MITOS Y REALIDADES DEL CORONAVIRUS……"A MI NO ME VA A PASAR"

Dr. Pedro Pablo Usedo López

Especialista Medina Interna

Especialista Salud Pública

Subespecialista Infectologia

Magister Gestión Empresas de Salud

Magister (E) en Gestión de Seguridad de Pacientes y Calidad de la Atención Calidad y Seguridad paciente

Conflictos de Interés

- **Subdirector Medico Clínica Bupa Antofagasta**
- **Jefe IAAS Clínica Bupa Antofagasta**
- **Jefe Unidad de Infectología Hospital Regional Antofagasta**
- **Jefe IAAS Hospital Regional Antofagasta**

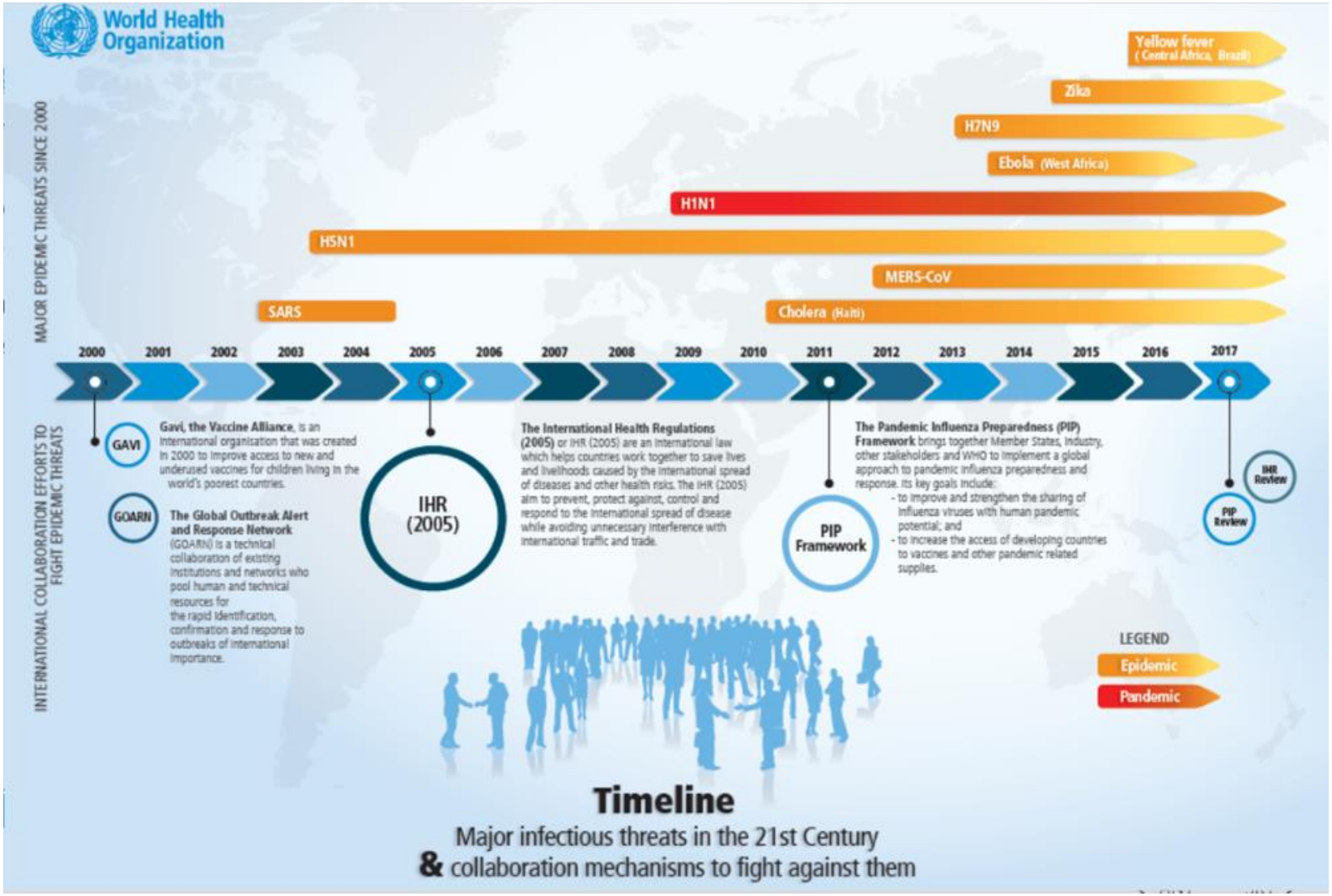
Clínica Antofagasta

COVID-19

Largo Mercatello a Napoli durante la peste del 1656

Clínica Antofagasta

Cronología virus emergentes



Clínica Antofagasta

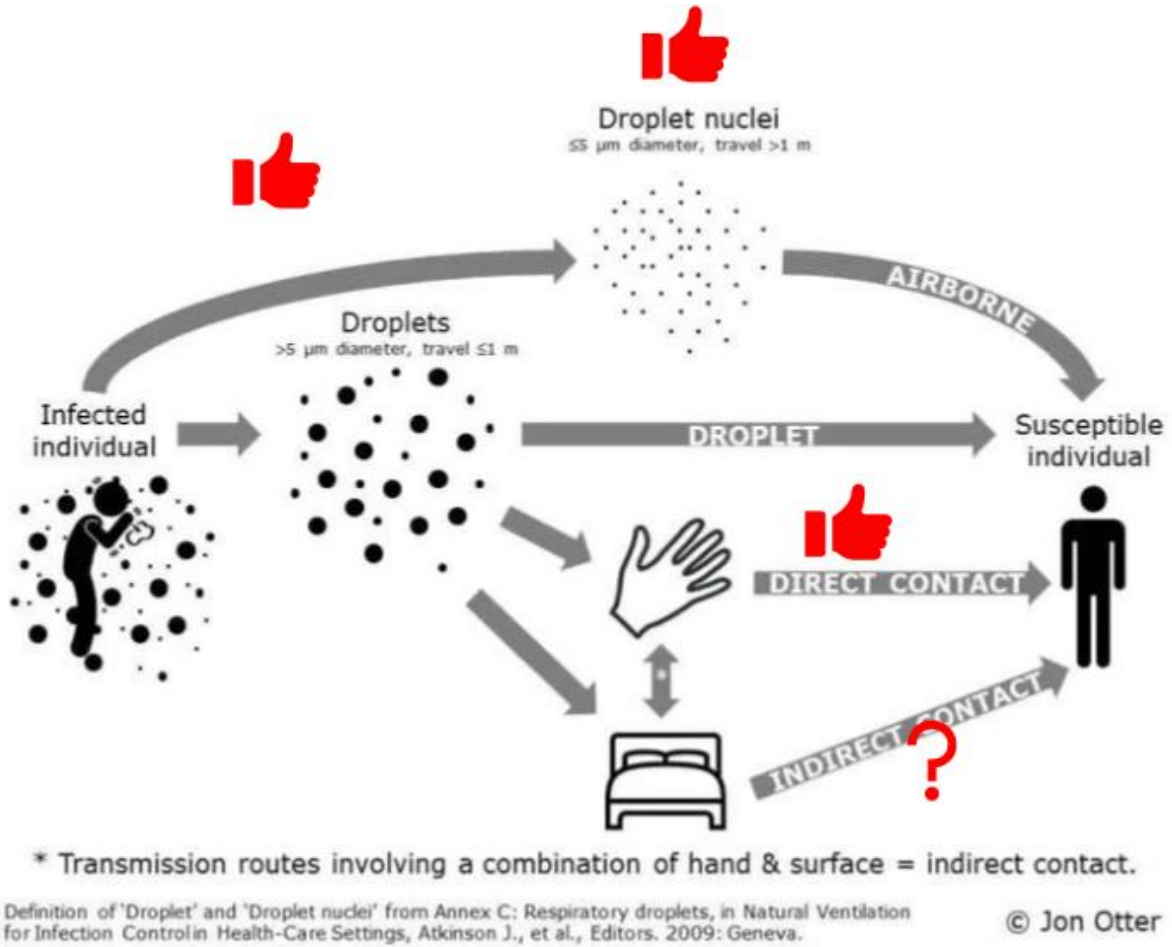
COVID-19

La transmisión de COVID-19 de persona a persona fue documentada, con transmisión nosocomial e implicaciones en la amplificación de la enfermedad en los centros de salud.

Las posibles rutas de transmisión de COVID-19 incluyen el contacto directo, las gotas y la transmisión por el aire (aerosol).

Cualquier aparición de enfermedad respiratoria aguda grave (IRAG) entre los trabajadores de la salud justifica una investigación inmediata.

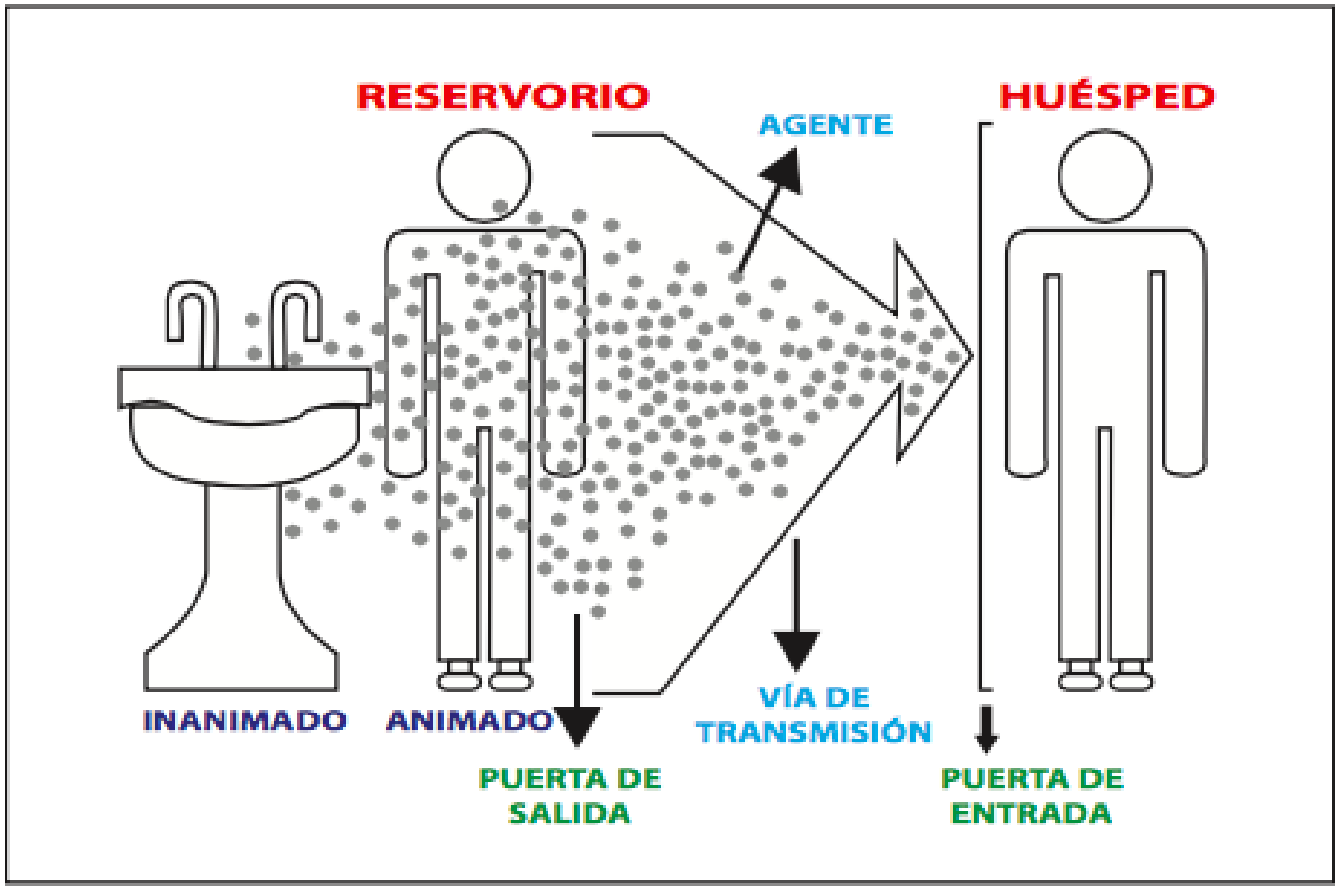
Transmisión COVID-19



as of February 19, 2020 – subject to change as new evidence become available

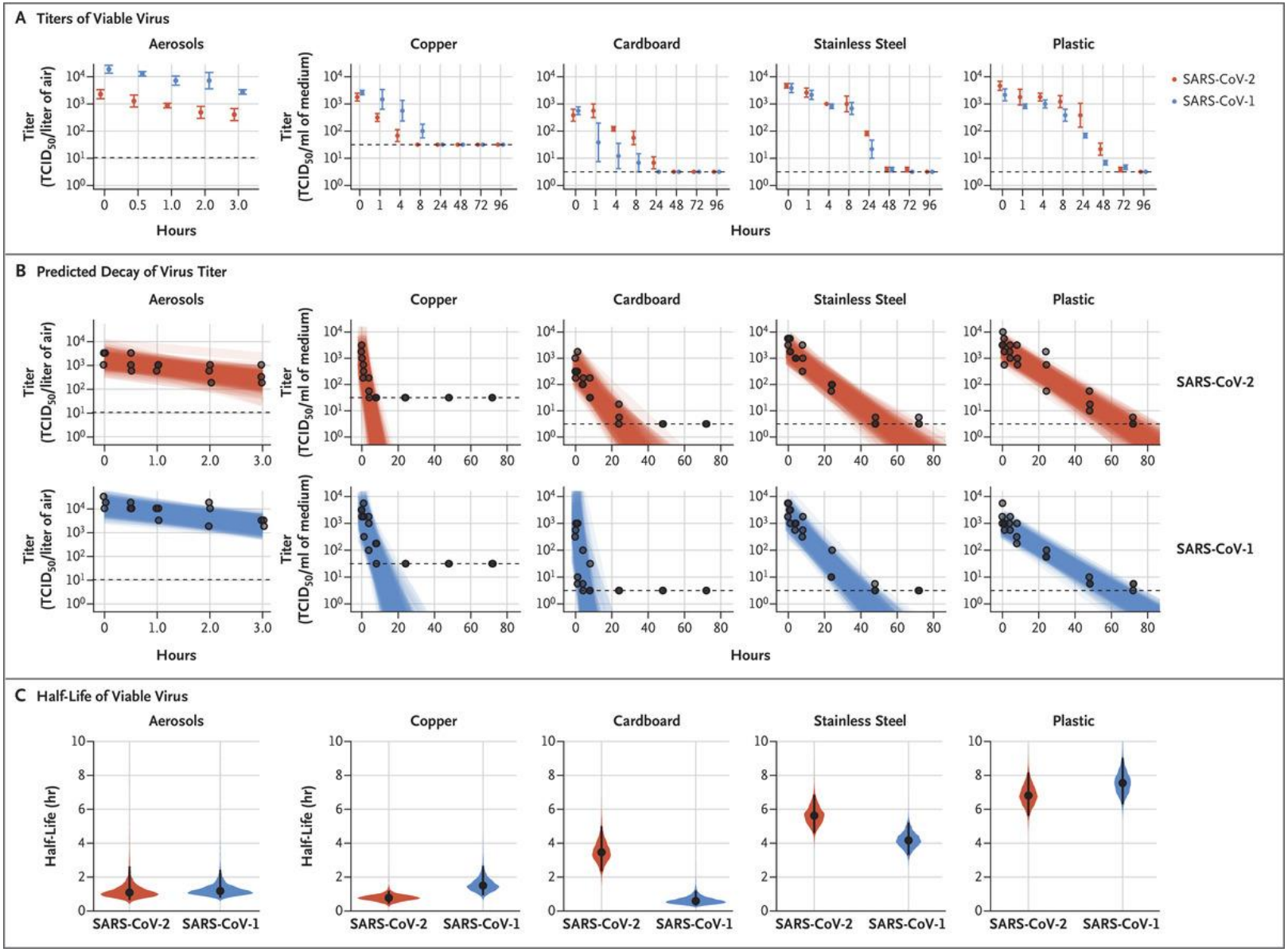
Clínica Antofagasta

Cadena de transmisión de IAAS



Programa de Control de Infecciones Asociadas a la Atención de Salud. Ministerio de Salud, Chile,1989.

Viability of SARS-CoV-1 and SARS-CoV-2 in Aerosols and on Various



N van Doremalen et al. N Engl J Med 2020;382:1564-1567.

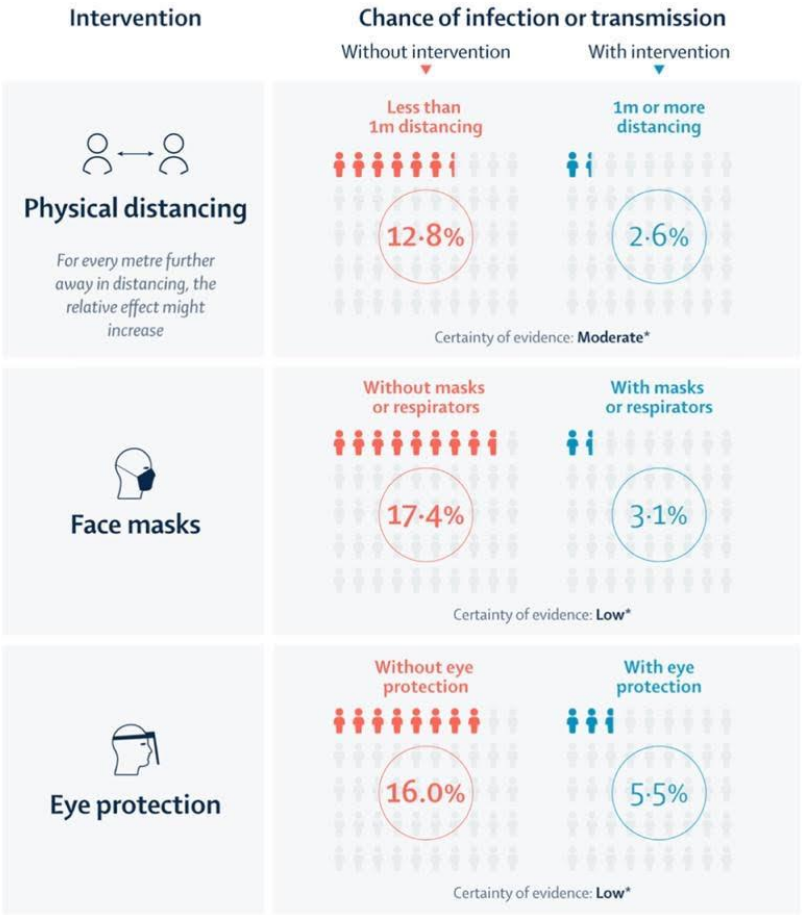
Persistence of coronaviruses on different types of inanimate surfaces

Type of surface	Virus	Strain / isolate	Inoculum (viral titer)	Temperature	Persistence	Reference
Steel	MERS-CoV	Isolate HCoV-EMC/2012	10^5	20°C	48 h	[21]
				30°C	8–24 h	
	TGEV	Unknown	10^6	4°C	≥ 28 d	[22]
				20°C	3–28 d	
				40°C	4–96 h	
	MHV	Unknown	10^6	4°C	≥ 28 d	[22]
				20°C	4–28 d	
				40°C	4–96 h	
	HCoV	Strain 229E	10^3	21°C	5 d	[23]
Aluminium	HCoV	Strains 229E and OC43	5×10^3	21°C	2–8 h	[24]
Metal	SARS-CoV	Strain P9	10^5	RT	5 d	[25]
Wood	SARS-CoV	Strain P9	10^5	RT	4 d	[25]
Paper	SARS-CoV	Strain P9	10^5	RT	4–5 d	[25]
	SARS-CoV	Strain GVU6109	10^6	RT	24 h	[26]
			10^5		3 h	
			10^4		< 5 min	
Glass	SARS-CoV	Strain P9	10^5	RT	4 d	[25]
	HCoV	Strain 229E	10^3	21°C	5 d	[23]
Plastic	SARS-CoV	Strain HKU39849	10^5	22°-25°C	≤ 5 d	[27]
	MERS-CoV	Isolate HCoV-EMC/2012	10^5	20°C	48 h	[21]
				30°C	8–24 h	
	SARS-CoV	Strain P9	10^5	RT	4 d	[25]
	SARS-CoV	Strain FFM1	10^7	RT	6–9 d	[28]
	HCoV	Strain 229E	10^7	RT	2–6 d	[28]
PVC	HCoV	Strain 229E	10^3	21°C	5 d	[23]
Silicon rubber	HCoV	Strain 229E	10^3	21°C	5 d	[23]
Surgical glove (latex)	HCoV	Strains 229E and OC43	5×10^3	21°C	≤ 8 h	[24]
Disposable gown	SARS-CoV	Strain GVU6109	10^6	RT	2 d	[26]
			10^5		24 h	
			10^4		1 h	
Ceramic	HCoV	Strain 229E	10^3	21°C	5 d	[23]
Teflon	HCoV	Strain 229E	10^3	21°C	5 d	[23]

MERS = Middle East Respiratory Syndrome; HCoV = human coronavirus; TGEV = transmissible gastroenteritis virus; MHV = mouse hepatitis virus; SARS = Severe Acute Respiratory Syndrome; RT = room temperature.

Journal of Hospital Infection 104 (2020) 246e251

What protects against COVID-19 infection or transmission?



* See the paper below for full explanations of certainty and why these categories are used. Moderate certainty: we are moderately confident in the effect estimate; the true effect is probably close to the estimate, but it is possibly substantially different. Low certainty: our confidence in the effect estimate is limited; the true effect could be substantially different from the estimate of the effect.

Even when properly used and combined, none of these interventions offers complete protection and other basic protective measures (such as hand hygiene) are essential to reduce transmission

Chu DK, Akl EA, Duda S, et al.
Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. *Lancet* 2020. Published online June 1.

Clínica Antofagasta

COVID-19

Emergency Hospital during Influenza Epidemic, Camp Funston, Kansas, 1918

Buena Higiene de Manos

- Reconocer todas las oportunidades de higiene de manos
- Optar por el método correcto de higiene
- Usar una técnica apropiada
- Hacer de la higiene una prioridad

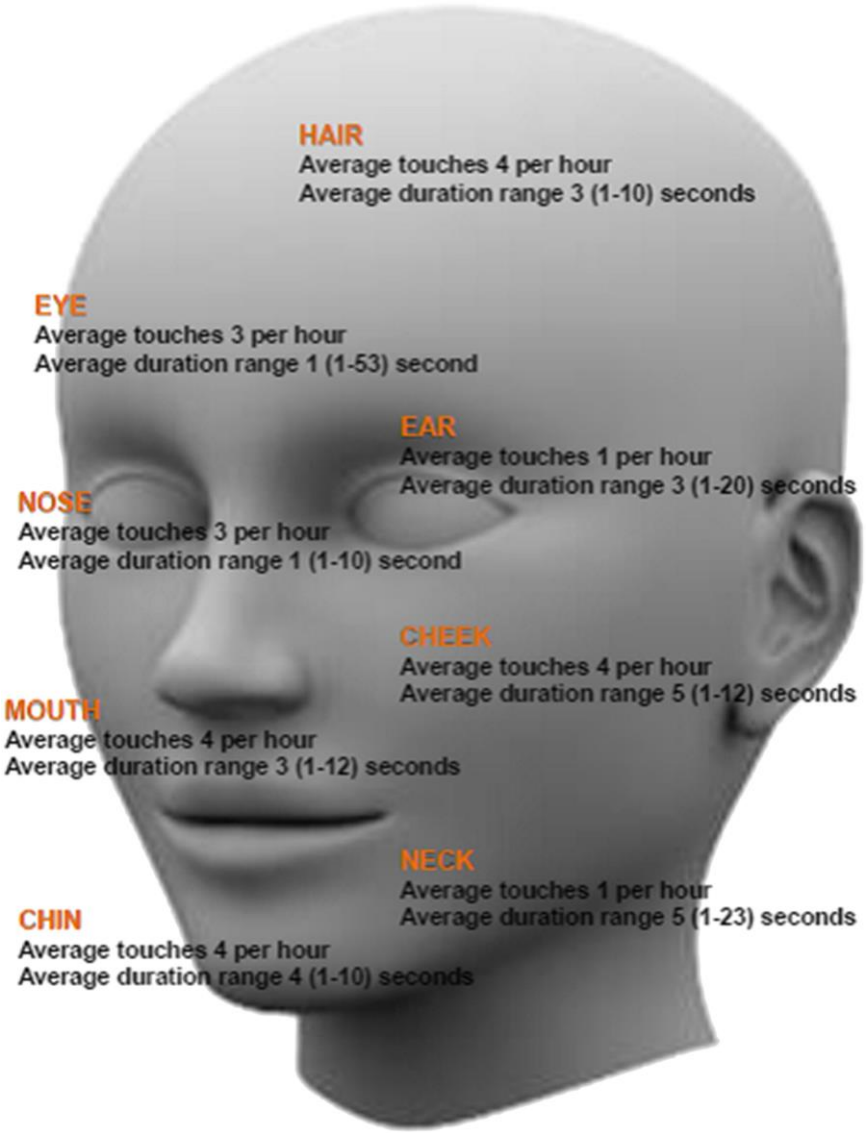
Clínica Antofagasta

Buena Higiene de Manos

- La trasmisión de enfermedades respiratorias desde las superficies ocurre a través de las manos (Nicas & Jones 2009)
- Las moléculas de jabón tienen un lado hidrofílico iónico polar y un lado hidrofóbico no polar, que se une con aceites y lípidos.
- El lavado de manos funciona emulsionando el contenido de lípidos del material adherido a la mano.
- SARS-CoV-2, las moléculas de jabón desmantelan la envoltura lipídica del virus, desactivándolo (Kohn, Gitelman e Inbar 1980).
- El movimiento de las manos genera flujos complejos de cizalladura del agua jabonosa, que forma una emulsión polifásica cargada de espuma, que atrapan las micelas.

R. Mittal ,R. Ni ,J H. Seo J. Fluid Mech. 10.1017 / jfm.2020.330 (2020)

Face touching: A frequent habit that has implications for hand hygiene



American Journal of Infection Control 2015 43112-114

Características de los 2 métodos principales de higiene de manos como parte de las precauciones estándares

Lavado de manos	Aplicación de soluciones alcohólicas
Frotado de las manos con agua y jabón y enjuague, generalmente bajo un chorro de agua, con el fin de eliminar los microorganismos por arrastre y retirar el producto químico.	Frotado o fricción de las manos con una solución alcohólica con el fin de eliminar los microorganismos por el efecto microbicida del alcohol.
En 15 segundos se elimina entre 0,6 y 1,1 $\log_{10}$ de unidades formadoras de colonias (UFC) y en 30 segundos, entre 1,8 y 2,8 $\log_{10}$ UFC.	En 10 segundos se eliminan entre 3,2 y 5,8 $\log_{10}$ UFC.

Widmer AF. Replace hand washing with use of a waterless alcohol hand rub? Clinical infectious diseases: an official publication of the Infectious Diseases Society of America, 2000 31(1), pp.136–143.

COVID-19

Typist Wearing Mask, New York City, October 16, 1918.

Fluorescent Dye Expelled from a Simulated Patient Cough That Ended Up on the Laryngoscopist

Canelli et al. N Engl J Med 2020;382:1957-1958.

2007 guideline for isolation precautions: preventing transmission of infectious agents in health care settings

Recommendations for application of Standard Precautions for the care of all patients in all healthcare settings (see Sections II.D to II.J and III.A.1)

Component	Recommendations
Hand hygiene	After touching blood, body fluids, secretions, excretions, contaminated items; immediately after removing gloves; between patient contacts
Personal protective equipment (PPE)	
Gloves	For touching blood, body fluids, secretions, excretions, contaminated items, mucous membranes, and nonintact skin
Gown	During procedures and patient care activities when contact of clothing/exposed skin with blood/body fluids, secretions, and excretions is anticipated
Mask, eye protection (goggles), face shield*	During procedures and patient care activities likely to generate splashes or sprays of blood, body fluids, secretions, especially suctioning, endotracheal intubation
Soiled patient care equipment	Handle in a manner that prevents transfer of microorganisms to others and to the environment; wear gloves if visibly contaminated; perform hand hygiene
Environmental control	Develop procedures for routine care, cleaning, and disinfection of environmental surfaces, especially frequently touched surfaces in patient care areas
Textiles and laundry	Handle in a manner that prevents transfer of microorganisms to others and to the environment
Needles and other sharps	Do not recap, bend, break, or hand-manipulate used needles; if recapping is required, use a one-handed scoop technique only; use safety features when available; place used sharps in puncture-resistant container
Patient resuscitation	Use mouthpiece, resuscitation bag, other ventilation devices to prevent contact with mouth and oral secretions
Patient placement	Prioritize for single-patient room if patient is at increased risk of transmission, is likely to contaminate the environment, does not maintain appropriate hygiene, or is at increased risk of acquiring infection or developing adverse outcome after infection
Respiratory hygiene/cough etiquette (source containment of infectious respiratory secretions in symptomatic patients, beginning at initial point of encounter, eg, triage and reception areas in emergency departments and physician offices)	Instruct symptomatic persons to cover mouth/nose when sneezing/coughing; use tissues and dispose in no-touch receptacle; observe hand hygiene after soiling of hands with respiratory secretions; wear surgical mask if tolerated or maintain spatial separation, >3 feet if possible.

*During aerosol-generating procedures on patients with suspected or proven infections transmitted by respiratory aerosols (eg, severe acute respiratory syndrome), wear a fit-tested N95 or higher respirator in addition to gloves, gown, and face/eye protection.

Am J Infect Control 2007;35:S65-164

Prevalencia de infección asintomática por SARS-CoV-2

Table. Summary of SARS-CoV-2 Testing Studies

Cohort	Tested, *n*	SARS-CoV-2 Positive, *n* (%)	Positive but Asymptomatic, *n* (%)	Notes*
Iceland residents (6)	13 080	100 (0.8)	43 (43.0)	R
Vo', Italy, residents (7)	5155	102 (2.0)	43 (42.2)	R, L
Diamond Princess cruise ship passengers and crew (8)	3711	712 (19.2)	331 (46.5)	–
Boston homeless shelter occupants (9)	408	147 (36.0)	129 (87.8)	–
New York City obstetric patients (11)	214	33 (15.4)	29 (87.9)	L
U.S.S. *Theodore Roosevelt* aircraft carrier crew (12)	4954	856 (17.3)	~500 (58.4)	E
Japanese citizens evacuated from Wuhan, China (2)	565	13 (2.3)	4 (30.8)	L
Greek citizens evacuated from the United Kingdom, Spain, and Turkey (14)†	783	40 (5.1)	35 (87.5)	L
Charles de Gaulle aircraft carrier crew (13)	1760	1046 (59.4)	~500 (47.8)	E
Los Angeles homeless shelter occupants (10)	178	43 (24.2)	27 (62.8)	–
King County, Washington, nursing facility residents (15)	76	48 (63.2)	3 (6.3)	L
Arkansas, North Carolina, Ohio, and Virginia inmates (16)	4693	3277 (69.8)	3146 (96.0)	–
New Jersey university and hospital employees (17)	829	41 (4.9)	27 (65.9)	–
Indiana residents (18)	4611	78 (1.7)	35 (44.8)	R
Argentine cruise ship passengers and crew (19)	217	128 (59.0)	104 (81.3)	–
San Francisco residents (29)	4160	74 (1.8)	39 (52.7)	–

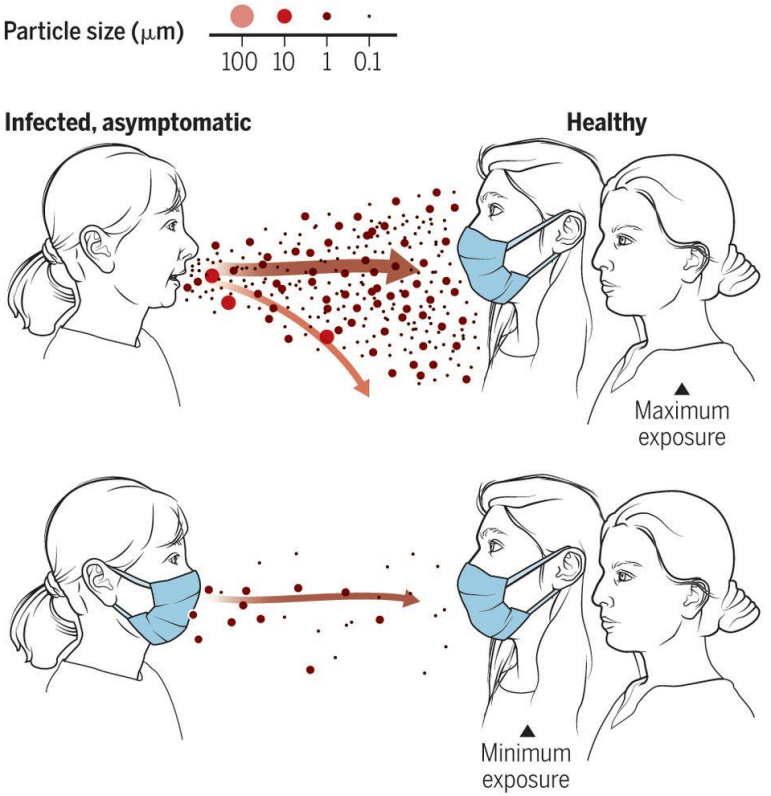
E = estimated from incomplete source data; L = longitudinal data collected; R = representative sample.
* A dash indicates that the study did not have a representative sample, collected no longitudinal data, and did not require estimation of missing data.
† Clarified via e-mail communication with coauthor.

Annals of internal Medicine 3 de junio de 2020

Masks reduce airborne transmission.

Masks reduce airborne transmission

Infectious aerosol particles can be released during breathing and speaking by asymptomatic infected individuals. No masking maximizes exposure, whereas universal masking results in the least exposure.



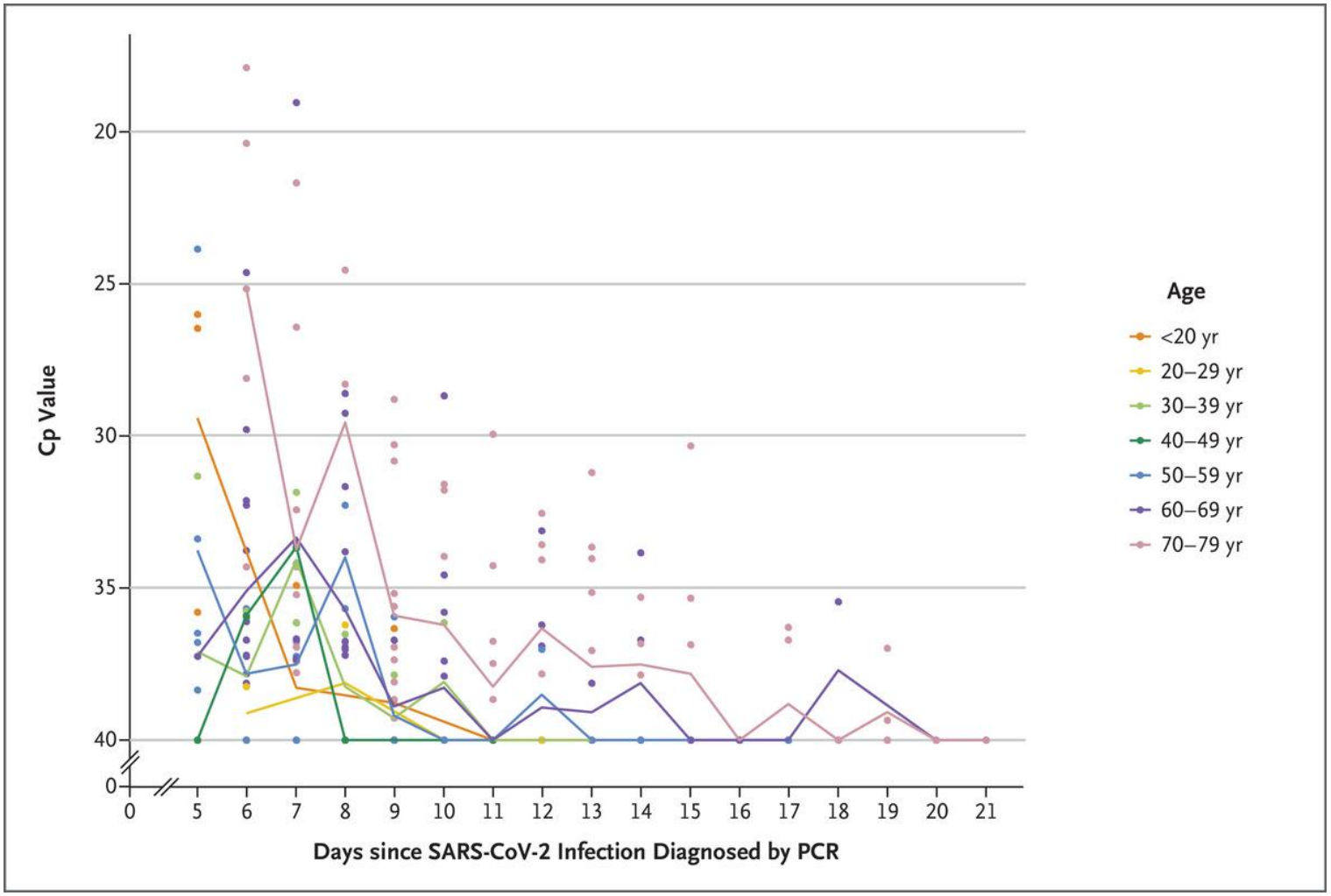
GRAPHIC: V. ALTOUNIAN/*SCIENCE*

Kimberly A. Prather et al. Science 2020;science.abc6197

Science
AAAS

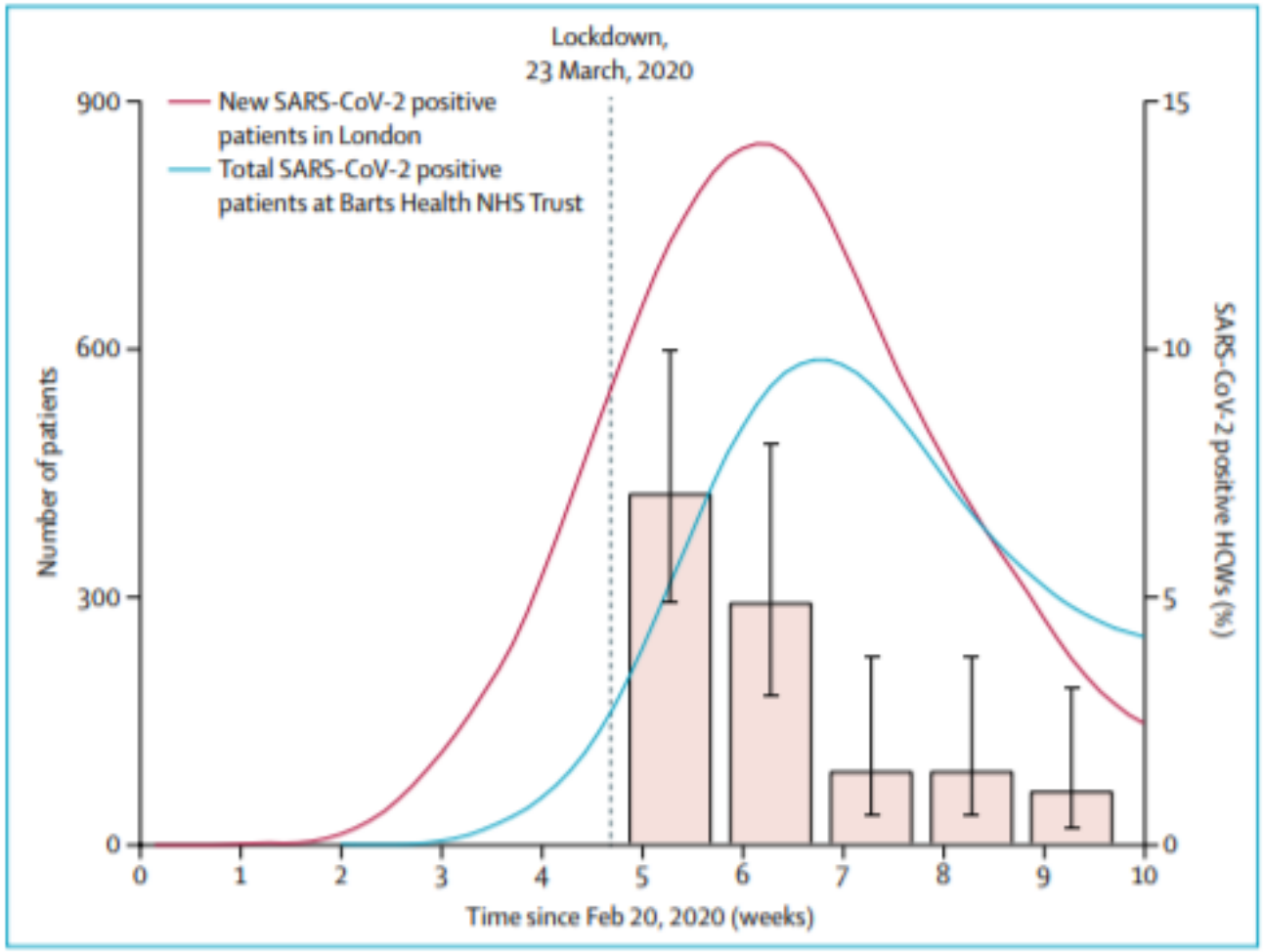
Clínica Antofagasta
Bupa

Crossing-Point Values in RT-PCR Testing of Asymptomatic Persons with SARS-CoV-2 Infection.



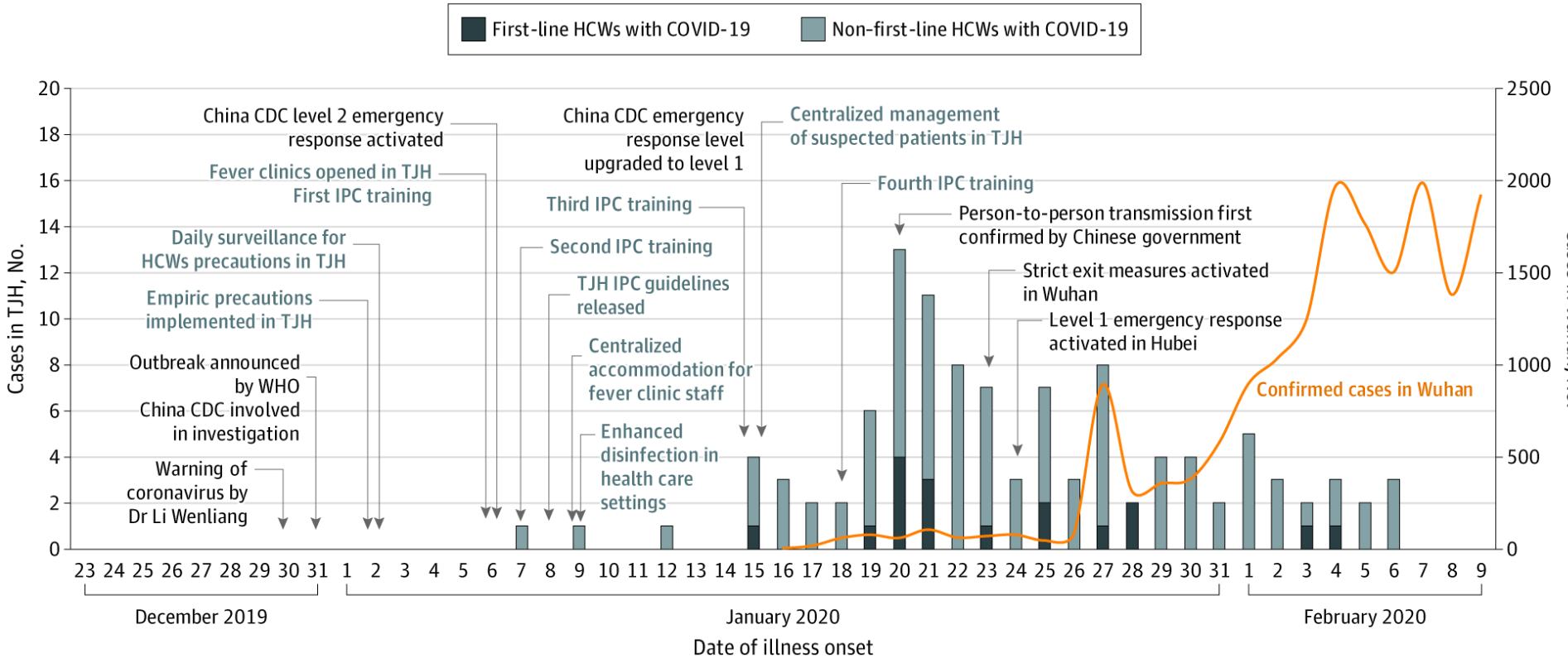
A Sakurai et al. N Engl J Med 2020. DOI: 10.1056/NEJMc2013020

COVID-19: PCR screening of asymptomatic healthcare workers at London hospital



www.thelancet.com Vol 395 May 23, 2020

COVID-19



JAMA Netw Open. 2020; 3 (5): e209666. doi: 10.1001

Clínica Antofagasta

COVID-19

An Emergency Hospital in Brookline, Massachusetts, Where Patients Were Cared for during the 1918 Influenza Epidemic

Clínica Antofagasta