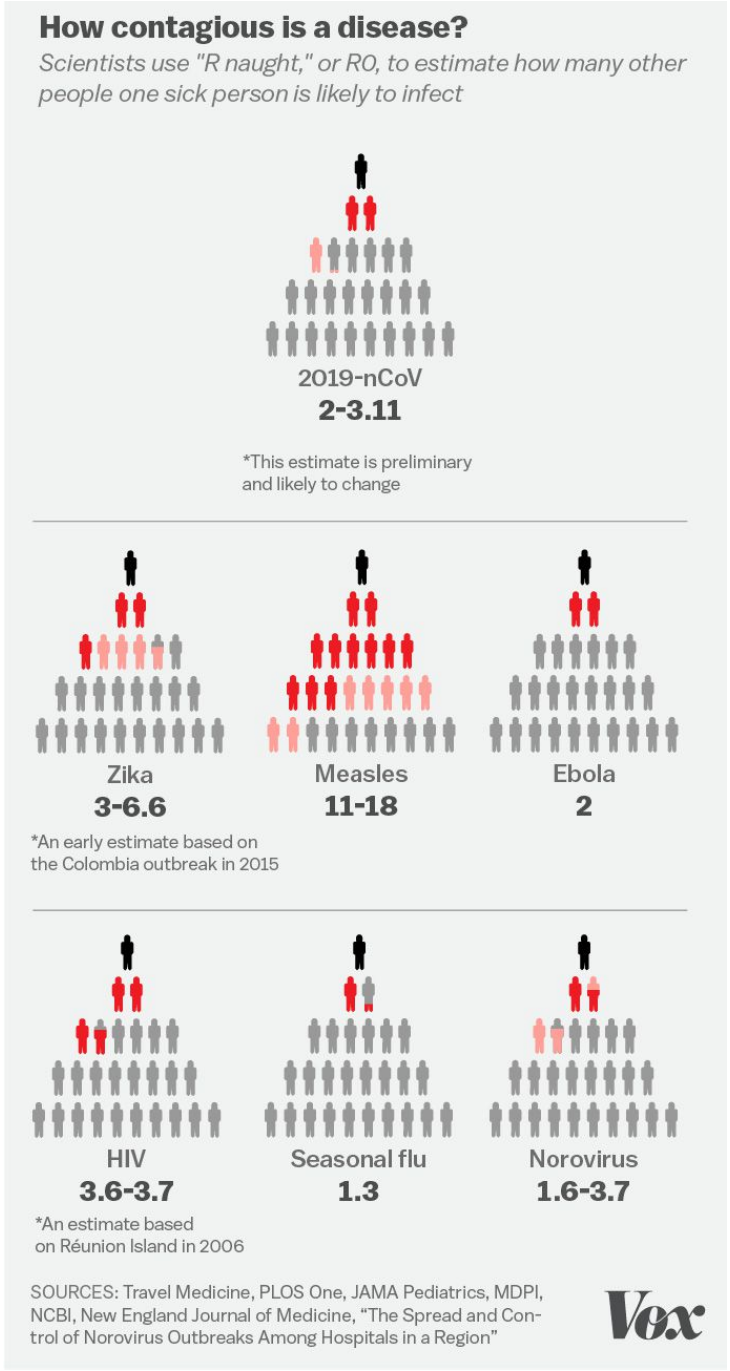
- Simple and safe measure to prevent healthcare personnel (HCP) exposures at all times, regardless of the patient's probability of having COVID-19 or ability to reliably wear a mask.

- Does not replace Special Airborne/Contact Precautions for symptomatic rule out and/or confirmed COVID-19 patients

New Universal Precautions:

- Masks required for HCP, patients, and visitors
- Eye protection for HCP when interacting with patients
- Gown, respirator, eye protection, and gloves to perform aerosol generating procedures





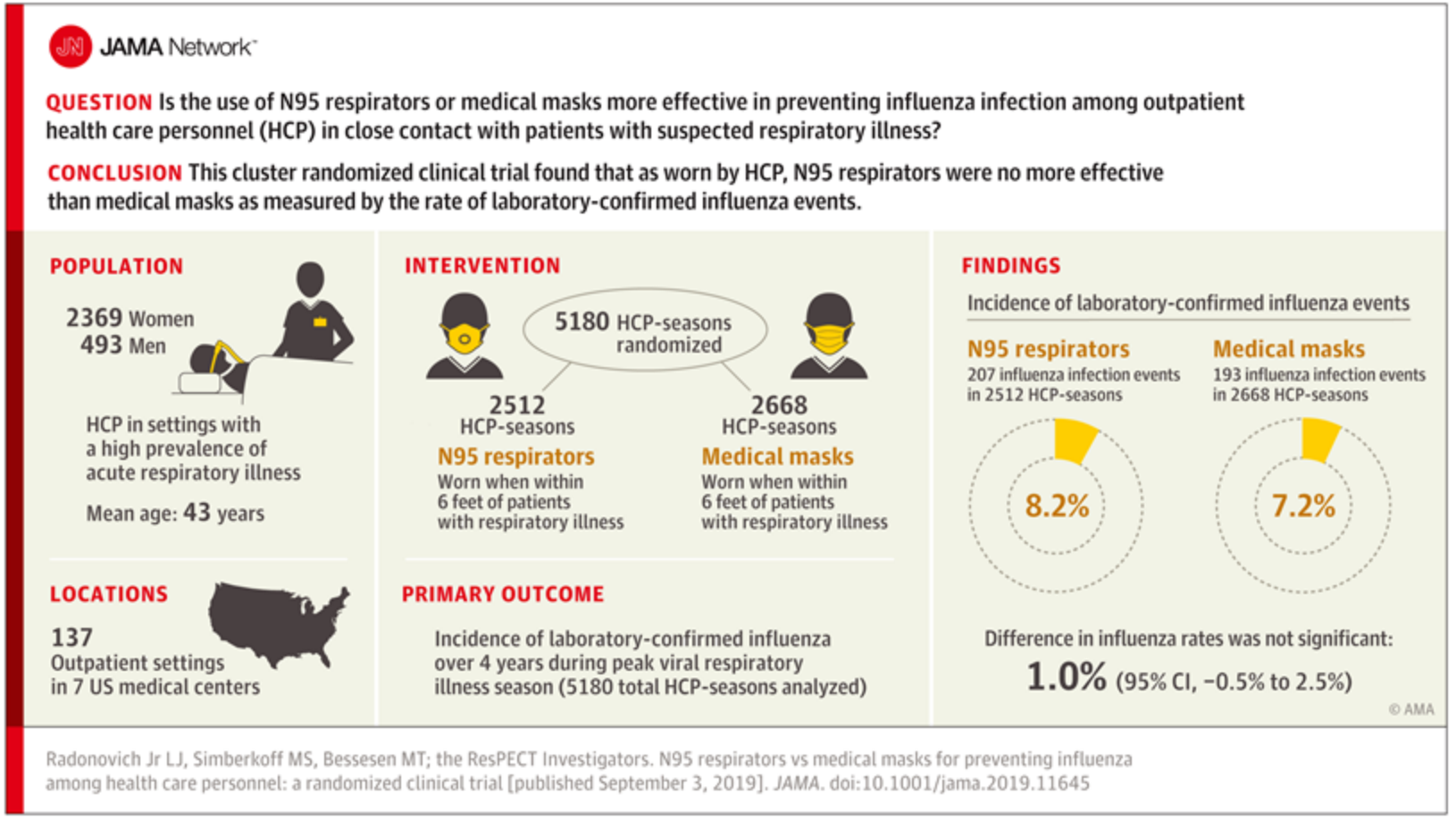
COVID transmission rates more similar to 'droplet' spread diseases (flu) than 'airborne' spread diseases (measles)

Methods: 105 index patients and 392 household contacts were were tested by SARS-CoV-2 RT-PCR. Secondary attack rates of SARS-CoV-2 to contact members were computed and the risk factors for transmission within the household were estimated.

Results: Secondary transmission of SARS-CoV-2 developed in 64 of 392 household contacts (16.3%).

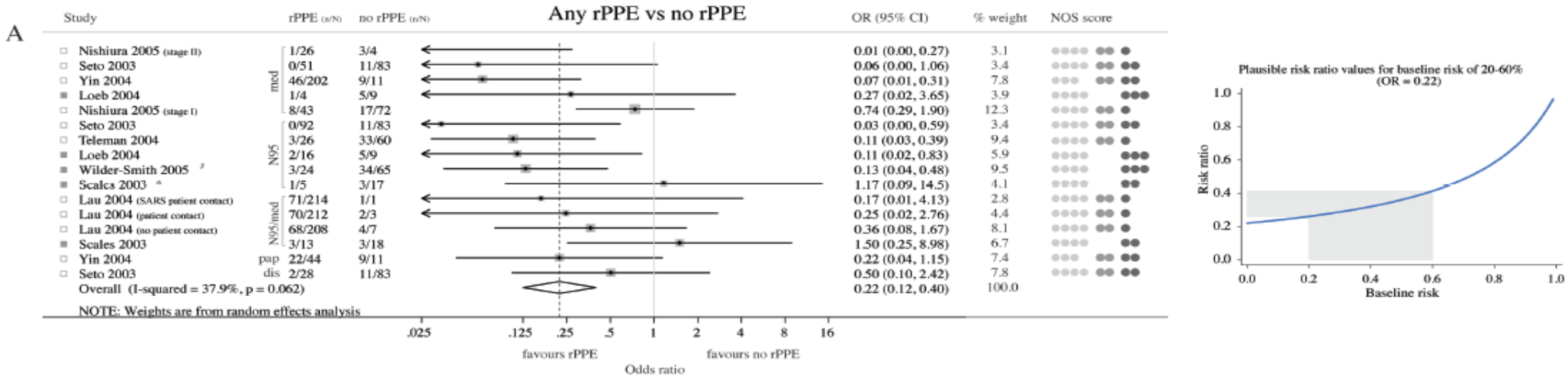
Li W, et al. CID, April 2020 https://doi.org/10.1093/cid/ciaa450

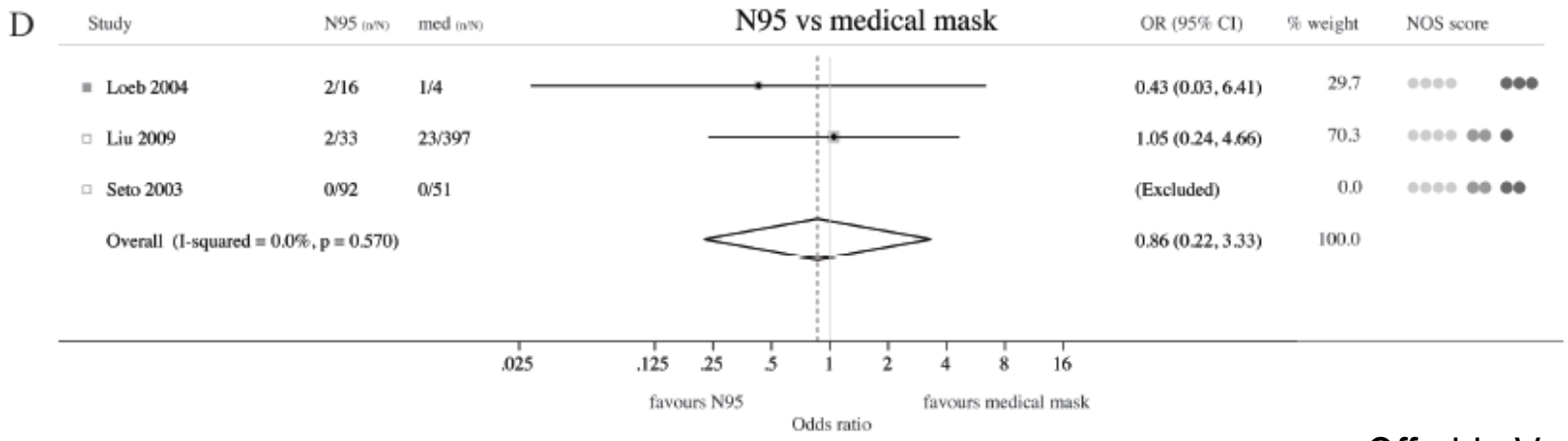
N95 respirators no more effective than masks in influenza transmission

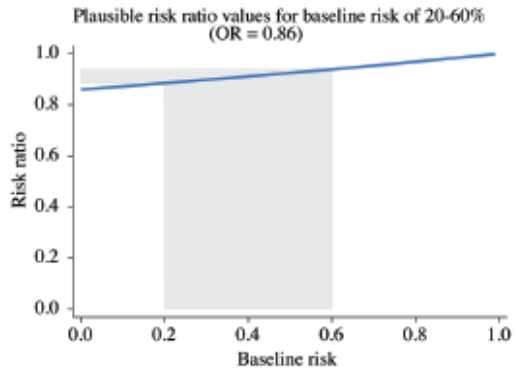


Masks are protective
No difference between respirators and masks

Meta-analysis of observational studies provided evidence of a protective effect of masks (OR = 0.13; 95% CI: 0.03–0.62) and respirators (OR = 0.12; 95% CI: 0.06–0.26) against severe acute respiratory syndrome (SARS) – no difference between respirators and medical masks







Offeddu V, et al. Clin Infect Dis 2017;65:1934-42

Which PPE to Use When?

The safety of our co-workers and patients is our top priority. We are doing everything possible to ensure the safety of all staff by following and exceeding the standards recommended by the CDC. Please follow the guidelines for proper PPE below.

HEALTHCARE PERSONNEL - WEAR THE FOLLOWING PPE IF YOU ARE IN:

COVID+ (or suspected) patient or procedure rooms:

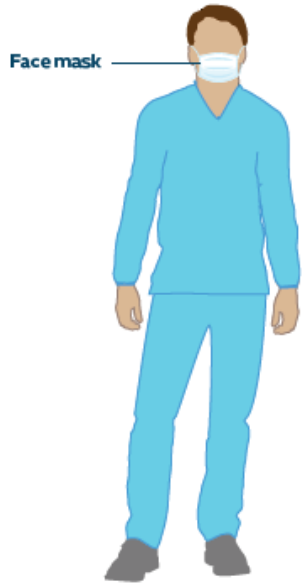
PREFERRED PPE
USE N95 OR HIGHER RESPIRATOR

ACCEPTABLE ALTERNATIVE PPE
USE FACEMASK

RECOMMENDED

Non-covid+ patient or procedure rooms / Common areas (i.e. hallways, cafeteria, etc.):

ACCEPTABLE PPE
USE FACE MASK



Help conserve PPE while keeping yourself protected.

Use these guidelines for PPE use.

Help Prevent the Spread of COVID-19

Putting On Your Mask:

1. Set down your glasses (if you wear them).
2. Wash or sanitize your hands.
3. Make sure the front side of the mask is facing away from your face and the top metal strip is above your nose.
4. Put on your mask and secure it over your ears.

Take Preventative Actions

Everyday actions can prevent the spread of respiratory viruses.
Protect yourself and others with these tips:

WASH YOUR HANDS OFTEN WITH SOAP AND WATER FOR AT LEAST 20 SECONDS. IF SOAP AND WATER ARE NOT AVAILABLE, USE AN ALCOHOL-BASED HAND RUB WITH AT LEAST 60% ALCOHOL.

AVOID CLOSE CONTACT WITH PEOPLE WHO ARE SICK.

CLEAN AND DISINFECT SURFACES AND OBJECTS THAT ARE USED OFTEN, SUCH AS CELLPHONES, DOOR KNOBS, AND LIGHT SWITCHES.

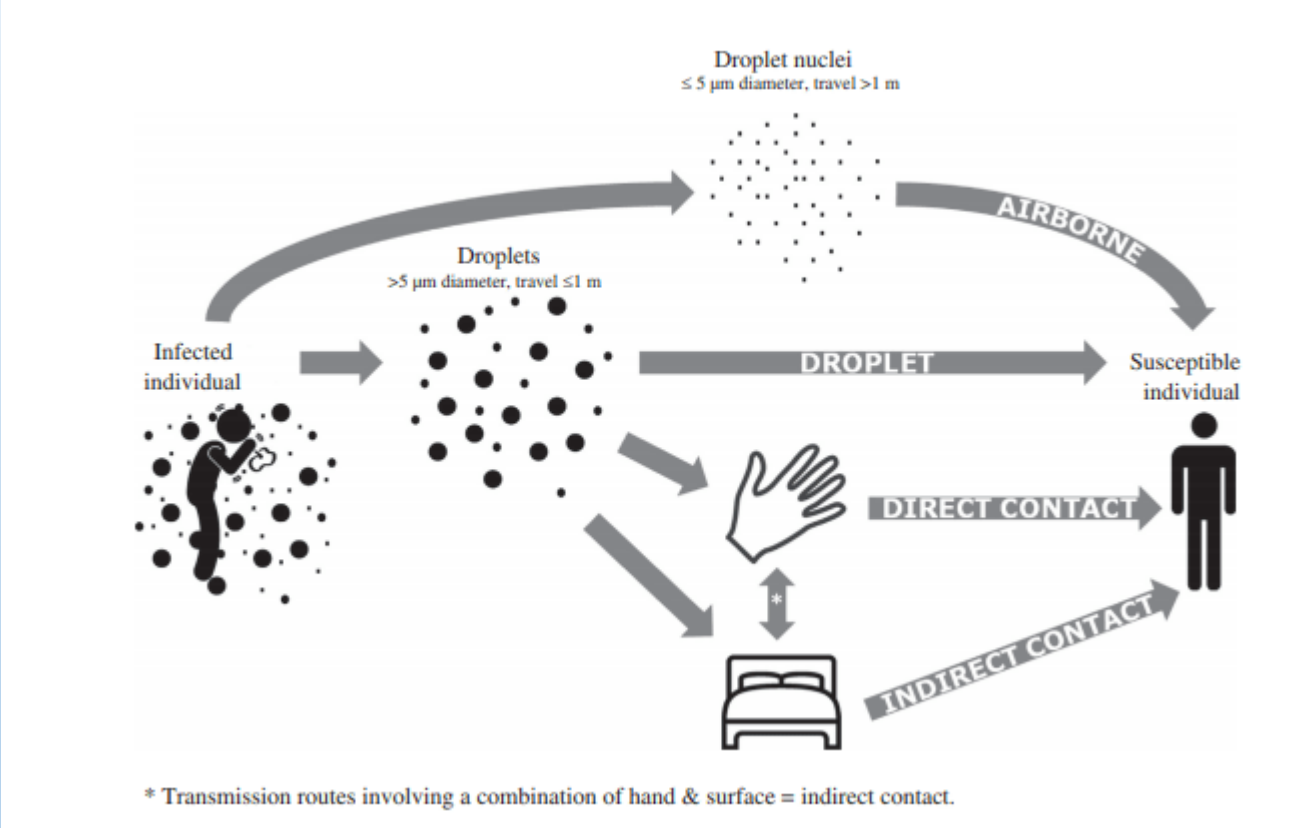
COUGH OR SNEEZE INTO YOUR ELBOW OR COVER YOUR NOSE AND MOUTH WITH A TISSUE.

AVOID TOUCHING YOUR FACE.

IF YOU DO BECOME SICK, STAY HOME AND LIMIT CONTACT WITH OTHERS IN YOUR HOME AS MUCH AS POSSIBLE.

For more information about how to avoid getting sick or spreading respiratory illnesses to others, visit our Coronavirus Resource page: UNCHealthcare.org/coronavirus

UNC HEALTH

Science-Based Keys to Prevention

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