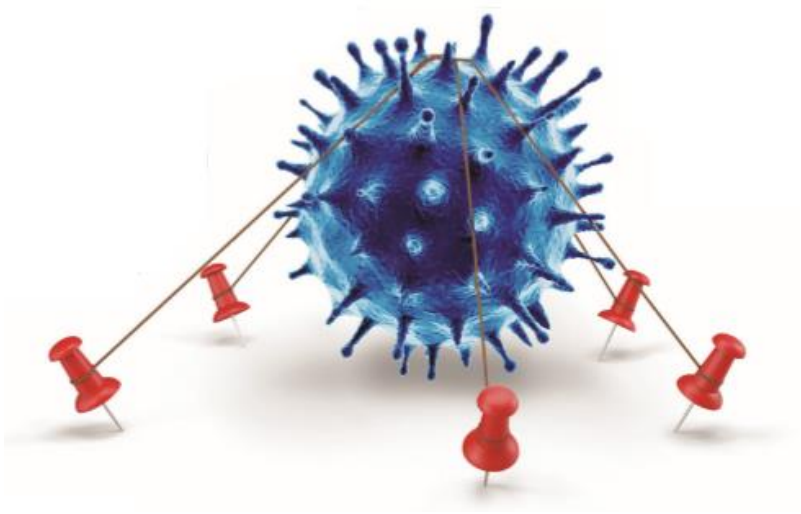
NATIONAL HEALTH LABORATORY SERVICE

NATIONAL INSTITUTE FOR OCCUPATIONAL HEALTH
Division of the National Health Laboratory Service

Preparing the Workplace for Coronavirus

TIME FOR RADICAL ACTION



RISK MANAGEMENT

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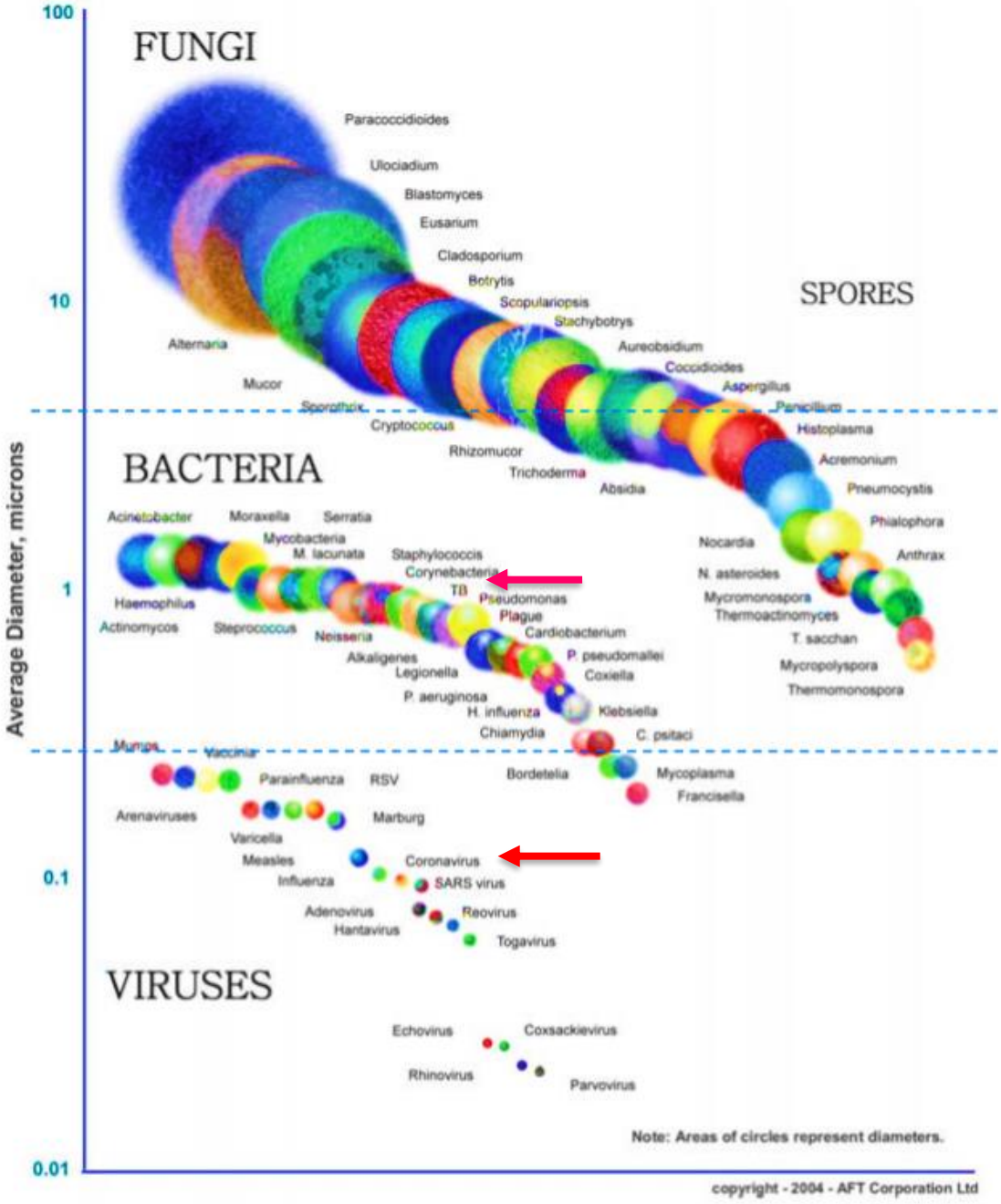
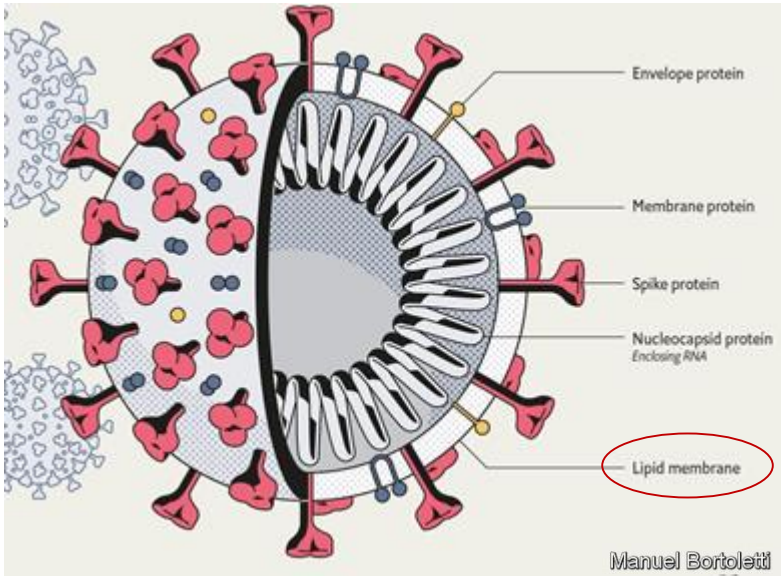




- **3,459,006 cases**
- **243,367 death**
- **212 Countries (03/05/2020) == Public health, occupational health, economic & social issues all straddle together**
- **Risk related solutions – collaborative efforts**

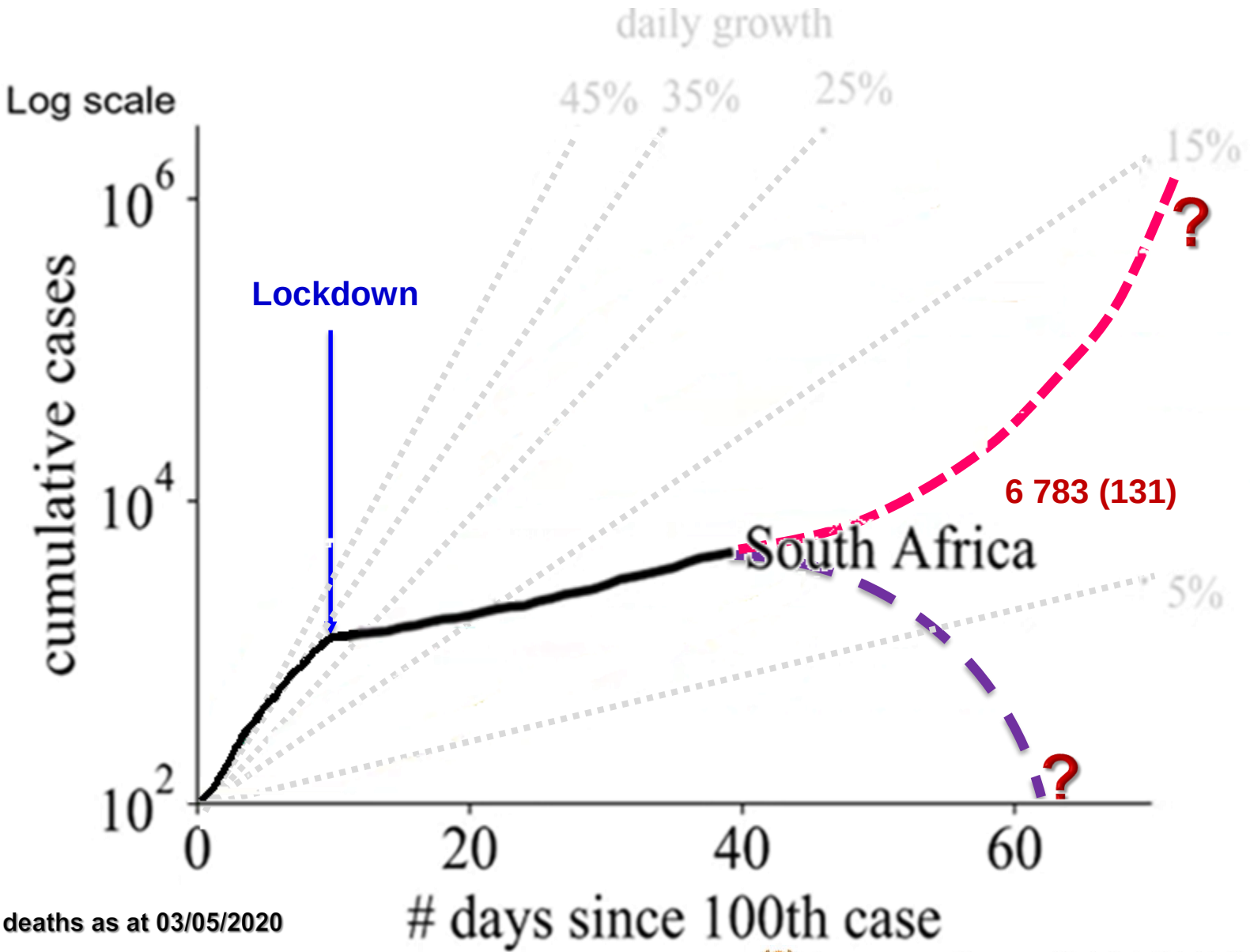
245 747	6783	2549	131	447
TESTS CONDUCTED	POSITIVE CASES IDENTIFIED	RECOVERIES	DEATHS	NEW CASES

SUNDAY
03
MAY
2020

Learn more to Be READY for #COVID19:
www.sacoronavirus.co.za

NICD Hotline: 0800 029 999
WhatsApp 'Hi' to 0600 123 456

What to expect post stage 5?

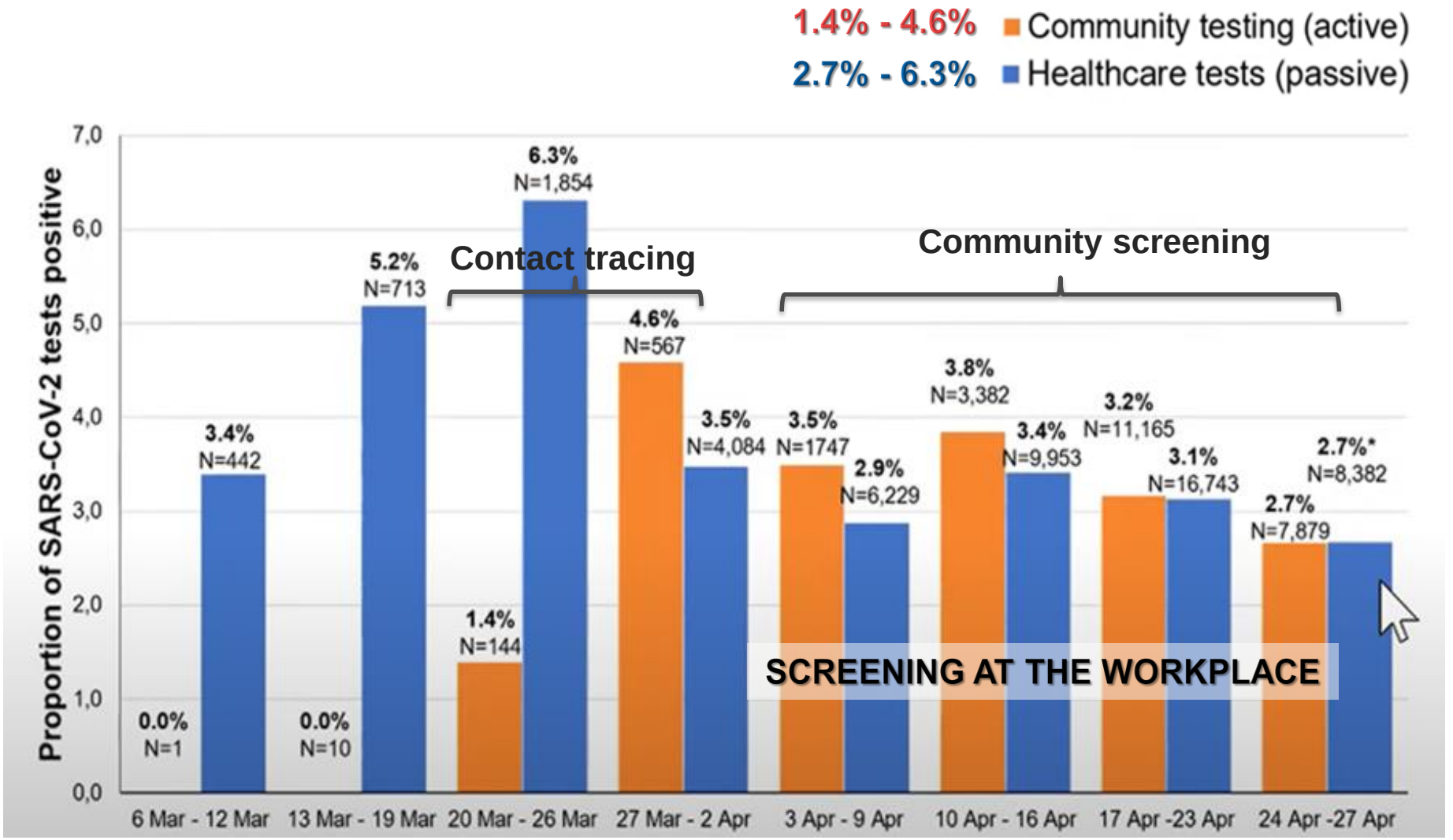


Cases & deaths as at 03/05/2020

SA's epidemic trajectory – to 27/04/2020, modified

Diagram source: Tulio de Oliveira, Maria Schud & UKZN CoV Big Data Consortium

Proportion of NHLS tests that are positive comparing passive and active testing (by week)



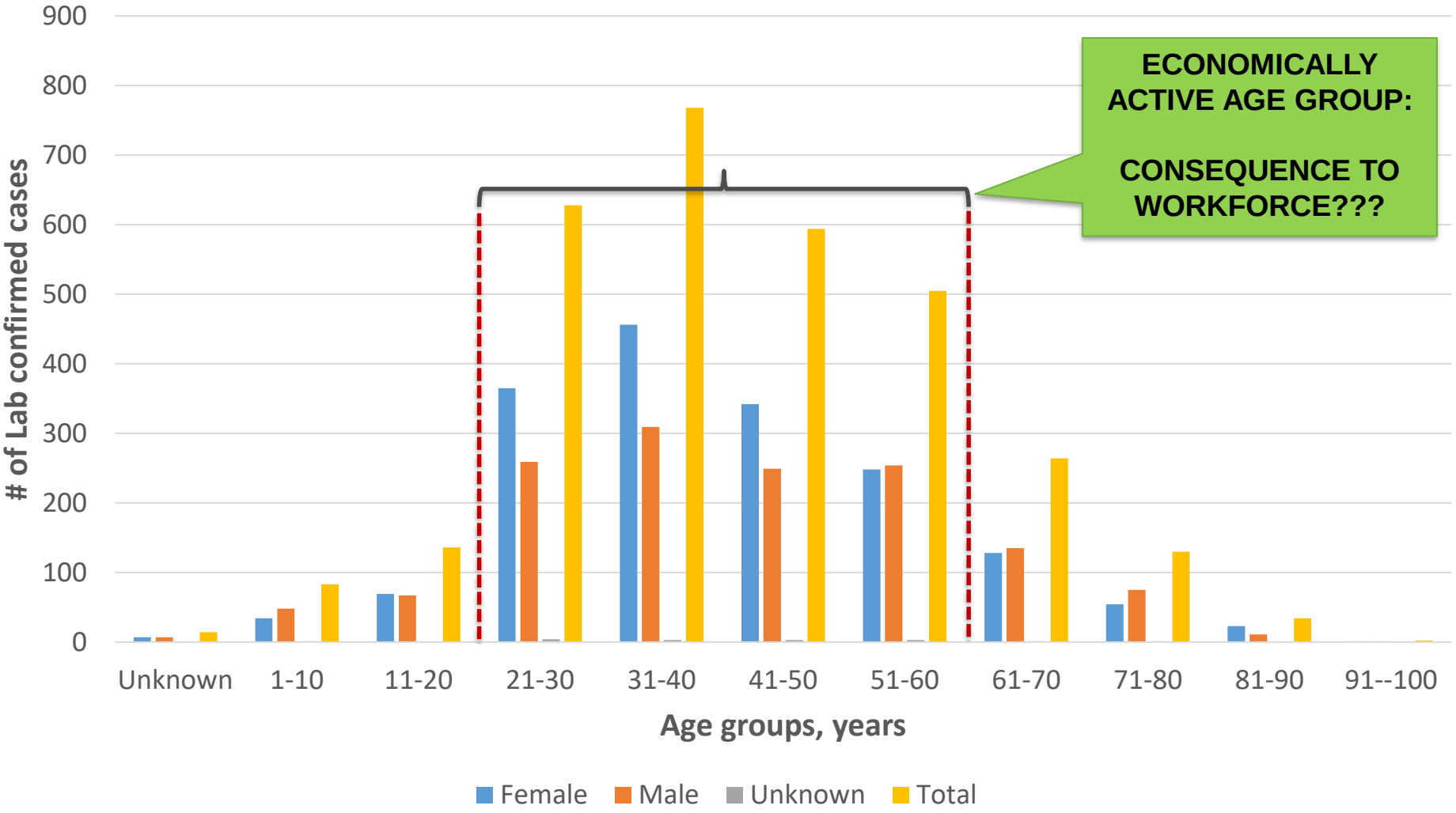
health
Department:
Health
REPUBLIC OF SOUTH AFRICA

Source of data: Kamy Chetty, NHLS

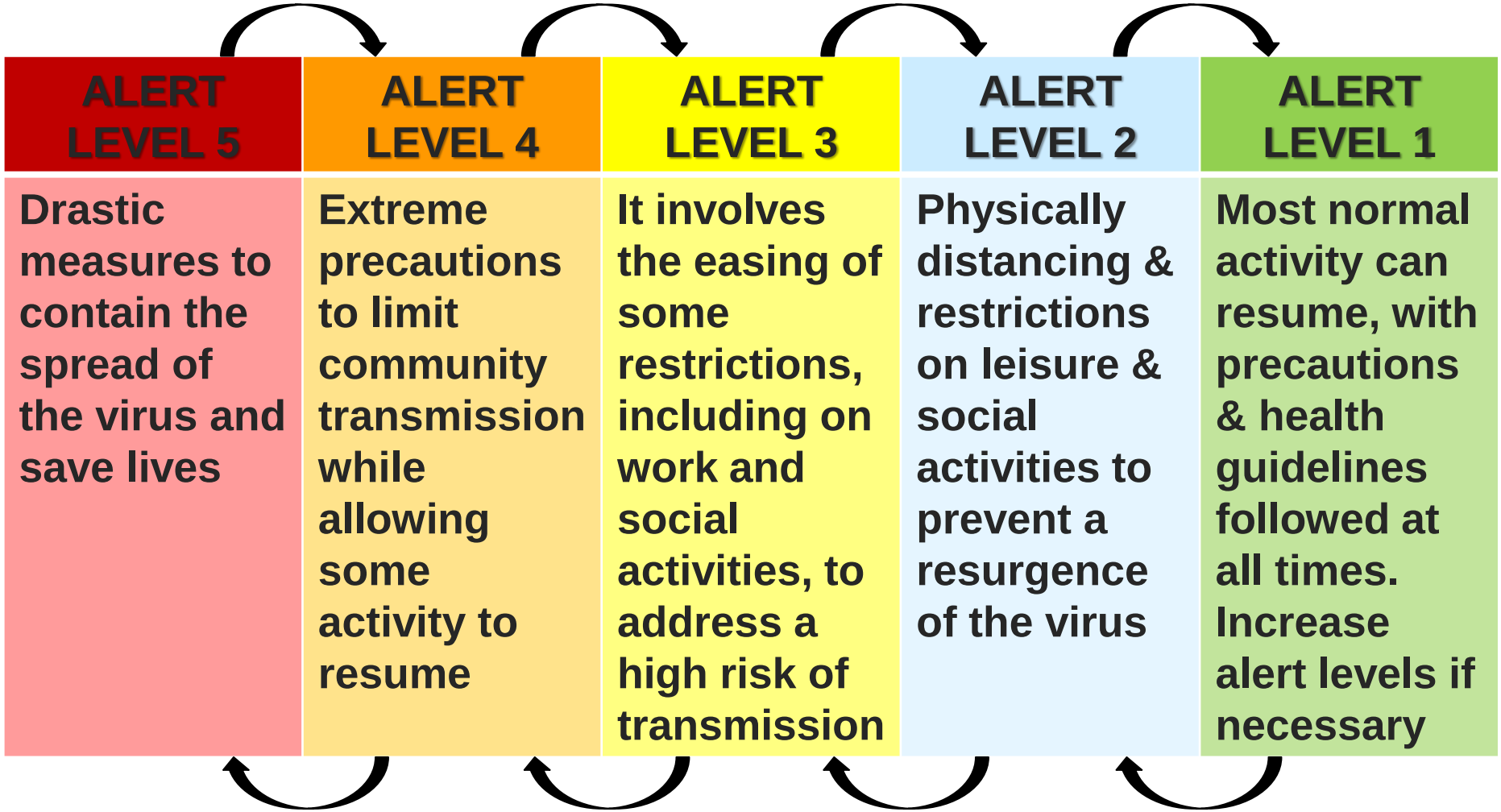
CAPRISA

Analysis of Age and Gender of confirmed cases

(NICD data as of 19/04/2020)



RISK ADJUSTED STRATEGY: ALERT LEVELS



- Economic imperatives & social disruption, epidemiology into consideration
- Reviewed based on the rates of infection and health system capacity across the country

RULES APPLICABLE TO ANY SECTOR BEFORE RESUMING ACTIVITY

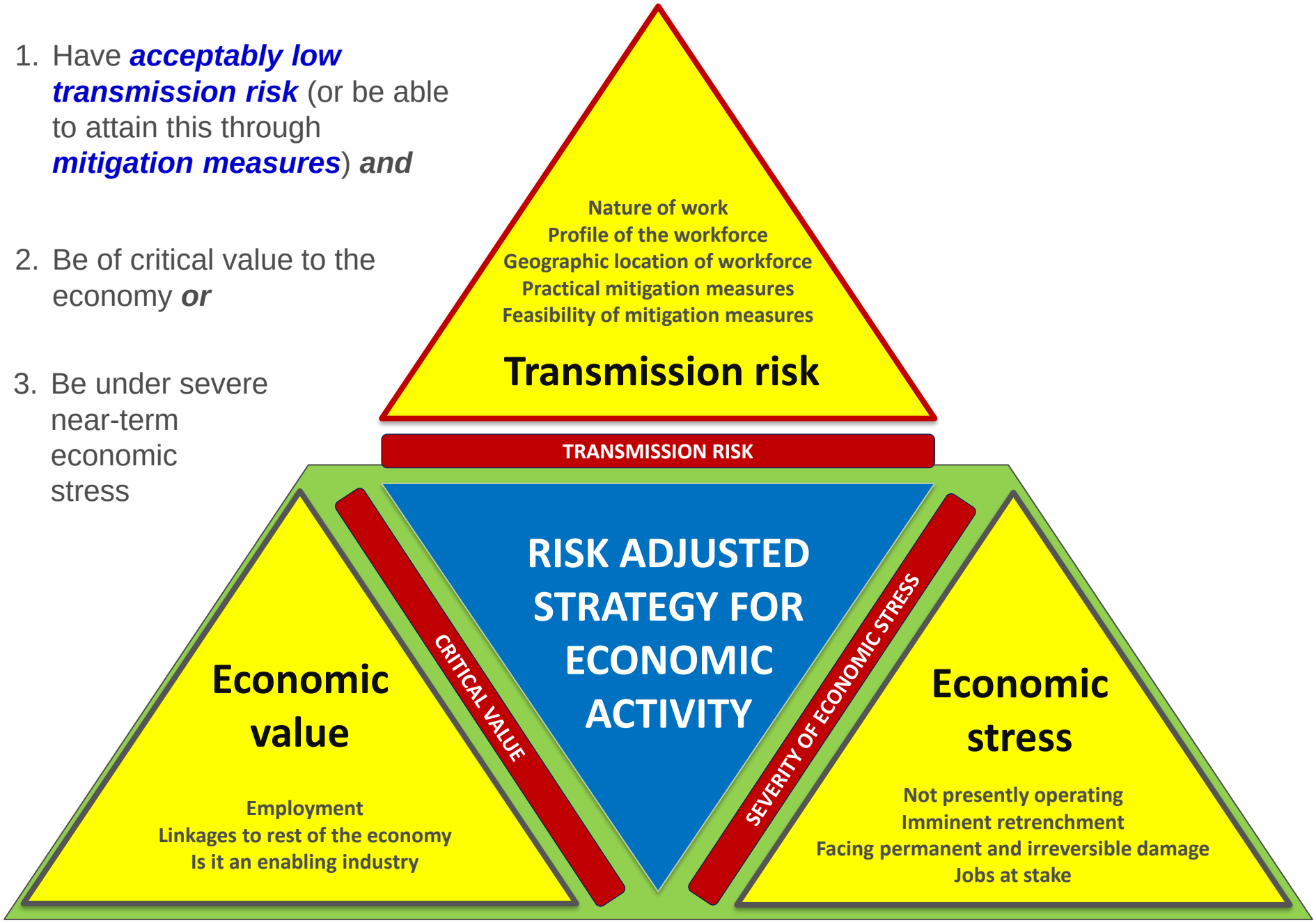
- Each sector agree upon a COVID-19 prevention and mitigation plan with Ministries of Health, Employment and Labour, relevant sector (social dialogue)
- Objective: to provide specific focus on COVID-19 and adapt and implement the measures required
- Individual businesses must have **COVID-19 RISK ASSESSMENT** and **PLANS** in place and must conduct **WORKER EDUCATION** on protection measures:
  - ✓ Prevention of viral spread in the workplace
  - ✓ Good ventilation
  - ✓ Managing sick employees
- Monitoring systems must be in place to i) ensure compliance with safety protocols, and ii) identify infections among employees

INDUSTRIES THAT RETURN TO WORK FIRST SHOULD:

1. Have ***acceptably low transmission risk*** (or be able to attain this through ***mitigation measures***) ***and***

2. Be of critical value to the economy ***or***

3. Be under severe near-term economic stress



COVID-19 AND THE WORLD OF WORK

Community acquired

Workplace acquired

ANY WORKPLACE
–High population density work

ANY WORKER
–Visitors, customers & contractors

HIGH RISK OCCUPATIONS
–Low risk areas

AT RISK WORKERS
–Immunocompromised workers

OSH SERVICE CRISIS

- **Increased unemployment and underemployment**
- **Business continuity plan: outward focus** (systematic & societal approach)

RIGHTS, ROLES AND RESPONSIBILITIES

EMPLOYER

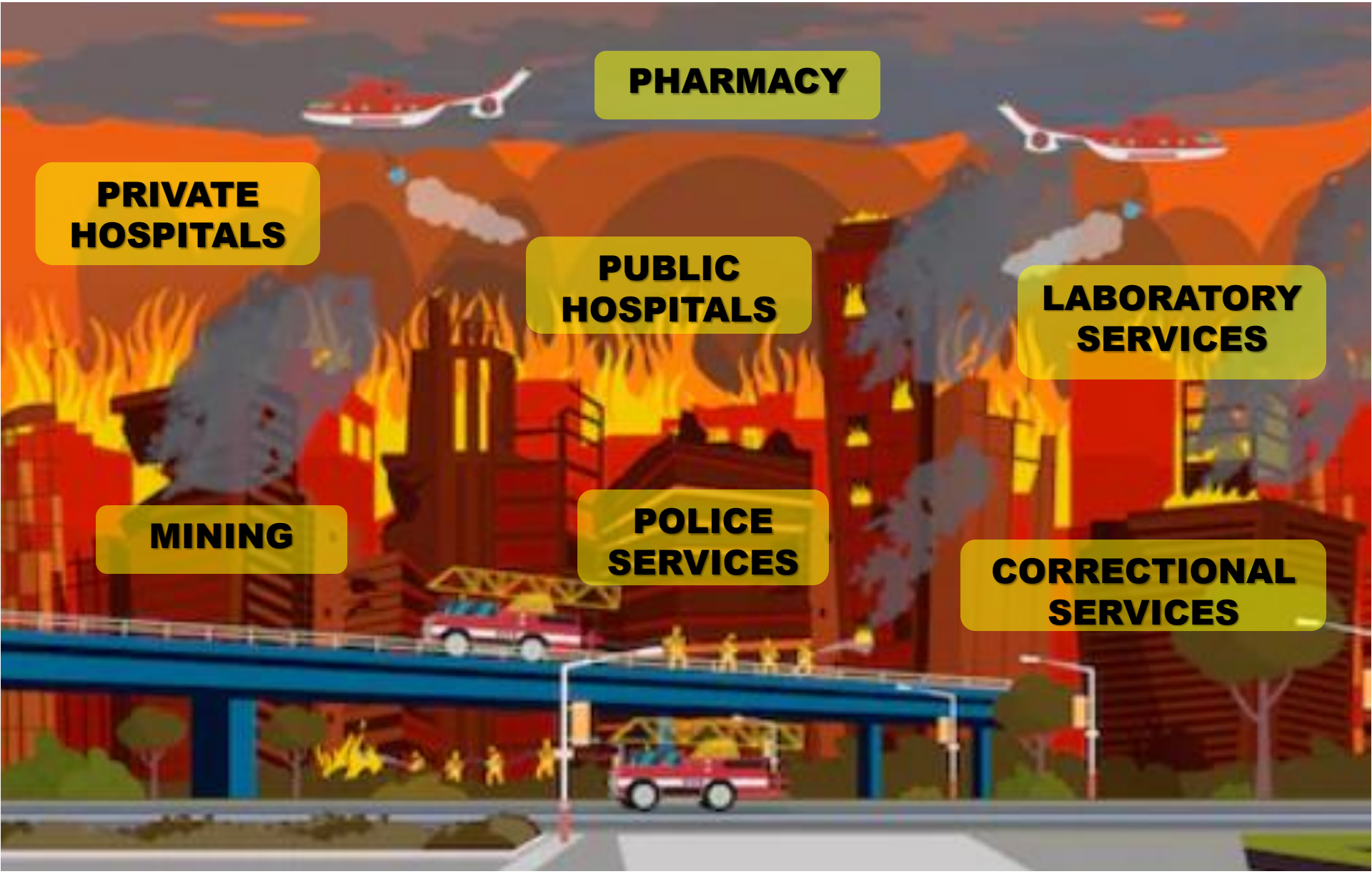
Ensure as far as is reasonably practicable:-

- That workplaces, machinery, equipment and processes are safe and without risk to health of workers and public
- The **biological, chemical, psychosocial** (stigma) factors are without risk to health when the appropriate measures are taken
- Provide, where necessary, adequate personal protective equipment (at no cost to workers)
- Provide for measures to deal with isolation of positive workers and emergencies
- Ensure that workers and their representatives are consulted, informed, and **trained** on OSH
- This obligation applies to self-employed persons (e.g. plumbers or electricians) whose working activities bring them into contact with members of the public

EMPLOYEE

- Right to remove themselves from a work situation which they have reasonable justification to believe presents an imminent and serious danger to their life or health, without undue consequences
- Right to receive adequate information and training on OSH – COVID-19
- Right to enquire into (and to be consulted on) all aspects of OSH associated with their work
- Duty to co-operate with the employer in the field of OSH (e.g. comply with OSH instructions and procedures; use PPE correctly; report to supervisor hazardous situation; etc.)

Department of Employment & Labour, Directive No 43257


PHARMACY
PRIVATE HOSPITALS
PUBLIC HOSPITALS
LABORATORY SERVICES
MINING
POLICE SERVICES
CORRECTIONAL SERVICES

Different risk exposure profiles based on specific job function.

- **Probability or likelihood** to be exposed to SARS-CoV-2:
  - characteristic of the infectious disease (i.e. transmission patterns)
  - possibility that workers may encounter infectious persons
  - may be exposed to contaminated environments or materials (e.g. frequently touched surfaces
  - exposed to waste in the course of their duties
- **Severity or consequence** of the resulting health outcomes:
  - individual affecting factors (including age, underlying diseases and health conditions)
  - measures available to control the impact of the infection

Department of Employment and Labour Exposure Risk Classification

Low Exposure Risk	Medium Exposure Risk	High Exposure Risk	Very high Exposure Risk
Lower exposure risk (caution) jobs are those that **do not require contact** with people known to be or **suspected** of being infected with SARS-CoV-2, **nor frequent close contact** with (i.e. within 2 meter of) the general **public**.	Medium exposure risk jobs include those that require **frequent and/or close contact** with (i.e. within 2 meters of) people who **may be infected** with SARS-CoV-2, but who are **not known** or suspected COVID-19 patients.	High exposure risk jobs are those with **high** potential for **exposure** to **known or suspected sources** of COVID-19.	Very high exposure risk jobs are those with **high** potential for **exposure** to **known or suspected sources** of COVID19 during specific medical, postmortem, or laboratory procedures.

RISK OF TRANSMISSION: RISK MATRIX FOR BUSINESS

General guiding criteria	High	Medium	Low	Explanatory notes
Nature of business requires dense public congregation of customers	Exclusion			Certain non-essential congregation activities (mass gathering in cinemas, stadium events, large functions) per se excluded
General density of interaction (inside & outside the workplace)	<2 m^2 per person	2-6 m^2 per person	>6 m^2 per person	
Geography of workplace(s)	High risk province & urban/metro area	High risk province OR urban/metro area OR crossing borders	Low risk province & rural area & within provincial boundaries	
Employees can work remotely	Less than 30%	30 – 60%	60 – 100%	All workers who can continue to work remotely must do so
For % of the workforce who cannot work remotely:				
Travel risk of employees	60% + use public transport OR ≥20% crossing borders	30 – 60% use public transport OR 10 – 20% cross borders	<30% use public transport AND <10% crossing borders	
Ability to separate vulnerable employees/customers	Isolate pensioners and immunocompromised workers			Vulnerable groups should not enter the workspace at all (both employee and customer), treated separately and/or remotely
	>50 years	30 – 50 years	<30 years old	
Resources & capacity to implement risk mitigation measures at work	Cannot implement all mitigation measures	All those relevant, but not immediately	All those relevant, immediately	See general measures

RISK ASSESSMENT

	Legal Framework: industry fragmentation		
Number of employees	> 500	10 – 500	<10 (SMME)
Policy	●	●	●
COVID-19 readiness plan	●	●	●
Documented risk Assessment	●	●	●
Risk communication all workers	●	●	●
Health & Safety committee	●	▲	▲
Report to DEL*	●	▲	▲

* Department of Employment and Labour

- **Who should conduct the risk assessment**
  - Any trained and competent person: internal personnel know processes better
  - Hire a consultant/occupational health practitioner (costs incurred)
- **Risk assessment guideline** available www.nioh.ac.za **OR** www.who.int
- **Risk assessment template**: no standard
  - Use simple template that is sector specific and easy
  - Several available online

PRECAUTIONS APPLICABLE ACROSS ALL SECTORS AND ALERT LEVELS

Wash your hands often with soap and water. If you don't have soap and water, use a hand sanitizer that is at least 60% alcohol based.

Clean and disinfect frequently touched surfaces.

Encouraged to adopt work-from-home, *where possible*

Cover your mouth and nose with a tissue when you cough or sneeze. If you don't have a tissue, cough or sneeze into your upper sleeve or elbow, not your hands.

Try not to touch your face with unwashed hands.

DID YOU KNOW on average: 23 times/hour

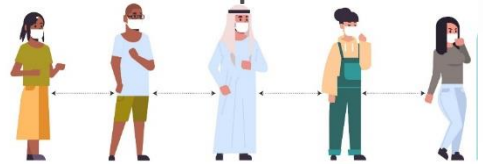
All employees screen staff daily: symptom check as well as temperature assessment

Workers > 60 years and those with comorbidities should be offered a work-from-home option or be allowed to remain on leave with full pay

Have workplace protocols in place that would include disease surveillance and prevention of the spread of infection

All employees to use a cloth mask especially where social distancing is not possible, and when using public transport. 2x mask/worker

Stringent social distancing measures should be implemented in the workplace



~2.3% die

~60% population Infected?

~5% critical cases

~15% severe cases

~80% mild cases

COMMON SYMPTOMS

SORE THROAT

COUGH

LOSS OF TASTE & SMELL

HEADACHE

HIGH FEVER

DIFFICULTY BREATHING

SCREENING

Cases that were not identified and not diagnosed

asymptomatic cases?

https://en.wikipedia.org/wiki/Coronavirus_disease_2019#/media/File:Severity-of-coronavirus-cases-in-China-1.png

Where does a cough go?

Coughs, along with sneezes, play a key role in transfering respiratory diseases

Can travel as fast as **80 km/h** and expel almost **3,000 droplets**

The direct jet can spray droplets **around 1.8 m**

Lighter drops can **remain airborne** and travel further

Small droplets may float into **ventilation systems**

What is in a cough?

Can contain a mixuture of mucus, phlegm, irritants and fluids. It can also carry **infections such as coronaviruses**

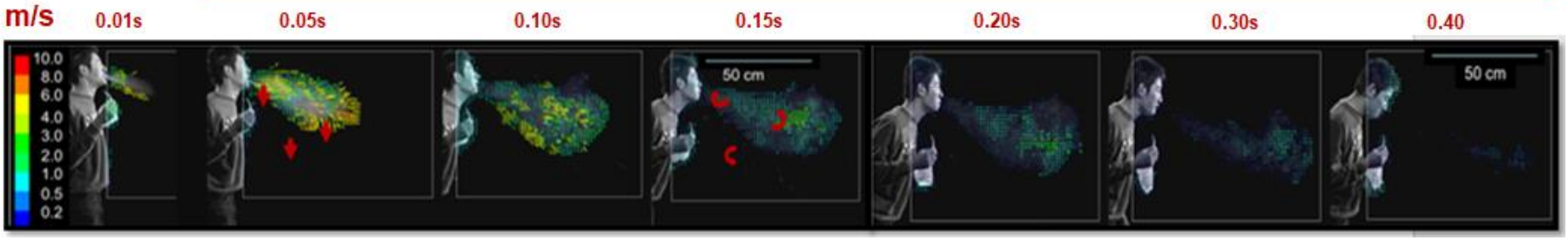
Some droplets **settle on surfaces** such as door knobs and tables

A coronavirus may remain viable on inanimate surfaces for 1 - 9 days*

Can **enter the respiratory tract of another person**

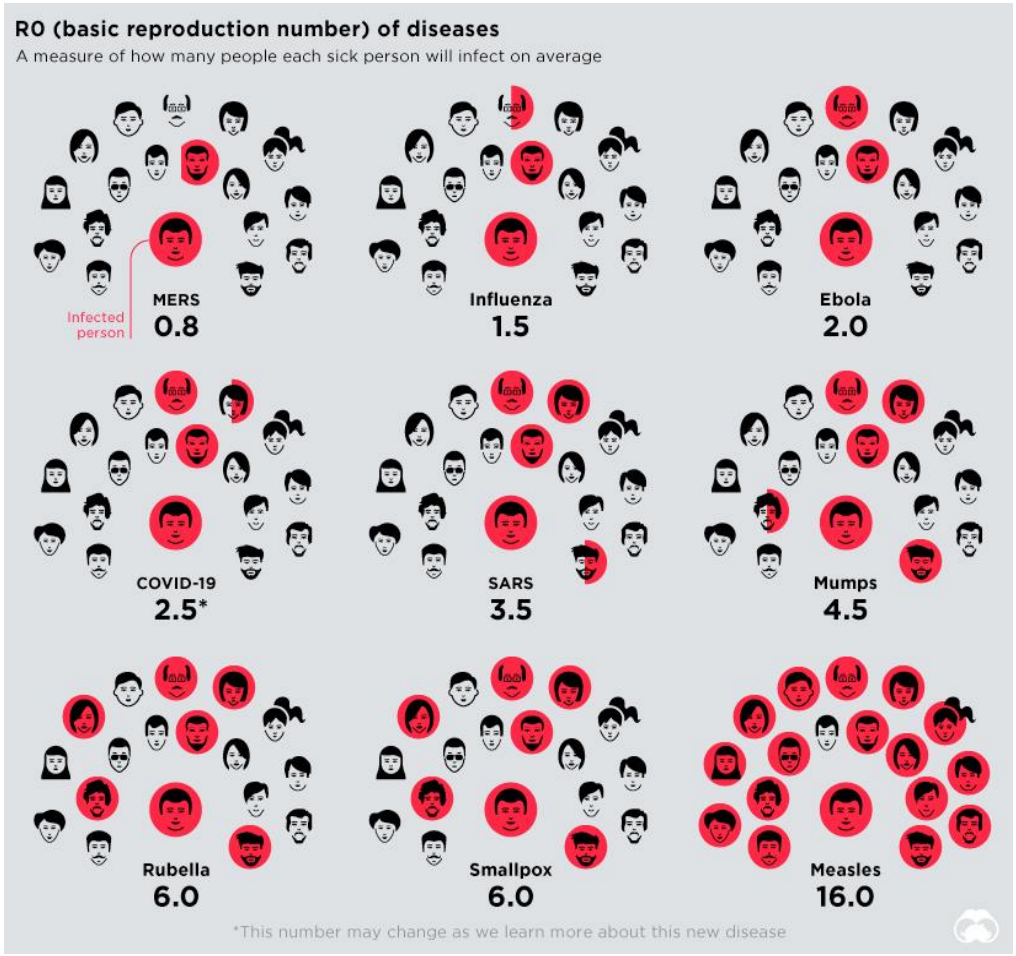
Source: MIT/Lung.org/CDC/*journalofhospitalinfection.com

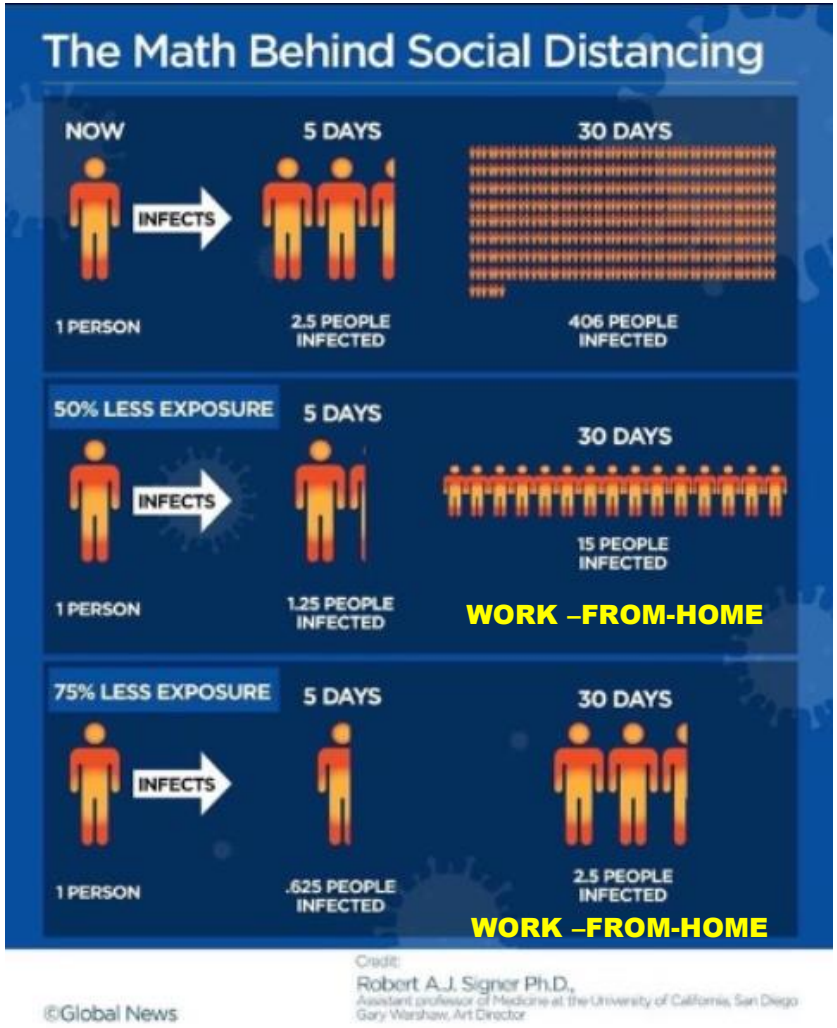
© AFP



Particles expelled at high speed (~6m/s) and can travel ~ 30 – 80 cm within 0.20 s

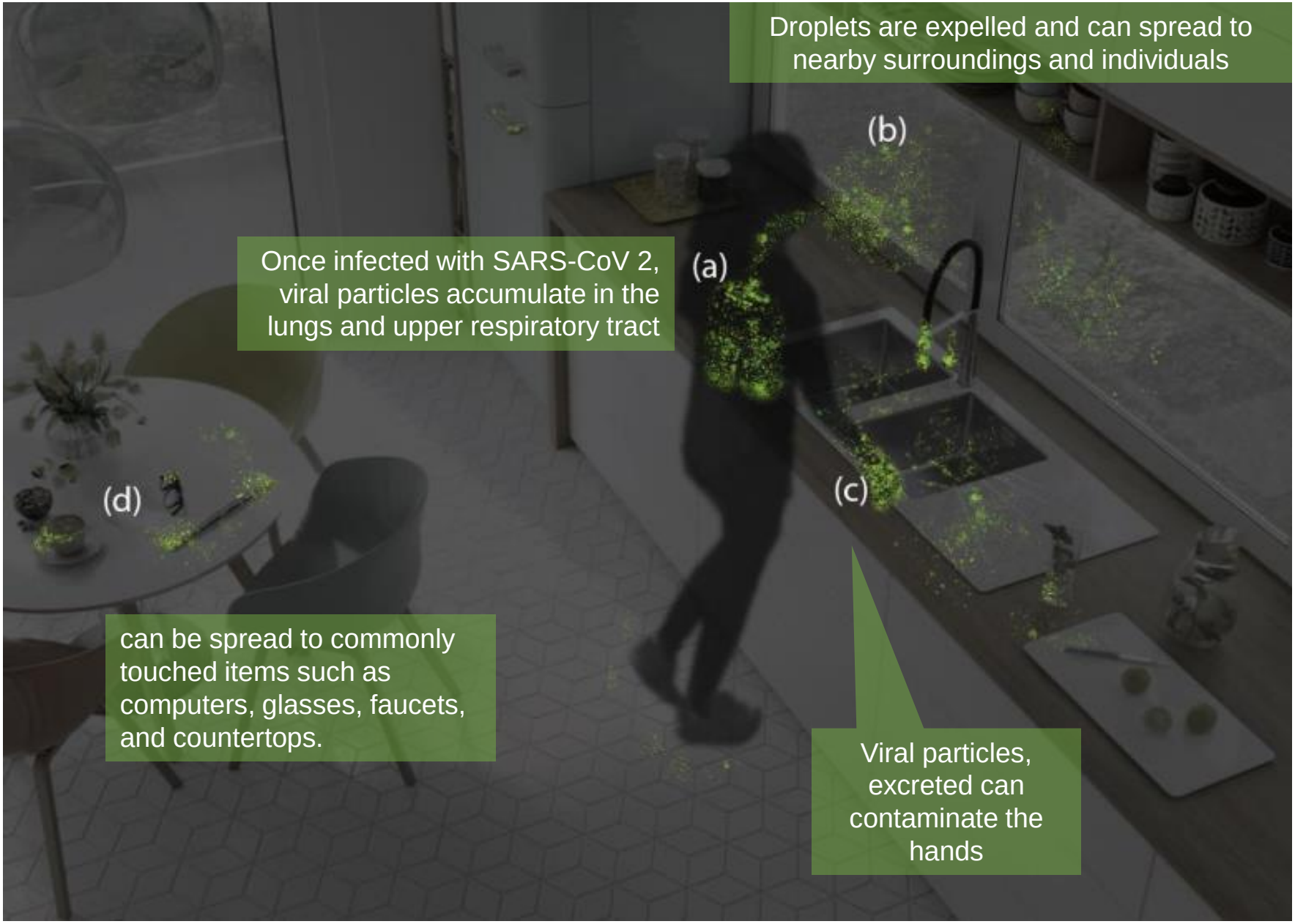
(Nishimura, Sakata & Kaga, 2013)



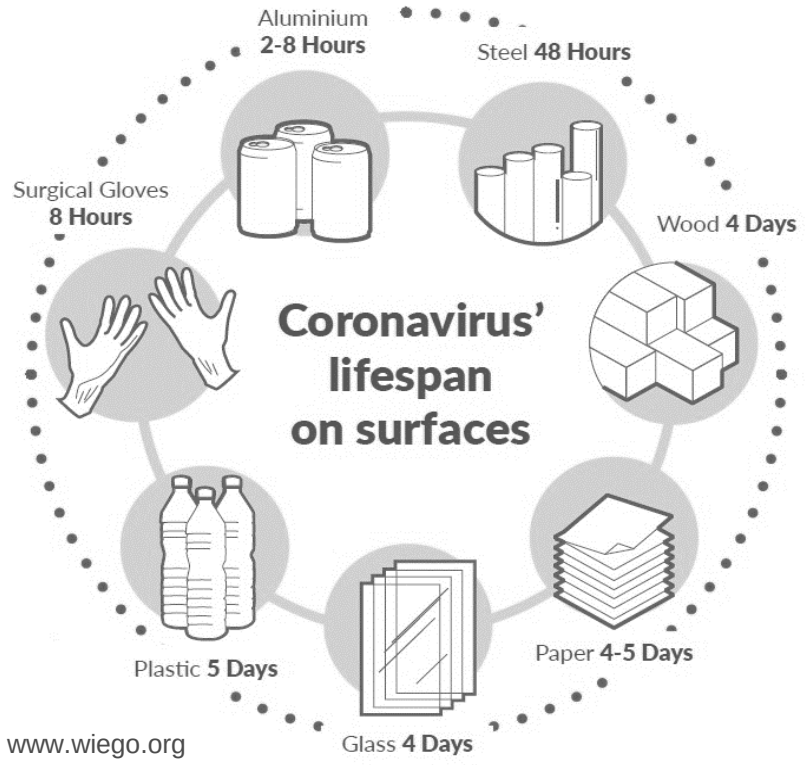


SOUTH KOREA
PATIENT #31: 80% of the infections

CONCEPTUALIZATION OF SARS-COV-2 DEPOSITION



CORONAVIRUS SURVIVAL ENVIRONMENT



- Less stable in the environment
- Fragile outer membrane
- Survival on inanimate surface ranges from 2 hrs - 9 days
- Survival time depends on
  - **pH**
  - **Inoculum size**
  - **Dryness (humidity)**
  - **Temperature**
  - **Type of surface**
  - **Contact time and concentration of disinfectants (common disinfectants: >60% alcohol, bleach, QAC, glutaraldehyde)**

IMPACT ON HEALTH (Respiratory, Skin)

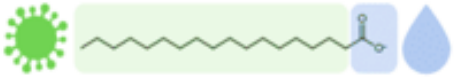
- www.epa.gov
- www.nrcs.org.za

FOUR WAYS TO DESTROY CORONAVIRUS

1 SOAP AND WATER

✓ HANDS ✓ HARD SURFACES

SOAP MOLECULES



WASH HANDS FOR A MINIMUM OF 20 SECONDS

HOW DOES IT DESTROY THE VIRUS?

Soap molecules dissolve the fatty outside layer of the virus. Any type of soap is effective, so it doesn't matter what type you use.

2 ALCOHOL HAND SANITISER

✓ HANDS ✓ HARD SURFACES

MIN. 60% ALCOHOL (HANDS) OR 70% (SURFACES)

HOW DOES IT DESTROY THE VIRUS?

Alcohol molecules dissolve the fatty outside layer of the virus and damage the structures of virus proteins.

3 BLEACH SOLUTION

✗ HANDS ✓ HARD SURFACES

NaClO

SODIUM HYPOCHLORITE

Cl_2

Don't mix bleach with other cleaners. This can generate toxic chlorine gas.

MINIMUM CONCENTRATION OF 0.1% HYPOCHLORITE

HOW DOES IT DESTROY THE VIRUS?

Bleach oxidises and destroys virus proteins and genetic material. It should be left on surfaces for at least 10 minutes.

4 HYDROGEN PEROXIDE

✗ HANDS ✓ HARD SURFACES

H_2O_2

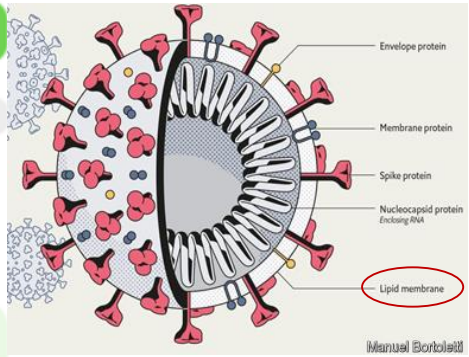
HYDROGEN PEROXIDE

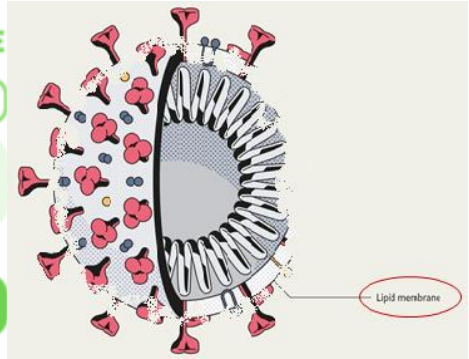
Don't mix peroxide with vinegar. This makes corrosive peracetic acid.

MINIMUM CONCENTRATION OF 0.5% PEROXIDE

HOW DOES IT DESTROY THE VIRUS?

Peroxide oxidises and destroys virus proteins and genetic material. It should be left on surfaces for at least 10 minutes.





ACKNOWLEDGEMENTS

- NHLS Management
- NIOH Outbreak Response Team
- NDOH
- Department of Employment & Labour
- CAPRISA
- WHO, CDC
- NEWS24, SABC

AWARENESS IS POWER

&

POWER SAVES LIVES

DO THE RIGHT THING!!

Note: The COVID-19 outbreak is evolving rapidly and information we know today may change tomorrow. It is therefore important that you keep abreast with the latest information. The material is prepared under emergency conditions, and has not been subject to its usual peer review processes and thus will contain errors and omissions. While care was taken in preparing the content using available resources and partners, and adapting it to the South African context we request that the material only be used as a guideline which does not replace official policies. We endeavour to update new information as soon as we're aware of it.

03/05/2020