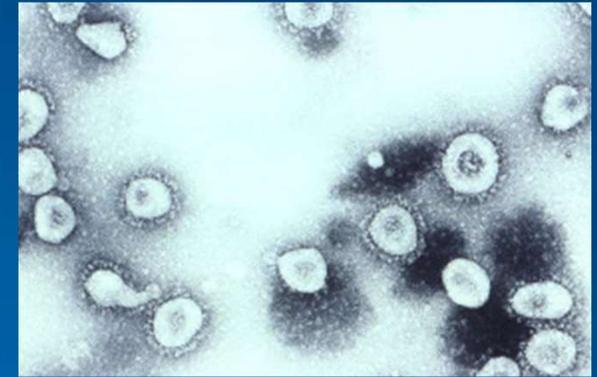
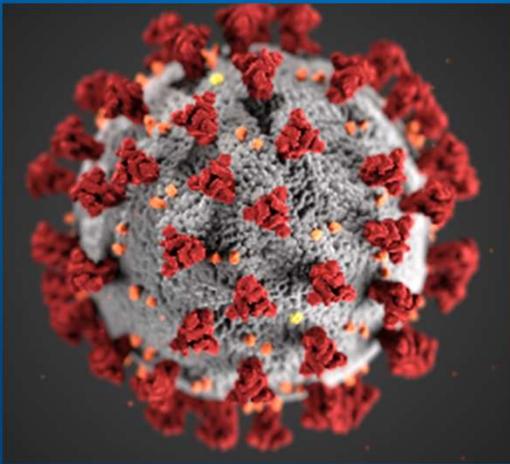


# Coronavirus Disease 2019 [COVID-19] and People with Intellectual/Developmental Disabilities [IDD]



**Geoffrey A. Weinberg, MD**  
**Professor of Pediatrics**

**Director, Clinical Pediatric Infectious Diseases  
& Pediatric HIV Program**

**Co-Director, Pediatric Immune Deficiency Disorders Clinic**  
**University of Rochester School of Medicine & Dentistry**

*MEDICINE of THE HIGHEST ORDER*



# Disclosures

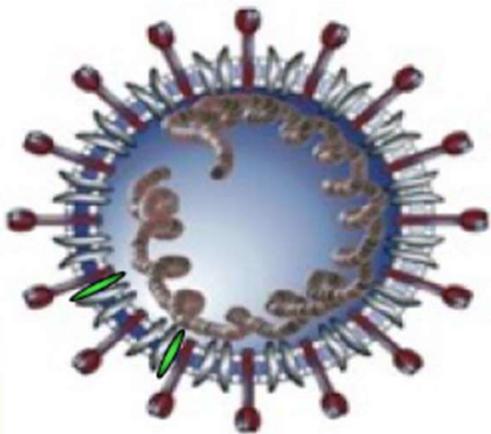
- **No financial Conflicts of Interest to declare**
- **My research is funded by the CDC, but nothing I say in this webinar is meant to represent the CDC, the PHS, or the DHHS**
- **Knowledge about COVID-19 is increasing so quickly that it may turn out that much I say in this webinar may be out of date or untrue next week/month/year!**

# Outline

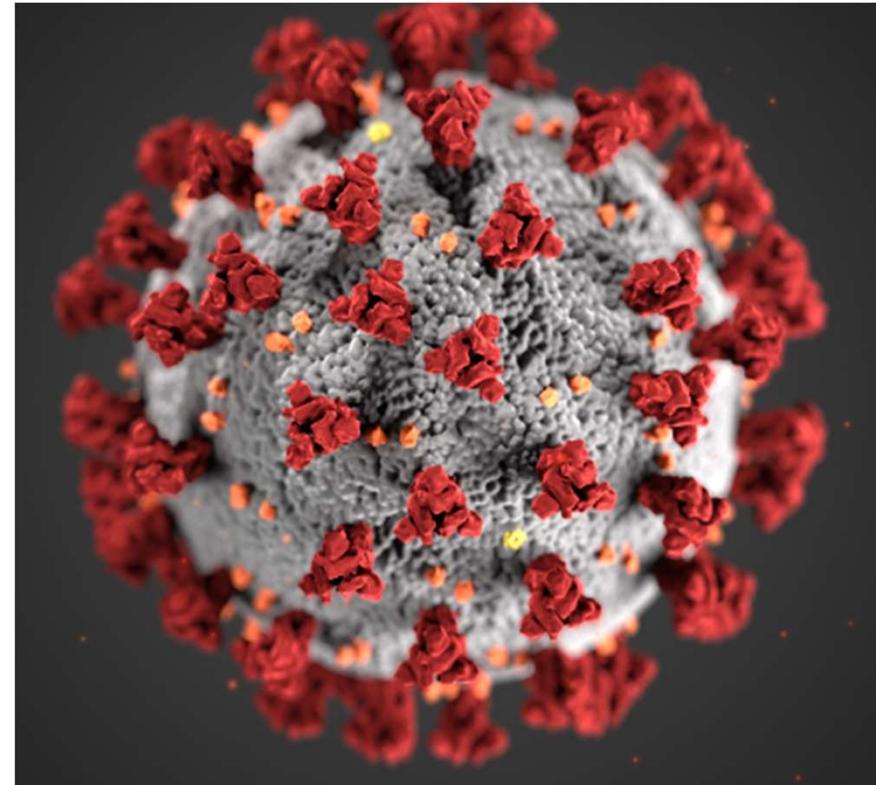
- **What is COVID-19 or SARS-CoV-2 infection?**
  - **A bit of virology and history**
  - **Disease in adults**
  - **Disease in children**
  - **Transmission, Prevention**
- **What is different about COVID-19 among those with IDD?**

# Human Coronaviruses [HCoVs]—“Old”

- HCoVs 229E, OC43, NL63, HKU1
- Cause ~15-30% of common colds
- Immunity not durable, so can get again
- Mostly URIs; possibly LRIs in those with immunocompromised
- No known vaccines or antivirals
- Many CoVs appear to infect animals



- Large genome, RNA viruses



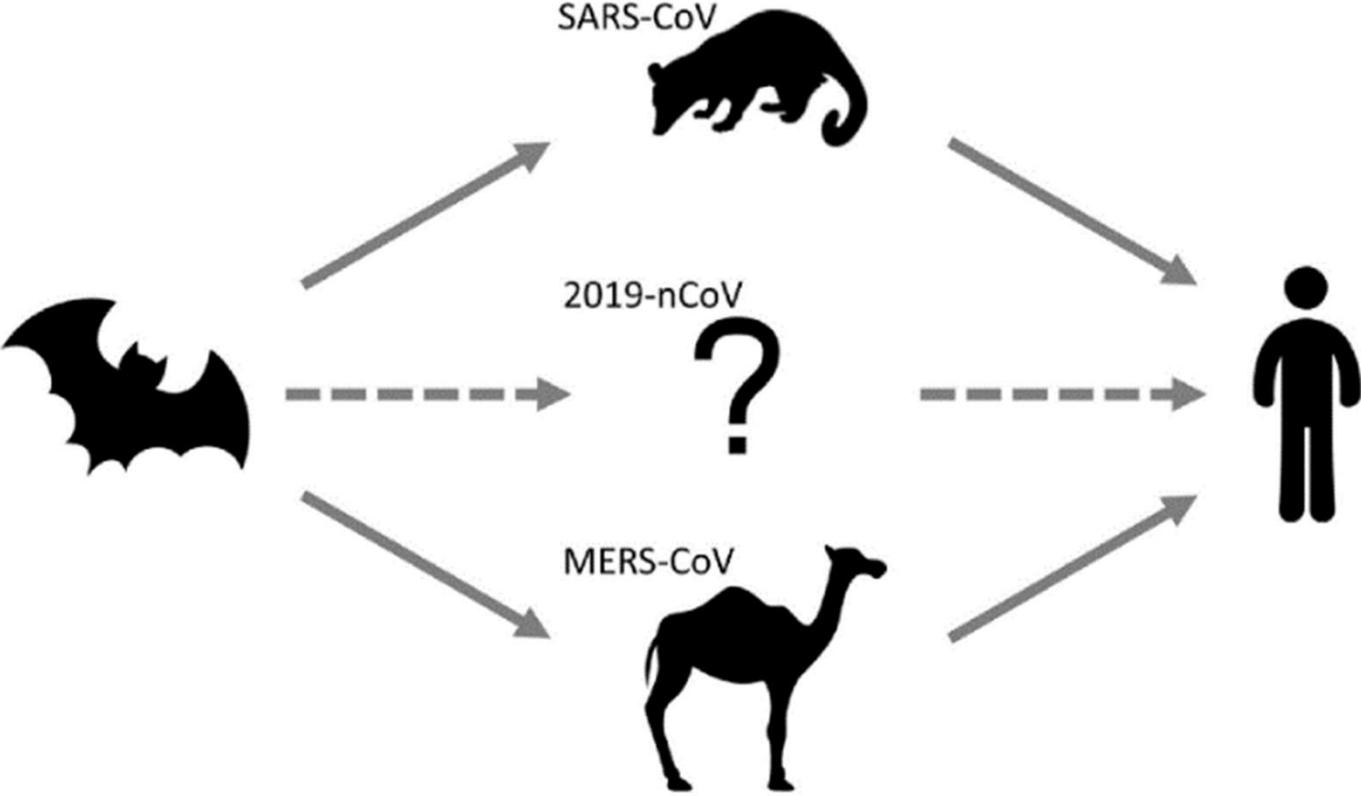
## **“Old” HCoV Disease**

- **About 8% of lower respiratory tract infection [LRTI] in hospitalized young children**
- **Found globally, in tropical and temperate regions**
- **Can see year-round, although concentrated in winter and spring**
- **Most of us [up to 90% of adults] have evidence of past infection [seropositive for antibody]**
- **Can be asymptomatic in children <5 y**
- **Incubation period about 3 days**

## **Human Coronaviruses [HCoVs]—“NEW”**

- **SARS-CoV (2002-2004) Severe Acute Respiratory Syndrome**
  - **>8,000 cases with 10% mortality**
  - **From China to 32 countries over 3 mo**
- **MERS-CoV (2012-present) Middle East Respiratory Syndrome**
  - **From Middle Eastern countries →27 globally, mostly Middle East**
  - **>2,500 cases with 34% mortality**
- **nCoV-19, SARS-CoV-2, COVID-19 (2019→ ??)**
  - **Globally, 1.33 million cases, 184 countries [~all]**
  - **Mortality not firmly known—estimated ~2-3%**

# Origins of Epidemic-Pandemic HCoVs



# COVID-19: one of many early studies coming out

*The NEW ENGLAND JOURNAL of MEDICINE*

ORIGINAL ARTICLE

## Clinical Characteristics of Coronavirus Disease 2019 in China

W. Guan, Z. Ni, Yu Hu, W. Liang, C. Ou, J. He, L. Liu, H. Shan, C. Lei, D.S.C. Hui, B. Du, L. Li, G. Zeng, K.-Y. Yuen, R. Chen, C. Tang, T. Wang, P. Chen, J. Xiang, S. Li, Jin-lin Wang, Z. Liang, Y. Peng, L. Wei, Y. Liu, Ya-hua Hu, P. Peng, Jian-ming Wang, J. Liu, Z. Chen, G. Li, Z. Zheng, S. Qiu, J. Luo, C. Ye, S. Zhu, and N. Zhong, for the China Medical Treatment Expert Group for Covid-19\*

This article was published on February 28, 2020, and last updated on March 6, 2020, at NEJM.org.

DOI: 10.1056/NEJMoa2002032

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## **COVID-19: early Chinese study, NEJM Guan et al.**

### **Important points:**

- **Median age 47 y; Virtually all >15 y**
- **60%/40% M/F distribution**
- **Severe disease skewed to >50 y, esp. >65 y**
- **Mean incubation 4 d**
- **Most common S & Sx: fever, cough, fatigue**
- **Mortality rate: 1.4% [other papers: 2.6%]—but  
~50% if “critical disease**

# COVID-19: early Chinese study, NEJM Guan et al.

## Other Important points:

- **~50% fever**
- **~70% cough**
- **40% fatigue**
- **20-40% SOB**
- **<5% diarrhea**
- **Very few if any of these 1,099 patients said to have immuno-deficiency or IDD [but whether/how questions asked is ? In China]**

## More recent data from US: NYC—JAMA April 22, 2020

- **5,700 cases admitted to hospitals in Northwell Health system, Metro NYC, 3/1/20-4/4/20 [all lab pos]**
- **Age distribution & Mortality of 2,634 [early look at data!]:**
- **21% mortality overall; 88% if on ventilators vs 12% if not**
- **Higher mortality than in China, but many confounders—more ill, less tested, how reported, more may survive—news reports can be confusing!!**

Age group	Number	Percent	Mortality (%)
≥80 y	441	17%	54%
70-79 y	451	17%	32%
60-69 y	533	8%	16%
30-59 y	1078	41%	8%
20-29 y	97	4%	4%
10-19 y	8	<1%	0%
<10 y	26	1%	0%

# What About Underlying Health Conditions: 7,100 Adults with COVID-19, US—MMWR April 3, 2020

TABLE 1. Reported outcomes among COVID-19 patients of all ages, by hospitalization status, underlying health condition, and risk factor for severe outcome from respiratory infection — United States, February 12–March 28, 2020

Underlying health condition/Risk factor for severe outcomes from respiratory infection (no., % with condition)	No. (%)			
	Not hospitalized	Hospitalized, non-ICU	ICU admission	Hospitalization status unknown
Total with case report form (N = 74,439)	12,217	5,285	1,069	55,868
Missing or unknown status for all conditions (67,277)	7,074	4,248	612	55,343
Total with completed information (7,162)	5,143	1,037	457	525
One or more conditions (2,692, 37.6%)	1,388 (27)	732 (71)	358 (78)	214 (41)
Diabetes mellitus (784, 10.9%)	331 (6)	251 (24)	148 (32)	54 (10)
Chronic lung disease* (656, 9.2%)	363 (7)	152 (15)	94 (21)	47 (9)
Cardiovascular disease (647, 9.0%)	239 (5)	242 (23)	132 (29)	34 (6)
Immunocompromised condition (264, 3.7%)	141 (3)	63 (6)	41 (9)	19 (4)
Chronic renal disease (213, 3.0%)	51 (1)	95 (9)	56 (12)	11 (2)
Pregnancy (143, 2.0%)	72 (1)	31 (3)	1 (1)	36 (7)
Neurologic disorder, neurodevelopmental, intellectual disability (52, 0.7%) <sup>†</sup>	17 (0.3)	25 (2)	7 (2)	3 (1)
Chronic liver disease (41, 0.6%)	24 (1)	9 (1)	7 (2)	1 (0.2)
Other chronic disease (1,182, 16.5%) <sup>§</sup>	583 (11)	359 (35)	170 (37)	70 (13)
Former smoker (165, 2.3%)	80 (2)	45 (4)	33 (7)	7 (1)
Current smoker (96, 1.3%)	61 (1)	22 (2)	5 (1)	8 (2)
None of the above conditions <sup>¶</sup> (4,470, 62.4%)	3,755 (73)	305 (29)	99 (22)	311 (59)

Abbreviation: ICU = intensive care unit.

\* Includes any of the following: asthma, chronic obstructive pulmonary disease, and emphysema.

<sup>†</sup> For neurologic disorder, neurodevelopmental, and intellectual disability, the following information was specified: dementia, memory loss, or Alzheimer's disease (17); seizure disorder (5); Parkinson's disease (4); migraine/headache (4); stroke (3); autism (2); aneurysm (2); multiple sclerosis (2); neuropathy (2); hereditary spastic paraplegia (1); myasthenia gravis (1); intracranial hemorrhage (1); and altered mental status (1).

<sup>§</sup> For other chronic disease, the following information was specified: hypertension (113); thyroid disease (37); gastrointestinal disorder (32); hyperlipidemia (29); cancer or history of cancer (29); rheumatologic disorder (19); hematologic disorder (17); obesity (17); arthritis, nonrheumatoid, including not otherwise specified (16); musculoskeletal disorder other than arthritis (10); mental health condition (9); urologic disorder (7); cerebrovascular disease (7); obstructive sleep apnea (7); fibromyalgia (7); gynecologic disorder (6); embolism, pulmonary or venous (5); ophthalmic disorder (2); hypertriglyceridemia (1); endocrine (1); substance abuse disorder (1); dermatologic disorder (1); genetic disorder (1).

<sup>¶</sup> All listed chronic conditions, including other chronic disease, were marked as not present.

# COVID-19 in Children Dong Y et al, China

*Pediatrics*. 2020; doi: 10.1542/peds.2020-0702

## Important points:

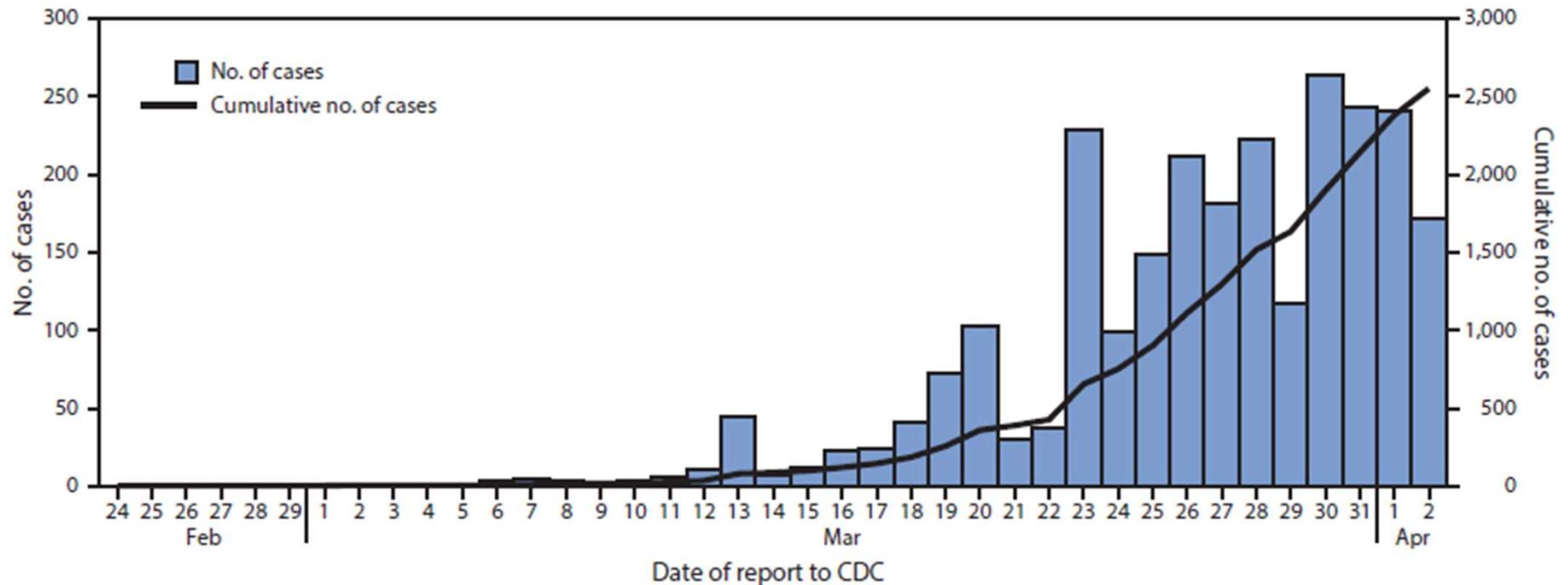
- **Not many kids, compared with adults—2,141 [731 confirmed]—but more than others to date**
- **Still almost 60/40 male**
- **Mild disease most common**
- **Median incubation 3 d**
- **Median age 10 y**
- **Severe disease skewed to infants and toddlers**

## **US Pediatric Data—April 6, 2020 MMWR Early Release**

- **As of April 2, 2020: 239,279 cases and 5,443 deaths in US**
  - **149,082 cases with known age data**
    - **2,572 (1.7%) were <18 y**
    - **Yet, 22% of the US population is <18 y of age**
- **Median age 11 y [range 0-17 y]**
- **91% had exposure to a patient in household or in community**
- **9% travel-associated**
  
- **Only 3 deaths reported to date**

# US Pediatric Data—April 6, 2020 MMWR Early Release

FIGURE 1. COVID-19 cases in children\* aged <18 years, by date reported to CDC (N = 2,549)<sup>†</sup> — United States, February 24–April 2, 2020<sup>§</sup>



\* Includes infants, children, and adolescents.

<sup>†</sup> Excludes 23 cases in children aged <18 years with missing report date.

<sup>§</sup> Date of report available starting February 24, 2020; reported cases include any with onset on or after February 12, 2020.

# US Pediatric Data—April 6, 2020 MMWR Early Release

TABLE. Signs and symptoms among 291 pediatric (age <18 years) and 10,944 adult (age 18–64 years) patients\* with laboratory-confirmed COVID-19 — United States, February 12–April 2, 2020

Sign/Symptom	No. (%) with sign/symptom	
	Pediatric	Adult
Fever, cough, or shortness of breath <sup>†</sup>	213 (73)	10,167 (93)
Fever <sup>§</sup>	163 (56)	7,794 (71)
Cough	158 (54)	8,775 (80)
Shortness of breath	39 (13)	4,674 (43)
Myalgia	66 (23)	6,713 (61)
Runny nose <sup>¶</sup>	21 (7.2)	757 (6.9)
Sore throat	71 (24)	3,795 (35)
Headache	81 (28)	6,335 (58)
Nausea/Vomiting	31 (11)	1,746 (16)
Abdominal pain <sup>¶</sup>	17 (5.8)	1,329 (12)
Diarrhea	37 (13)	3,353 (31)

\* Cases were included in the denominator if they had a known symptom status for fever, cough, shortness of breath, nausea/vomiting, and diarrhea. Total number of patients by age group: <18 years (N = 2,572), 18–64 years (N = 113,985).

<sup>†</sup> Includes all cases with one or more of these symptoms.

<sup>§</sup> Patients were included if they had information for either measured or subjective fever variables and were considered to have a fever if “yes” was indicated for either variable.

<sup>¶</sup> Runny nose and abdominal pain were less frequently completed than other symptoms; therefore, percentages with these symptoms are likely underestimates.

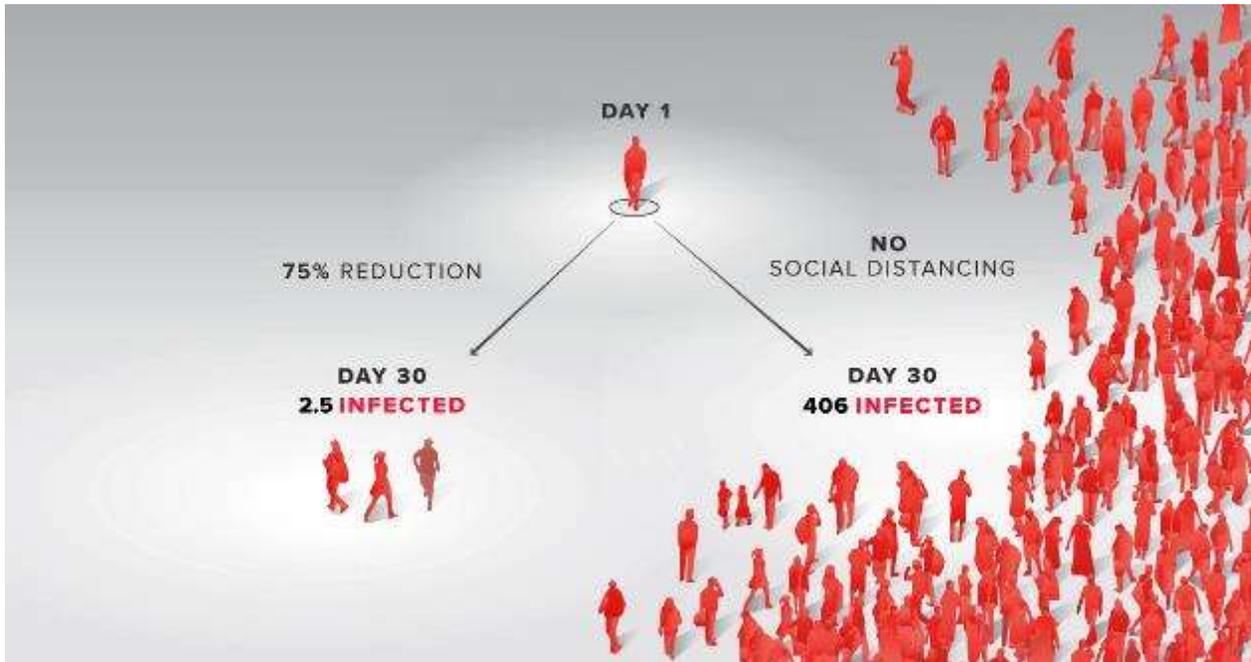
## Important points:

- **Children: less common than in adults, but still predominance of [Fever, cough, or shortness of breath] 73% vs 93%**
- **Less myalgia; less headache; still rare GI signs/symptoms**

## Transmission & Prevention

- **Transmission is by DROPLET SPREAD in community settings**
  - **5-10  $\mu\text{M}$  droplets such as those in cough or sneeze**
  - **They can move  $\sim 3$  ft, and be on contaminated surfaces “fomites” for a few hours**
- **Hence, SOCIAL DISTANCING 6 ft, HANDWASHING, & MASK use should prevent transmission for the most part**
  - **Aerosol transmission [long distance through air, e.g., measles] is ONLY relevant with selected medical procedures**

# Social Distancing



## Social distancing: What should I do?



### Working from home

**Advised**

For anyone aged 0-69

**Strongly advised**

Anyone 70+  
Those with an underlying health conditions  
Pregnant women



### Use less public transport

**Advised**

For anyone aged 0-69

**Strongly advised**

Anyone 70+  
Those with an underlying health conditions  
Pregnant women



### Visits from friends and family

**Advised against**

For anyone aged 0-69

**Strongly advised against**

Anyone 70+  
Those with an underlying health conditions  
Pregnant women



### Socialising outside home

**Advised against**

For anyone aged 0-69

**Strongly advised against**

Anyone 70+  
Those with an underlying health conditions  
Pregnant women

Those with serious underlying health conditions: as above but further guidance will be provided by the NHS

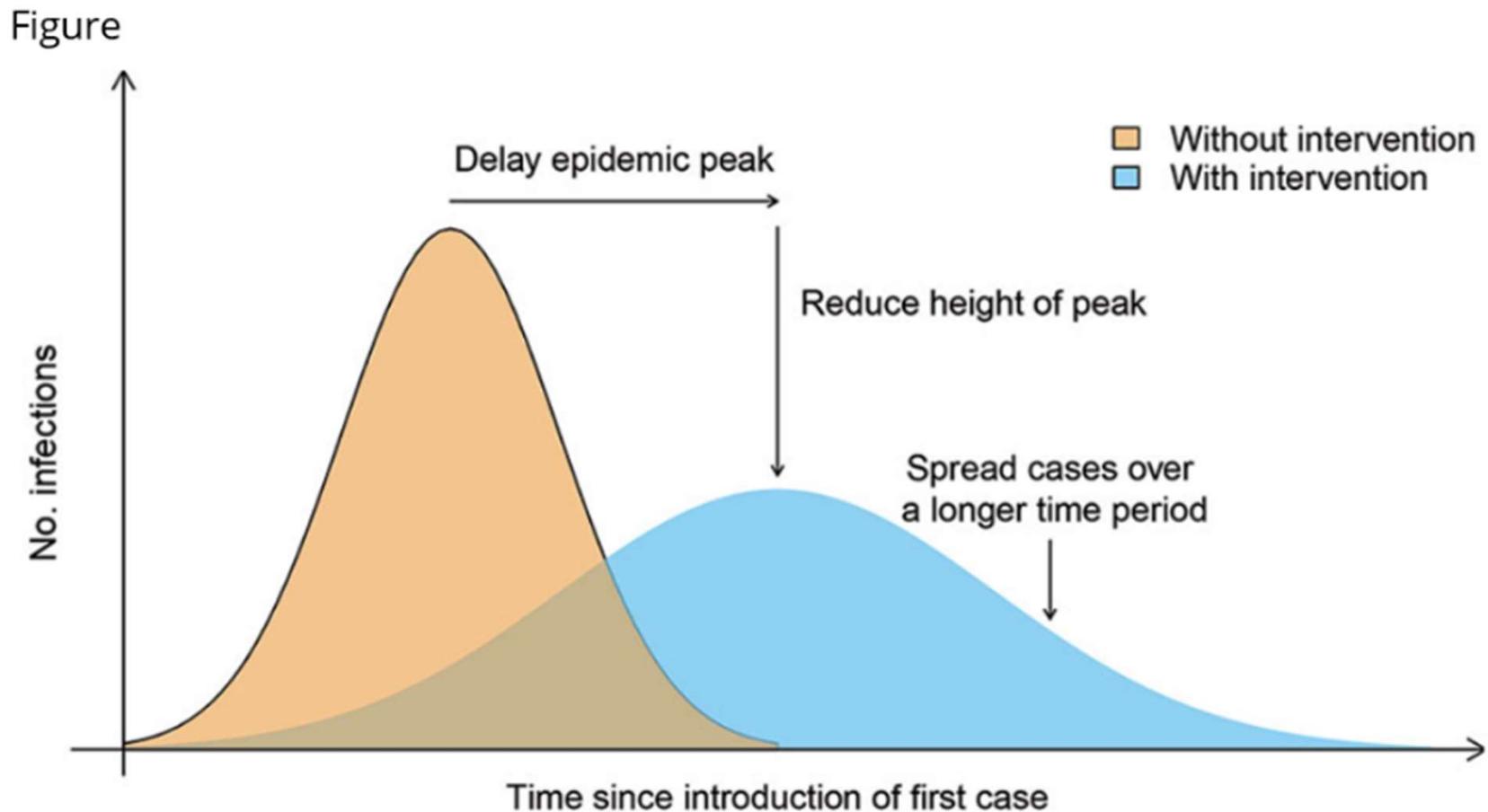
Source: Public Health England

BBC

## Confused about social distancing?



# “Flattening the Curve” to try to avoid high peak case loads



# What is Different About COVID-19 Among Those with IDD?

??

[No data!]

# What is Different About COVID-19 Among Those with IDD?

## I. Medical Comorbidities

- A. Obesity, neurologic disease, respiratory disease, including tracheostomy, home ventilators
- B. Communication difficulties

## II. Self-Care “Comorbidities”

- A. May be partly or entirely dependent on others for self-care—such that exposed to more people, perhaps lesser degrees of handwashing
- B. May be harder to socially distance in homes

# What is Different About COVID-19 Among Those with IDD, continued

## III. Intellectual “Comorbidities”

- A. All of this—social distancing, quarantine—is hard for anyone to grasp!
- B. Those living with IDD are not always facile with rapidly [and rather radically] changing routines

## IV. Potential Ethical Issues with Pandemic Care

- A. Triage of ventilators, medical care **MUST** be allocated equitably, fairly, and rationally [American with Disabilities Act; American College of Physicians; many state governments incl. PA, MN, NY; many bioethicists]
- B. But some may judgmentally consider IDD as “excludable”

## Other considerations

- **Early fill Rx, 90 d overrides, etc. to help people with IDD avoid medication interruption**
- **Attention to continuing routine immunization!**
- **Telehealth & Telemedicine visits**
- **Infection Prevention to protect both HCW, caregivers**
- **Attention to food insecurity!**
- **Mental health assistance for people with IDD AND caregivers**
  - **SAMHSA.hhs.gov Talking with Children [Tips during outbreaks]**
  - **Disability Rights Education & Defense Fund [DREDF]**
  - **NASP/NASM Helping Children Cope...**
  - **AADMD <https://www.aadmd.org/coronavirus-center>**

## **Current Screening Questions for Employees & Indications for Priority in Testing**

- **In past 24h, have you had a temperature >100.4?**
- **Do you have a new cough?**
- **Are you having a hard time breathing?**
- **Sore throat?**
- **Any body aches?**
- **Any chills, new loss of taste or smell, or vomiting or diarrhea?**



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