Recording

Covid-19

Clinical Management & few other things

NURJANNAH...

COVID-19

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhoea

Respiratory symptoms

Body ache, fatigue

Loss of taste and smell

GI symptoms

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COVID-19
#KitaTeguhKitaMenang

SEGERA DAPATKAN RAWATAN

Bersama Hentikan Wabak COVID-19

Kementerian Kesihatan Malaysia

MyHEALTH

MYHEALTHKKM

Jika anda mempunyai gejala berikut:

SEKURANG-KURANGNYA ADA 2 GEJALA BERIKUT:

- Demam
- Muntah atau loya
- Sakit kepala
- Menggigil
- Hidung tersumbat
- Kelesuan
- Selesema
- Kejang otot
- Sakit tekak
- Cirit-birit

ATAU

SALAH SATU DARIPADA GEJALA BERIKUT:

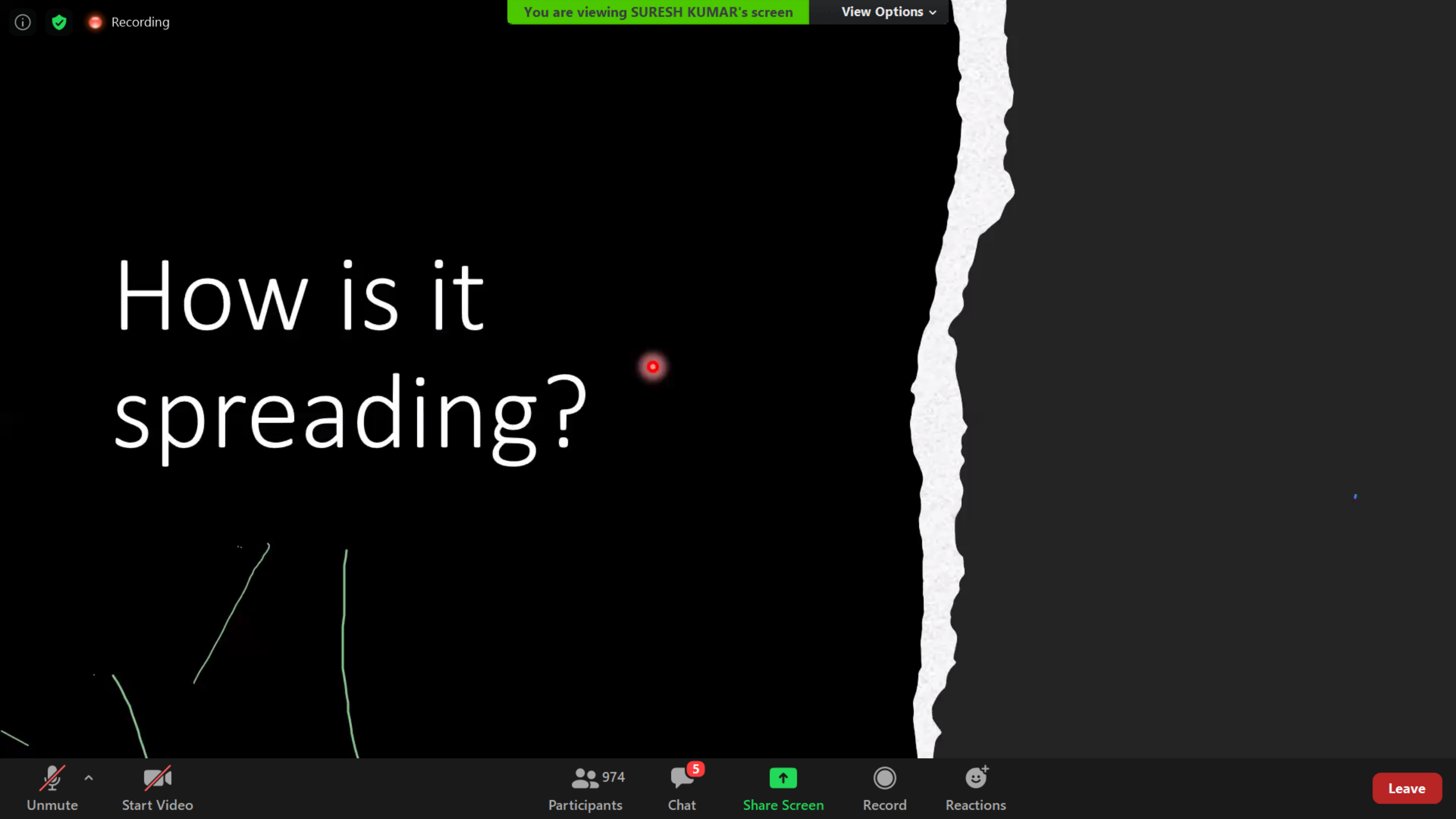
- Batuk
- Sesak nafas
- Sukar bernafas
- Tiba-tiba hilang deria bau
- Tiba-tiba hilang deria rasa

DAN anda

1. Pernah kunjungi kawasan kluster COVID-19 dalam masa 14 hari **ATAU**
2. Pernah kunjungi zon merah COVID-19 dalam masa 14 hari **ATAU**
3. Pernah kunjungi / pulang dari luar negara dalam masa 14 hari **ATAU**
4. Mempunyai kontak dengan kes positif dalam masa 14 hari

JANGAN BERLENGAH LAGI

Unmute
Start Video
979
Participants
Chat
4
Share Screen
Record
Reactions
Leave


Recording
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View Options
How is it spreading?
Unmute
Start Video
974
Participants
5
Chat
Share Screen
Record
Reactions
Leave

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Mode of transmission

Primarily through droplet transmission

"There is no evidence of efficient spread (i.e., routine, rapid spread) to people far away or who enter a space hours after an infectious person was there."

Airborne transmission of SARS-CoV-2 can occur under special circumstances

- **Enclosed spaces**
- **Prolonged exposure to respiratory particles**, often generated with expiratory exertion (e.g., shouting, singing, exercising).
- **Inadequate ventilation or air handling** that allowed a build-up of suspended small respiratory droplets and particles.

https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-sars-cov-2.html

Unmute Start Video 971 Participants 5 Chat Share Screen Record Reactions Leave

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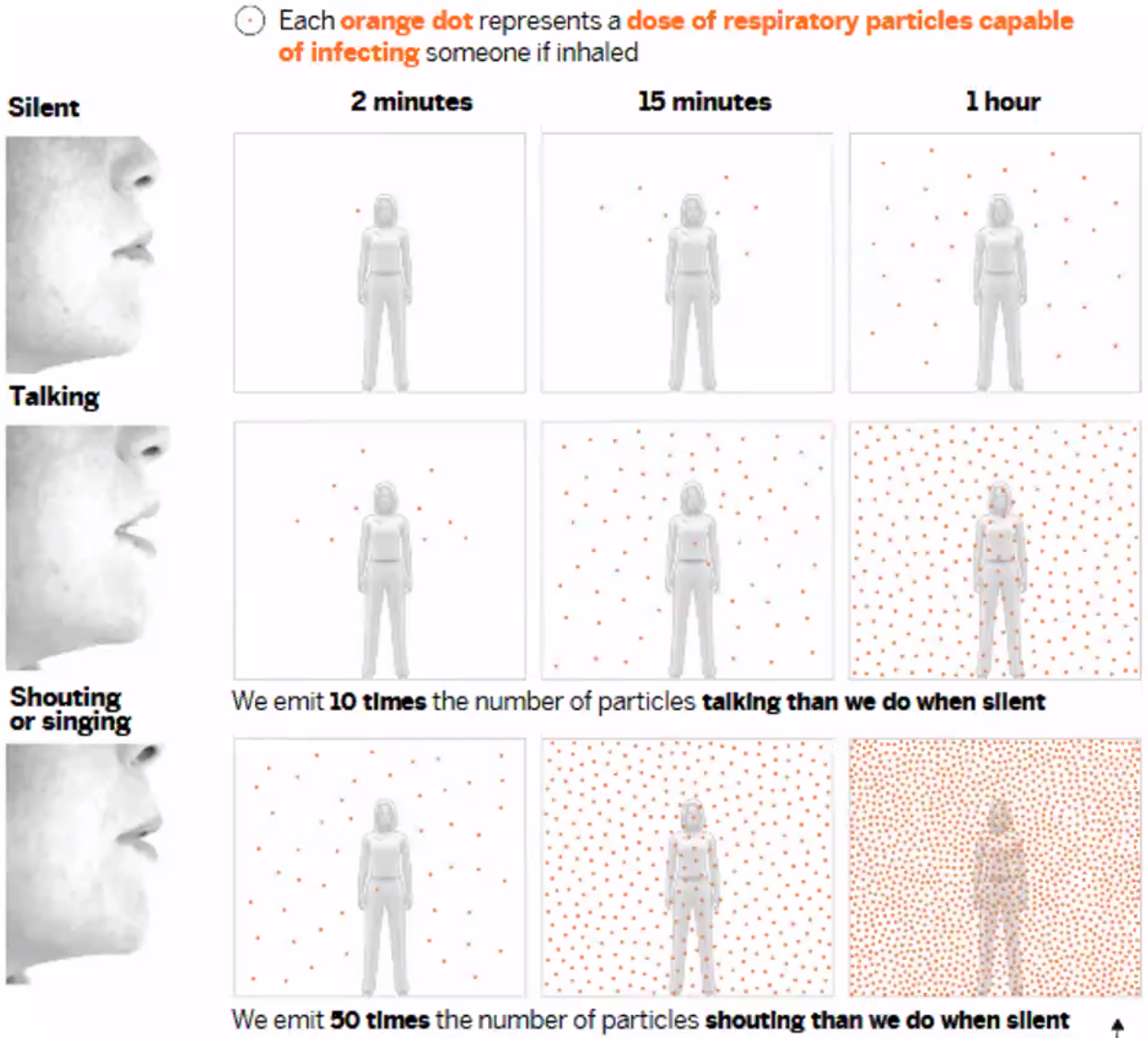
AEROSOL GENERATION



Unmute Start Video 965 Participants 5 Chat Share Screen Record Reactions Leave

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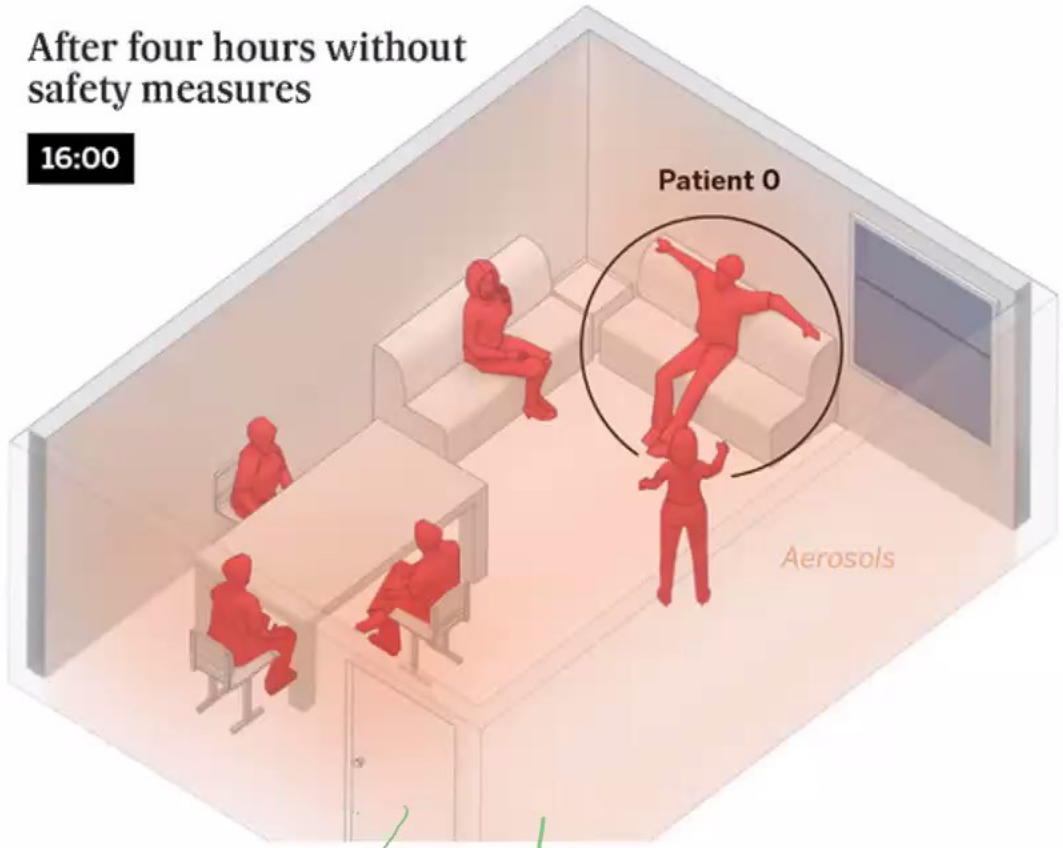
View Options

After four hours without safety measures

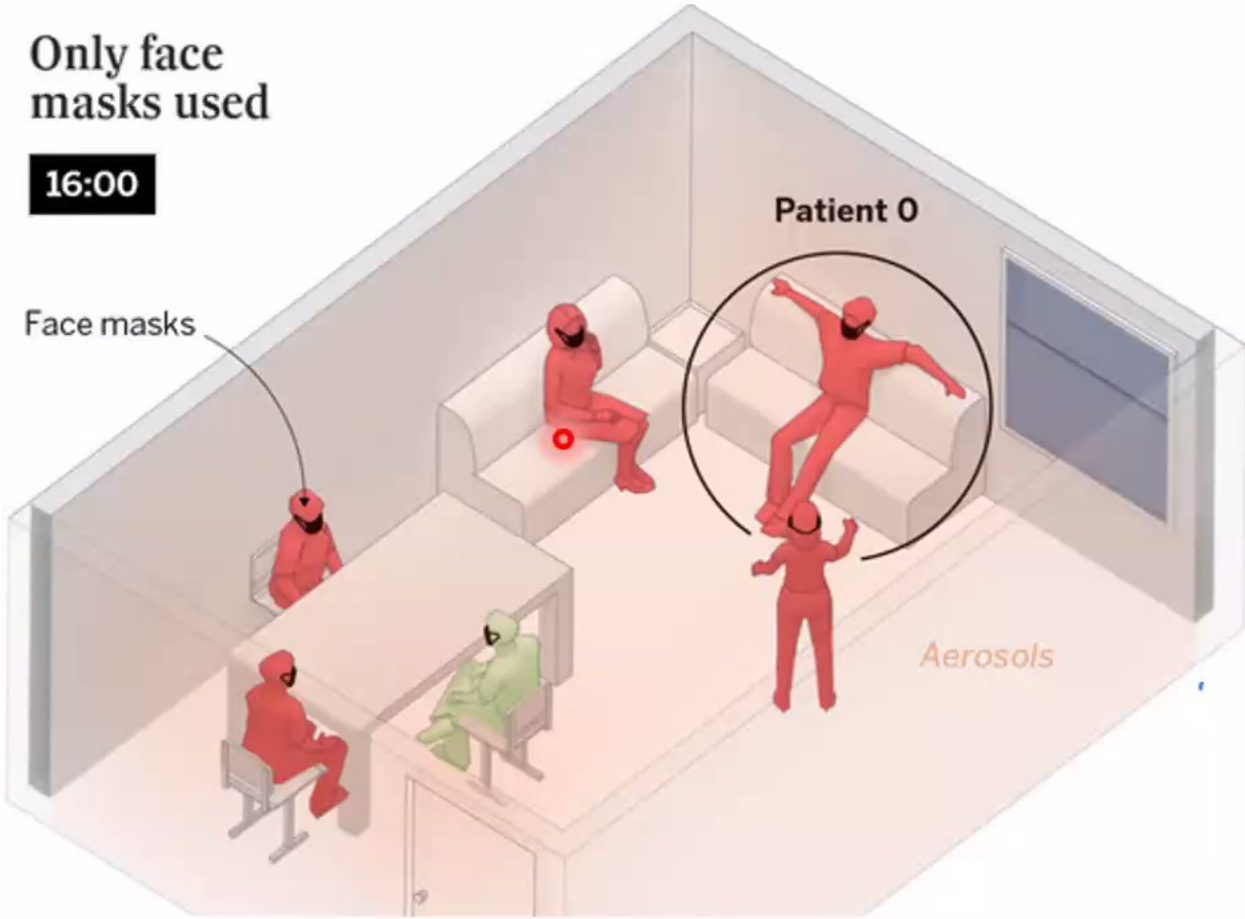
16:00



Irrespective of whether safe distances are maintained, if the six people spend four hours together talking loudly, without wearing a face mask in a room with no ventilation, five will become infected, according to the scientific model explained in the methodology.

Only face masks used

16:00



If face masks are worn, four people are at risk of infection. Masks alone will not prevent infection if the exposure is prolonged.

Unmute
Start Video
960
Participants
5
Chat
Share Screen
Record
Reactions
Leave

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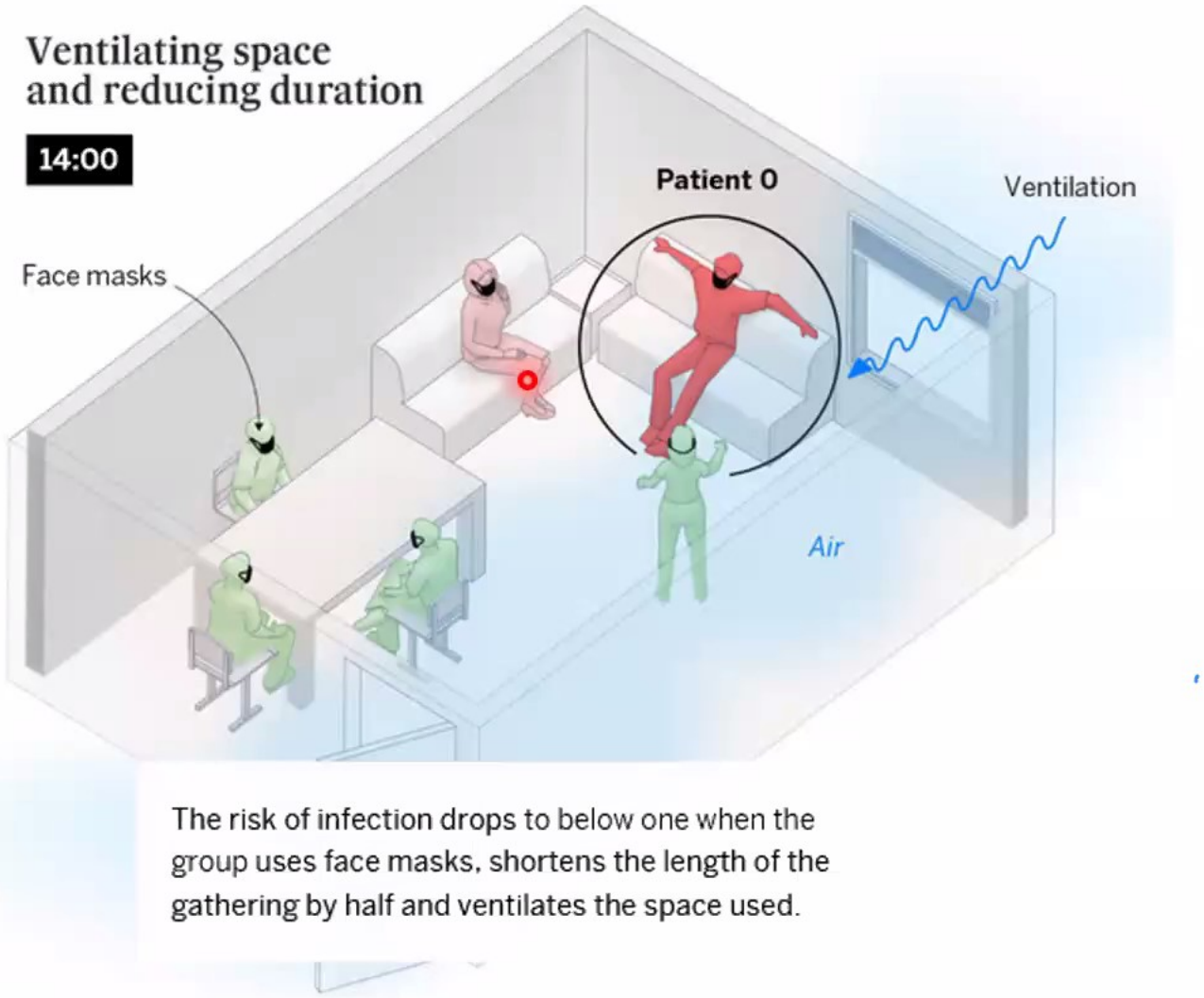
View Options

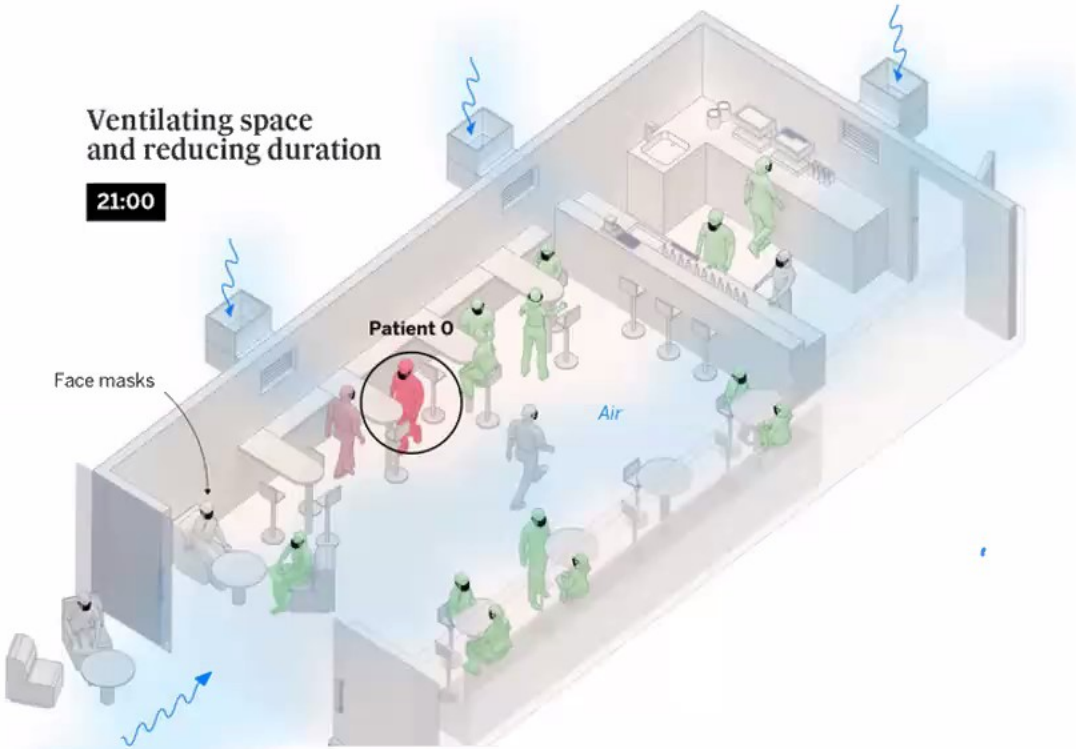
- No prolonged contact
- Ventilation
- Mask



Unmute
Start Video
958
Participants
Chat
Share Screen
Record
Reactions
Leave

RESTAURANT

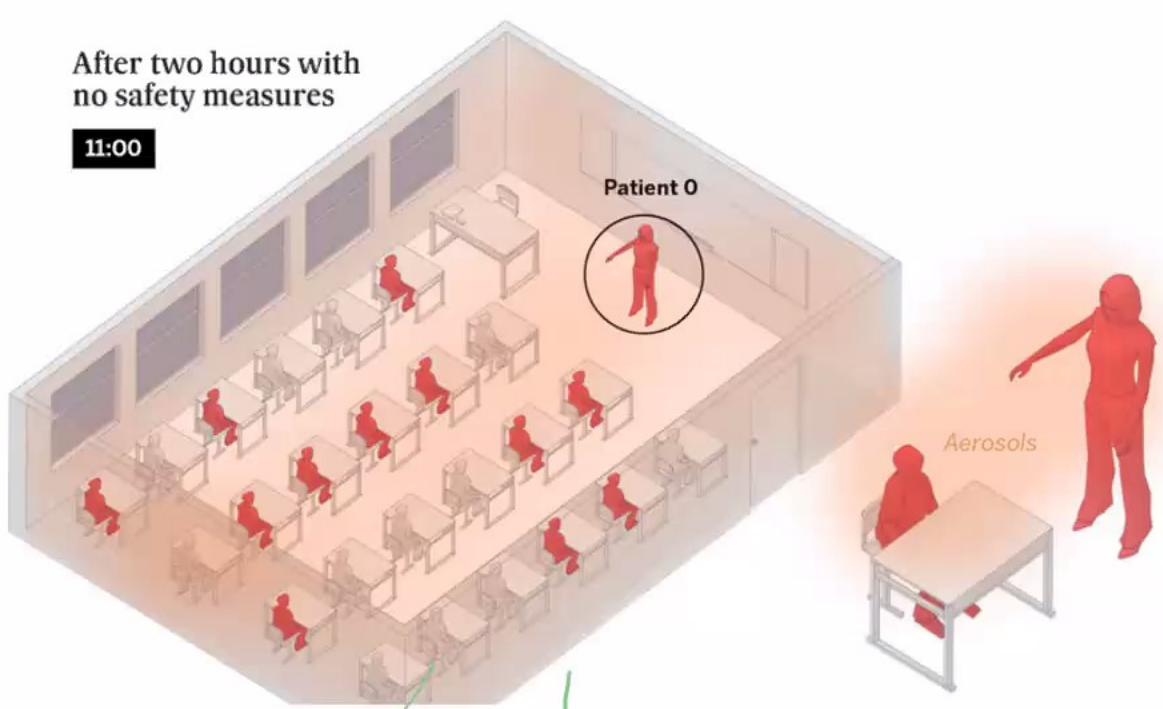
In the worst-case scenario, if no measures are taken, 14 of the customers will be infected after four hours.



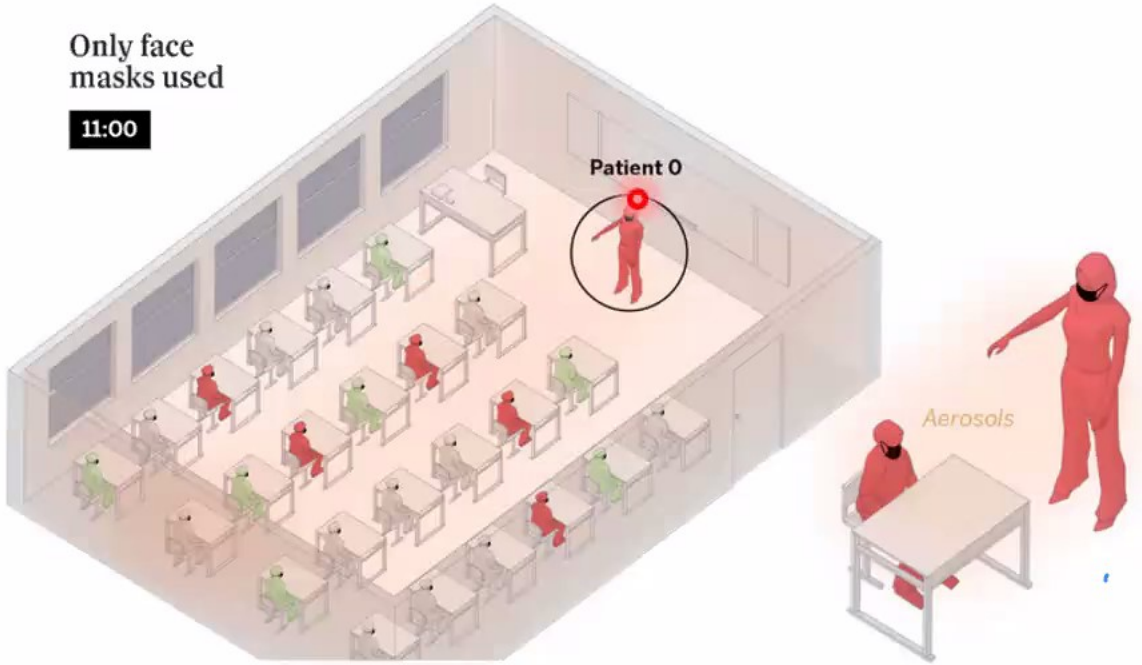
If the premises are ventilated, which can be done with a good air conditioning unit, and the time spent in the bar is shortened, there is only the risk that one person will be infected.

https://english.elpais.com/society/2020-10-28/a-room-a-bar-and-a-class-how-the-coronavirus-is-spread-through-the-air.html

SCHOOL



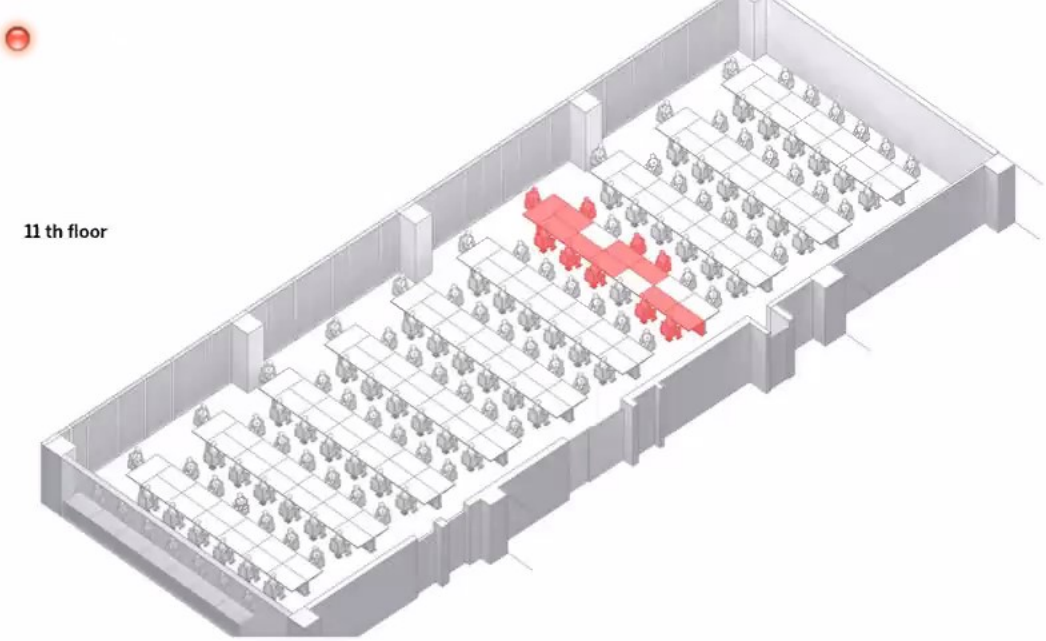
If two hours are spent in the classroom with an infected teacher, without taking any measures to counter the number of aerosols, there is the risk that up to 12 students could become infected.



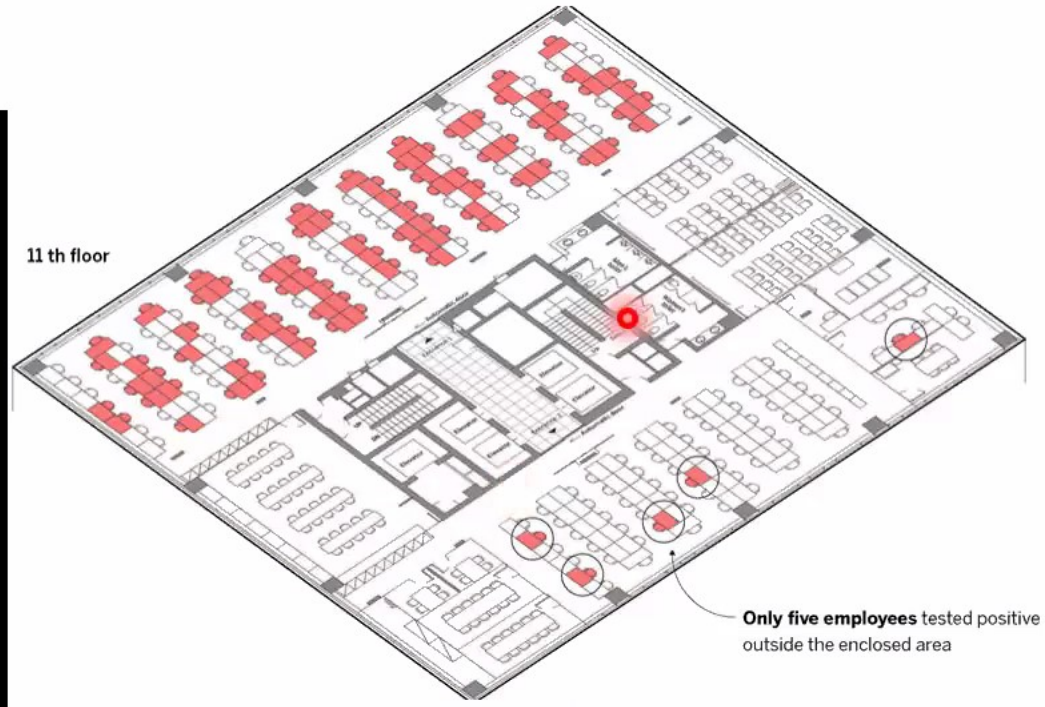
If everyone is wearing a face mask, the number that could become infected drops to five. In real outbreaks, it has been noted that any of the students could become infected irrespective of their proximity to the teacher as the aerosols are distributed randomly around the unventilated room.

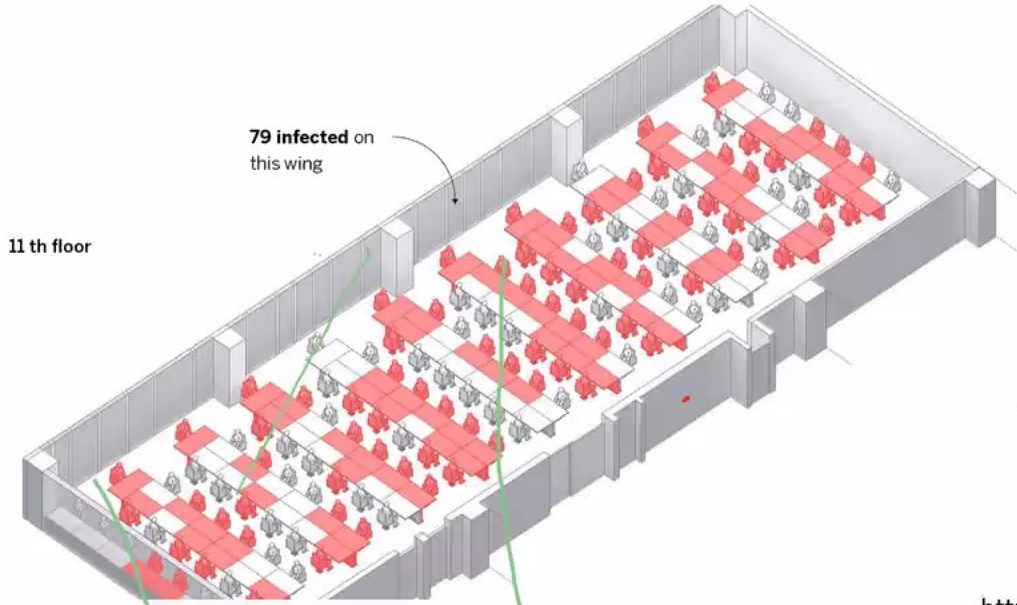
https://english.elpais.com/society/2020-10-28/a-room-a-bar-and-a-class-how-the-coronavirus-is-spread-through-the-air.html

A call centre in Seoul, South Korea

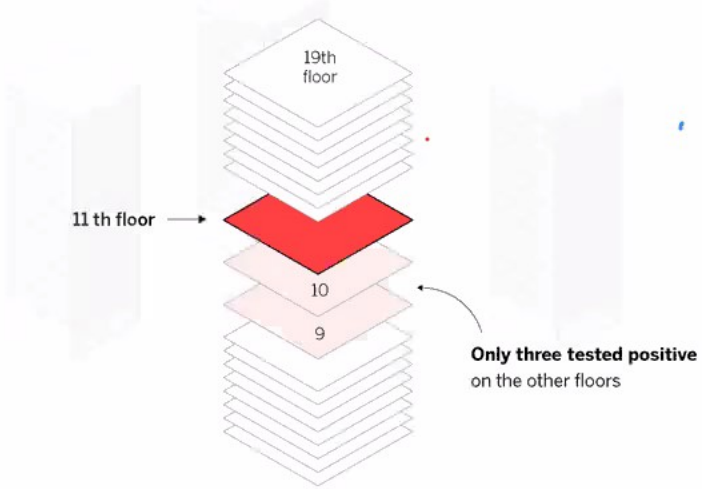


These employees were sitting inside an enclosed space with 137 workers.



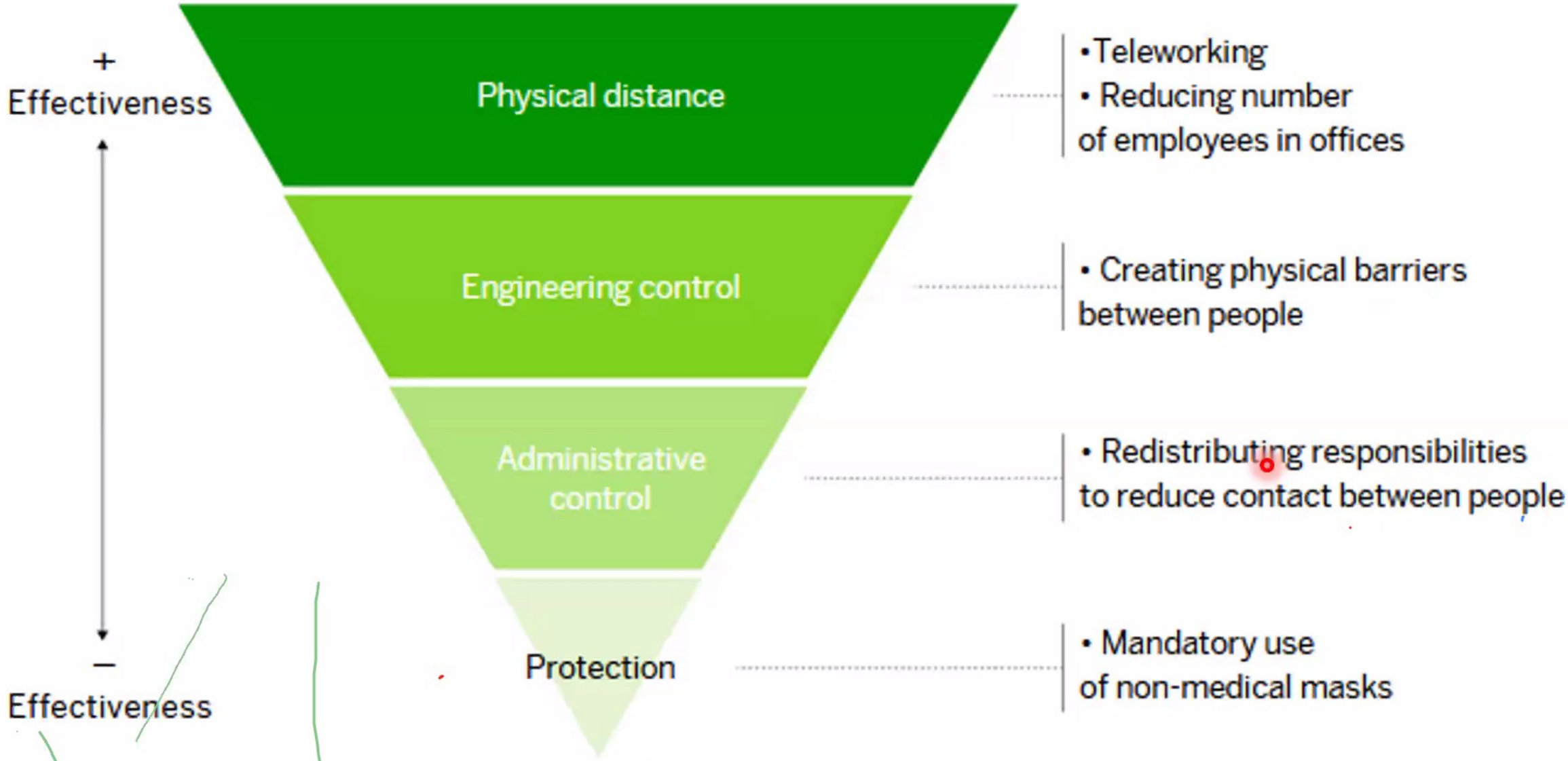


Out of these 137 employees, 79 (57.6%) tested positive. The permanent contact within the same space over a prolonged period of time played a crucial role.



In the rest of the building, only three people tested positive out of 927 who underwent checks (0.3%) despite the fact they shared lobbies, elevators and other communal areas.

https://english.elpais.com/spanish_news/2020-06-17/an-analysis-of-three-covid-19-outbreaks-how-they-happened-and-how-they-can-be-avoided.html?rel=mas



https://english.elpais.com/spanish_news/2020-06-17/an-analysis-of-three-covid-19-outbreaks-how-they-happened-and-how-they-can-be-avoided.html?rel=mas

- Virus was highly stable at low temperatures
- Sensitive to heat, with inactivation of the virus in 5 minutes at 70 °C
- Susceptible to common disinfectants
- Environmental contamination found in dining utensils, high touch surfaces, toilets
- Very few studies have assessed for presence of replication competent virus

Table 1. Review of Studies Assessing Viral RNA on Surfaces and in Air Samples

Setting	Findings	Viable Virus Assessed?	Reference
Quarantine hotel room (China)	Viral RNA found on 8 of 22 surfaces with high cycle thresholds in rooms of 2 presymptomatic individuals	Not assessed	3
Chopsticks (Hong Kong)	Viral RNA found on chopsticks at levels several logs lower than in respiratory tracts of 5 patients	Not assessed	4
Microbiology laboratory (Spain)	4 of 22 high-touch surfaces positive, all with cycle thresholds >30	Not assessed	7
Laboratory (China)	No samples positive by standard PCR techniques; 13 of 61 high-touch surfaces positive by droplet digital PCR, indicating very low levels of viral RNA	Not assessed	8
Hospital (China)	25% of 200 surfaces positive, high-touch surfaces most likely to be positive; 0 of 44 air samples positive	Not assessed	9
Hospital (Iran)	0 of 10 air samples measured 2–5 m from patients were positive for viral RNA	Not assessed	10
Hospital (Nebraska)	>70% of surfaces in patient rooms positive for viral RNA	Assessed/no viable virus detected	11
Hospital (Italy)	2 of 26 samples positive (both from CPAP helmets) with very low viral loads	Not assessed	12
Hospital (Wuhan, China)	0 of 90 surfaces positive after sanitization	Not assessed	13
Hospital (Singapore)	Surfaces positive before but not after sanitization; no air samples positive	Not assessed	14
Hospital (Hong Kong)	Extensive air sampling at close range (10 cm from chin) showed no positive air samples; viral RNA found in saliva and on surfaces	Not assessed	15
Hospitals (Wuhan)	Very low/undetectable levels in patient areas; detectable RNA in aerosols in poorly ventilated PPE removal areas that cleared with improved sanitization/ventilation	Not assessed	16
Hospitals (Wuhan)	Surfaces and air up to 4 m from patients frequently positive for viral RNA	Not assessed	17
Hospital (Milan, Italy)	High-touch surfaces and air samples positive for RNA in patient areas but not clean areas	Not assessed	18
Hospital (London, England)	Surfaces and air samples frequently positive for viral RNA at high cycle thresholds >30; more likely to be positive in areas closer to patients with COVID-19	Assessed/no viable virus	19
Hospital (Florida)	Viable virus isolated from 2 patients with COVID-19 from air samples collected 2–4.8 m away (no cycle threshold reported for either patient), with extremely low viral concentrations of 0.006–0.074 $TCID_{50}$ units/mL air	Assessed/viable virus detected	6
Hospital (Nebraska)	Air samples were taken around 6 patients with COVID-19 (no cycle threshold for patients and no distance at which air samples were taken reported), and an aerodynamic particle sizer spectrometer measured and separated air particles; viral growth confirmed from particles <1 μm and 1–4 μm in size	Assessed/viable virus detected	5
Radiation oncology clinic (New Jersey)	0/128 environmental surface samples were positive for SARS-CoV-2 RNA before they were cleaned and disinfected	Not assessed	20
Ferryboat, nursing home, and COVID-19 isolation ward (Greece)	SARS-CoV-2 RNA was detected on a variety of environmental surfaces, including an air conditioning filter and ventilation duct and in 1/12 air samples tested during an outbreak	Not assessed	21

COVID-19 = coronavirus disease 2019; CPAP = continuous positive airway pressure; PCR = polymerase chain reaction; PPE = personal protective equipment; SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2; $TCID_{50}$ = median tissue concentration infectious dose.

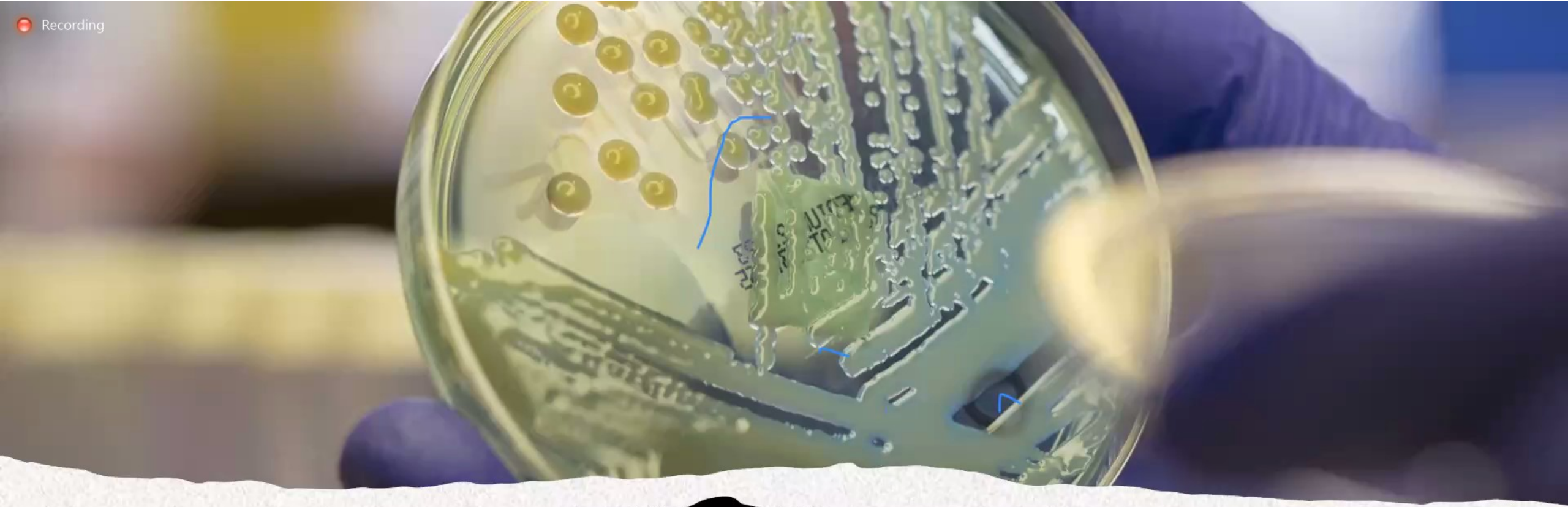
Role of direct contact and fomites

No direct evidence yet

Contact investigations have pointed to a possibility of getting infected while using e.g. elevators, restrooms

Viral load of live virus transiently found in public places is low

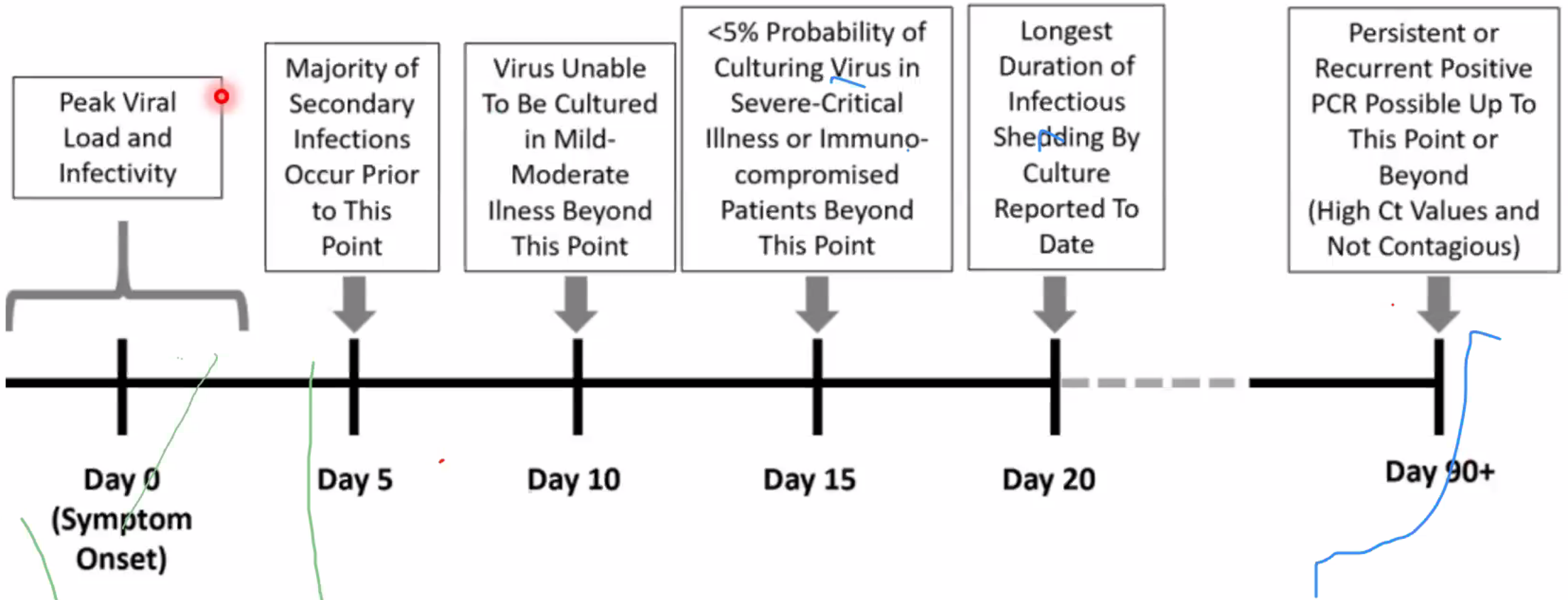
Unlikely efficient mode of transmission



Infective Period

Duration of SARS-CoV-2 Infectivity: When is it Safe to Discontinue Isolation?

Chanu Rhee MD, MPH[1,2,3], Sanjat Kanjilal[1,2], Meghan Baker MD, ScD[1,2,3],
Michael Klompas MD, MPH[1,2,3]



Discharge criteria

a. **Person with COVID-19 who have symptoms:**

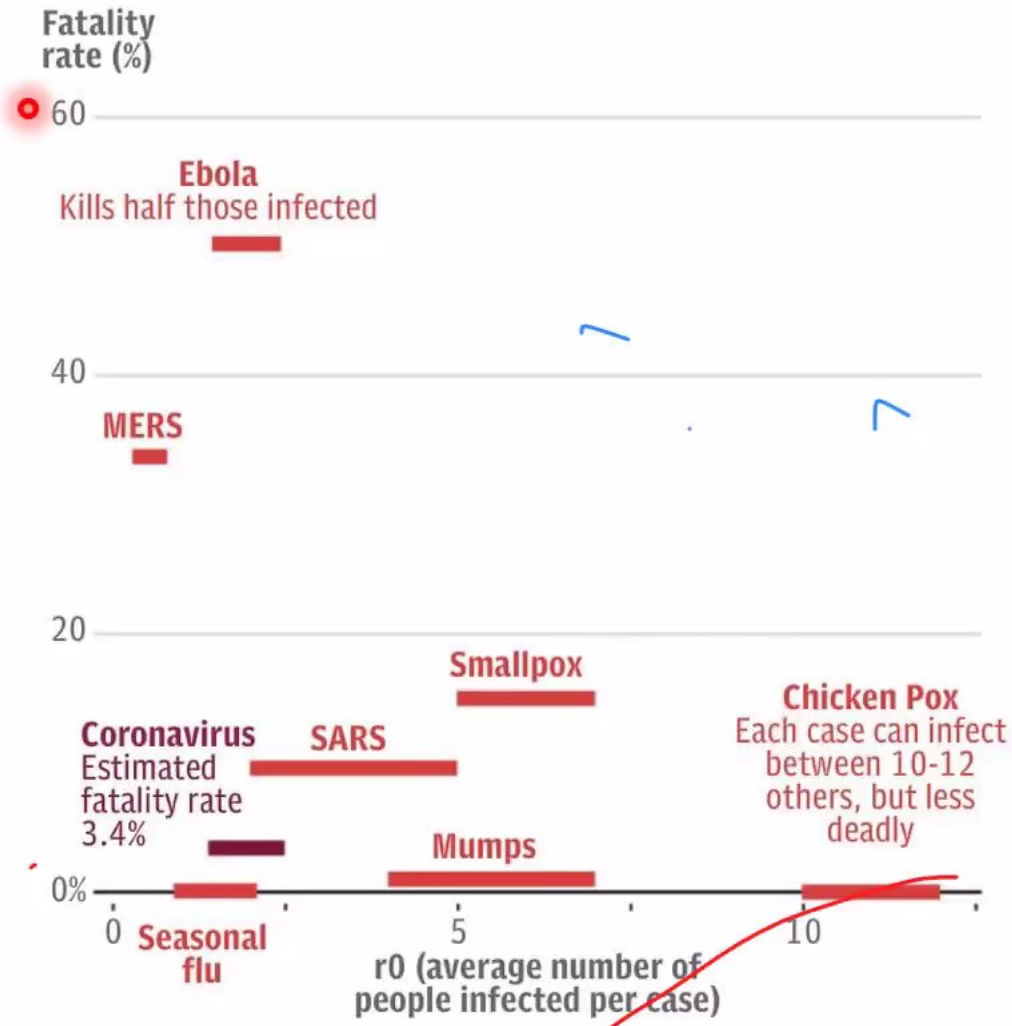
At least 10 days have passed since symptom onset
And
At least 24 hours have passed since resolution of fever without the use of fever-reducing medications
And
Other symptoms such as dyspnoea, cough have improved

b. **Person infected with SARS-CoV-2 who never develop COVID-19 symptoms:**

Maybe discharged 10 days after the date of their first positive RT-PCR test for SARS-CoV-2

How does it compare to other diseases?

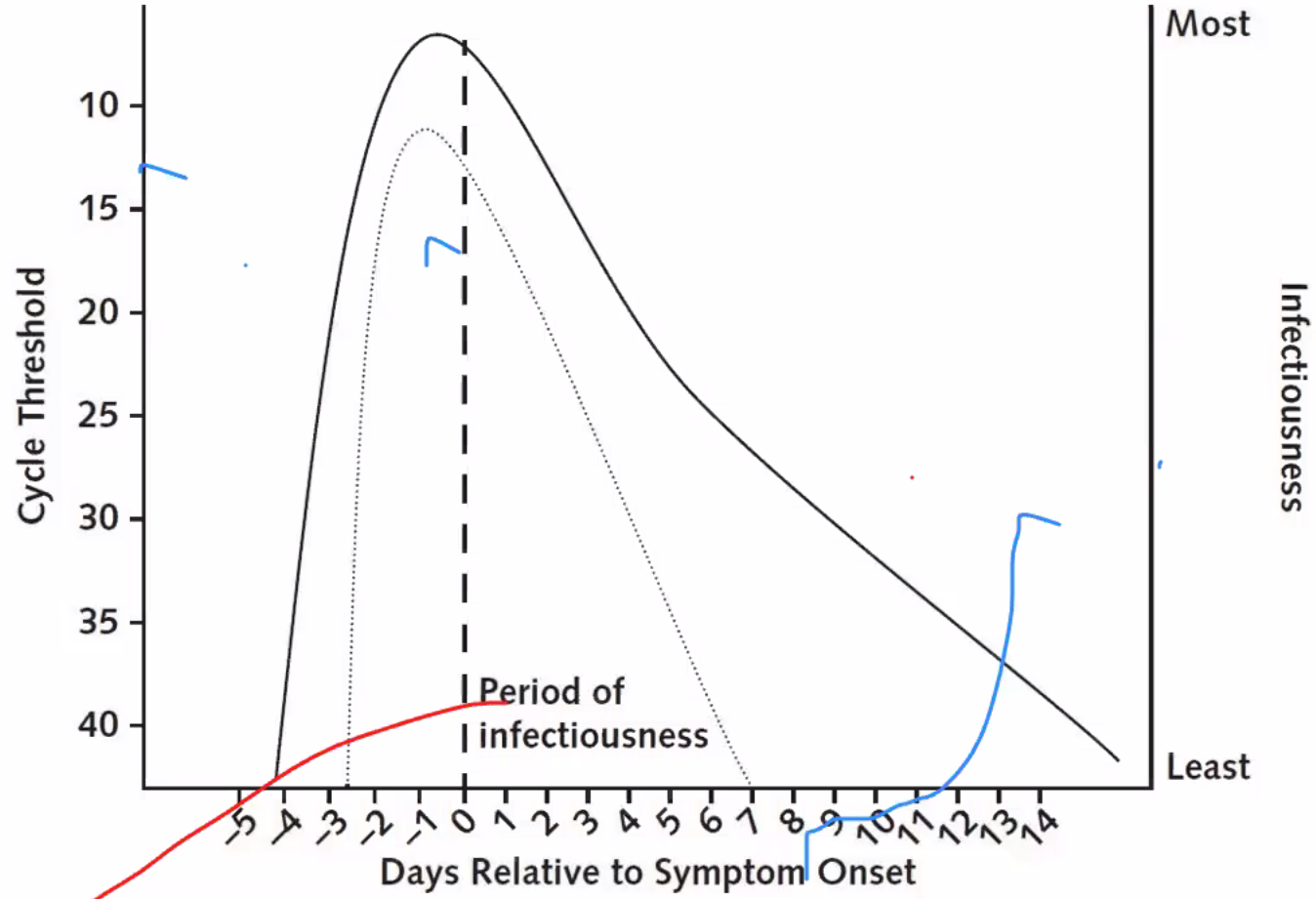
Average reproductive rate (r0) of infectious diseases and their fatality rate



SOURCE: WHO ESTIMATES/ RCBI STUDIES

Symptoms and Period of infectiousness

- Pre-symptomatic & symptomatic
- 44 – 70% of transmission occurs during pre-symptomatic period



Morbidity and Mortality Weekly Report

Transmission of SARS-COV-2 Infections in Households — Tennessee and Wisconsin, April–September 2020

Carlos G. Grijalva, MD[1,*]; Melissa A. Rolfes, PhD[2,*]; Yuwei Zhu, MD[1]; Huong Q. McLean, PhD[3]; Kayla E. Hanson, MPH[3]; Edward A. Belongia, MD[3]; Natasha B. Halasa, MD[1]; Ahra Kim, MPH[1]; Carrie Reed, DSc[2]; Alicia M. Fry, MD[2]; H. Keipp Talbot, MD[1]

MMWR / November 6, 2020 / Vol. 69 / No. 44

75% of infections identified within 5 days of the index patient's illness onset

KETUA PENGARAH KESIHATAN MALAYSIA
DIRECTOR GENERAL OF HEALTH MALAYSIA
Kementerian Kesihatan Malaysia
Aras 12, Blok E7, Kompleks E ,
Pusat Pentadbiran Kerajaan Persekutuan
62590 PUTRAJAYA

Tel: 03-8000 8000
Faks: 03-8889 5542
Email: anhisham@moh.gov.my

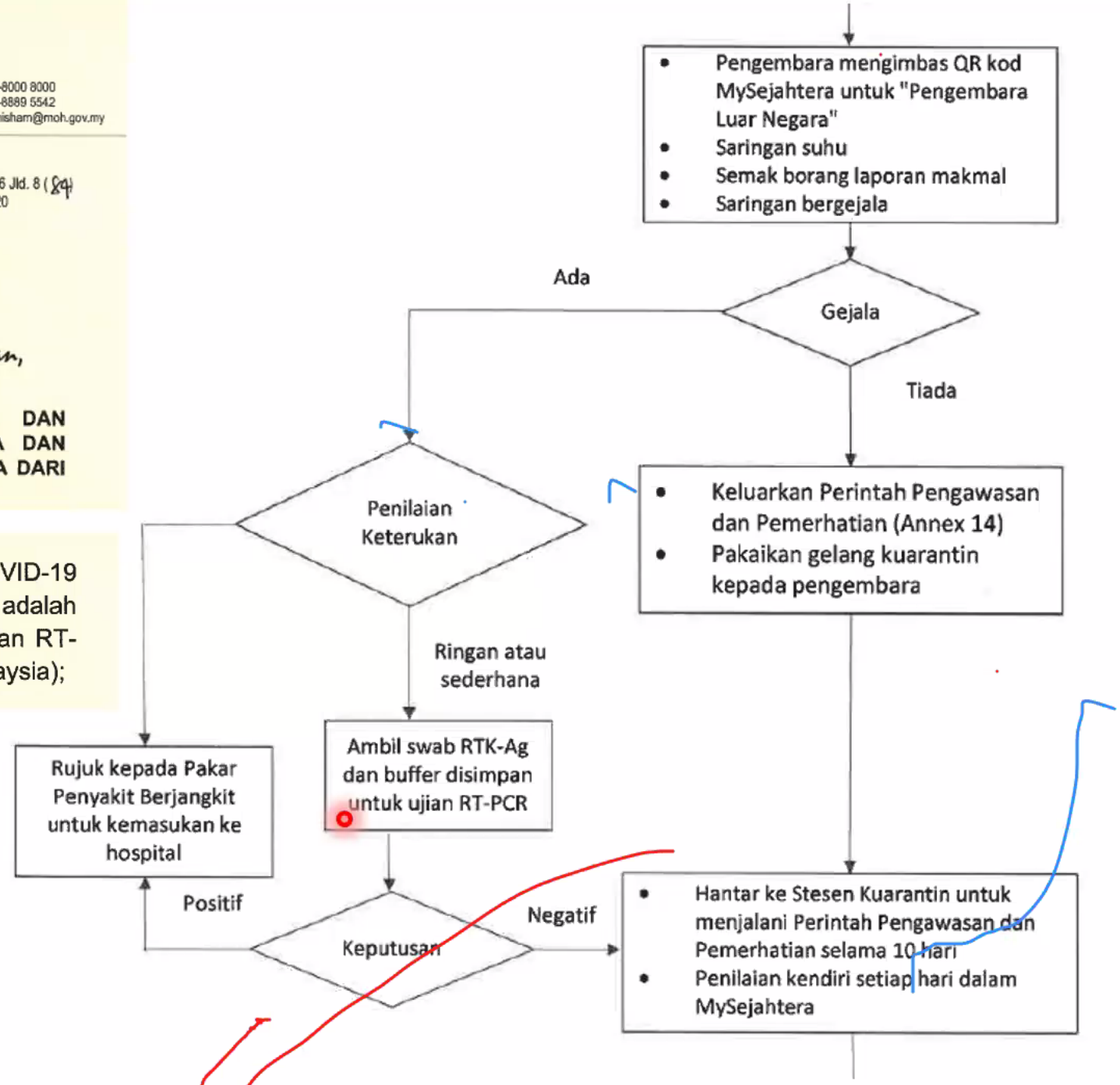
Ruj. Tuan :
Ruj. Kami : KKM.600-29/4/146 Jld. 8 (84)
Tarikh : 14 Disember 2020

Senarai Edaran

YBhg. Datuk / Dato' Indera / Dato' / Datin / Tuan / Puan,

PROSES SARINGAN KESIHATAN, UJIAN COVID-19 DAN KUARANTIN KEPADA PENGEMBARA WARGA NEGARA DAN BUKAN WARGA NEGARA YANG BARU TIBA DI MALAYSIA DARI LUAR NEGARA

i. Memastikan keputusan ujian pengesanan RT-PCR COVID-19 yang dibawa oleh pengembara semasa ketibaan adalah negatif. (Pengembara diwajibkan untuk menjalani ujian RT-PCR COVID-19 tiga (3) hari sebelum berlepas ke Malaysia);



COVID-19
#KitaMestiMenang

CARTA ALIR PENGURUSAN PENGEMBARA YANG MASUK KE MALAYSIA DARI LUAR NEGARA DENGAN KEPUTUSAN PCR COVID-19

Sebelum berlepas

- Pengembara memuat turun dan mengisi deklarasi kesihatan dalam aplikasi MySejahtera
- Jalani ujian swab RT-PCR COVID-19 dalam tempoh 3 hari sebelum berlepas

Selepas Ketibaan

1. Pengembara mengimbas QR kod MySejahtera untuk "Pengembara Luar Negara"
2. Saringan suhu dan gejala

Bergejala

Pengurusan pengembara bergejala

Tidak Bergejala

Mempunyai keputusan laporan ujian makmal COVID-19

- Kuarantin wajib **7 hari**
- Ujian swab RTK-Ag/RT-PCR pada hari ke-**5**

- Pelepasan kuarantin pada **hari ke-7**

Tidak mempunyai keputusan laporan ujian makmal COVID-19

- Ujian swab RT-PCR semasa ketibaan
- Kuarantin wajib **10 hari**
- Ujian swab RTK-Ag/RT-PCR pada **hari ke-8**

- Pelepasan kuarantin pada **hari ke-10**

- Teruskan penilaian kendiri sehingga **hari ke-14**

Putuskan Rantaian COVID-19

Kementerian Kesihatan Malaysia

MyHEALTH

MYHEALTHKKM

SCAN ME

Bersama Hentikan Wabak COVID-19

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COVID-19
#KitaMestiMenang

PENGURUSAN PENGEMBARA YANG MASUK KE MALAYSIA DARI LUAR NEGARA BERMULA 14 DISEMBER 2020

Kementerian Kesihatan Malaysia

KETIBAAN

H1 H2 H3 H1 H2 H3 H4 H5 H6 H7 H8 H9 H10 H11 H12 H13 H14

Situasi Pertama

Ujian Swab RT-PCR → Kuarantin (Swab) → Tamat → Teruskan Penilaian Kendiri

Situasi Kedua

Tiada Ujian Swab RT-PCR → Swab → Kuarantin (Swab) → Tamat → Teruskan Penilaian Kendiri

MyHEALTH

MYHEALTHKKM

SCAN ME

Bersama Hentikan Wabak COVID-19

Unmute
Start Video
924
Participants
1
Chat
Share Screen
Record
Reactions
Leave

Planned day after which quarantine is completed and can be discontinued	Residual post-quarantine transmission risk (%) with and without diagnostic testing of a specimen within 48 hours before time of planned discontinuation of quarantine					
	No testing		RT-PCR testing		Antigen testing	
	Median	Range	Median	Range	Median	Range
7	10.7	10.3-22.1	4.0	2.3-8.6	5.5	3.1-11.9
10	1.4	0.1-10.6	0.3	0.0-2.4	1.1	0.1-9.5
14	0.1	0.0-3.0	0.0	0.0-1.2	0.1	0.0-2.9

Recording

Covid19 PCR+ vs Infective

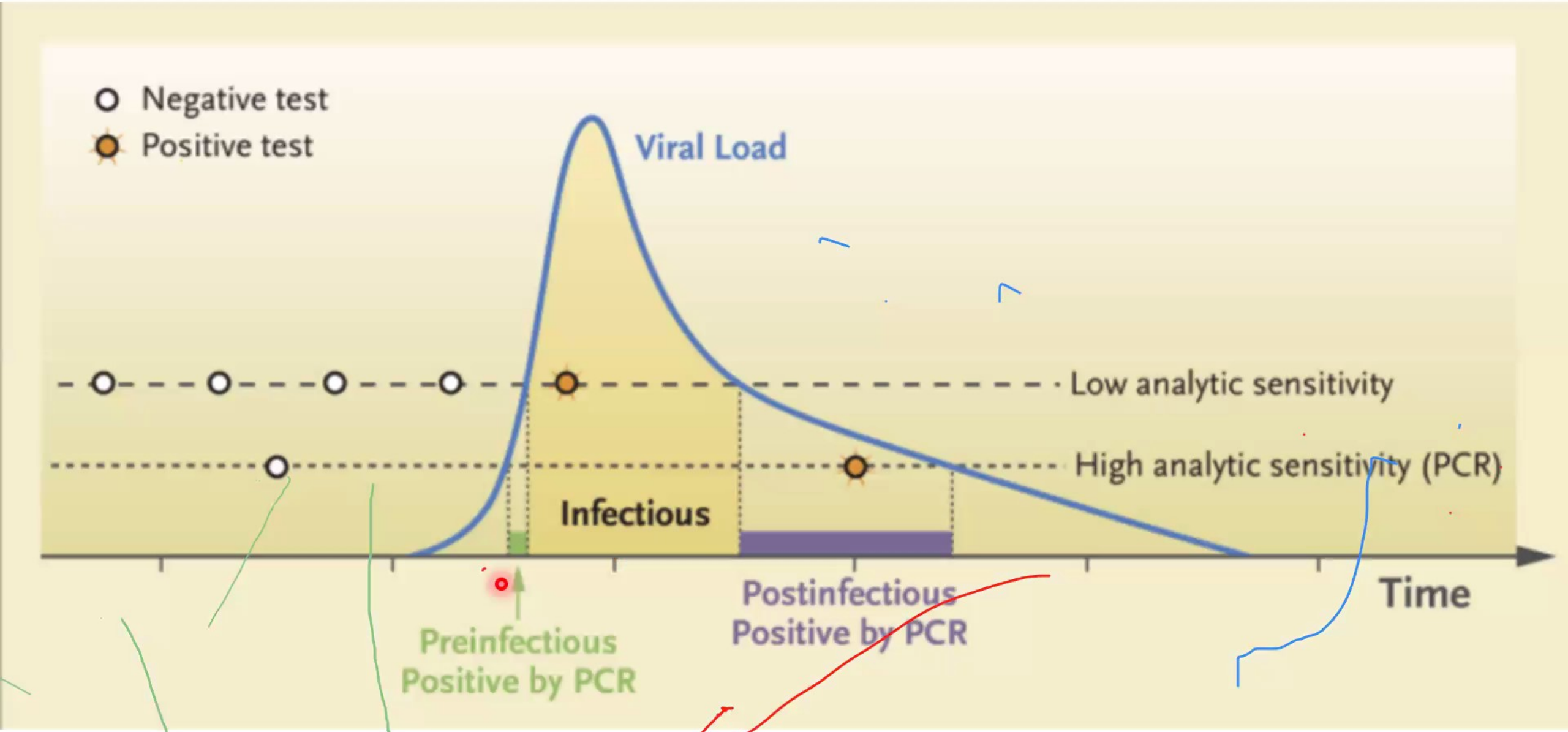
Infectivity

- 90 PCR samples grown in Vero cells and 28.9% demonstrated viral growth
- **No growth in samples if CT value > 24 or Day of illness >8**

- The probability of obtaining a **positive viral culture peaked on day 3** and decreased from that point.

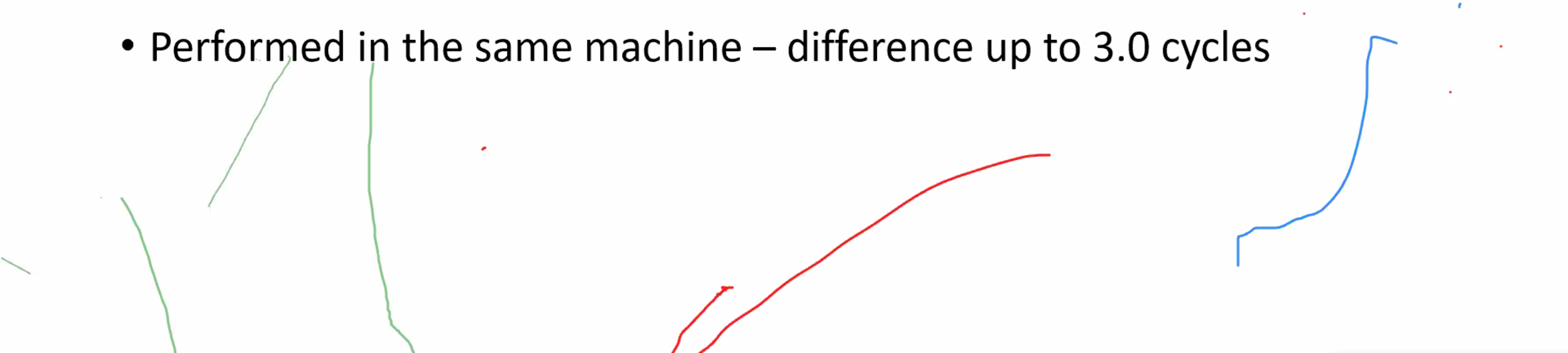
- For every **1 unit increase in CT value** – OR for being culture positive **decreased by 32%**
- For **every day increase in day of illness** – OR for being culture positive **decreased by 37%**

Bullard J, Dust K, Funk D, Strong JE, Alexander D, Garnett L, et al. Predicting infectious SARS-CoV-2 from diagnostic samples. Clinical Infectious Diseases. 2020 May 22;ciaa638.


Negative test
Positive test
Viral Load
Low analytic sensitivity
High analytic sensitivity (PCR)
Infectious
Time
Preinfectious
Positive by PCR
Postinfectious
Positive by PCR

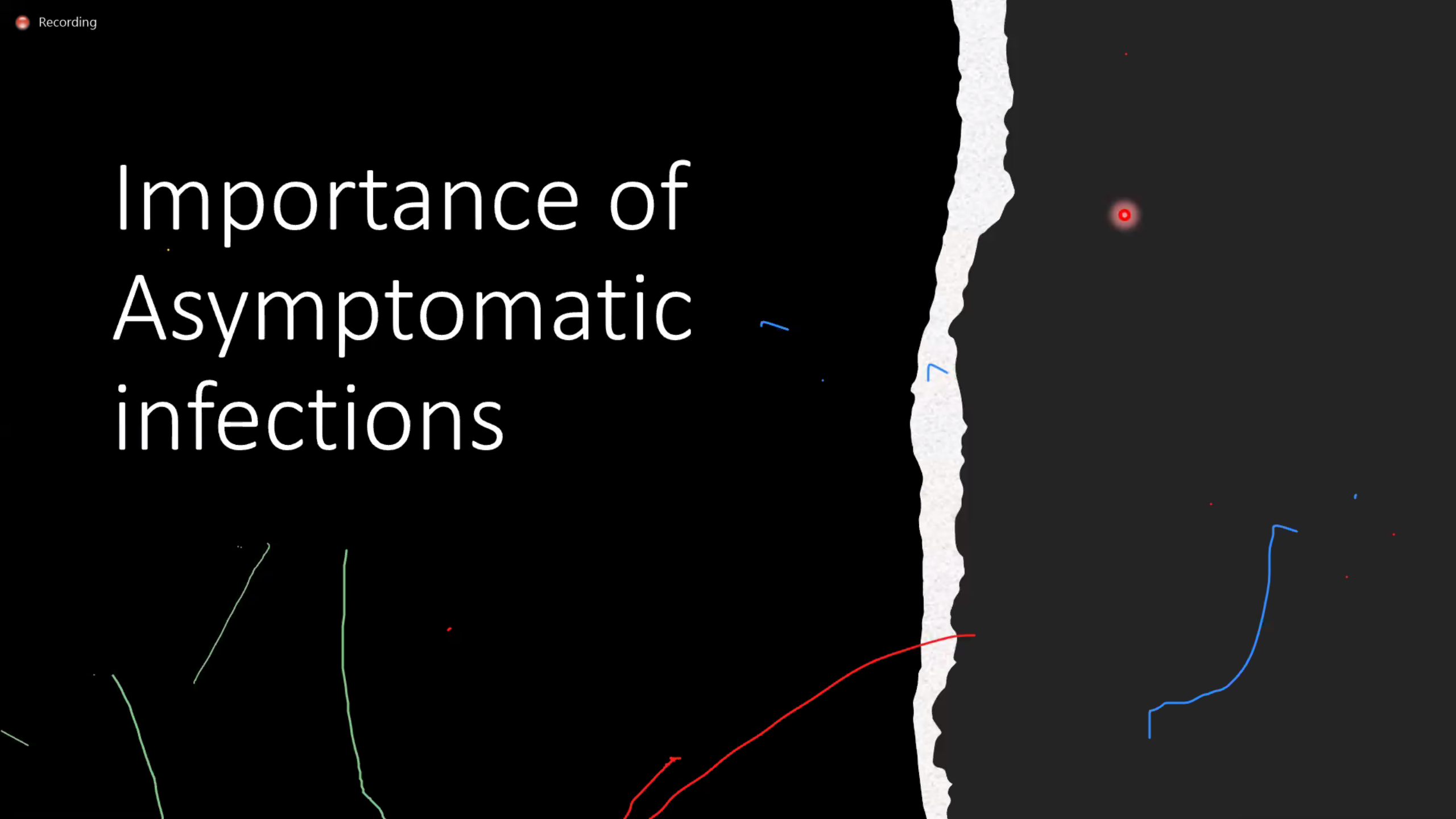
Variations in CT value

- College of American Pathologists – Proficiency test to 700 labs in US
- Reported CT values – different PCR methods - varied as much as 14 cycles
- Performed in the same machine – difference up to 3.0 cycles



Recording

Importance of Asymptomatic infections



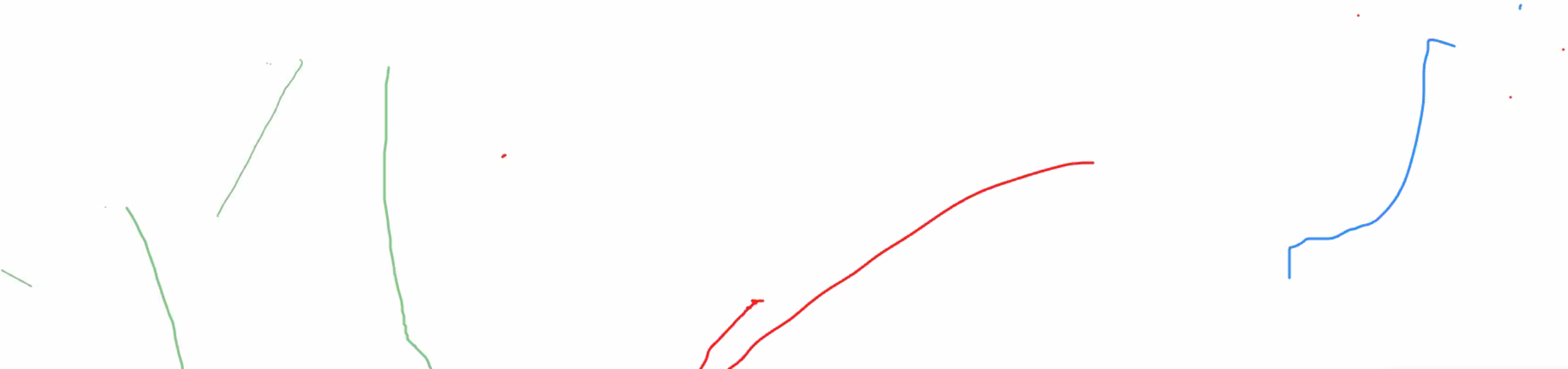
Asymptomatic infection – how common?

- Proportion of positive cases that remained asymptomatic - 17% (range 6 to 41%)
  - Byambasuren O, Cardona M, Bell K, Clark J, McLaws M-L, Glasziou P. Estimating the extent of asymptomatic COVID-19 and its potential for community transmission: Systematic review and meta-analysis. Official Journal of the Association of Medical Microbiology and Infectious Disease Canada. 2020 Dec 11;e20200030.

- Asymptomatic cases at time of testing - 25%, majority develop symptoms later on - only 8.4% remaining asymptomatic
  - Koh WC, Naing L, Roslédzana MA, Alikhan MF, Chaw L, Griffith M, et al. What do we know about SARS-CoV-2 transmission? A systematic review and meta-analysis of the secondary attack rate, serial interval, and asymptomatic infection. medRxiv. 2020:2020.05.21.20108746.

Asymptomatic infections – Viral load

- Similar viral loads in asymptomatic versus symptomatic
  - Lee S, Kim T, Lee E, Lee C, Kim H, Rhee H, et al. Clinical Course and Molecular Viral Shedding Among Asymptomatic and Symptomatic Patients With SARS-CoV-2 Infection in a Community Treatment Center in the Republic of Korea. JAMA Internal Medicine. 2020
  - Zou L, Ruan F, Huang M, Liang L, Huang H, Hong Z, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients. New England Journal of Medicine. 2020



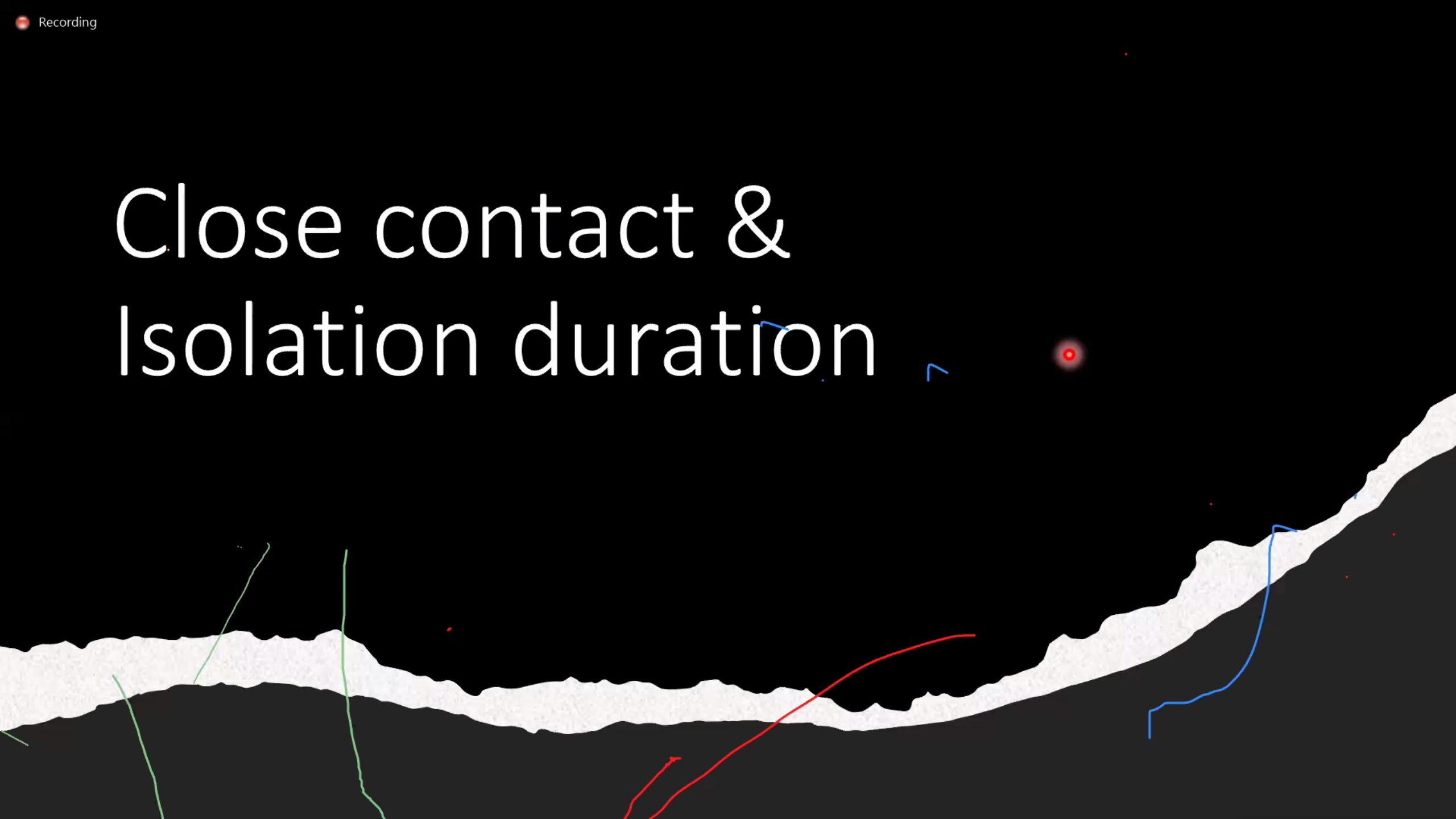
Asymptomatic – transmission risk

- The relative risk [RR] of asymptomatic transmission was 42% lower than that for symptomatic transmission (combined RR 0.58; 95% CI 0.34 to 0.99, p = 0.047)
  - Byambasuren O, Cardona M, Bell K, Clark J, McLaws M-L, Glasziou P. Estimating the extent of asymptomatic COVID-19 and its potential for community transmission: Systematic review and meta-analysis. Official Journal of the Association of Medical Microbiology and Infectious Disease Canada. 2020 Dec 11;e20200030.

- Asymptomatic people, more likely to be out in the community than isolated at home

Recording

Close contact & Isolation duration



DEFINING A CLOSE CONTACT

- Question 1: Did the contact happen during infective period?
  - 2 days before illness onset (or, for asymptomatic patients, 2 days prior to positive specimen collection) until the time the COVID-19 case is isolated
- Question 2: Was it a Close and/or prolonged contact?
  - A person having had face-to-face contact with a COVID-19 case within 1-2 metres for more than15 minutes
  - had physical contact with a COVID-19 case
  - unprotected direct contact with infectious secretions of a COVID-19 case (e.g. being coughed on)
  - exposure was in a closed environment (e.g. household, classroom, meeting room, hospital waiting room, etc.) with a COVID-19 case for more than 15 minutes
- Question 3: Was the exposure accompanied by inadequate PPE?
  - COVID -19 case or both (contact and COVID-19 case) not wearing a mask

KETUA PENGARAH KESIHATAN MALAYSIA
DIRECTOR GENERAL OF HEALTH MALAYSIA
Kementerian Kesihatan Malaysia
Aras 12, Blok E7, Kompleks E ,
Pusat Pentadbiran Kerajaan Persekutuan
62590 PUTRAJAYA

Tel: 03-8000 8000
Faks: 03-8889 5542
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Ruj. Tuan :
Ruj. Kami : KKM.600-29/4/146 Jld. 8 (85)
Tarikh : 14 Disember 2020

Senarai Edaran

YBhg. Datuk / Dato' Indera / Dato' / Datin / Tuan / Puan,

PENGURUSAN KONTAK RAPAT DI LAPANGAN

Pejabat Kesihatan Daerah (PKD)

- Arahkan PUS ke klinik bagi pengambilan swab ujian RT-PCR
- Lawat kes di rumah (pada hari pertama pengawasan)
- Keluarkan Perintah Pengawasan dan Pemerhatian (Annex 14)
- Jelaskan mengenai COVID-19 dan risikonya kepada PUS dan ahli keluarga
- Nasihatkan PUS untuk memuat turun dan mendaftar dalam aplikasi MySejahtera
- Terangkan mengenai *Home Assessment Tool* (HAT) (Annex 10)
- Lakukan pengawasan terhadap PUS selama **10 hari** (iaitu dari tarikh pendedahan terakhir kepada kes indeks) dengan menggunakan Annex 15, sama ada melalui panggilan telefon atau lawatan ke rumah. Rujuk kes yang mengalami gejala ATAU gejala bertambah teruk ke hospital.
- Semak keputusan sampel pertama; Jika positif, uruskan kes mengikut Annex 2, Garispanduan COVID-19 5/2020
- Sekiranya negatif, ambil RT-PCR pada **hari ke-8** dari tarikh pendedahan terakhir kepada kes indeks.
- Sekiranya ujian kedua positif, uruskan sebagai kes mengikut Annex 2. Sekiranya negatif, keluarkan perintah pelepasan (Annex 17) pada hari ke-10
- PUS perlu teruskan pemantauan kendiri menggunakan HAT sehingga **selesai 14 hari**

Group Isolation vs Individual Isolation

2 weeks not enough for group isolation

Repeated testing necessary

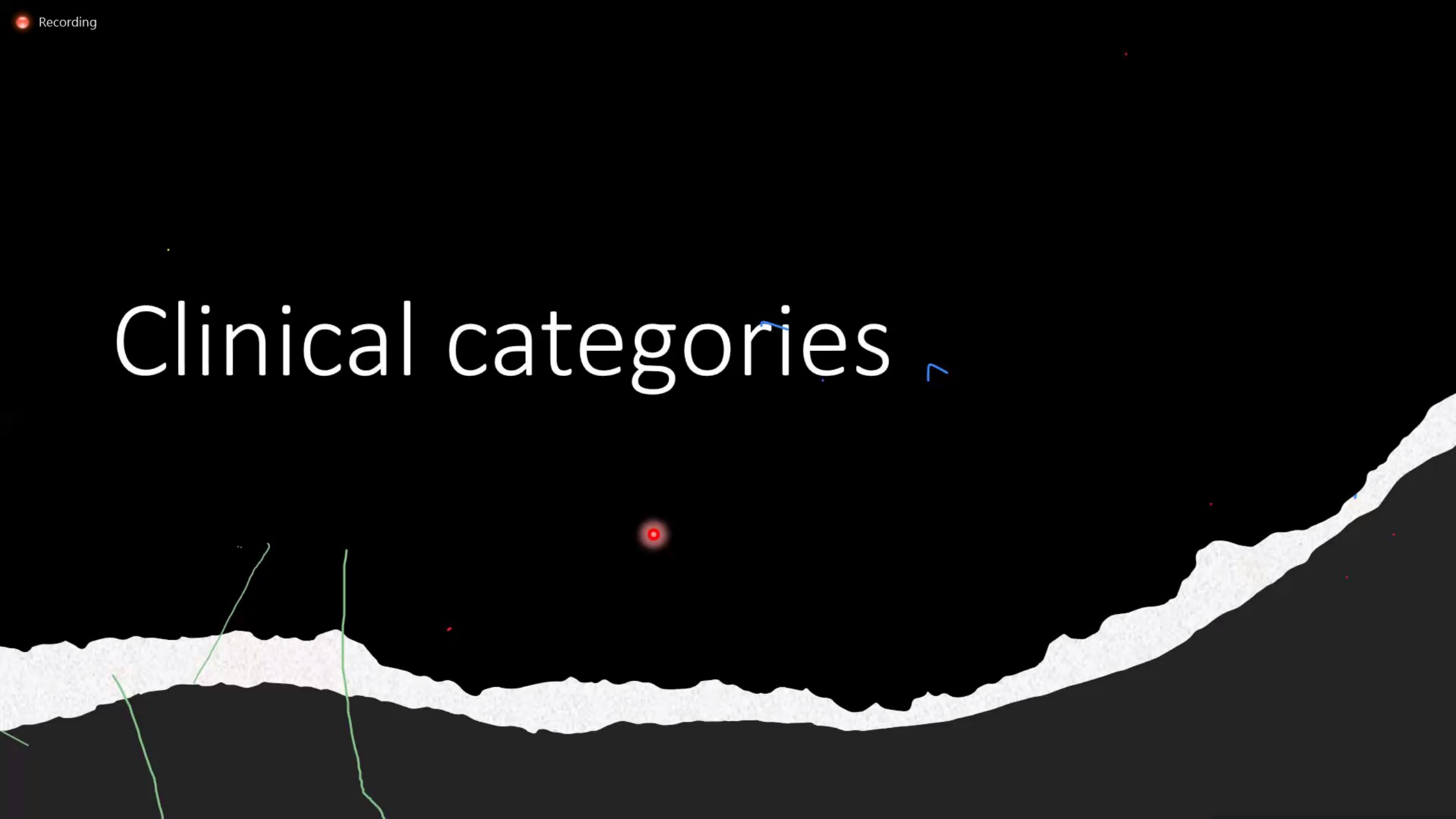
Group isolation – Military recruits

- 1848 recruits, South Carolina.
- 2-week self-quarantine period at home, followed by a 2-week supervised quarantine on a college campus
  - **16** recruits tested positive for SARS-CoV-2 **on arrival** at the quarantine campus
  - **24** subsequently tested positive on **day 7**
  - **11** tested positive on **day 14**
- Only 5 of the total 51 had history of any symptoms
- No SARS-CoV-2 infections were identified as a result of clinical testing performed because of symptom screening.

1. Letizia AG, Ramos I, Obla A, Goforth C, Weir DL, Ge Y, et al. SARS-CoV-2 Transmission among Marine Recruits during Quarantine. New England Journal of Medicine. 2020 Nov 11;0(0):null.

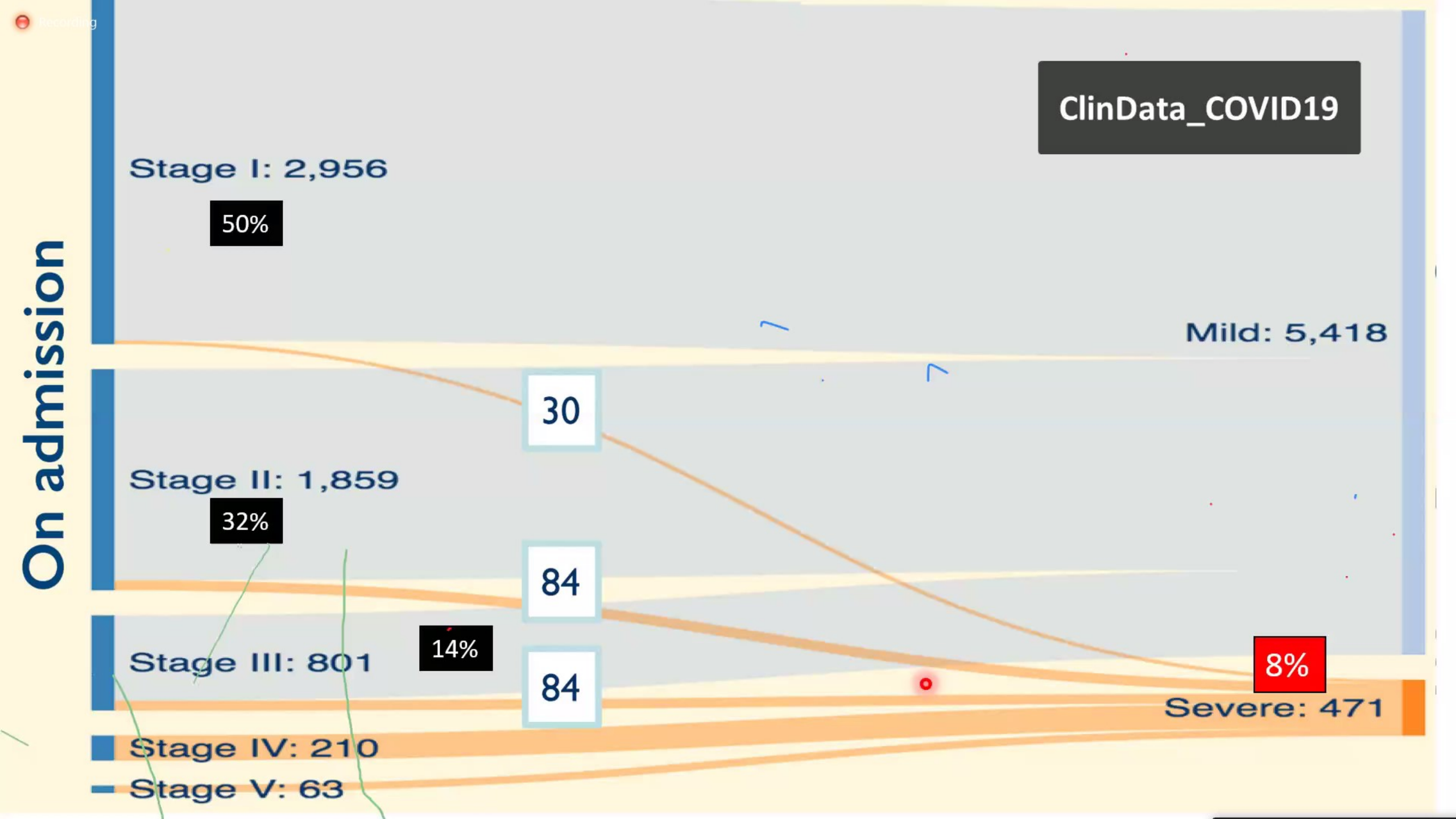
Recording

Clinical categories



Clinical categories

Clinical stage		
1	Asymptomatic	
2	Symptomatic, No Pneumonia	MILD
3	Symptomatic, Pneumonia	
4	Symptomatic, Pneumonia, Requiring supplemental oxygen	SEVERE
5	Critically ill with multiorgan involvement	


ClinData_COVID19
On admission
Stage I: 2,956
50%
Stage II: 1,859
32%
Stage III: 801
14%
Stage IV: 210
Stage V: 63
30
84
84
Mild: 5,418
8%
Severe: 471

	Stable	Worsen	Percentage %
12 - 30	2472	9	0.36%
31 - 50	1803	57	3.16%
51 - 70	1051	101	9.61%
71 +	92	31	33.70%
	5418	198	3.65%
		5616	

ClinData_COVID19

	STABLE	WORSEN	PERCENTAGE (%)
<50 without comorbid	3746	36	0.96%
<50 with comorbid	454	25	5.51%
>=50 without comorbid	551	34	6.17%
>=50 with comorbid	667	103	15.44%
Total	5418	198	3.65%
		5616	

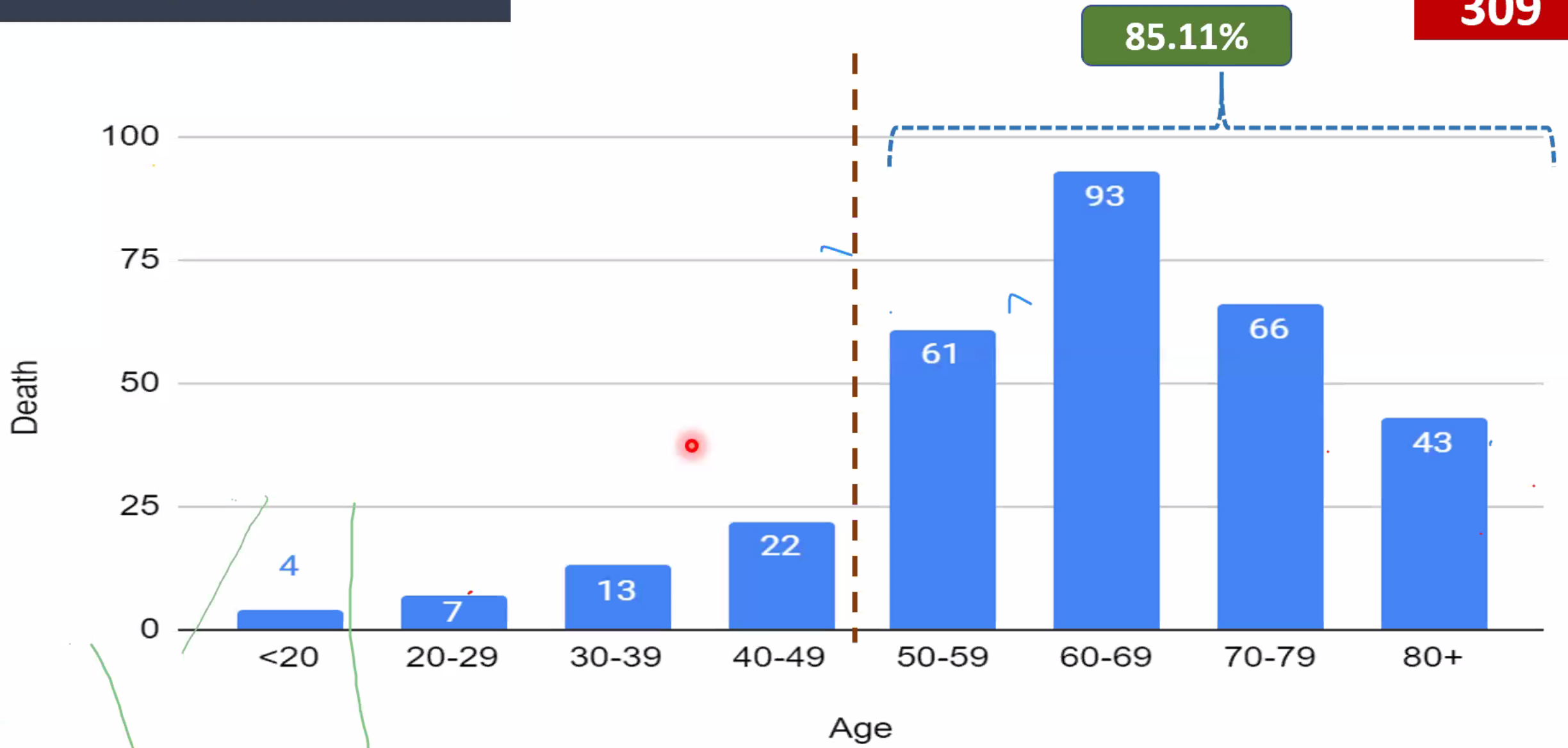
ClinData_COVID19

Recording

National Mortality by Age

15th Nov 2020

Cumulative Deaths
309



Source: National Mortality Review Committee

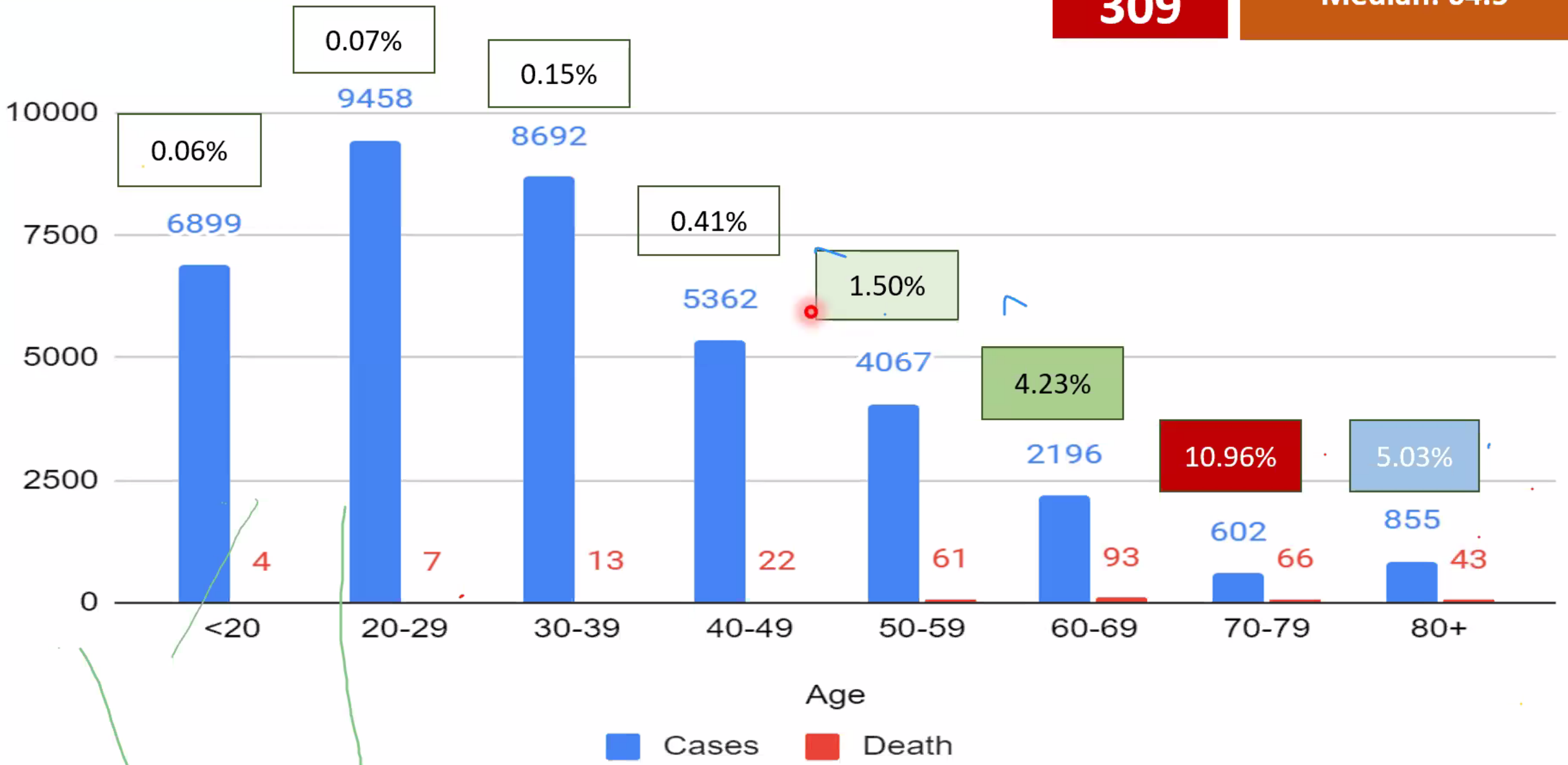
Recording

National Mortality Rate according to Age Group *

15th Nov 2020

Cumulative Deaths 309

Mean: 63.17 (±15.80)
Median: 64.5

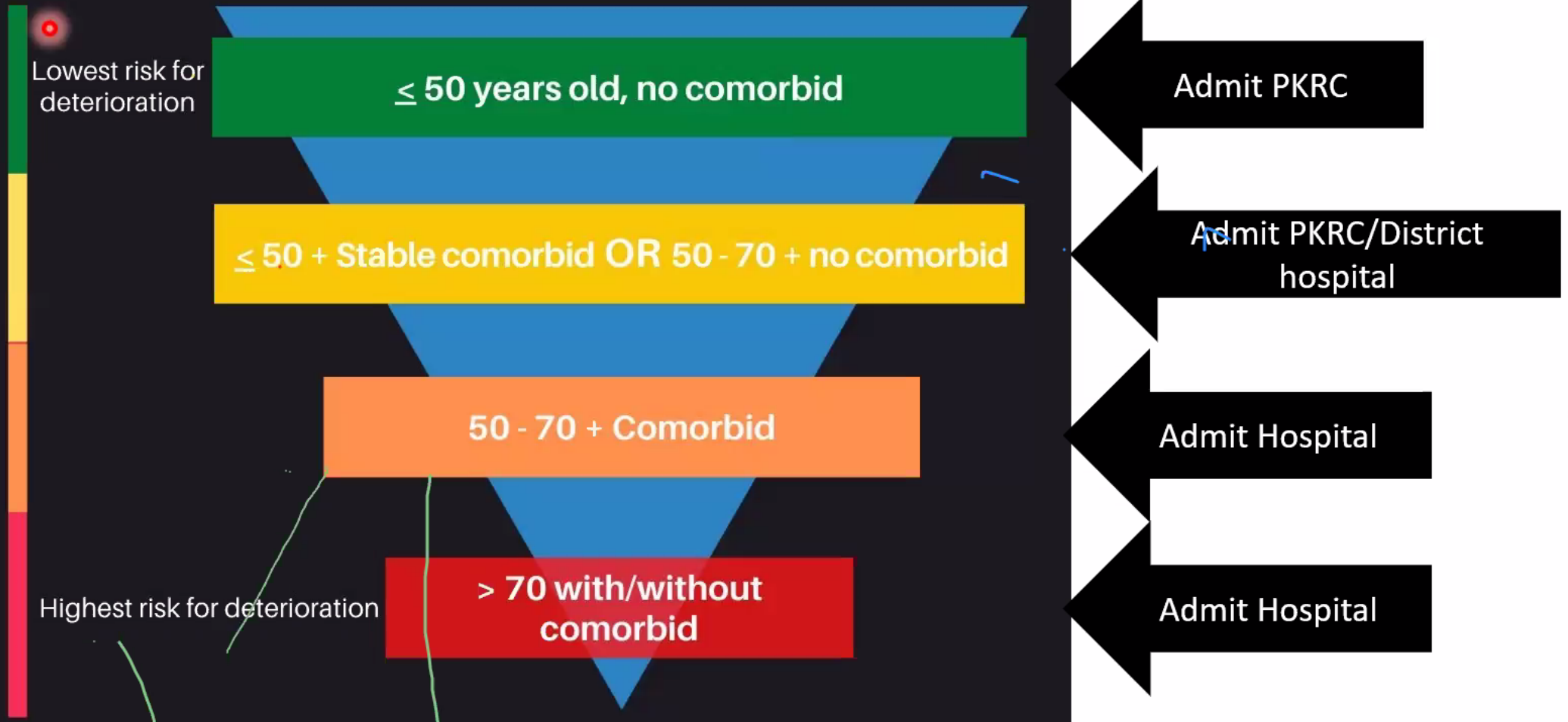


*Based on 38131 (82.52%) of the total positive COVID-19 cases (denominator).

Simplified treatment approach

Recording

RISK STRATIFICATION FOR COVID-19 PATIENTS



Admit PKRC

Admit PKRC/District hospital

Admit Hospital

Admit Hospital

Source: ClinData_COVID19 research team and Ministry of Health Malaysia's National Consensus Guidelines

Severe disease

WHO

Risk factors

- **Age > 50**
- **Chronic kidney disease**
- **History of hypertension**
- **History of cardiovascular disease**
- **Obesity (BMI ≥ 30 kg/m^2)**
- **Pre-existing pulmonary disease**
- **Diabetes with A1c > 7.6%**
- **Use of biologics**
- **History of transplant or other immunosuppression**
- **Uncontrolled HIV (viraemic or CD4 <200)**

WHEN

Day 5 – Day 10 of illness

HOW (to predict)

Warning signs

Clinical

- **Persistent or new onset fever**
- **Persistent symptoms - Lethargy/ anorexia/ cough**
- **Respiratory compromise**
  - **Exertional dyspnoea**
  - **Respiratory rate more than 25**
  - **SpO2 room air <95%**

Laboratory

- **A rising CRP value or a single CRP value of ≥50mg/l**
- **Dropping Absolute lymphocyte count (ALC),**

Radiological

- **Features of Pneumonia; multi- lobular involvement or rapidly worsening chest X-ray**

Recording

Warning signs

used to pick up those at high risk of deterioration

LOOK OUT FOR WARNING SIGNS IN COVID-19 PATIENT

SYMPTOMS

- Fever
- Exertional dyspnoea
- Persistent cough
- Persistent symptoms – lethargy, poor appetite, nausea

EXAMINATION

- RR > 25/min
- SPO2 < 95%
- Exertional hypoxia

LABORATORY

- Rising CRP / Single CRP > 5mg/dl
- Dropping ALC / Single ALC < 1
- Neutrophil / lymphocyte ratio ≥ 3.13

RADIOLOGICAL

- Features of severe pneumonia / multilobular involvement / rapidly worsening chest X-ray

Low risk group – exertional desaturation instead of CXR

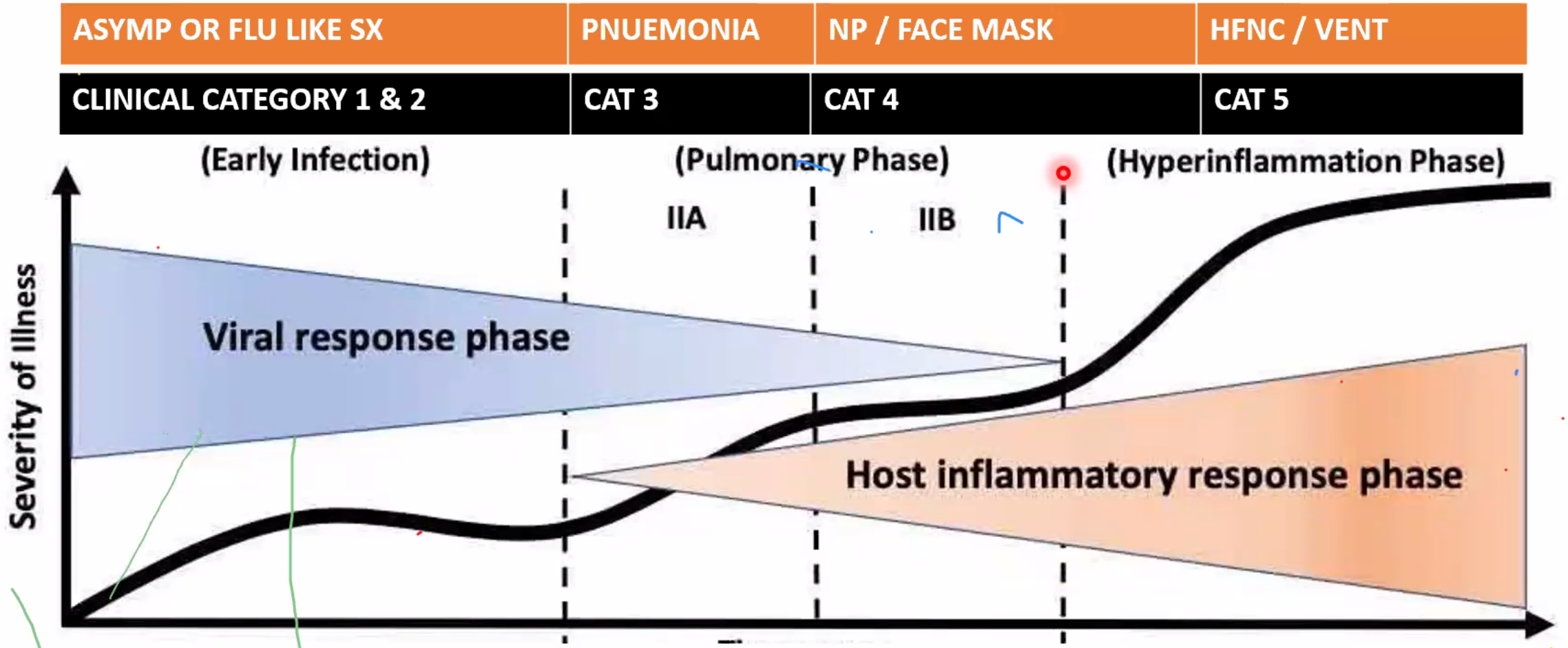
- Low risk group – Age ≤ 50, No co-morbids
- Exertional desaturation (i.e. a fall of 3% or more in pulse oximetry reading on exercise)
  - 1-minute sit-to-stand test (in which the patient goes from sit to stand as many times as they can in one minute)

https://www.cebm.net/covid-19/what-is-the-efficacy-and-safety-of-rapid-exercise-tests-for-exertional-desaturation-in-covid-19/

Recording

Medical management of covid

Natural history

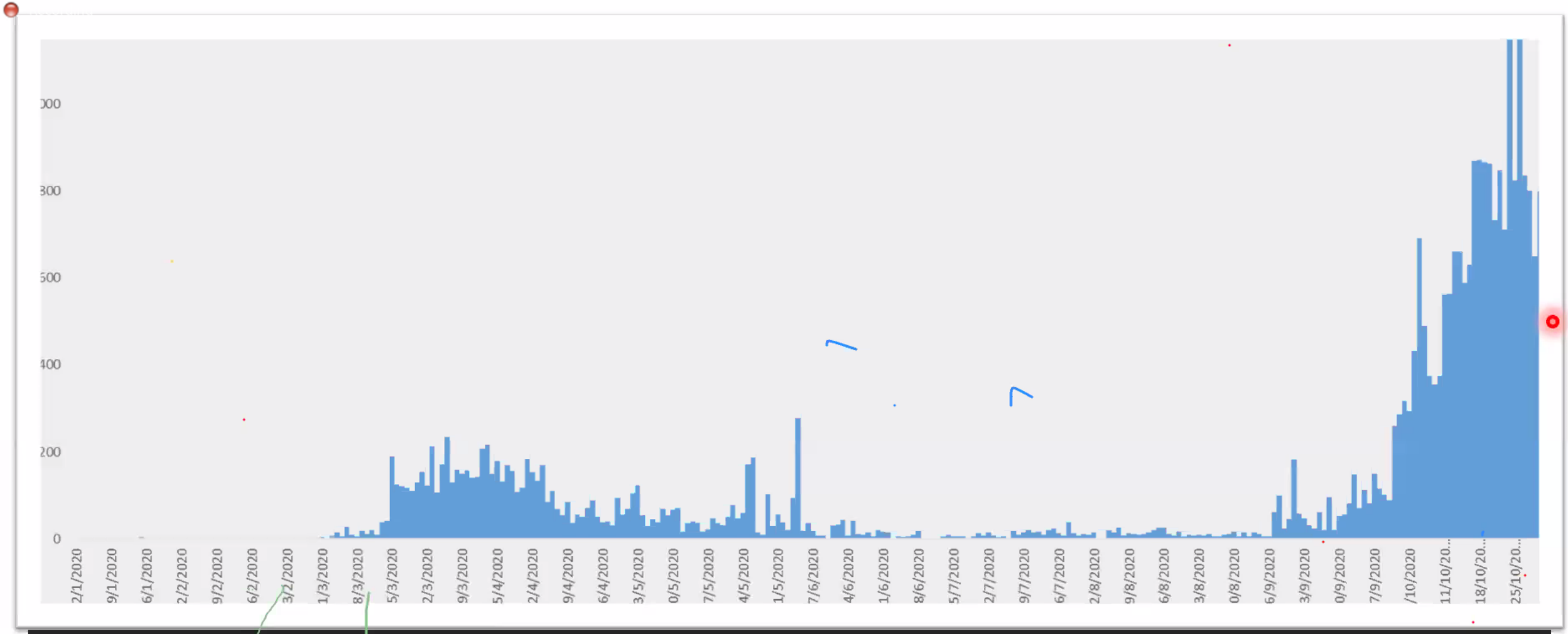


Covid-19 Treatment

Anti-coagulation - LMWH

Antiviral - Favipiravir

Steroids or other immunomodulatory agents (Tocilizumab)



When will this end?

nature human behaviour

ARTICLES

https://doi.org/10.1038/s41562-020-01009-0

Check for updates

Ranking the effectiveness of worldwide COVID-19 government interventions

Nils Haug[1,2,7], Lukas Geyrhofer[2,7], Alessandro Londei[3], Elma Dervic[1,2], Amélie Desvars-Larrive[2,4], Vittorio Loreto[2,3,5], Beate Pinior[2,4], Stefan Thurner[1,2,6] and Peter Klimek[1,2]✉

Table 1 | Comparison of effectiveness rankings on L2

L2 category	Score (%)	Consensus
Small gathering cancellation	83	4
Closure of educational institutions	73	4
Border restriction	56	4
Increased availability of PPE	51	4
Individual movement restrictions	42	4
National lockdown	25	4
Mass gathering cancellation	53	3
Educate and actively communicate with the public	48	3
The government provides assistance to vulnerable populations	41	3
Actively communicate with managers	40	3
Measures for special populations	37	3
Increase healthcare workforce	35	3
Quarantine	30	3
Activate or establish emergency response	29	3
Enhance detection system	25	3
Increase in medical supplies and equipment	25	3
Police and army interventions	23	3
Travel alert and warning	20	3
Public transport restriction	13	3
Actively communicate with healthcare professionals	11	3

Recording

Learning to live with Covid19

- Overburdened public health system
  - Foreign workers – 3 million
  - Porous borders
- Whole society approach
- Refocus on the vulnerable group
- Aim to decrease mortality
- Adopt new norms in all walks of life

Highlight ***(Updated)***

Govt to increase Covid-19 vaccine purchase to cover 60%-70% of M'sians — PM

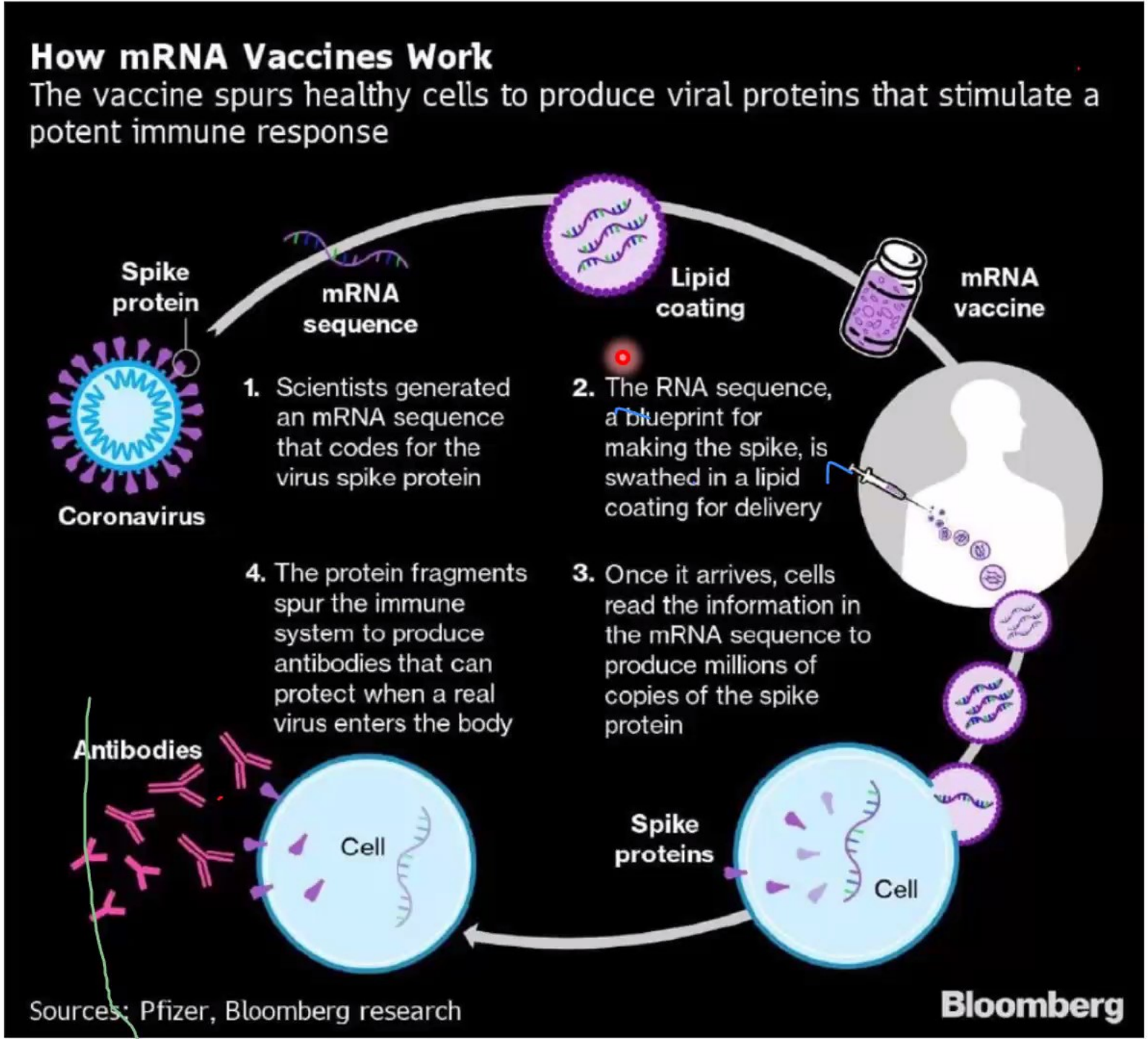
Bernama / Bernama
December 13, 2020 12:12 pm +08

KUALA LUMPUR: Some 6.4 million Malaysians are expected to be the initial recipients of the Covid-19 vaccine developed by multinational pharmaceutical corporation, Pfizer.

In this regard, 12.8 million doses of the BNT162 mRNA-based vaccine are expected to be made available, with those selected in the initial batch expected to receive two immunisation shots in 2021.

How mRNA Vaccines Work

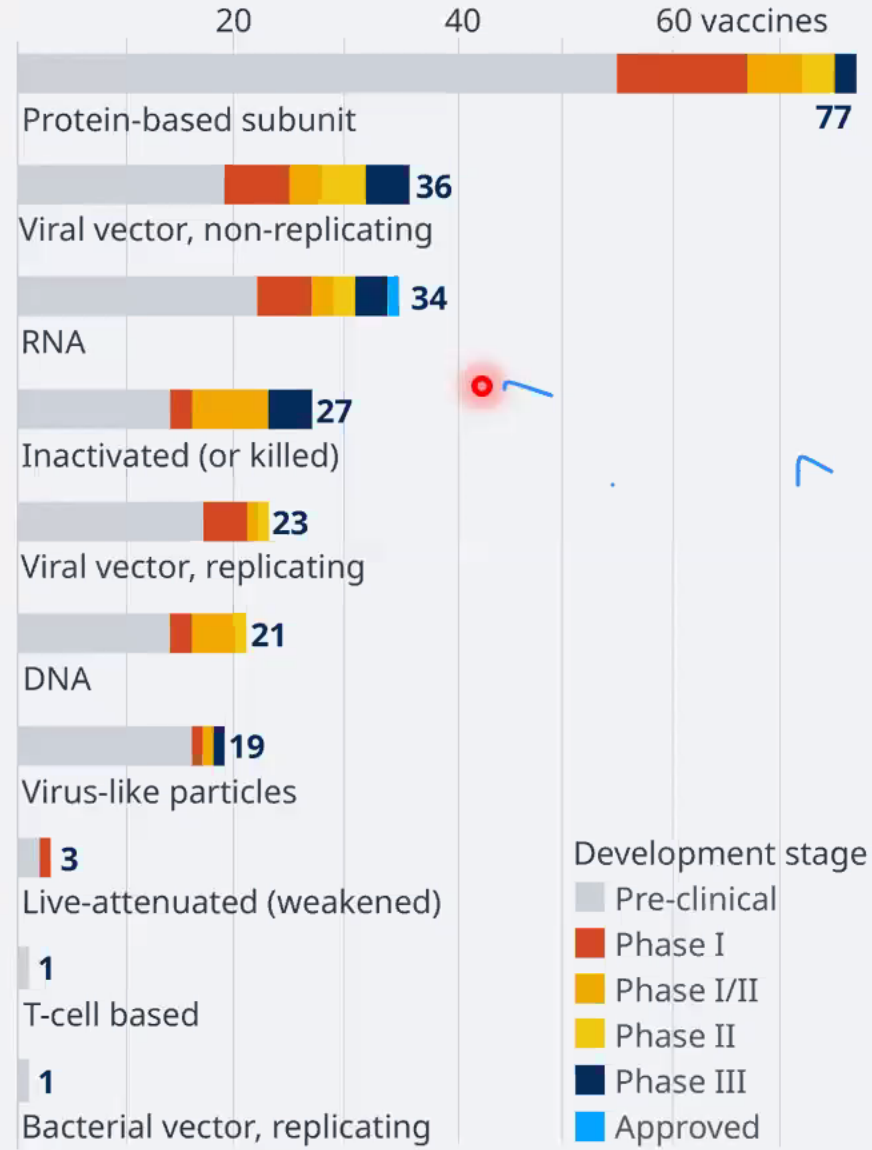
The vaccine spurs healthy cells to produce viral proteins that stimulate a potent immune response



Sources: Pfizer, Bloomberg research

Bloomberg

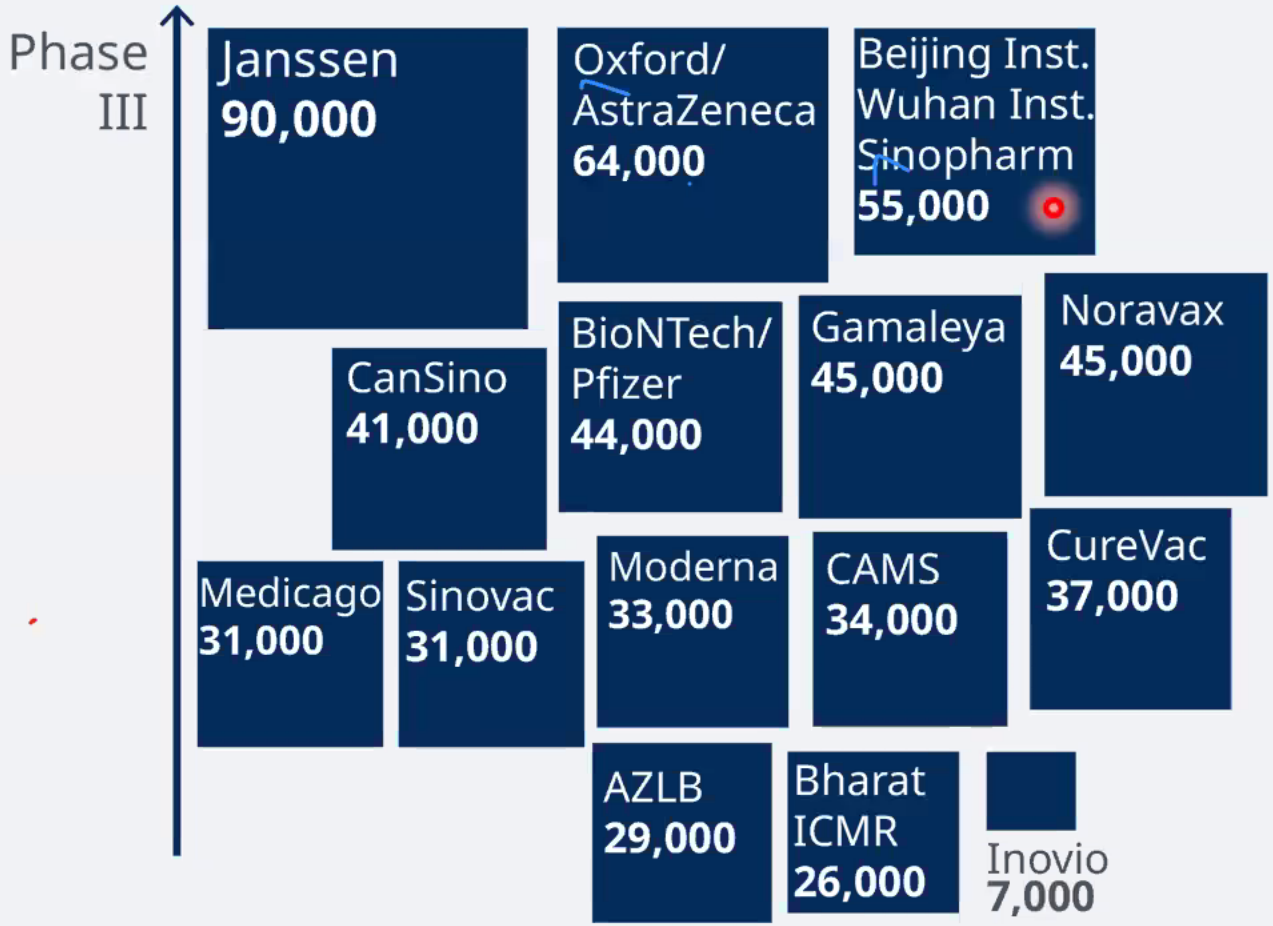
Variety of approaches among COVID-19 vaccine candidates



Source: WHO (as at 14.12.2020)

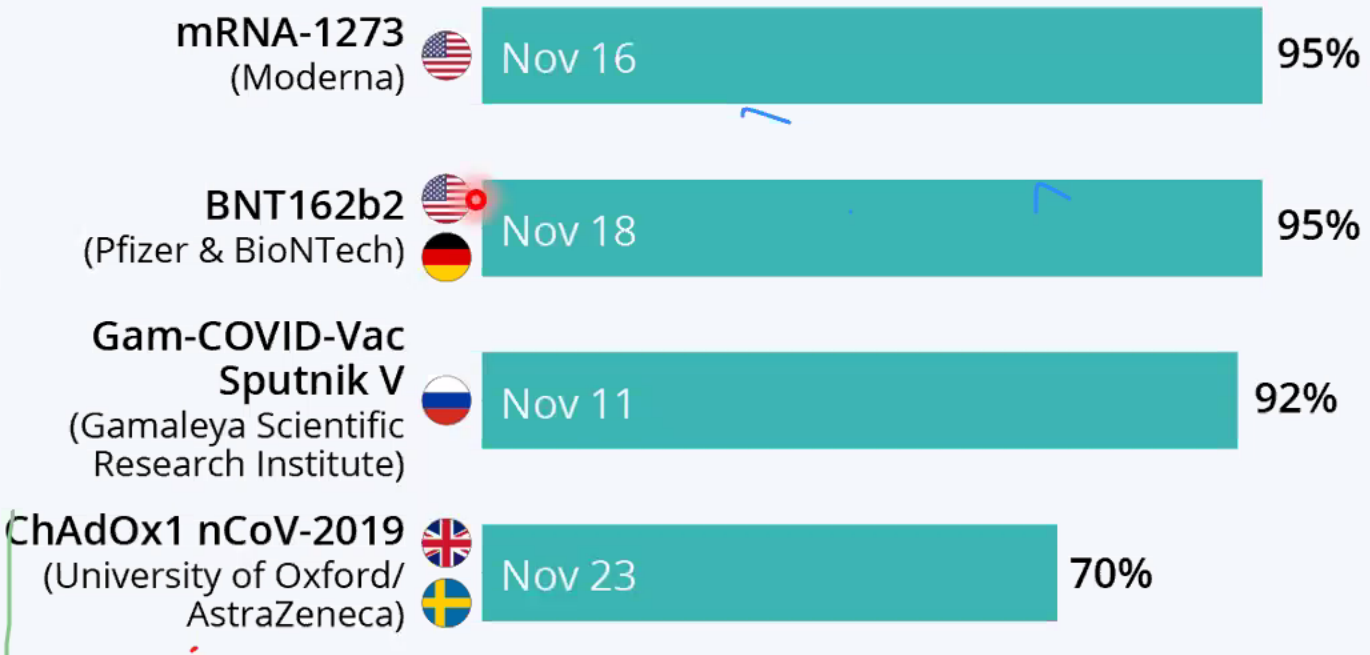
COVID-19 vaccine development: These research teams are scaling up

Each square represents one research team; size relates to the number of people in a trial



How Effective Are The Covid-19 Vaccine Candidates?

Estimated effectiveness at Covid-19 prevention based on interim data from late-stage clinical trials*



* As of Nov 23, 2020. Phase III trials for BNT162b2 are complete. Other trials are ongoing and findings have not been peer-reviewed.

Sources: Respective companies, Russian health ministry

statista

How some of the Covid-19 vaccines compare

Company	Type	Doses	How effective*	Storage
Oxford Uni-AstraZeneca	Viral vector (genetically modified virus)	x2	62-90%	Regular fridge temperature
Moderna	RNA (part of virus genetic code)	x2	95%	-20C up to 6 months
Pfizer-BioNTech	RNA	x2	95%	-70C
Gamaleya (Sputnik V)	Viral vector	x2	92%	Regular fridge temperature (in dry form)

*preliminary phase three results, not yet peer-reviewed

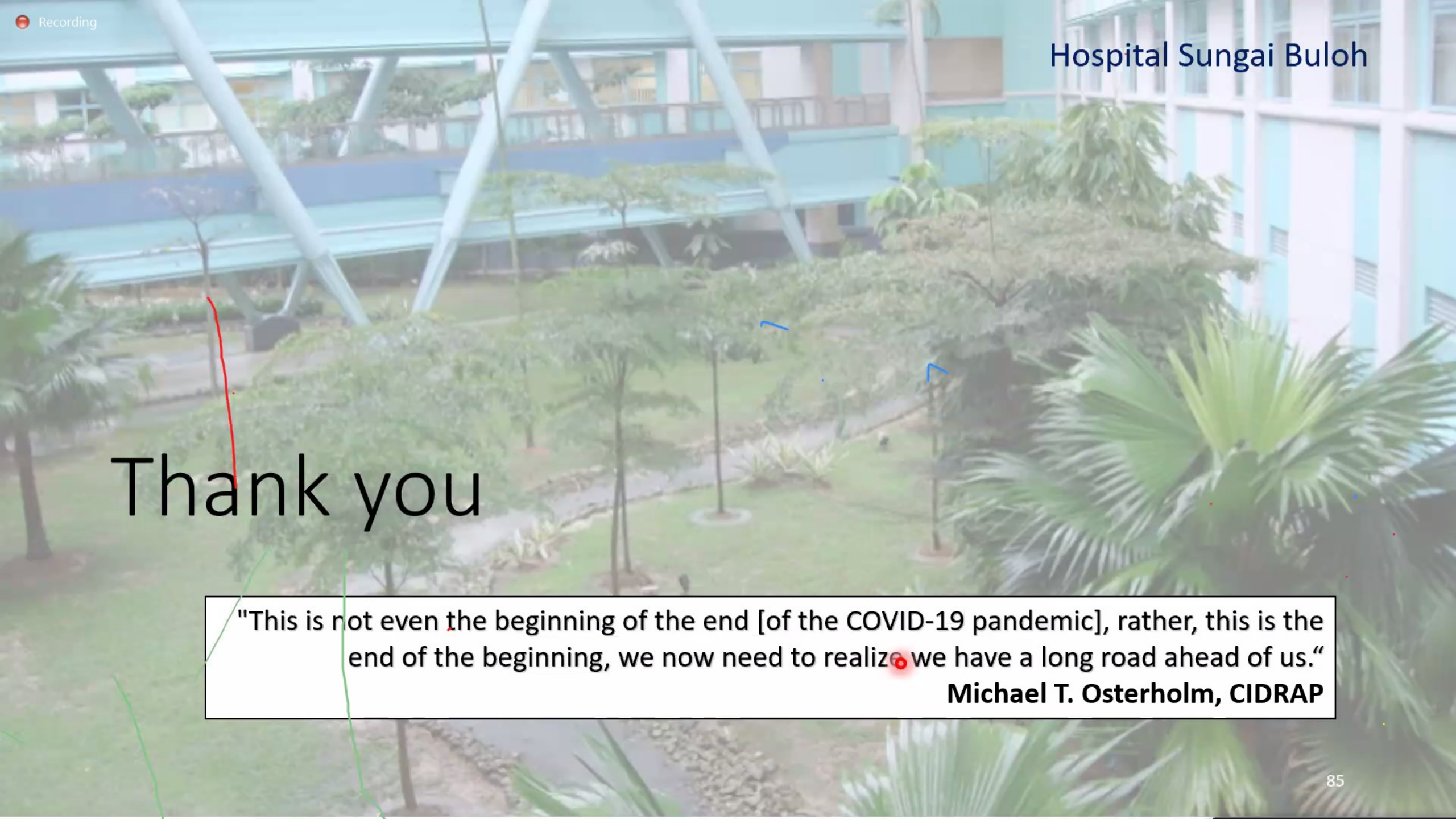
Source: Respective companies, WHO

BBC

Chinese Covid-19 vaccine has 86% efficacy, UAE says

First results released from trial of Sinopharm shot involving 31,000 people

Recording



Thank you

"This is not even the beginning of the end [of the COVID-19 pandemic], rather, this is the end of the beginning, we now need to realize we have a long road ahead of us."

Michael T. Osterholm, CIDRAP