# CO<u>VID-19</u>

Primary Care Update #2

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Latest developments













### WHO-China Joint Mission Report - new insights into COVID-19



"The COVID-19 virus is unique among human coronaviruses in its combination of **high** transmissibility, substantial fatal outcomes in some high-risk groups, and ability to cause huge societal and economic disruption.

▶ Team leader Bruce Aylward

#### WHO-China Joint Mission Report

- Clinical severity
  - ▶ 80% Mild to moderate illness (incl some with pneumonia)
- High level care (ECMO, ventilators), mortality may be higher outside China
   Most deaths in elderly and with underlying disease: heart, lung, BP, cancer, maybe





fable. Clinical Features of Patients In	fected With SARS-Co	N-2			
	All patients (N = 18)	Did not require supplemental O <sub>2</sub> (n = 12)	Required supplemental O <sub>2</sub> (n = 6)		
Demographics					
Age, median (range) y	47 (31-73)	37 (31-56)	55 (47-73)		
Male sex, No. (%)	9 (50)	7 (58)	2 (33)		
Any cornorbidiky, No. (%)*	5 (28)	1 (8)	4 (67)		First 18 cases in Sinaapore.
Signs and symptoms on presentation, No. (%)					All hospitalised
Fever	13 (72)	7 (58)	6 (100)		
Cough	15 (83)	10(83)	5 (83)		
Shortness of breath	2 (11)	1 (8)	1 (17)		Common symptoms:
Shinomhea	1(6)	1 (8)	0		common symptoms.
Sore throat	11(61)	8 (67)	3 (50)		Fever, cough, sore throat
Diantea	3 (17)	3 (25)	0		
Vital signs at presentation, median (range)					
Temperature, *C	37.7 (35.1-39.6)	38.3 (36.6-39.6)	37.7 (16.1-38.1)		khinomoed uncommon (6%)
Respiratory rate, breaths, min	18 (16-21)	18 (17-19)	20 (16-21)		Diarrhoea in 17%
Pulse aximeter 02 saturation, %	98 (95-100)	98 (95-100)	97 (95-98)		
Systolic blood pressure, mm Hg	131 (103-167)	131 (104-167)	136 (103-141)		
Heart rate, /min	97 (75-118)	99 (75-118)	91 (78-102)		Duration of symptoms modian
Baseline investigations, median (range)					12 days (E 24)
WBCs, *10 <sup>9</sup> /L	4.6 (1.7-6.3)	4.6 (1.7-6.3)	3.4 (2.6-5.8)		15 ddys (5 – 24)
Hemoglobin, g/dl.	13.5 (11.7-17.2)	13.9 (11.7-17.2)	13.2 (11.7-14)		
Platelets, ×10 <sup>4</sup> /L	159(116-217)	159 (128-213)	156 (116-217)		0
Neutrophils, ×10°/L	2.7 (0.7-4.5)	2.8 (0.7-4.5)	1.8 (1.2-3.7)	Abbreviations LDH, lactate	2 required ICU
Lymphocytes, ×10 <sup>9</sup> /L	1.2 (0.8-1.7)	1.2 (0.8-1.6)	1.1 (0.8-1.7)	acute respiratory syndrome	
C-reactive protein, reg/L (n = 16)	16.3 (0.9-97.5)	11.1 (0.9-19.1)	65.6 (47.5-97.5)	coronavirus 2, WBC, white blood cell.	
LDH, U/L (a = 13)	512 (285-796)	424 (285-748)	550 (512-796)	Si conversion factor: To convert LDH	No deaths
Abnormal chest radiograph, No. (%)	6 (33)	3 (25)	3 (50)	* Group not requiring supplemental	
Duration of symptoms, median (range)				crygen: hypertension, diabetes. Group requiring supplemental	Epidemiologic Features and Clinical Course of Patients Infected
Fears, d	4 (0-15)	1 (0-7)	5 (4-15)	caygen hypertension (n = 4),	With SARS-CoV-2 in Singapore
Any symptoms, d	13 (5-24)	12 (5-24)	16 (10-20)	type 2 chapeses (n = 1),	And the fidework in case with the first that they first Million Data Schwardship Million Schward (1999)





# Typical clinical course – 3 patterns

#### 1. Mild URTI

2. Viral Pneumonia. Potential for rapid progression to death in those with comorbidities

3. Mild progressing to severe pneumonia / ARDS after 7+ days. Deaths due to ARDS potentially delayed 2 – 4 weeks after onset





#### Transmission pathways – droplet and contact

COVID-19 is transmitted via **droplets and fomites** during <u>close</u> <u>unprotected</u> <u>contact</u> between an infector and infectee. (people who shared the same household as someone with COVID-19 (in the Province of Guangdong) had **3-10%** chance of being infected)

Airborne spread has not been reported for COVID-19 and it is not believed to be a major driver of transmission based on available evidence:

The **faecal-oral** route does not appear to be a driver of COVID-19 transmission; its role and significance for COVID-19 remains to be determined



### "But lots of people die with flu" - How does COVID-19 compare?

- Completely different disease
- No prior immunity
- ▶ COVID-19:
  - More severe outcomes than
  - Different Transmissibility, Higher Ro (~2.5) but longer incubation period (serial interval ~7 days). Provides an opportunity for public health action
  - Children appear not to feature in transmission
  - Pregnant women appear not to be at higher risk

### "But lots of people die with flu" - How does COVID-19 compare?

Pathogen	Population AR%	Case Fatality Ratio	
Seasonal influenza	7 – 10%	Up to 0.1% *	
Pandemic H1N1(2009)	10 - 20%	0.01 - 0.1% **	
SARS (2003)	Very low	10%	
COVID-19	20 - 50%+?	0.7% + ?	
*Eg USA last winter – 16.000 deaths, > 100 in **Est 150,000 to 575,000 deaths	children COVID-19 lik times worse	ely to be at least 10 than a bad flu seasor	

#### Patient care

- ► Supportive care
- ▶ No established antiviral treatment, RCTs underway
- ► Vaccine likely 18 months away
- > Avoid aerosolisation where possible no nebulisers

# Home management of mild cases

- cleared
- Separate bedroom and bathroom
- Surgical mask on case and carer when in same space
- Increased cleaning of surfaces at least daily using a fresh clean cloth with detergent (wash hands after cleaning)
- monitor for symptoms
- Clearance two negative PCRs following resolution

Current recommendations

# Public Health action plan containment

- 1. Identify cases
- 2. Isolate case to stop transmission
- Trace contacts
- 4. Repeat







#### Who to quarantine (no symptoms)

For 14 days after last potential exposure:

- Returned travellers from high risk countries
- Currently mainland China, Iran, South Korea
- Close contacts of confirmed COVID-19 cases

#### Healthcare workers

Returning from any higher risk country (China, Iran, Sth Korea, Italy)

N.B. Asymptomatic people should not be tested

# Who to test (symptomatic)

- 1. Suspected cases
- Also consider testing:
- Fever or respiratory symptoms in those with international travel in 14 days prior to illness onset
- 3. HCWs with influenza-like illness (fever AND respiratory symptoms)\*

N.B. Those tested for COVID-19 must be isolated whilst awaiting results, and if in quarantine must continue to wait out 14 days irrespective of test result

## Suspected Case definition

#### Epidemiological criteria

- Travel (incl. transit) to a country considered to pose a risk of transmission
- Close or casual contact with a confirmed case of COVID-19 AND

#### **Clinical criteria**

- ▶ Fever OR
- Acute respiratory symptoms (cough, shortness of breath)

## Testing options

- Collect onsite
- Refer to private pathology collection centre
- Fever clinics (JHH from today 0800-2200)
- Refer to ED

# Testing

#### Samples:

- Two combined nose and throat viral swabs OR
- Two nasopharyngeal swabs OR
- Lower respiratory specimen (sputum) if obtainable\*

Routine respiratory pathogens

COVID-19 testing

\*Less appropriate for collection in primary care setting

# Recommended infection control

#### Mildly unwell patient

- Standard, Contact and Droplet precautions
- Surgical mask, goggles, gloves, (gown?)
- Wipe contact surfaces, no need to 'rest' the room

Moderate to severely unwell patient (coughing +) Standard, Contact and Airborne precautions

► Referral to Emergency Department

# **Testing** locations phn Tex. UEXTOWN Unit 2/ 119 Pacific Hwy. 4942 4868 4942 4775 7.30 am - 12:00 pm Clesed 2.00pm - 4.00pm 12.30pm - 3.30pm PORT Suite 6, Grange Building, 3 MACQUARE Lake Road BELMONT 500 Pacific Highway

spiratory Nucleic Acid Detection	Location No: JH20M44586
Specimen Source	Swab
Rapid Influenza A RNA	Not Detected
Rapid Influenza B RNA	Not Detected
Rapid RSV RNA	Not Detected
Influenza A RNA PCR	Not Detected
Influenza B RNA PCR	Not Detected
	Not Detected
Metapneumovirus RNA PCR	Not Detected
	Not Detected
	Not Detected
	DETECTED
	Not Detected

Reptid Tinfluenze A RNA Reptid Tinfluenze B RNA Reptid RSV RNA Reptid RSV RNA Frideric B RNA PCR RSV RNA PCR Pareinfluenze A RNA PCR Pareinfluenze J RNA PCR Pareinfluenze J RNA PCR Pareinfluenze J RNA PCR Cause of Adenovitue RNA PCR B (COMMONIC RNA PCR Pareinfluenze J RNA PCR Cause of Metagneumovitus RNA PCR NOT COULD ST NATE-COVID-19 Human Coronsvitus RNA	Not Detected Not Detected DetEctED Not Detected	Name for the virus that causes COVID-19
Note that some people who are beir remain in isolation even following a n Eg close contacts of confirmed case high risk countries	ng tested for ( egative COV s or returned	COVID-19 may need to ID-19 test travellers from selected

# PCR test performance

- When virus is present PCR has high sensitivity and specificity
- Negative result in asymptomatic patients not helpful
- positive
- Clinical suspicion drives further testing

# Practice implications when consulting COVID-19 patients

- When would Doctors or staff need to go into quarantine?

- Should I start consulting routinely in PPE?
- alth Minister Jenny Mikakos said th firmed to have the virus last night, ming from overseas, and was nov The doctor, from the Toorak Clinic in Malvern Road, onsulted about 70 patients between March 2-6. Ms

positive for coronavirus

Melbourne GP clinic closed after doctor tests



#### When to call PHU?

- ▶ Confirmed case
- Suspected case in high risk group or priority settings\*
- Management challenges (i.e. non-compliance with recommended PH action isolation/ quarantine) for cases or close contacts

\*e.g. HCW, institutional settings, Aboriginal or Torres Strait Islander communities, attended mass gathering

No need to call for testing enquiries

## COVID-19 – aspects of testing, infection control and treatment

John Ferguson John Hunter Hospital University of Newcastle NSW, Australia 10<sup>th</sup> March 2020

Primary Care Update #2

#### Neil Diamond: Hands CDC: Yes, wash them for at least 20 seconds Neil Diamond: Touching hands CDC: No, please don't touch hands Neil Diamond: Reaching out CDC: Avoid that too Neil Diamond: Touching me CDC: Oh hell Neil Diamond: TOUCHING YOU CDC: We're doomed

#### Testing – RT-PCR- various targets in use

False negatives Quality and type of specimen affects this parameter.

No systematic evidence available Some suggestion that lower respiratory samples are better

<u>Re-testing:</u> if high suspicion (international travel history and deteriorating respiratory condition and no other diagnosis), re-test with nasopharyngeal sample



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# General practice setting 1: routine consultation process



- Bare below elbows standard
- Routine eye protection (reuse ok clean with alcohol wipe)
- Hand hygiene (alcohol) before & after interactions (even shaking hands). Apply sufficient and spread over all hand surfaces; allow to dry. 30 second rule.
- Equipment cleaning/disinfection (wipes easiest) before & after
- · Sophisticated triage mechanisms to forewarn

of respiratory illness

<u>Standard infection control precautions</u> reduce infection spread via the contact route



#### GP 2: respiratory illness or fever or testing

- CONTACT & DROPLET TRANSMISSION-BASED PRECAUTIONS
  - Additional PPE required surgical mask, gloves (after hand hygiene), eyewear
  - Gown or plastic apron technically required for contact precautions – dispense with this only if care taken to avoid contact between own clothing and patient skin or clothes
  - Clean / disinfect chair and touched surfaces post
  - consultation
  - Room does not require spelling

#### Surgical masks

- Ensure it covers nose and mouth!
- Facial hair avoid
- Do not reuse
- Don't touch the front of the mask
- Maximum 60 minutes with continuous wearing; discard earlier if becomes very moist
- Care++ with removal to avoid self-contamination
- Hand hygiene (alcohol ) after disposal



# Environmental cleaning: principles

In general, coronaviruses are unlikely to survive for long once droplets produced by coughing or sneezing dry out.

- Clean general surfaces and fittings when visibly soiled and immediately after any spillage.
- Disinfect after cleaning or follow a dual process with a Therapeutic Goods Administration (TGA) approved product.



#### Surgical versus airborne (p2/n95) masks for protection from droplet transmission

Java Logical Institution N95 Respirators vs Medical Masks for Preventing Influenza Among Health Care Personnel A Randomized Clinical Trial

#### **Key Points**

Question Is the use of N95 respirators or preventing influenza infection among outpatient health care personnel in close contact with patients with suspected respiratory illness?

Findings in this pragmatic, cluster randomized clinical trial involving 2862 health care personnel, three was no significant difference in the incidence of laboratory-confirmed influenza auroup health care personnel with the use of N95 respirators (8.2%) vs medical masks (7.2%).

Meaning As worn by health care personnel in this trial, use of N95 resis compared with medical masks, in the outpatient setting resulted in no significant difference in the rates of laboratory-confirmed influenza.

- Staff were 'fit tested' for n95 fit Indicates that either mask was equivalent but not fully effective
- Compliance with hand hygiene and other IC precautions not documented
- Indicates that there was no significant airborne spread component detected as N95 not found to be superior (c.f. tuberculosis or measles)

#### Severe Illness & aerosol generating procedures - avoid !

#### · Aerosol generating procedures

 Nebulisation tracheal intubation

bronchoscopy and BAL,high flow nasal oxygen

- non-invasive ventilation,
- tracheotomy,
- cardiopulmonary resuscitation,
  manual ventilation before intubation,

Referral to Emergency Department

P2/N95 respirator or mask

Gloves

Protective eyewear

- Place in negative pressure isolation room, door closed (where available)
- Room cleaning and disinfection

Standard, Contact and Airborne precautions:

• Fluid resistant long sleeved gown

#### General advice to staff (10/3/20)

HNE Health staff are advised to consider:

- No handshaking • Videoconferencing as default for meetings
  - Options and alternatives to large meetings that bring external groups together. If you do
- have large meetings, then try to use larger rooms where there can be more space between participants
- The necessity of overseas travel
- Sanitisation of high touch surfaces regularly and between uses. . Limiting food handling and sharing of food in the workplace.



#### Treatment

- Supportive management
- No conclusive evidence: Steroids
- Ribavirin IV or PO
  - IVIg
  - Interferon alpha and beta
- Current clinical trials:
  - Remdesivir (GS-5734)
  - Chloroquine
  - Lopinavir-ritonavir (Kaletra)
  - Antibody therapy (passive immunisation)

### Questions?

Testing service opens JHH 10/3/20





#### Scenario 1 – Traveller from China in 14 day quarantine period

Allen returned from China 24/2/20

- Booked appointment for day after quarantine
- Appt marked with COVID icon to flag need for symptoms check
- Patient called prior to appointment to check for symptoms
- No symptoms patient attended appt as normal

### Scenario 2 – Traveller from Bali

- ▶ Returned from Bali on 1/3/20
- 2/3/20 developed sore throat but no other symptoms went to work AM, PM developed fever with night sweats, dry cough, sore throat persisted
- Escalated triage appropriate for testing
- Testing arranged and request faxed to pathology Patient given information re: isolation until results returned
- Medical certificate provided for work
- ► COVID PCR -ve

# Scenario 3 – Traveller from Italy Hunter Coronavirus patient in the care of Hunter New England Health reportedly 'doing well' Matthew Kelly Have your say! f Y B A A A RVEY PORT WARATAH

#### HNE case – GP management

- Patient phoned ahead to request test, waited in car park until GP was ready, wore a mask into practice
- GP wore PPE: eye protection, mask and gloves
  Patient had mask on throughout (except for sample time)

- COVID19 positive, managed at home, mild illness doing well
- Practice staff will be alert for symptoms and immediately isolate themselves if become unwell following 14 days (very low risk)
- No impact on practice operating hours or staff attendance

# Be prepared...

- Workplace stress look after yourselves and your staff
- Strengthen workplace hygiene practices
- Business continuity and surge planning
- Modified or flexible service delivery
- Triaged waiting areas
- Other strategies?





#### Resources

# = 💥 Hunter New England Community HealthPathways

- (Escurices)
  WHO COVID-19 research database
  WHO COVID-19 research database
  WHO COVID-19 research database

# Other questions

- ► Travel advice