KARYA ILMIAH

PRESENTASI ILMIAH

Waspada Covid-19 pada Anak

Oleh:

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Disampaikan pada:

Webinar: Waspada Covid-19 pada Anak

08 Mei 2020

CERTIFICATE

NO. 228 / PKB / IDI-WJ / 2020

Peserta : 3 SKP IDI, Pembicara : 8 SKP IDI, Moderator : 2 SKP IDI, Panitia : 1 SKP IDI
SK IDI Wilayah Jawa Timur

DIBERIKAN KEPADA :

dr. Muhammad Ali Shodikin, M.Kes., Sp.A

Sebagai **PEMBICARA** dalam kegiatan Webinar
dengan tema « ***WASPADA COVID-19 PADA ANAK*** »

Yang diselenggarakan pada Sesi III Webinar Fakultas Kedokteran
Universitas Jember pada hari Jumat, 8 Mei 2020

dr. Alfi Yudisianto Ketua IDI Cabang Jember	dr. Supangat, M.Kes, Ph.D., Sp.BA Dekan Fakultas Kedokteran Universitas Jember	dr. Azham Purwandhono, M.Si., Sp.N Ketua Panitia Webinar

Waspada Covid-19 pada Anak

dr. Muhammad Ali Shodikin, M.Kes., Sp.A
FK Universitas Jember / RSD. Dr. Soebandi Jember

Pendahuluan

- Wabah mulai di Wuhan, China, pada akhir tahun 2019
  - Disebabkan oleh Novel Corona Virus (NCoV)
- WHO:
  - Severe Acute Respiratory Syndrome-Corona Virus 2 (SARS-CoV2)
  - Corona Virus Disease-2019 (COVID-19)
- Wabah sebelumnya karena corona virus:
  - 2002: Severe Acute Respiratory Syndrome (SARS-CoV)
  - 2012: Middle East Respiratory Syndrome (MERS-CoV)

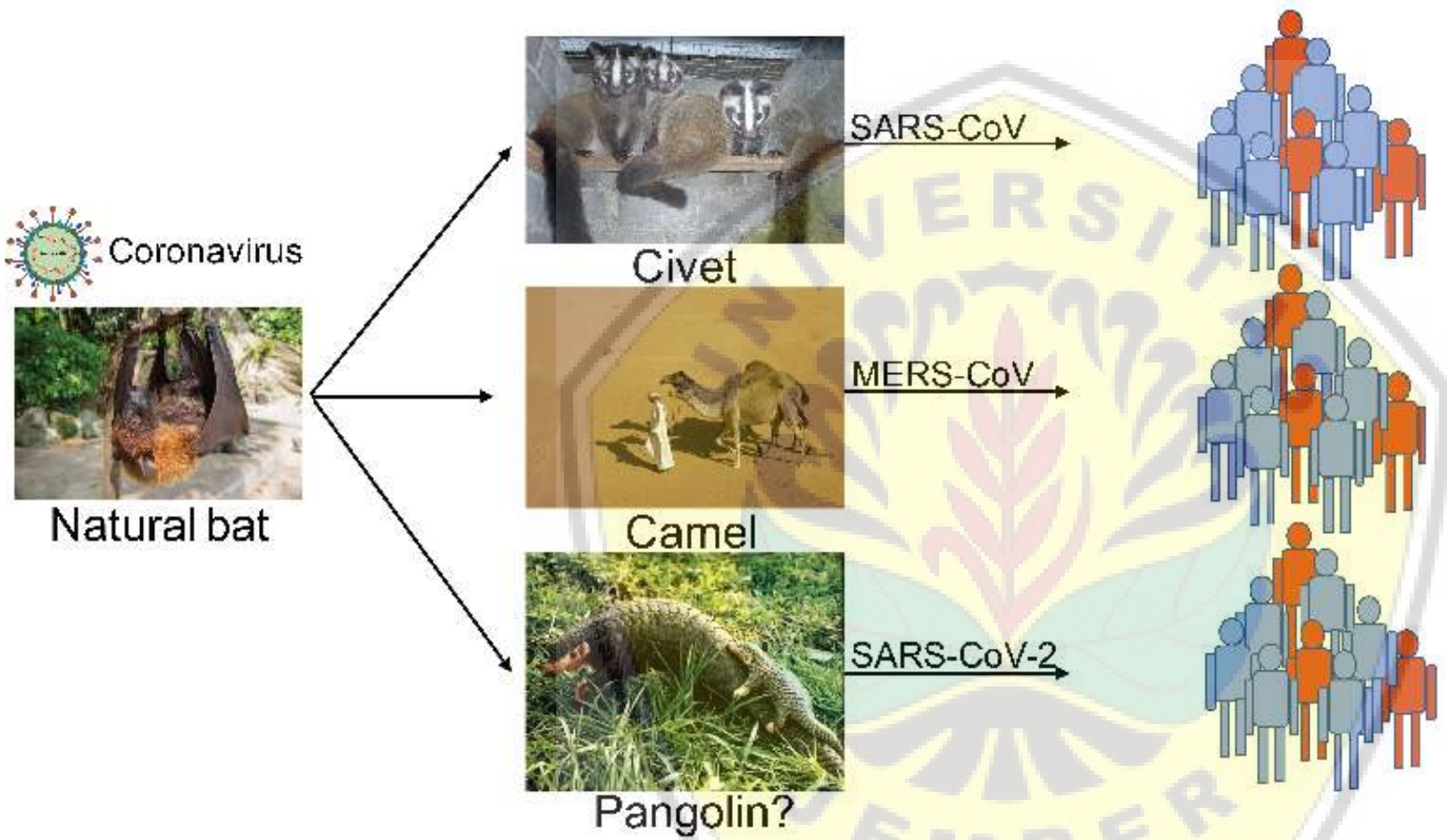


Figure Ecology of emerging coronaviruses SARS-CoV, MERS-CoV, and SARS-CoV-2 are all bat origin coronaviruses, which cause human infections after circulation in animal hosts of civet, camel, and pangolin.

Jin Y, *et all*., 2020

Situasi Pandemi Covid-19

- WHO (6 Mei 2020)

Situation in numbers (by WHO Region)

Total (new cases in last 24 hours)

Globally	**3 588 773 cases (71 463)**	**247 503 deaths (4102)**
Africa	33 973 cases (1403)	1202 deaths (90)
Americas	1 507 148 cases (29 701)	81 070 deaths (1480)
Eastern Mediterranean	221 230 cases (7854)	8290 deaths (175)
Europe	1 593 828 cases (27 179)	147 780 deaths (2178)
South-East Asia	76 998 cases (4310)	2821 deaths (139)
Western Pacific	154 884 cases (1016)	6327 deaths (40)

WHO., 2020

COVID-19 RESPONSE IN INDONESIA

Latest News: The number of the **people under observation** is **240,726** people, while the **number of the suspects** is **26,932** people. There were **92,976** people had been **examined by PCR** tests with **80,538** people were **proven negative**. In addition, there are **12,438** people **confirmed cases of COVID-19**, **2,317 recovered** and **845 death** in **34 provinces** and **350 districts/cities** in Indonesia. **Real-Time PCR Testing** has been performed in **89 laboratories** in Indonesia. Please **wear your mask to protect yourself and others**. Cotton masks should be **worn maximum for 4 hours**. **Wash your hands** with soap, **Avoid close contact with crowds** of any size, and maintain **physical distance**.

ISSUED EMERGENCY STATUS

RESPONSE TASK FORCE		LARGE SCALE MOVEMENT RESTRICTION	
34 Provinces	415 Districts/Cities	4 Provinces	22 Districts/Cities

Source : Indonesian Task Force for COVID-19, Mei 4th 2020

PCR TEST

89 Laboratories

92,976 People

80,538 Negative

Source : Ministry of Health

LOGISTICS & VOLUNTEERS

TOTAL MEDICAL SUPPLIES DISTRIBUTION: 6,204,878 DISTRIBUTED IN 34 PROVINCES

TOTAL MEDICAL & NON MEDICAL VOLUNTEERS: 29,494 DISTRIBUTED IN 26 PROVINCES

Source : Indonesian Task Force for COVID-19

TOTAL NUMBER OF COVID-19 CASES IN INDONESIA

As per May 6th 2020 at 12.00 P.M.

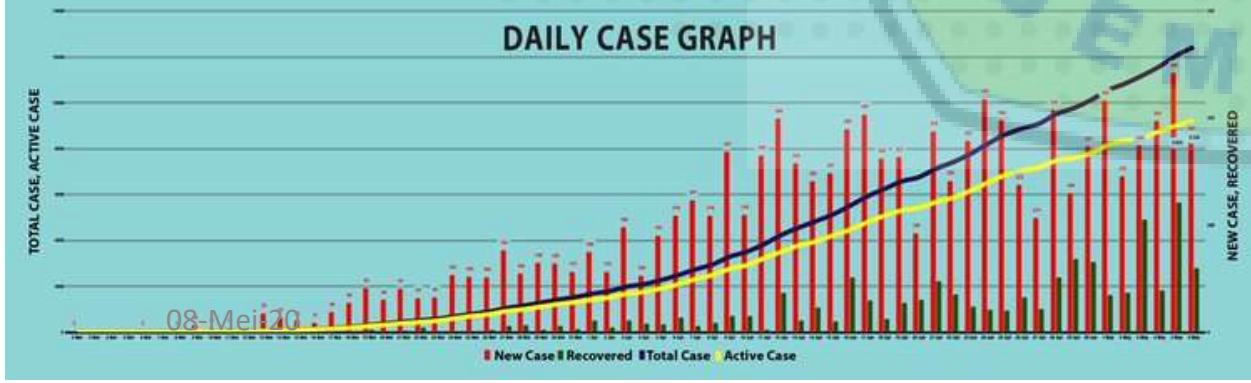
CONFIRMED CASES	RECOVERED	DEATHS
▲367 12,438	▲120 2,317	▲23 895

SPREAD IN 34 PROVINCES, 350 CITIES

Source : The Ministry of Health of the Republic of Indonesia

COVID-19 CASES IN INDONESIA

DAILY CASE GRAPH



NUMBER OF CONFIRMED COVID-19 CASES

SPREAD IN 215 COUNTRY AND AREA/TERITORIAL

As per May 6th, 2020 at 12.00 P.M.

No.	Country	Number of Case	Deaths	Population	Deaths / 1 M Pop
	World	3,525,116	243,540	7,794,798,739	31
1	USA	1,154,985	61,906	331,002,651	187
2	Spain	218,011	25,428	46,754,778	544
3	Italy	211,938	29,079	60,461,826	481
4	UK	190,588	28,734	67,886,011	423
5	Germany	163,860	6,831	83,783,942	82
6	Russia	155,370	1,451	145,934,462	10
7	France	130,242	25,165	65,273,511	386
8	Turkey	127,659	3,461	84,339,067	41
9	Brazil	101,147	7,025	212,559,417	33
10	Iran	99,970	6,340	83,992,949	75
36	Indonesia	12,438	895	269,603,400	3

Source : World Health Organization (WHO), worldometers.info (UN Population Division), BPS

INCOMING FUNDS

NATIONAL ACCOUNT	INTERNATIONAL ACCOUNT	DONATION
IDR 43.25 B	IDR 100.46 B	IDR 75.2 B

Source : Indonesian Task Force for COVID-19 May 6th 2020

TOTAL IDR 218.91 B

Preparedness Protocol of COVID-19

INFORMATION

OFFICIAL SITE www.covid19.go.id

CALL CENTER 119

No : 146/U40/099/COVID-19/BNPB/06052020

GTPP Covid-19., 2020

SARS-CoV2

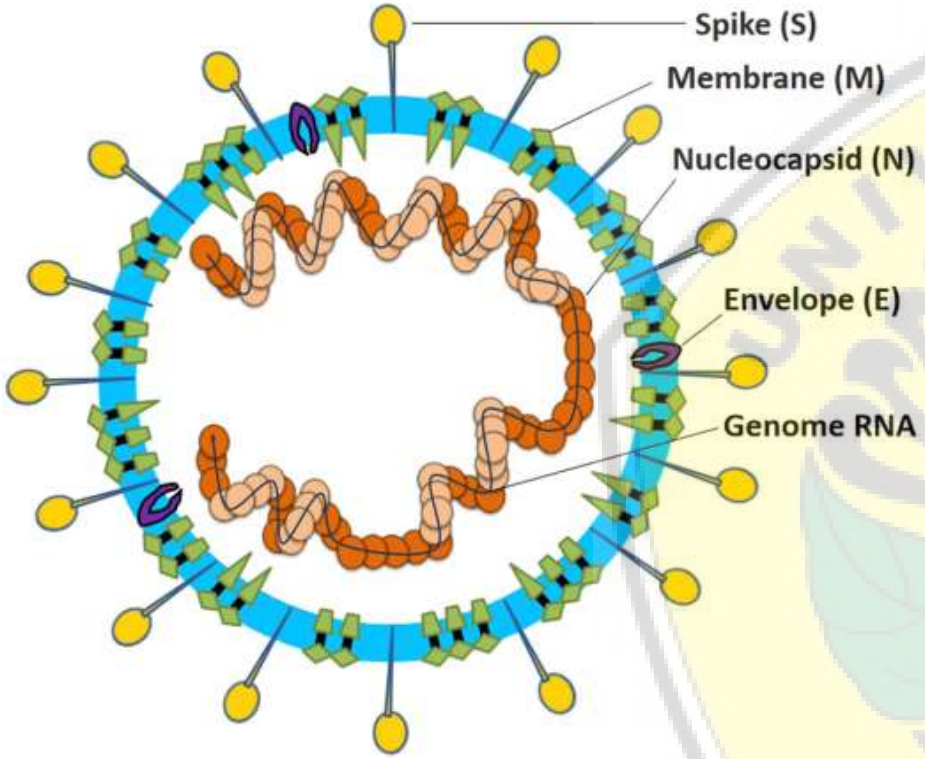


FIGURE Coronavirus particle. Coronaviruses are enveloped, nonsegmented, positive-sense single-stranded RNA virus genomes in the size ranging from 26 to 32 kilobases. The virion has a nucleocapsid composed of genomic RNA and phosphorylated nucleocapsid (N) protein, which is buried inside phospholipid bilayers and covered by the spike glycoprotein trimmer (S). The membrane (M) protein (a type III transmembrane glycoprotein) and the envelope (E) protein are located among the S proteins in the virus envelope

- Ukuran diameter partikel SARS-CoV2 = 80 -120 nm (nanometer = 10^{-6} mm)

Li G, *et al.*, 2020

Virus entry

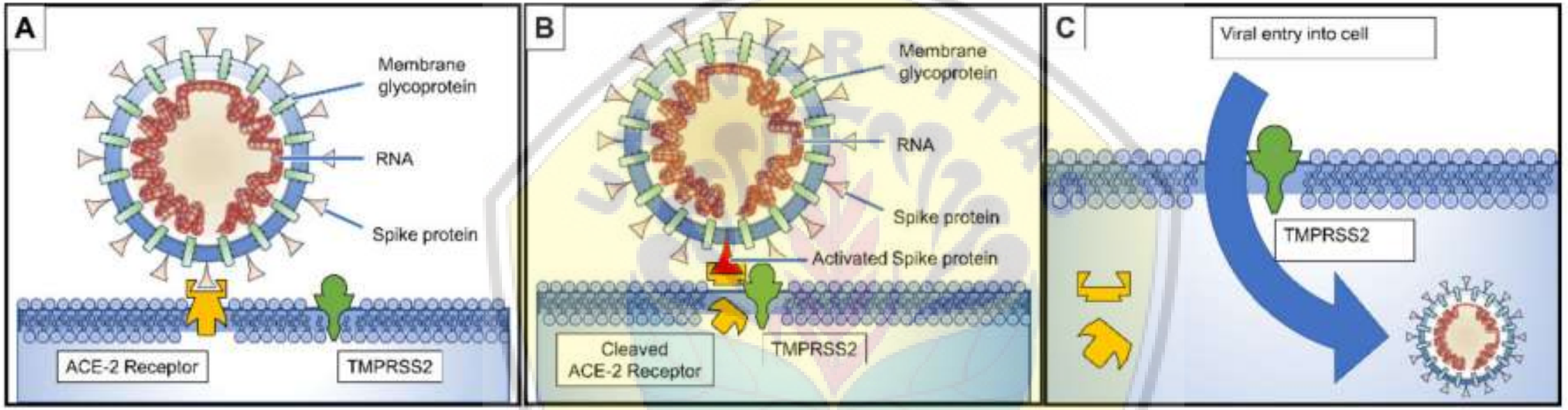


Figure (**A**) Spike proteins on the surface of the coronavirus bind to angiotensin-converting enzyme 2 (ACE-2) receptors on the surface of the target cell; (**B**) the type II transmembrane serine protease (TMPRSS2) binds to and cleaves the ACE-2 receptor. In the process, the spike protein is activated; (**C**) Cleaved ACE-2 and activated spike protein facilitate viral entry. TMPRSS2 expression increases cellular uptake of the coronavirus [20–22].

Rabi FA, *et all*., 2020

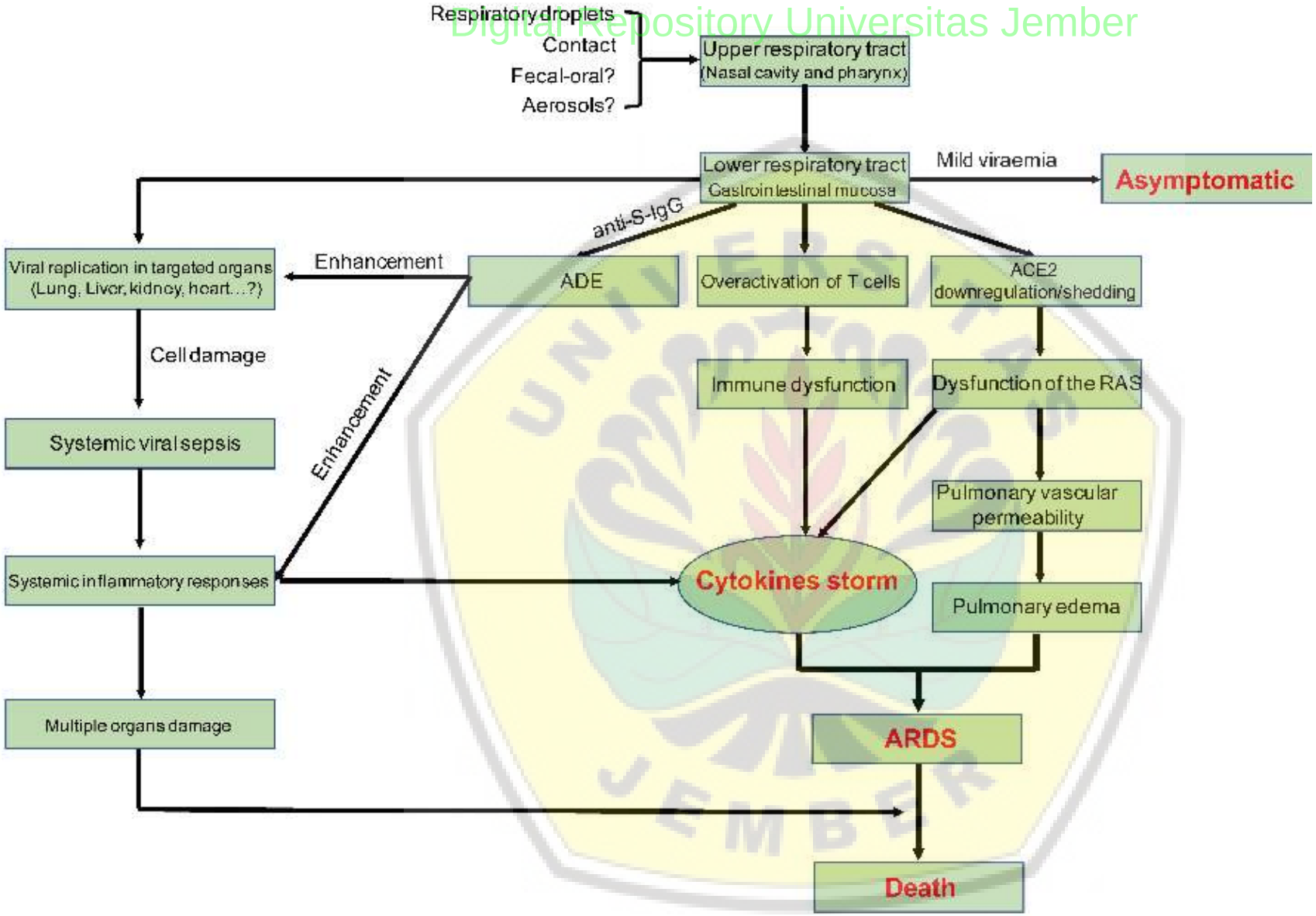
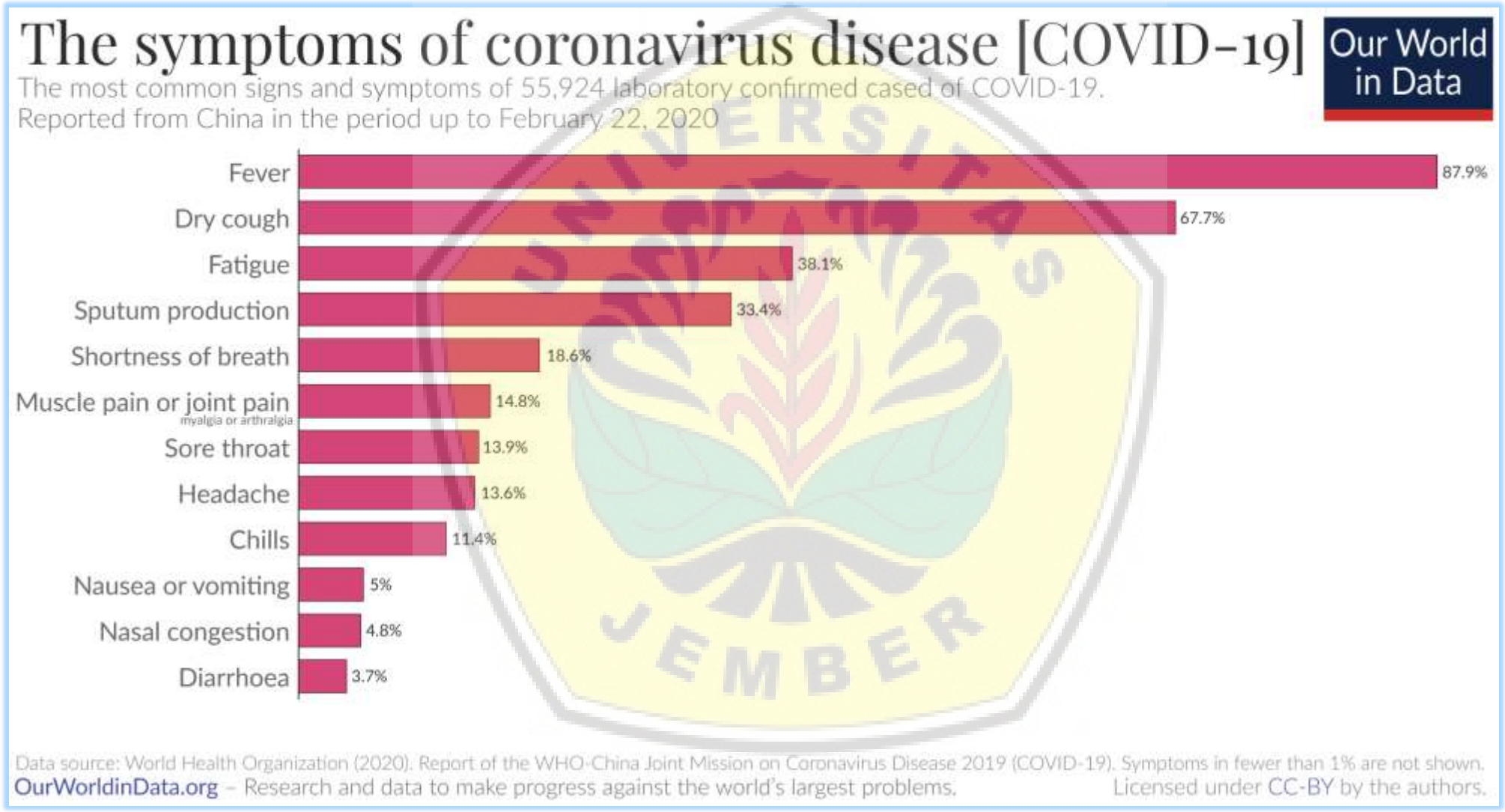


Figure Postulated pathogenesis of SARS-CoV-2 infection. Antibody-dependent enhancement (ADE); ACE2: angiotensin-converting enzyme 2; RAS: renin-angiotensin system; ARDS: acute respiratory distress syndrome. Red words represent the important turning points in SARS-CoV-2 infection.

Jin Y, *et all*., 2020

Gejala Klinis Covid-19



Covid-19 pada Anak

Covid-19 pada Anak

- Prevalensi lebih sedikit dibandingkan usia dewasa dan lansia
- Gejala klinis yang berat jarang terjadi
- Lebih banyak yang sakit ringan / sedang
- *Case fatality rate* (CFR) rendah

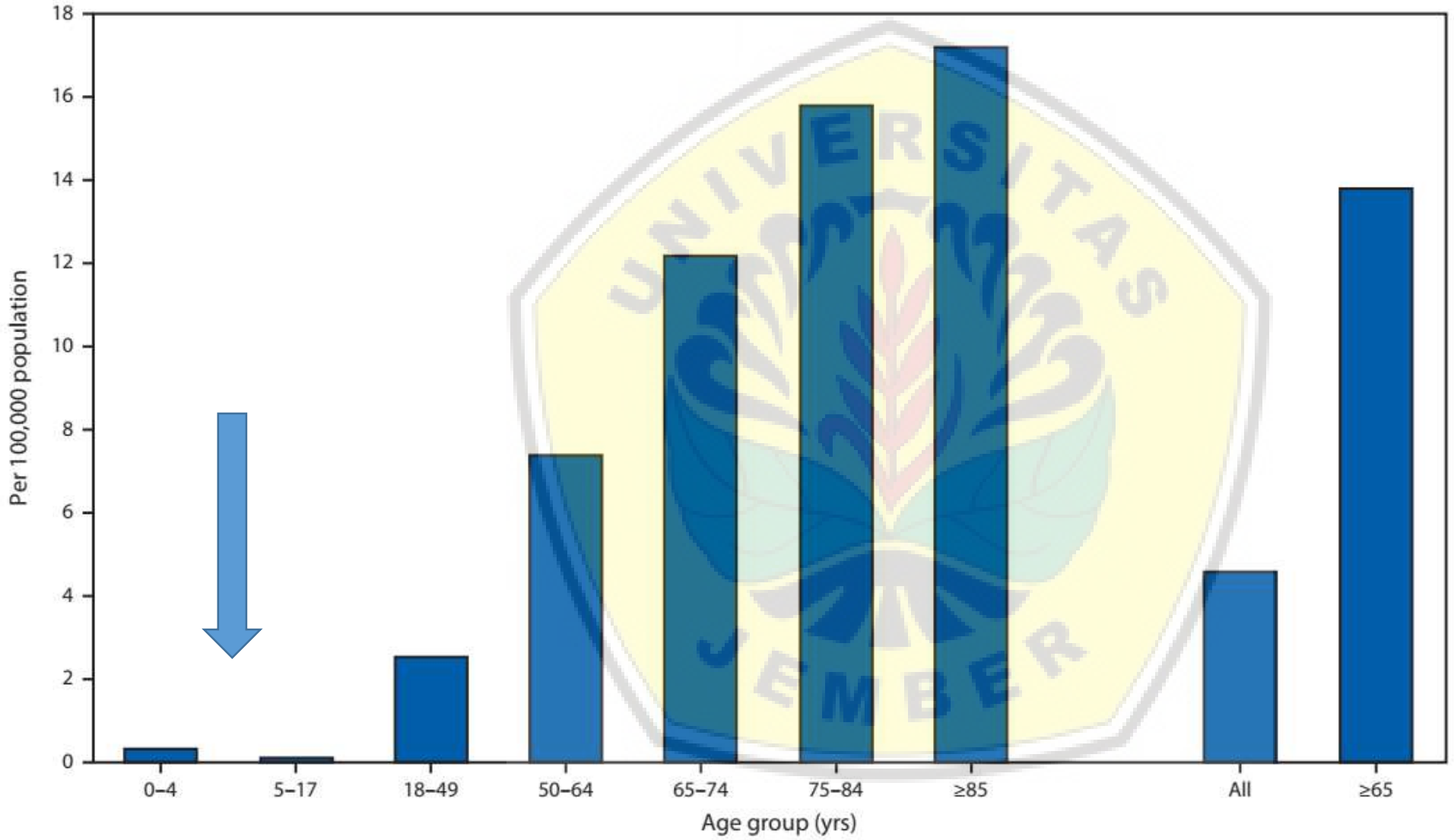
Ludvigson., 2020

Table Epidemiologic characteristics of the first 44,672 confirmed cases in China [26].

	No. Cases (%)	Deaths (%)	CFR (%)
Overall	44,672	1023	2.3
Age			
0–9 yrs	416 (0.9)	-	-
10–19 yrs	549 (1.2)	1 (0.1)	0.2
20–29 yrs	3619 (8.1)	7 (0.7)	0.2
30–39 yrs	7600 (17.0)	18 (1.8)	0.2
40–49 yrs	8571 (19.2)	38 (3.7)	0.4
50–59 yrs	10,008 (22.4)	130 (12.7)	1.3
60–69 yrs	8583 (19.2)	309 (30.2)	3.6
70–79 yrs	3918 (8.8)	312 (30.5)	8.0
≥ 80 yrs	1408 (3.2)	208 (20.3)	14.8
Wuhan related exposure			
Yes	31,974 (85.8)	853 (92.8)	2.7
No	5295 (14.2)	66 (7.2)	1.2
Case Severity			
Mild	36,180 (80.9)	-	-
Severe	6168 (13.8)	-	-
Critical	2087 (4.7)	1023 (100)	49.0
Missing	257 (0.6)	-	-

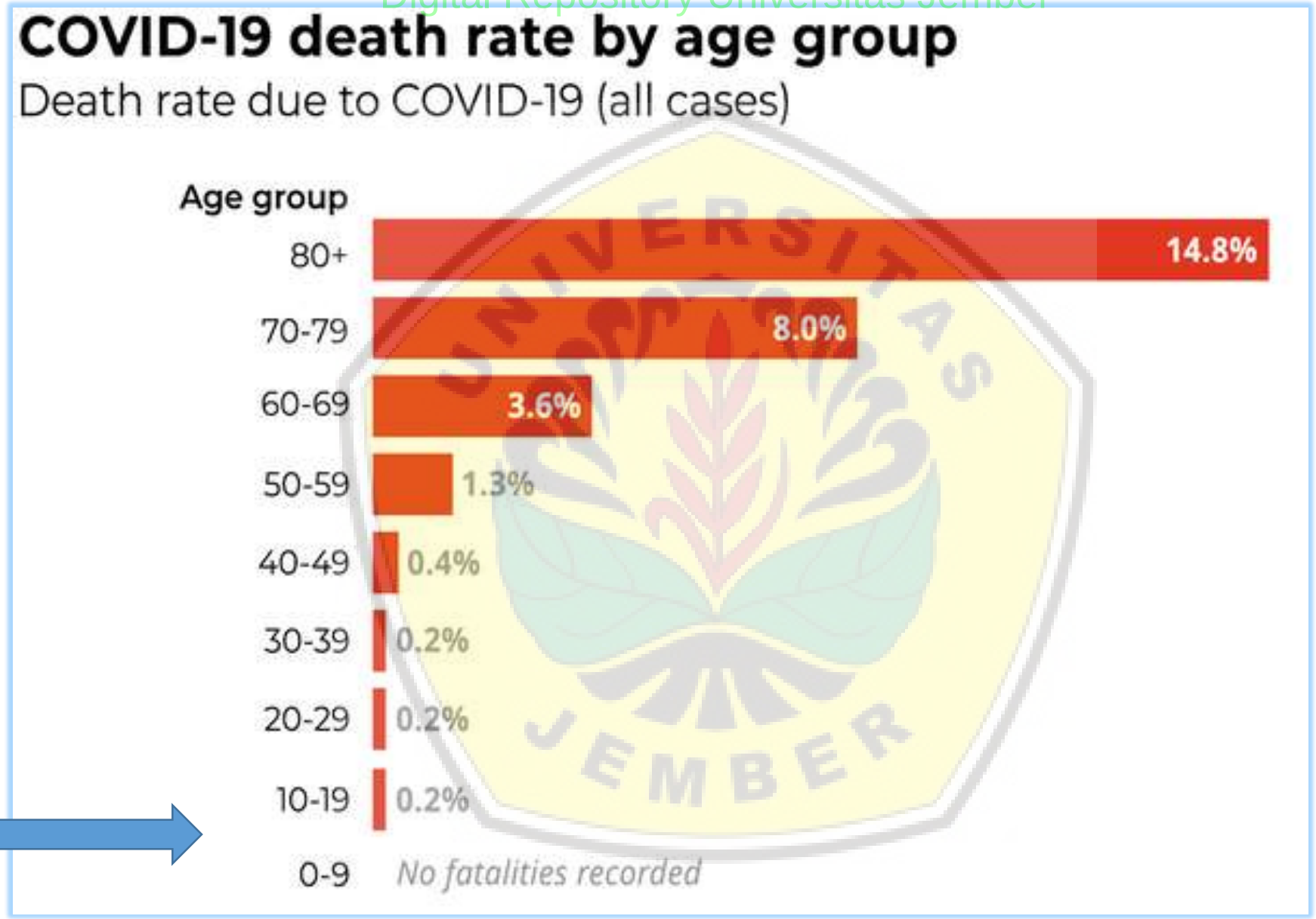
Rabi FA, *et all*., 2020

FIGURE Laboratory-confirmed coronavirus disease 2019 (COVID-19)–associated hospitalization rates,* by age group — COVID-NET, 14 states,† March 1–28, 2020

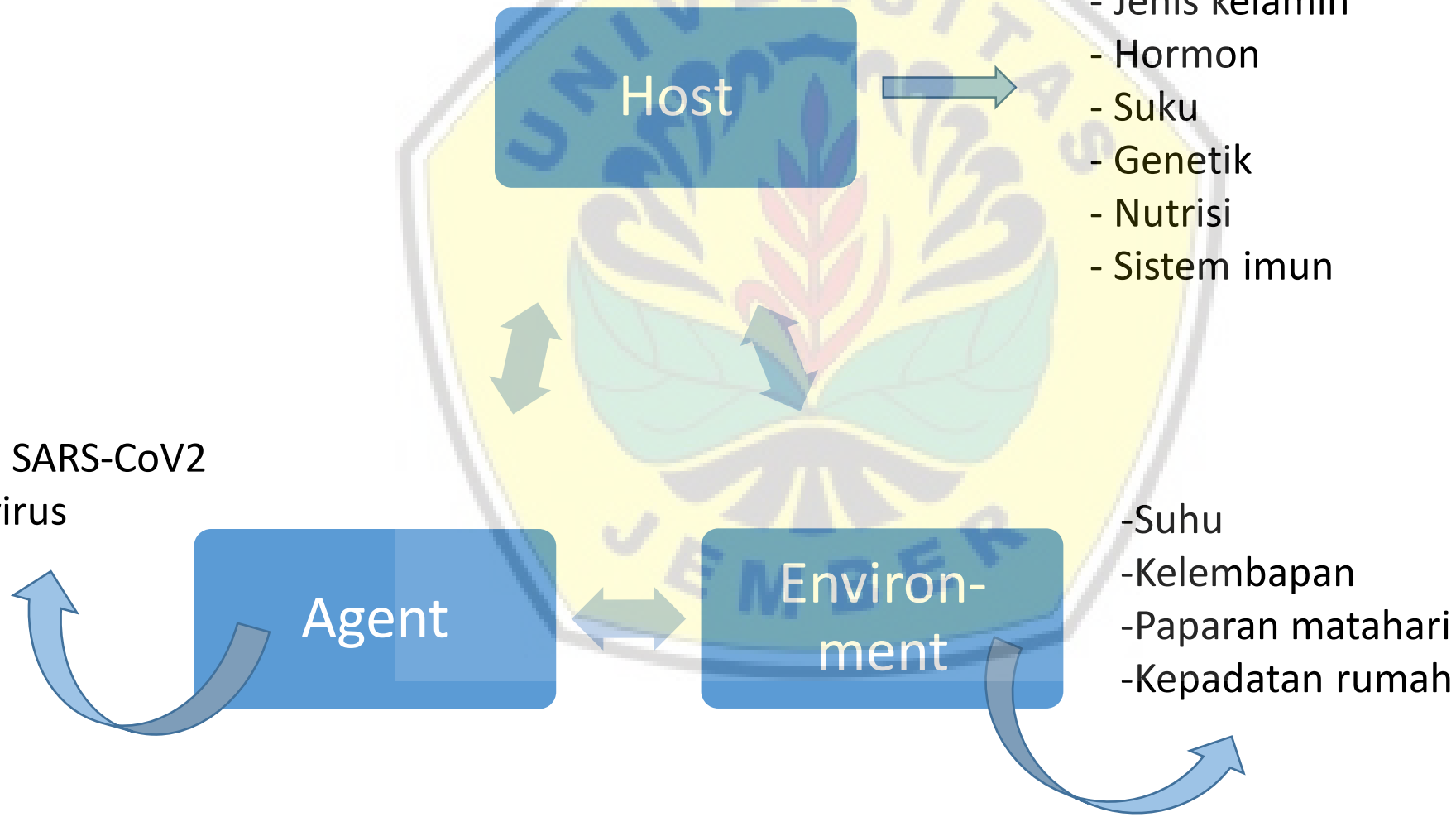


Abbreviation: COVID-NET = Coronavirus Disease 2019–Associated Hospitalization Surveillance Network.
* Number of patients hospitalized with COVID-19 per 100,000 population.

Garg S, *et all*., 2020



Mengapa covid-19 pada Anak Demikian?



Mengapa covid19 pada anak demikian?

- Anak jarang keluar jauh
- Lebih banyak di rumah
- Sehingga paparan terhadap virus kurang

- Comorbid penyakit kronis pada anak lebih sedikit

- Apakah surveillance pada kelompok anak kurang diperhatikan ?
- Sehingga sedikit terdeteksi

- Anak berpotensi sebagai carier

Bagaimana Gejala Covid-19 pada Anak ?

***Panel 2:* Definitions of clinical types of COVID-19 in paediatric patients**

Mild disease

- Upper respiratory symptoms (eg, pharyngeal congestion, sore throat, and fever) for a short duration or asymptomatic infection
- Positive RT-PCR test for SARS-CoV-2
- No abnormal radiographic and septic presentation

Moderate disease

- Mild pneumonia
- Symptoms such as fever, cough, fatigue, headache, and myalgia
- No complications and manifestations related to severe conditions

Qiu H, *et al*., 2020

Severe disease

Mild or moderate clinical features, plus any manifestations that suggest disease progression:

- Rapid breath (≥70 breaths per min for infants aged <1 year; ≥50 breaths per min for children aged >1 year)
- Hypoxia
- Lack of consciousness, depression, coma, convulsions
- Dehydration, difficulty feeding, gastrointestinal dysfunction
- Myocardial injury
- Elevated liver enzymes
- Coagulation dysfunction, rhabdomyolysis, and any other manifestations suggesting injuries to vital organs

Qiu H, *et al*., 2020

Critical illness

Rapid disease progression, plus any other conditions:

- Respiratory failure with need for mechanical ventilation (eg, ARDS, persistent hypoxia that cannot be alleviated by inhalation through nasal catheters or masks)
- Septic shock
- Organ failure that needs monitoring in the ICU

COVID-19=coronavirus disease 2019. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2. ARDS=acute respiratory distress syndrome. ICU=intensive care unit.

Qiu H, *et al*., 2020

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†	213 (73)	10,167 (93)
Fever§	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¶	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¶	17 (5.8)	1,329 (12)
Diarrhea	37 (13)	3,353 (31)

Bialek S, *et all.*, 2020

TABLE Characteristics of Children's COVID-19 Cases in China

Characteristics	All Cases	Category		*P*
		Confirmed	Suspected	
Age, median (interquartile range)	7 (2–13)	10 (4–15)	6 (2–12)	<.001
Age group, *n* (%)				
<1	379 (17.6)	85 (11.7)	291 (20.7)	<.001
1–5	491 (23.0)	137 (18.8)	354 (25.2)	
6–10	522 (24.5)	170 (23.4)	352 (25.0)	
11–15	412 (19.3)	180 (24.7)	232 (16.5)	
>15	334 (15.6)	156 (21.4)	178 (12.6)	
Sex, *n* (%)				
Male	1208 (56.6)	418 (57.4)	790 (56.1)	.575
Female	927 (43.4)	310 (42.6)	617 (43.9)	
Severity of illness, *n* (%)				
Asymptomatic	94 (4.4)	94 (12.9)	0 (0.0)	—
Mild	1088 (51.0)	314 (43.1)	774 (55.0)	<.001
Moderate	826 (38.7)	298 (40.9)	528 (37.5)	
Severe	112 (5.2)	18 (2.5)	94 (6.7)	
Critical	13 (0.6)	3 (0.4)	10 (0.7)	
Missing	2 (0.1)	1 (0.2)	1 (0.1)	

Dong Y, *et al.*, 2020

Anamnesis

Gejala:

- Sistemik: Demam, malaise, fatigue, myalgia, nyeri kepala
- Saluran pernapasan: batuk, pilek, nyeri tenggorokan, hidung buntu, sesak
- Gejala lain: diare, mual, muntah

Faktor risiko:

- Kontak erat dengan PDP atau covid19 terkonfirmasi
- Tinggal atau bepergian ke negara atau area terjangkit

IDAI., 2020

Pemeriksaan fisis

- Kesadaran: CM hingga koma
- Demam, faringitis, tonsilitis
- Pernapasan cuping hidung
- Laju napas meningkat
- Retraksi dinding dada
- Rhonki, wheezing
- Sianosis
- Desaturasi O2 (SaO2 <92%)

IDAI., 2020

Pemeriksaan Penunjang

- Darah
  - Leukosit normal atau leukopenia disertai limfopenia,
  - Kadang didapatkan trombositopenia
  - CRP normal atau meningkat
  - RFT, LFT, AGD, SE, glukosa, dll sesuai indikasi.

- Rapid test
  - Hati-hati dalam interpretasi hasilnya, bisa *false negative*.
  - Perhatikan waktu kontak dan timbulnya gejala
  - Perlu pemeriksaan ulang / lanjutan untuk konfirmasi diagnosis

IDAI., 2020

- PCR (*Polymerase chain reaction*) dan Squencing
  - Sampel dari swab hidung, tenggorok (Naso/orofaring), sputum, aspirat ETT, broncho alveolar lavage, serum.

IDAI., 2020

  - Koordinasi Dinkes:
    - Untuk penyediaan VTM (*virus transport media)*
    - Pengirimannya ke laboratorium yang ditunjuk.

Sumber: New England Journal of Medicine

Sumber: dokumentasi Litbang

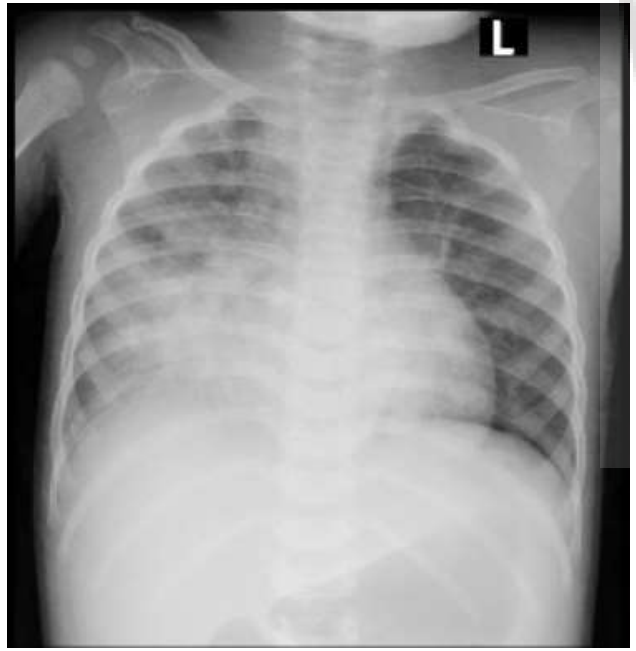
Gambar Pemasukkan Swab ke dalam VTM

- Interpretasi hasil PCR dan rapid test covid-19

PCR	IgM	IgG	Interpretasi
Positif	Negatif	Negatif	Infeksi Baru Infeksi biasanya hari ke 1 - 7
Positif	Positif	Negatif	Infeksi akut. Menuju puncak. Infeksi biasanya hari ke 7 - 14
Positif	Positif	Positif	Infeksi di puncak. Mulai menurun menuju sembuh. Biasanya hari ke 14 - 21
Positif	Negatif	Positif	Infeksi menuju sembuh. Biasanya hari ke 21 - 28
Negatif	Negatif	Positif	Infeksi lebih dari 1 bulan, menuju sembuh. Tidak menular.

- Chest x ray
  - Tidak rutin dilakukan tergantung kondisi pasien
  - Dilakukan pada PDP pneumonia, kasus probable dan kasus terkonfirmasi
  - Hasil: sesuai gambaran pneumonia ringan sampai berat
  - Dapat ditemukan efusi pleura

IDAI., 2020



- Chest CT scan
  - Jika ada indikasi dan kondisi memungkinkan
  - Tahap awal : *multiple small plaque*
  - Tahap lanjut : *bilateral multiple ground-glass opacity*
  - Konsolidasi paru pada kasus yang berat

IDAI., 2020

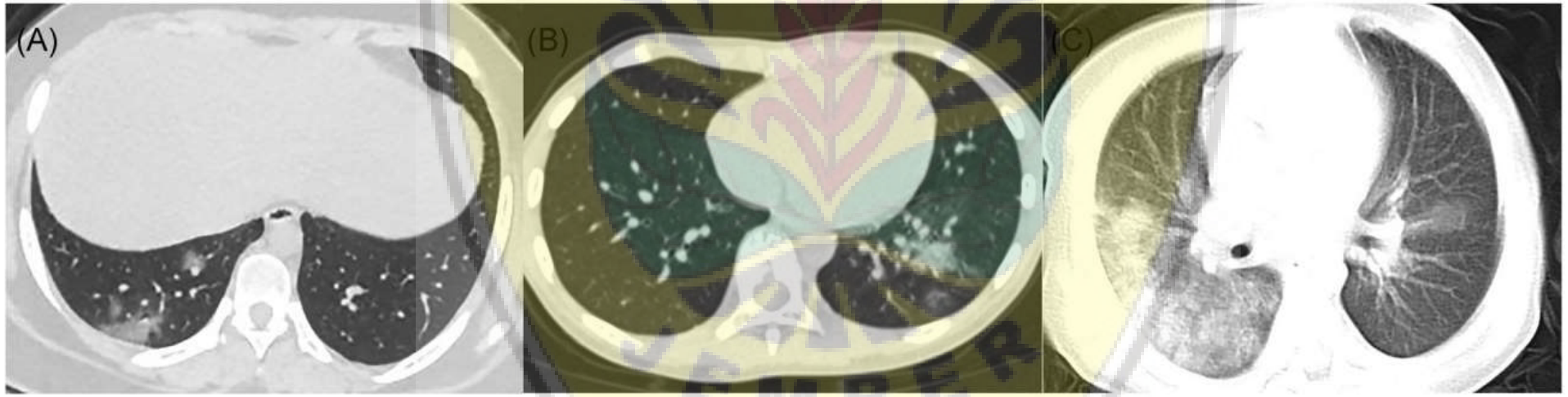
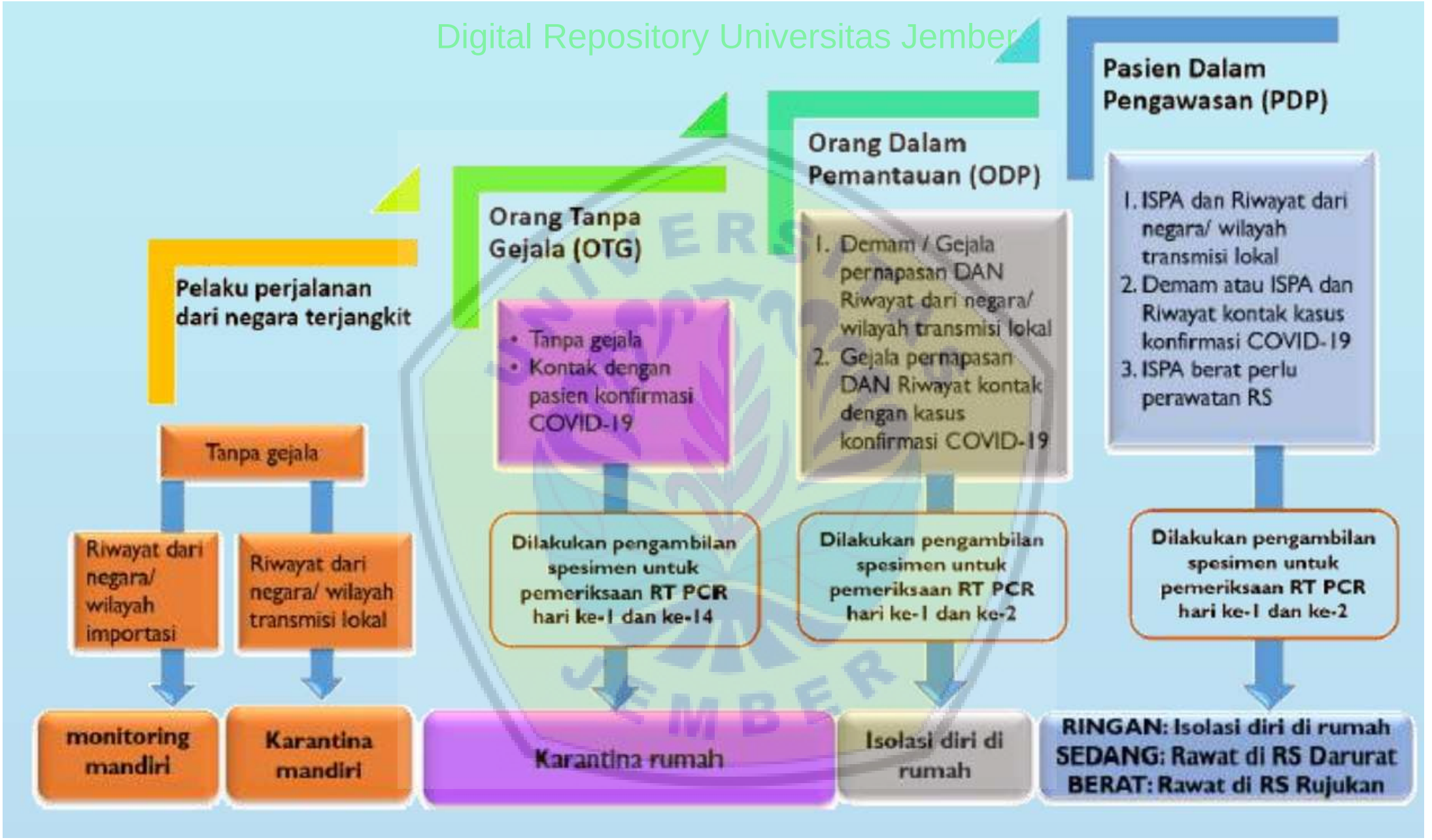


FIGURE A, Female, 14 years old. Chest CT showed scattered ground-glass opacities in the inferior lobe of the right lung, located subpleural or extended from subpleural lesions. B, Male, 10 years old. Chest CT showed consolidation with halo sign in the inferior lobe of the left lung surrounded by ground-glass opacities. C, Male, 1 year old. Chest CT showed diffused consolidations and ground-glass opacities in both lungs, with a "white lung" appearance of the right lung. CT, computed tomography

Tatalaksana Covid19 pada Anak



Kemenkes RI., 2020

TABLE Recommended treatment, after Shen *et al*[32]

Breathing and airway	Other support	Infectious disease	Experimental treatment[a]
Oxygen supply	Caloric intake (for a review of nutritional interventions see Zhang and Liu[46])	Antibiotics when there are bacterial superinfections	Interferon-alpha[b]
Inhalations	Water and electrolyte supply/balance		Lopinavir/litonavir[b]
Keeping respiratory tract unobstructed	Anti-pyretics if high fever		Interleukin-6 inhibitors[b]
Regular re-examination of airways			Arbidol, oseltamivir, ribavirin and other anti-influenza drugs[b]
Non-invasive/invasive respiratory support/mechanical ventilation including ECMO			Glucocorticoids
Fluid resuscitation, vasoactive drugs			Immunoglobulin
			Traditional Chinese medicine

Ludvigson., 2020

- Antivirus
  - Lopinavir / Ritonavir: Jika tersedia ?
  - Remdesivir: masih tahap uji klinis
  - Interferon alpha
  - Oseltamivir: jika ada koinfeksi dengan influenza virus

- Hidrocloroquin: pada anak, keamanan ?
- Antibiotika untuk mengatasi infeksi sekunder bakteri
- Convalescen plasma ?

IDAI., 2020

Kriteria pulang

- Pasien terkonfirmasi covid-19 atau PDP dengan pneumonia, dipulangkan jika:
  - Suhu normal minimal > 24 jam
  - Gejala pneumonia tidak ada
  - Swab → PCR SARS-CoV2 hasil negatif, dua kali pemeriksaan dengan interval minimal 1 hari

Pencegahan Covid-19 pada Anak

- *Physical / social distancing*
- Di rumah saja
- Gunakan masker
- Cuci tangan
- Deteksi dini dan isolasi (di RS atau mandiri)
- Penularan via droplet, airborne?, fecal oral?
- Vaksin belum tersedia (masih diteliti)

MENJAGA JARAK

(SOCIAL DISTANCING)

Adalah **kondisi menjaga jarak dengan orang lain** agar tidak terjadi penularan

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

GERMAS

Menjaga jarak dengan orang lain **minimal 1 meter**

Jangan pergi **ketempat yang ramai,** dan **gunakan masker** bila harus berada di keramaian

Tetap tinggal di rumah, tidak pergi kemana-mana **kecuali urusan yang penting,** (belajar dirumah, beribadah dirumah, bila mungkin berkerja dirumah).

Tidak salaman

Tidak kumpul-kumpul (ngobrol di warung kopi, arisan, pengajian, dan lainnya)

www.promkes.kemkes.go.id

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

GERMAS

CARA MEMAKAI MASKER YANG BENAR

Siapa saja yang perlu menggunakan masker

- Jika Anda batuk atau pilek
- Jika Anda sedang berangsur pulih dari sakit

CARANYA?

Tutup mulut, hidung dan dagu Anda. Pastikan bagian masker yang berwarna berada disebelah depan

Tekan bagian atas masker supaya mengikuti bentuk hidung Anda, dan tarik kebelakang dibagian bawah dagu

Lepas masker yang telah digunakan dengan hanya memegang tali, dan langsung buang ke tempat sampah

Cuci tangan pakai sabun setelah membuang masker yang telah digunakan ke dalam tempat sampah

Biar bersih ganti masker Anda secara rutin apabila kotor atau basah

INGAT !

Gunakan masker bila batuk atau tutup mulut dengan lengan atas bagian dalam (etika batuk)

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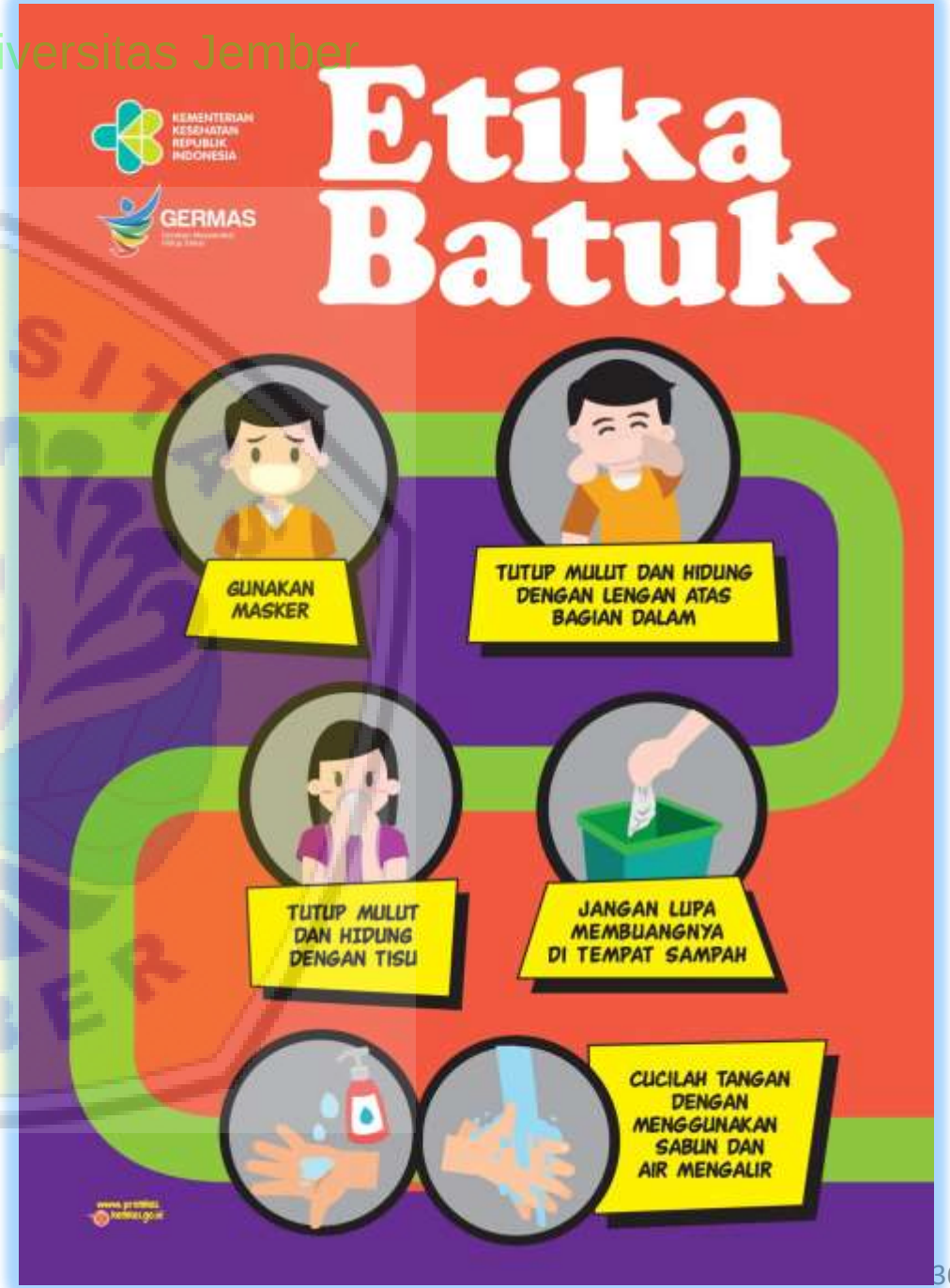

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

GERMAS
Gerakan Masyarakat Hidup Sehat

YUK Di RUMAH SAJA

JiKA MERASA KURANG SEHAT, LEBiH BAiK TiNGGAL Di RUMAH

Ketika seseorang merasa kurang sehat (seperti demam, atau gejala penyakit pernapasan yang lain), secara sukarela agar tinggal di rumah atau tidak bekerja, tidak sekolah, atau ke tempat umum lainnya.

Kriteria kurang sehat:

- Demam
- Batuk / pilek / nyeri tenggorokan / sesak nafas.

JiKA MERASA KURANG SEHAT, APA YANG HARUS DiLAKUKAN Di RUMAH?

Selalu gunakan masker. Ganti setiap hari dan langsung buang ke tempat sampah tertutup, kemudian cuci tangan dengan benar.

Konsumsi makanan bergizi, istirahat cukup.

Upayakan ruang terpisah dengan anggota keluarga yang lain dan jaga jarak dengan orang sehat minimal 1 meter.

Hindari pemakaian bersama alat makan (piring, sendok, garpu, dan gelas). Cuci alat makan dengan air dan sabun.

Tetap di rumah dan mudah dihubungi. Jika terpaksa harus keluar rumah, gunakan masker, serta hindari kerumunan atau keramaian.

Jagalah kebersihan rumah dan gunakan cairan disinfektan.

Hubungi fasilitas pelayanan kesehatan terdekat.

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Terimakasih