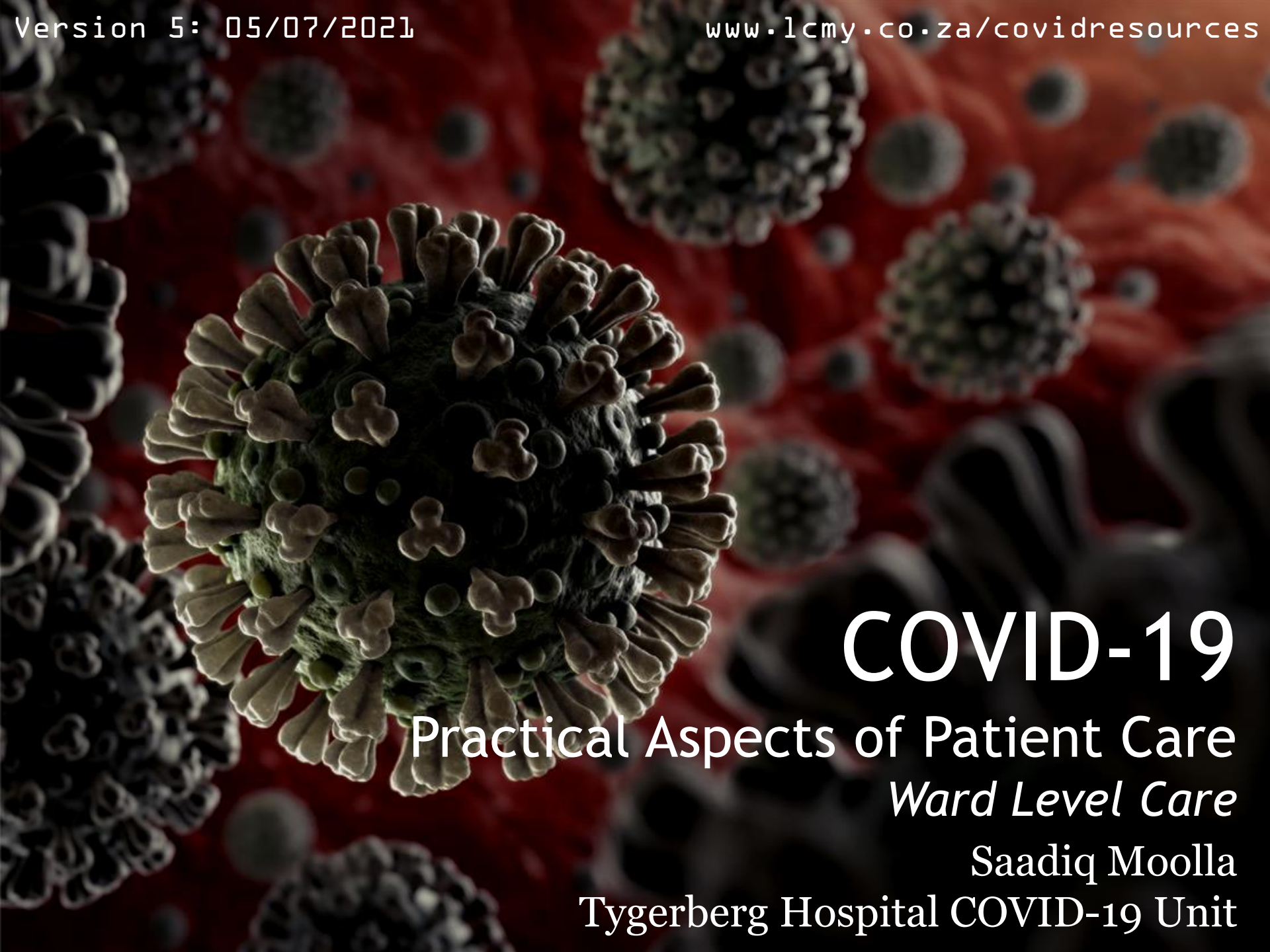


COVID-19

Practical Aspects of Patient Care

Ward Level Care

Saadiq Moolla
Tygerberg Hospital COVID-19 Unit

Terminology

- SARS-CoV-2
  - severe acute respiratory syndrome coronavirus 2
  - the name of the virus
  - previously also termed 2019-nCoV
- COVID-19
  - coronavirus disease 2019
  - the name of the disease
- SARS-CoV-2 causes COVID-19 similarly to HIV being the cause of AIDS

SARS-CoV-2

- Betacoronavirus
- Thought to originate from bats
  - direct vs intermediate host
- Enters cell via ACE2 receptor
- Many variants:
  - beta
  - delta

Person-to-person spread

- Droplets
  - coughing, sneezing, talking
  - contaminated surfaces
  - 2 m spread
- Contact with mucous membranes, typically eyes, nose or mouth
- Aerosol (in-hospital, procedure-related)

Incubation Period

- Thought to be within 14 days
- Usually 4 – 5 days
- Can be as short as 2 days
- Viral shedding occurs during asymptomatic stage but is highest soon after symptoms start

Presentation

- Fever (99%)
- Fatigue (70%)
- Dry cough (59%)
- LOA (40%)
- Myalgia (35%)
- SOB (31%)
- Sputum (27%)
- Other: anosmia, dysgeusia, headache, sore throat, diarrhoea, nausea and diarrhoea

Altered taste sensation

NICD Case Definition

Case definition as of 02 April 2020:

Criteria for person under investigation (PUI), i.e. a person to be tested for COVID-19

Persons with acute respiratory illness with sudden onset of at least one of the following: cough, sore throat, shortness of breath or fever [≥ 38°C (measured) or history of fever (subjective)] irrespective of admission status.

Characteristics of persons at highest risk

Persons at a highest risk are those who have an acute respiratory illness and who, in the 14 days prior to onset of symptoms, met at least one of the following epidemiological criteria:

- Were in close contact[1] with a confirmed[2] or probable[3] case of SARS-CoV-2 infection;

OR

- Had a history of travel to areas with local transmission of SARS-CoV-2; (NB Affected countries will change with time, consult NICD website for current updates);

OR

- Worked in, or attended a health care facility where patients with SARS-CoV-2 infections were being treated;

OR

- Admitted with severe pneumonia of unknown aetiology.

Centres with limited capacity should prioritise highest risk patients.

Close Contact

- Within 14 days
- Within 1 m
  - face-to-face
  - closed environment (household, working closely, aeroplane within 2 seats in any direction, HCW without PPE)
- Prolonged period of time (at least 15 min)
- No PPE
- Confirmed case: lab confirmation of SARS-COV-2 regardless of symptoms
- Probable case: PUI with inconclusive test or positive test on a pan-coronavirus assay

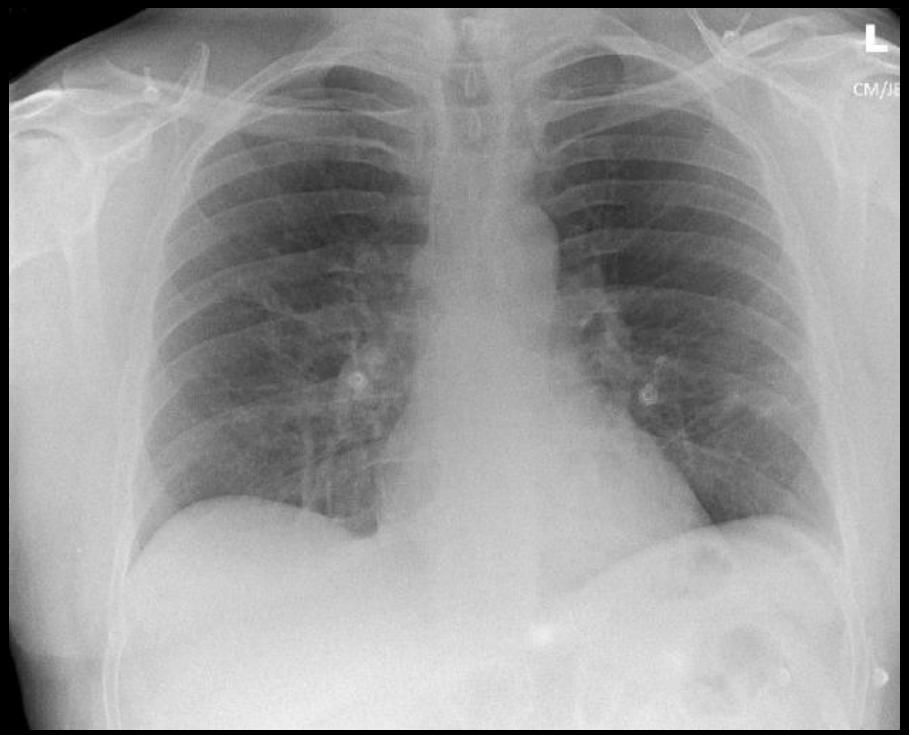
Specific History

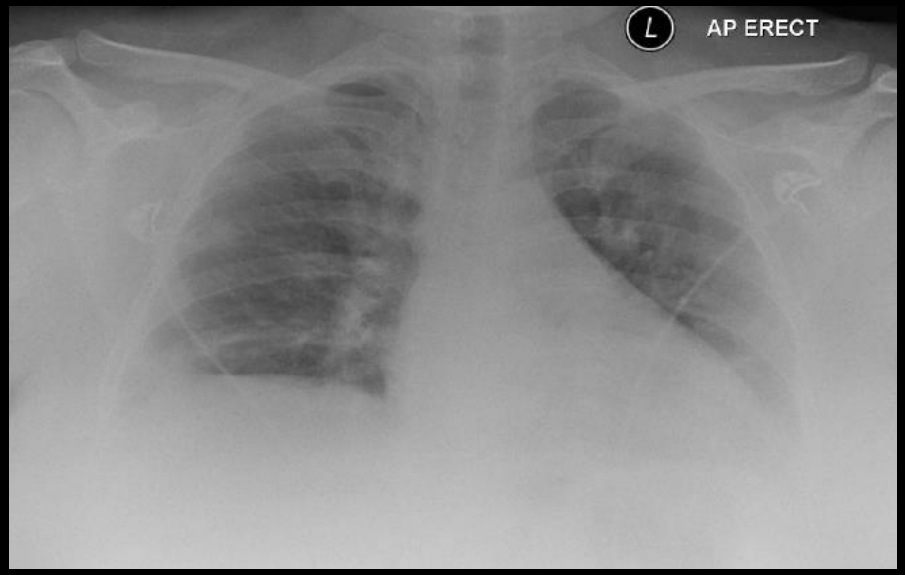
- Dates (document)
  - symptom onset
  - testing
  - important for case definition and isolation period
- Travel and contacts
- Social
  - ability to self-isolate at home
  - stigma, community issues, patient safety, etc.

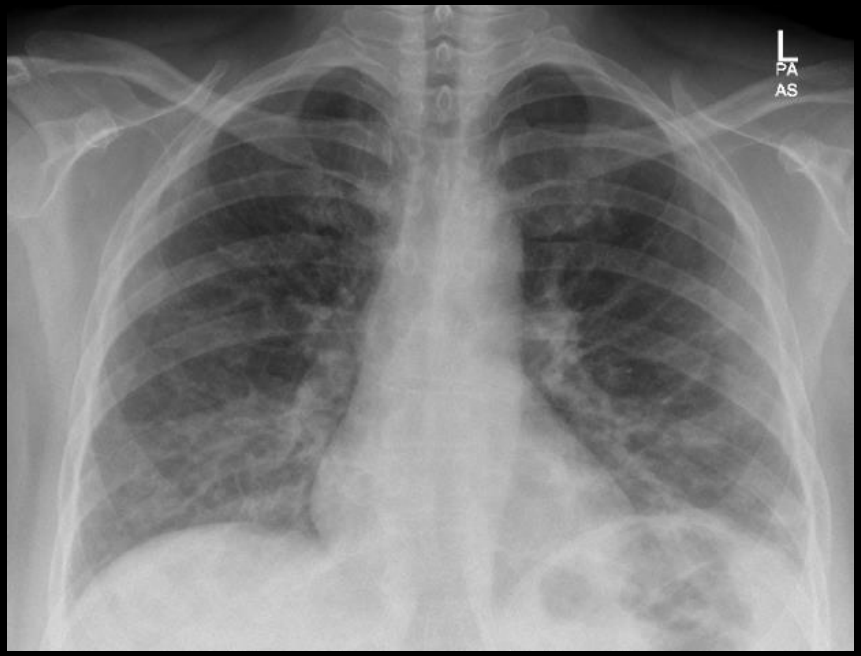
Imaging

- CXR (book as mobile)
  - normal early or mild disease
  - 69% abnormal on admission, 80% abn later
  - air space opacities, consolidation > ground glass and usually bilat, peripheral and lower zone
- CT Chest:
  - viral pneumonia: GGO ± consolidation, more likely bilat, peripheral/subpleural, lower lobes and broncho vascular thickening
  - atypical: fine reticular opacities, pl thickening, pl effusion, reverse, LN's, multiple tiny nodules, tree-in-bud, cavitation
  - Sn: 97% & Sp: 25%
  - abn may be present prior to sx's, usually worst at 10 - 12 days

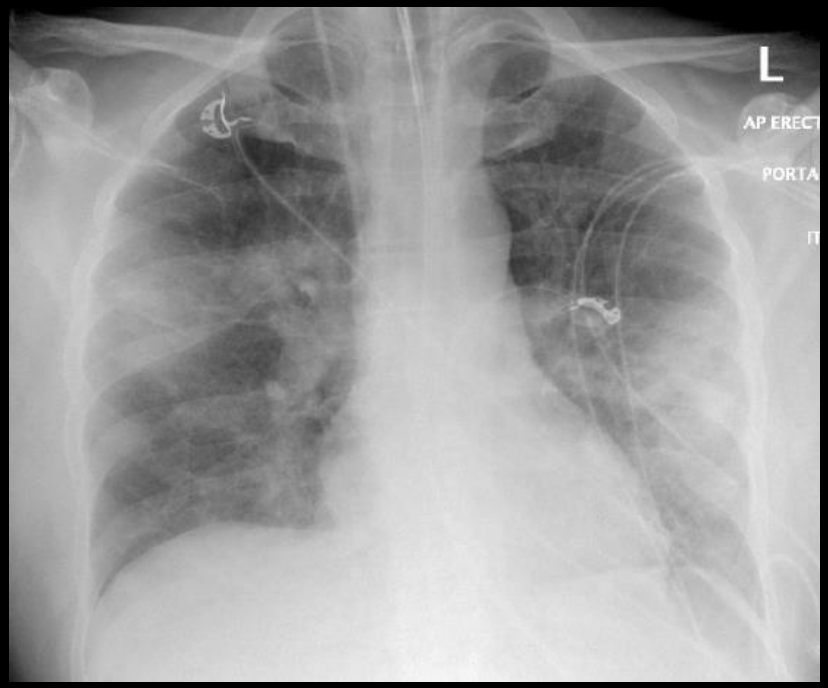
MILD DISEASE

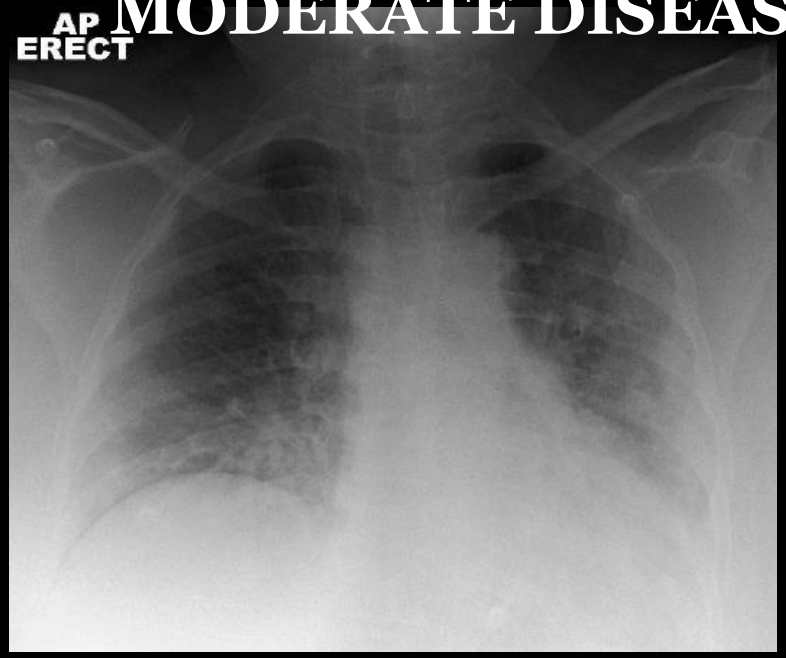


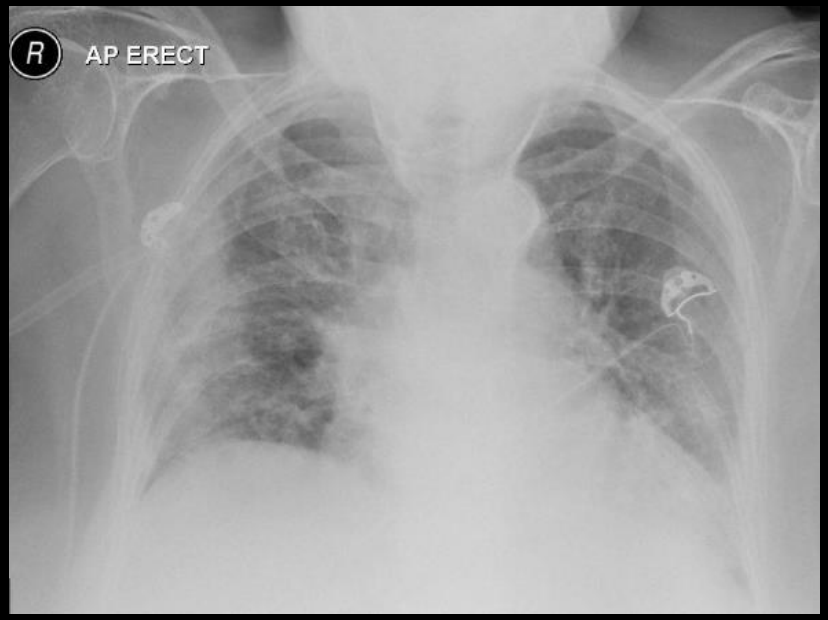




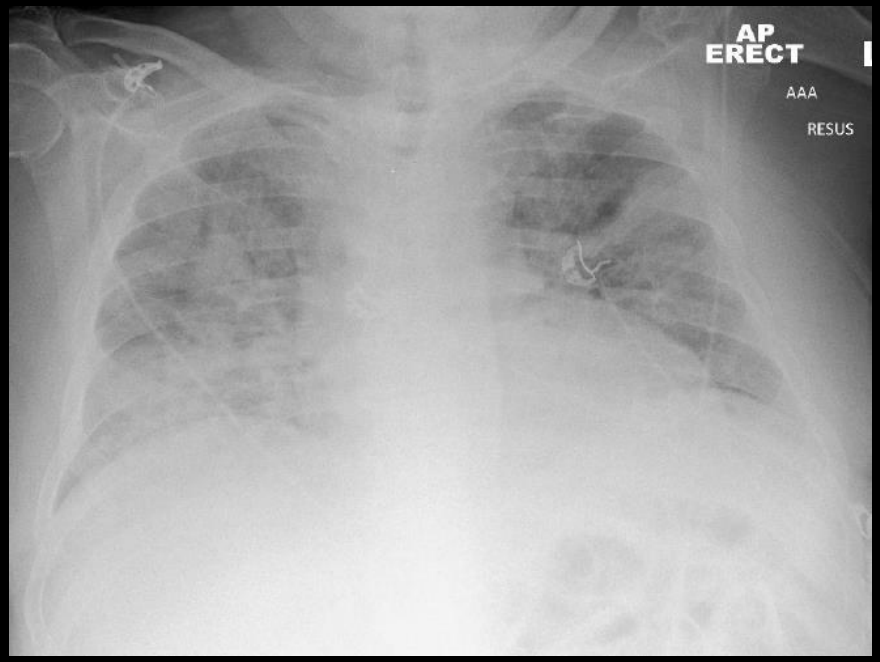
MODERATE DISEASE

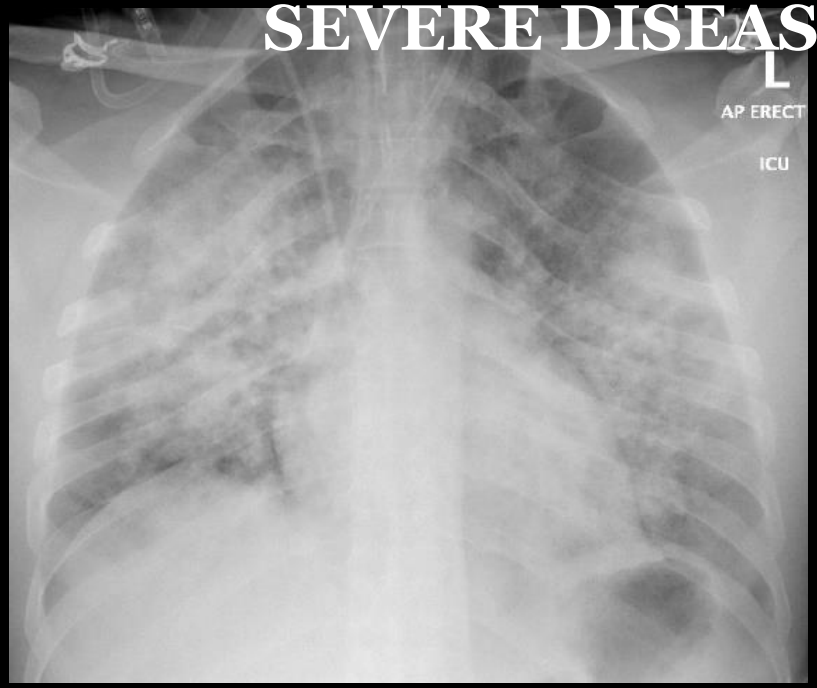


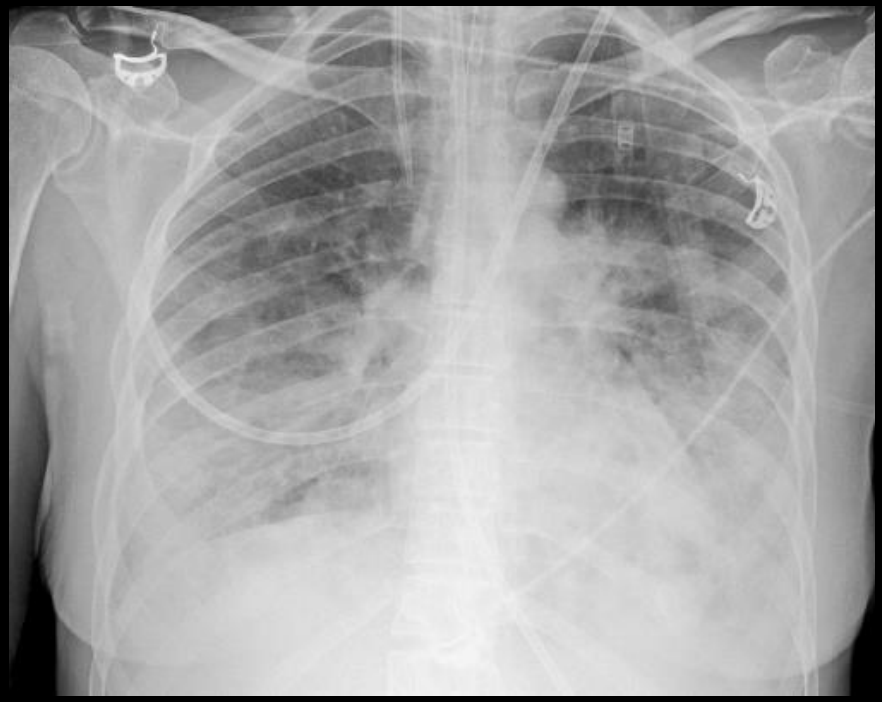


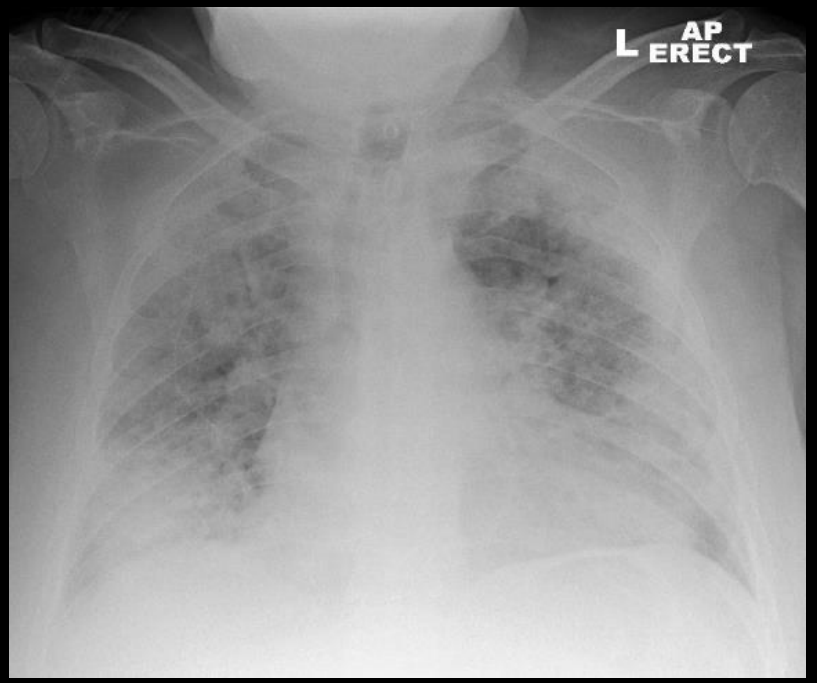


SEVERE DISEASE

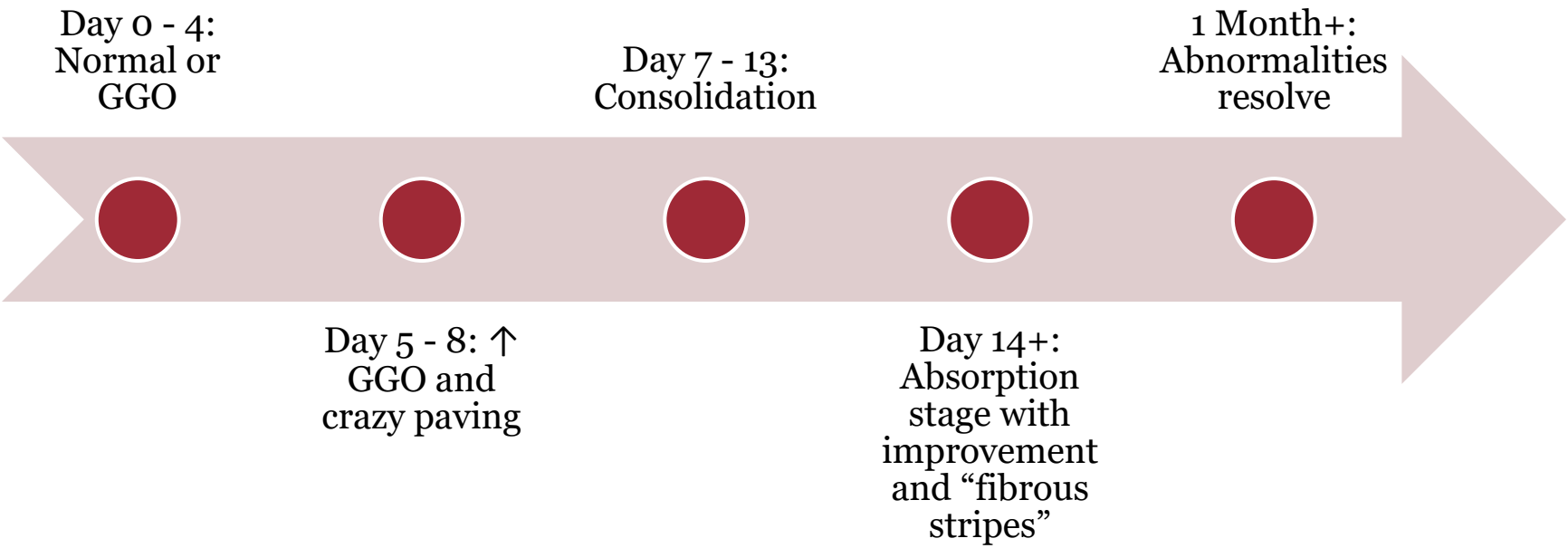








Temporal CT Changes



Differential Diagnosis

- Infective
  - viral: other viruses such as Influenza A
  - bacterial: multilobar pneumonia
  - PJP
  - TB
- Non-infective
  - CCF
  - PE
  - any cause of ARDS

PPE

Direct care of patients with COVID-19 (Non-aerosol generating)
✓ non-sterile gloves
✓ apron
✓ eye shield or goggles
✓ surgical mask

Aerosol-generating procedure on patients with COVID-19
✓ non-sterile gloves
✓ gown / apron
✓ eye shield or goggles
✓ N95 respirator

DONNING ORDER FOR PUTTING ON PPE

hand hygiene (soap or alcohol handrub)

put on apron or gown

put on surgical mask or N95 respirator

put on eye cover

put on non-sterile gloves

DOFFING ORDER FOR TAKING OFF PPE

hand hygiene (soap or alcohol handrub)

remove gloves

remove gown / apron

remove eye cover

remove N95 respirator

hand hygiene (soap or alcohol handrub)

PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

Investigations

- Bloods:
  - FBC, U&E, CRP, LDH, HIV
  - Consider: diff (? dx), ALT, d-dimer (all COVID + patients) and HbA1c, Cholesterol (metabolic phenotype)
  - Viral Load if HIV+, no recent result. Interpret CD4 with care.
  - 2 x Yellow, 1 x Purple, 1 x Blue (a/r to avoid repeat sampling)
- Micro:
  - Blood culture
  - Sputum such as TB MC&S, GXP and DFAT
  - Urine dipstix and legionella antigen
- Naso-pharyngeal swab (SARS-CoV-2 and RVP)
- Other tests (eg. U-LAM and β-D-glucan) as indicated

Performing an ABG

- After taking sample place cap on blood gas syringe discard sharps safely
- Put sample into a bag held by gloved assistant
- The assistant or a runner can wear gloves to take the sample to blood gas machine
- Use clean hand to touch buttons, other hand to hold sample
- Afterwards discard the syringe into red bin
- Wipe down the touchpad with a universal Clinelle wipe or a tissue saturated with 70% alcohol
- Remove gloves and perform hand hygiene afterwards

P:F Ratio

- The ratio of arterial oxygen partial pressure to fractional inspired oxygen
- PaO2 x 7.5 ÷ FiO2, eg. 12.0 x 7.5 ÷ 0.21 = 428
- Low score indicates disease severity and is part of the Berlin definition of ARDS

ARDS Severity	P:F Ratio*	Mortality
Mild	200 – 300	27%
Moderate	100 – 200	32%
Severe	< 100	45%

*assumes PEEP of 5 cm_{H2O}

Virology

- PCR test
  - naso- (63%) and oro-pharyngeal (32%) swab
  - sputum (72%) (don't induce)
  - tracheal aspirate
  - BAL (95%)
- Antigen test
- Consider repeat testing and alternate sites when negative results in setting of high pre-test probability
  - if remains negative, consider CT chest

Which Test?

The PCR Testing Criteria are modified to the following situations:

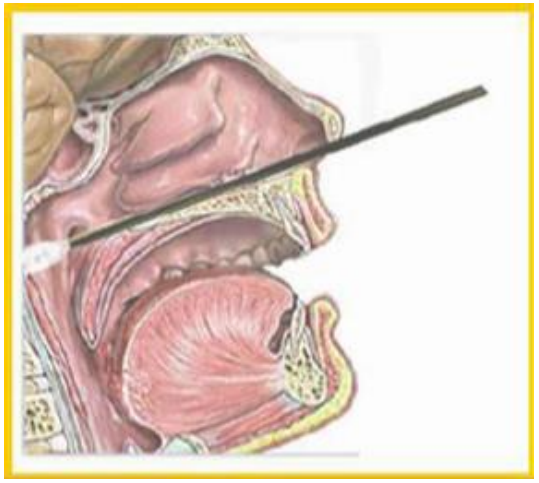
1. People with coronavirus symptoms admitted to hospital.
2. People with coronavirus symptoms **AND** who reside in large group confined congregate spaces (old age homes, care homes, hostels, prisons).
3. People with coronavirus symptoms **AND** who are at high risk of severe disease (those aged >45 years; those of any age who have one or more of the following co-morbidities: Diabetes, Obesity, High blood pressure, Heart disease, Lung disease, Kidney disease, Cancer, Tuberculosis and HIV).
4. Pre-operative testing of coronavirus *asymptomatic* patients awaiting surgery (should be tested 3 days or less before their operation).
5. Natural deaths who had coronavirus symptoms.
6. All Health Care Workers with coronavirus symptoms
7. Health Care Workers who are in quarantine and *asymptomatic* at day 7 (to allow early return to work).
8. Those who previously tested PCR positive, but have developed new coronavirus symptoms, should only be tested 30 days after their first PCR test.

The Antigen Testing Criteria are modified to the following situations:

1. The Antigen test is strongly encouraged to be done as the preferred first line test.
2. The Antigen test can be done on all patients who meet the PCR testing criteria above, except for the following situations, where it should **NOT** be done:
   a. Pre-operative testing of COVID-19 asymptomatic patients before *elective* surgery
   b. Natural deaths who had coronavirus symptoms
   c. Health Care Workers who are in quarantine and asymptomatic at day 7
3. All patients who test negative via the Antigen test, **MUST** have a follow-on PCR test.

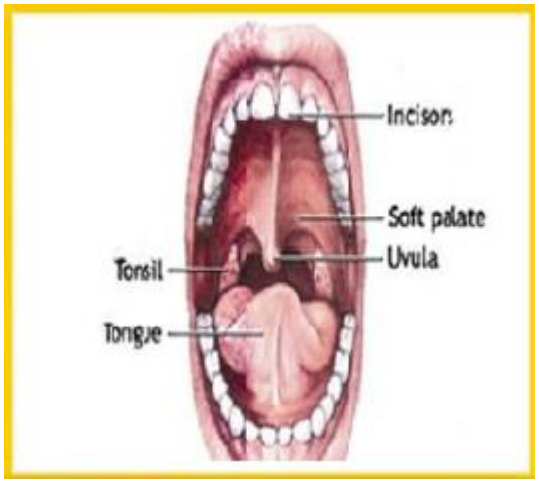
Collection of Nasopharyngeal Swab

1. Don gloves, respirator or mask, and eye protection
2. Open a sterile flocked swab at the plastic shaft
3. Ask the patient to tilt his/her head back. Estimate the distance from the patient's nose to the ear.
4. Gently insert swab into the nostril and back (not upwards) to the nasopharynx until a slight resistance is met
5. Rotate swab 2-3 times and hold in place for 2-3 seconds
6. If resistance is met before fully inserted, remove and try the other nostril
7. Slowly withdraw the swab and put it into the specimen container
8. Break plastic shaft at the break point line & close the tube



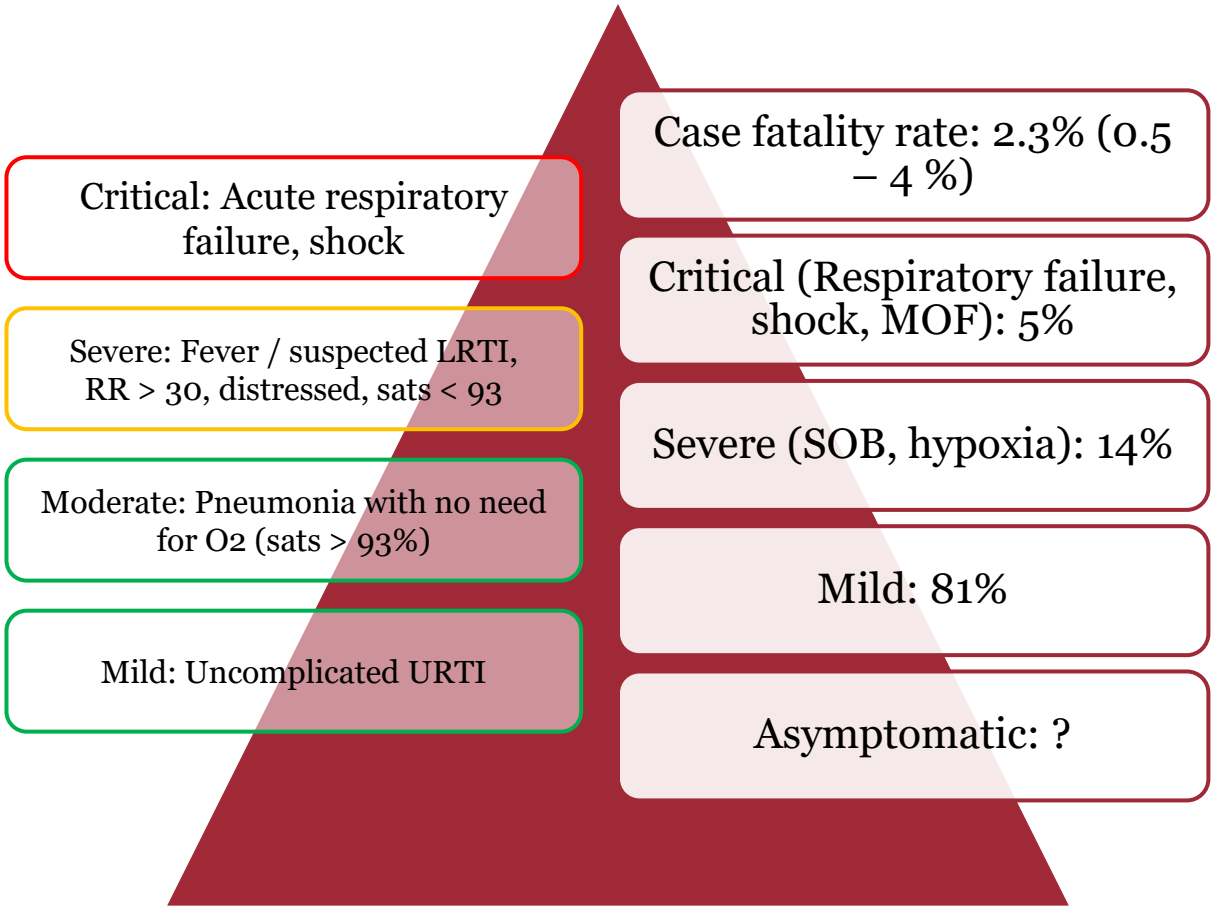
Collection of Oropharyngeal Swab

1. Wearing gloves, respirator or mask, and eye protection, and holding the UTM with the nasopharyngeal swab in, open a second flocked swab for OPS collection
2. Ask the patient to tilt their head back and mouth open
3. Hold the tongue down with a tongue depressor
4. Have the patient say "aahh" to elevate the uvula
5. Swab each tonsil first, then the posterior pharynx in a "figure 8" movement
6. Avoid swabbing the soft palate or the tongue with the swab tip as this can induce the gag reflex
7. Place the swab into the same UTM tube with the NPS already in and break off the shaft at the break point
8. Tightly close the tube
9. Place the closed tube with two swabs in the Ziploc bag
10. Remove gloves, respiratory or mask, and eye protection and wash hands thoroughly



We no longer do oropharyngeal swabs.

Spectrum of Severity



Severe Illness

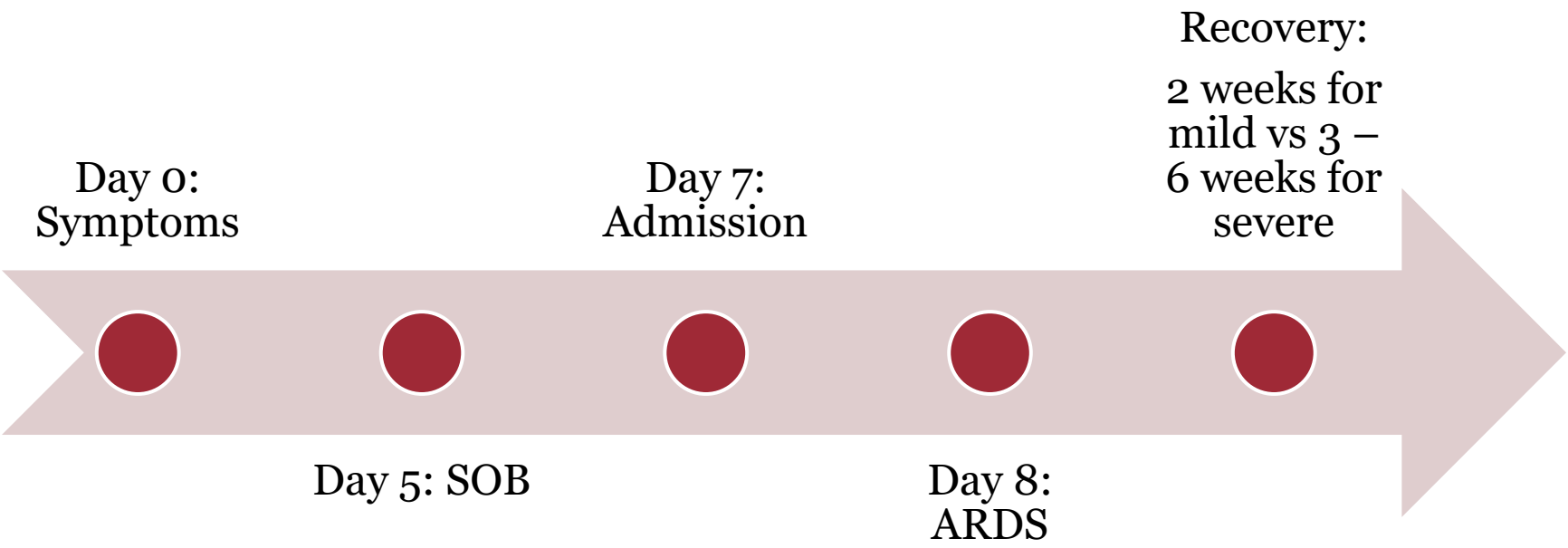
Risk factors and comorbidities assoc with severe illness and mortality

- Age
  - 70 – 80 (8 – 12%)
  - 80+ (15 – 20%)
- Obesity
- HPT, DM & CVD
- chronic lung disease
- cancer
- CKD
- HIV*

Laboratory features assoc with worse outcomes

- Lymphopaenia
- ↑ liver enzymes
- ↑ LDH
- ↑ CRP
- ↑ ferritin
- ↑ D-dimer
- ↑ PT
- ↑ troponin and CK
- AKI

Course


Day 0: Symptoms
Day 5: SOB
Day 7: Admission
Day 8: ARDS
Recovery:
2 weeks for mild vs 3 – 6 weeks for severe

Outpatient Management

- Mild disease:
  - sats ≥ 95% (on RA)
  - RR < 25
  - HR < 120
  - T^0 36 – 39 ^{0}C
  - normal cognition
- Ability to self-isolate:
  - separate bedroom to self-isolate
  - easy access to healthcare
- Low risk:
  - age < 65, no severe comorbidities or risk factors

Outpatient Management

- Goals
  - prevention of transmission
  - monitoring for deterioration
- Supportive care
  - hydration
  - antipyretics and analgesics
- Some evidence for steroid MDI's
- Frequent telephonic contact with provider

Emergency Plan with phone numbers in case of deterioration.

Self-isolation

Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts
Interim guidance
20 January 2020
WHO/nCov/IPC_HomeCare/2020.1
World Health Organization

- Isolate in a separate, well-ventilated room at home
- Avoid contact with others
  - no work or other activities
  - surgical mask if unavoidable close contact
- Respiratory hygiene for coughing (and sneezing)
  - turn away from others
  - cough into tissue and discard/elbow
- Hand hygiene: soap & water regularly + after cough
- Don’t share utensils, toiletries or towels
- Regularly clean and disinfect objects and surfaces
- Laundry with hot water (60 ^{0}C) and iron

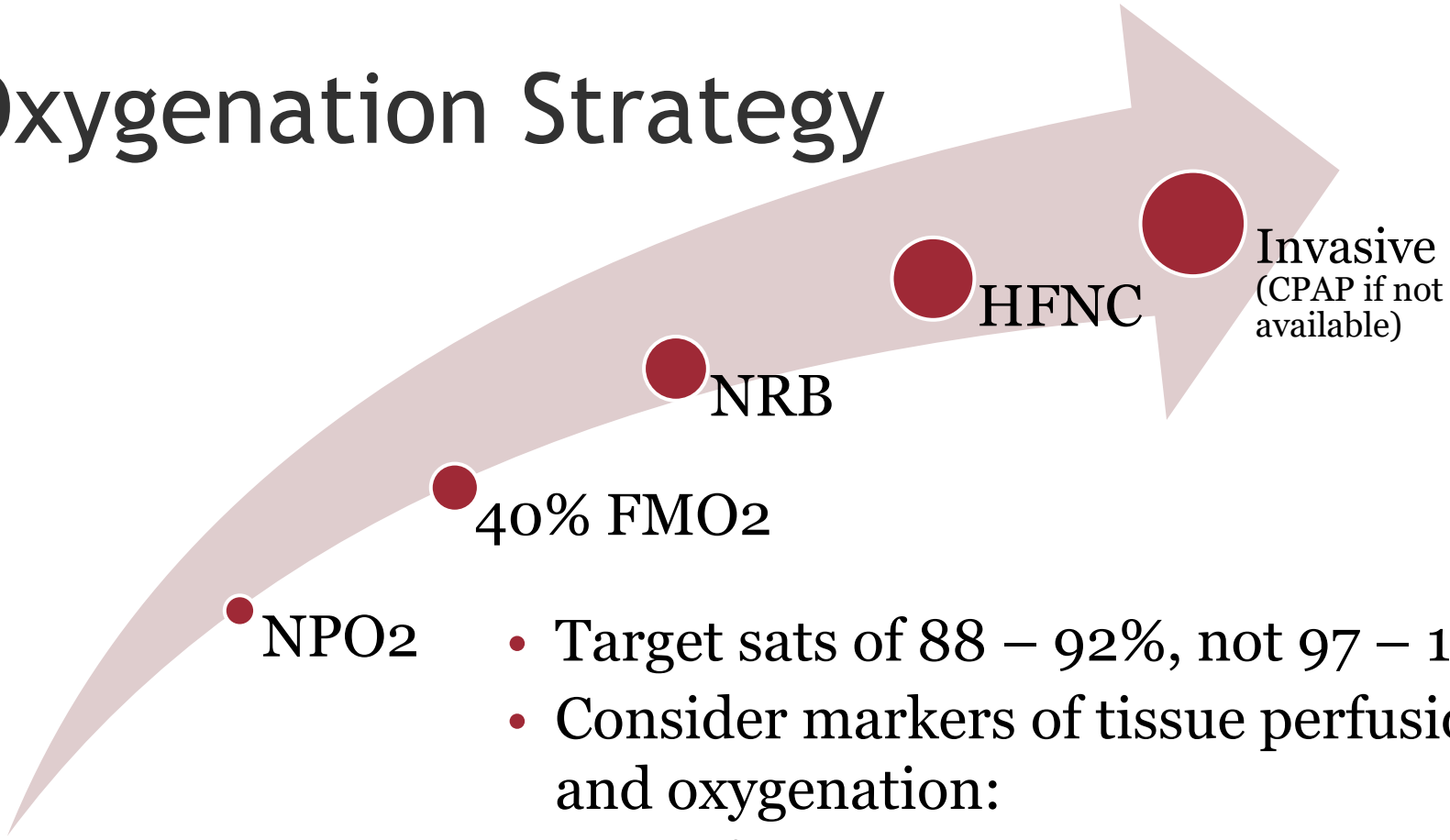
Inpatient Management

- Infection control
  - droplet precautions
  - airborne precautions during certain procedures
- Oxygen
  - face mask or nasal prong O_2
  - consideration for HFNC (early) and intubation (late)
  - CPAP not recommended
  - nebs only for other reasons – asthma and COPD (rather use MDI + spacer to avoid aersolisation)
- Fluid neutral strategy – restriction not recommended
- Steroids
  - evidence of benefit in RECOVERY trial
  - dexamethasone 6 mg IVI daily was used in the study

Inpatient Management

- Avoid NSAID's
  - anecdotal evidence of worse outcomes
  - can worsen AKI, GIT bleed, etc.
  - prefer paracetamol, but don't necessarily stop chronic NSAID's
- Antibiotics
  - only in patients with concern of bacterial coinfection (rare)
  - eg. Coamoxyclav 1 g po bd x 5/7 + Azithromycin 500 mg dly x 3/7
  - review and stop if not necessary (no benefit in viral pneumonia)
- Thromboprophylaxis
- ARV's, CLQ and hydroxy-CLQ, ivermectin, convalescent plasma not recommended in our setting

Oxygenation Strategy

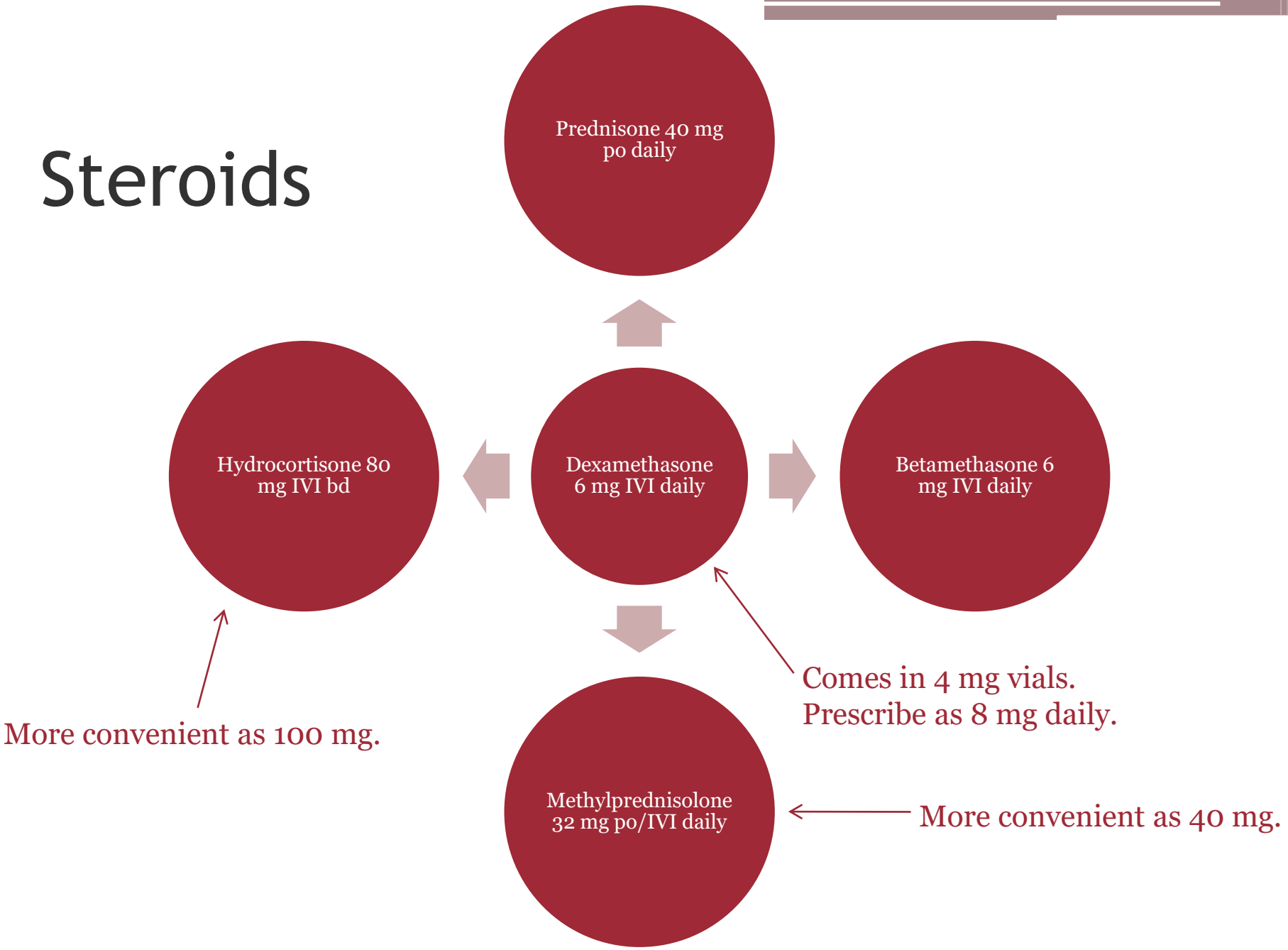


- Target sats of 88 – 92%, not 97 – 100%
- Consider markers of tissue perfusion and oxygenation:
  - confusion
  - urine output
  - lactate
  - etc.

Steroids

- Survival benefit in patients requiring resp support
  - $^1/_3$ reduction in ventilated patients (NNT = 8)
  - $^1/_5$ reduction in other patients on O_2 (NNT = 25)
- Dexamethasone 6 mg IVI daily x 10/7 used in the RECOVERY trial
  - not necessarily superior to other steroids
  - not necessarily optimal dose
- Use in confirmed/high probability COVID-19 inpatients on O_2
- Higher doses in select cases in discussion with a consultant

Steroids


Prednisone 40 mg po daily
Hydrocortisone 80 mg IVI bd
Dexamethasone 6 mg IVI daily
Betamethasone 6 mg IVI daily
Methylprednisolone 32 mg po/IVI daily
More convenient as 100 mg.
Comes in 4 mg vials.
Prescribe as 8 mg daily.
More convenient as 40 mg.

Thromboprophylaxis

- Patients with COVID-19 at increased risk
  - some studies show increased incidence of thrombotic complications
  - elevated D-dimer and fibrinogen with normal PT, PTT and AT
  - endothelial inflammation plays a role “immunothromboses”
- All hospitalised patients should receive prophylaxis
- Therapeutic dosing – Ddimer > 2 x ULN, older, comorbidities, or of VTE suspected or confirmed
- Post discharge anticoagulation – not routinely: give in confirmed VTE, high risk – long ICU stay, limited mobility
- Thrombolysis only for specific clinical indications (PE with haemodynamic compromise, STEMI, CVA)

Steroid and Heparin Dosing

Illness Severity	Oxygen Strategy	Level of Care	Steroid	Heparin
Mild	Room Air	Outpatient	None	None
Moderate	NPO2 40% FMO2 NRB	Ward	Prednisone 40 mg po daily	Clexane 40 mg s/c daily (or 80mg bd: ↑Ddimer, Age, Comorbidities) 60 mg (wt > 100 kg) 80 mg (wt > 150 kg)
Severe	NRB HFNC	High Care	Intravenous	Clexane 40mg d Consider Xa levels in obese patients, d/w Consultant
Critical	HFNC Invasive	ICU		

Nebs

- Delivering nebulised drugs increases aerosol risk
- Use a pressurised MDI with a spacer instead
  - salbutamol 800 mcg (8 puffs) via spacer
  - shake MDI and attach
  - one puff at a time with 4 breaths between puffs
  - repeat every 20 – 30 min at first, then 2 – 4 hourly thereafter
- Sterilise spacer by:
  - soaking in Biocide for 30 min, then rinse with water and air dry
  - wash with soap and water, wipe with 70% alcohol, then air dry
- For COPD consider also ipvent 2 – 4 puffs 6 hourly
- If absolutely necessary, deliver nebs in an isolation room with appropriate PPE for staff

Glucose Management

Basal Insulin (Glargine/ Intermediate-acting -insulin such as Protaphane) | **Covid-19**

Who?

- All patients with Covid-19 + BG > 10mmol/l
- Any patient (with/without diabetes) on admission with HbA1c >7%
- All using insulin at home

Why?

- To improve BG-control (target = 8 - 10mmol/L)
- Mortality & morbidity benefit
- Decrease length of stay

When?

- Glargine is given 1x/d at 6am **OR**
- Intermediate-acting is given 12 hourly (ideally 6am & before supper at 6pm)
- BG is checked to determine if basal is adequate: FBG at 6am & before supper (ideally 6am)

How?

- Use a weight-based dose if insulin naive
- In those using only basal insulin at home, start with the same dose equally split in 2
- Use the TDD in patients using a premix or basal-bolus at home

See table on next page re exact insulin doses (adjusted to be suitable if 1ml-insulin syringes are used)

Adjusting the basal dose

- Gradually adjust with ± 2 unit increments (10 to 20% more) based on the BG.
- **Please note:** In case of unexplained hypoglycaemia (BG < 4mmol/L) the basal insulin should be reduced by at least 20% (2 to 4 units less) to prevent hypoglycaemia.

(Ideally each patient should have his own insulin pen to limit cross-contamination)

Glucose Management

Starting Dose for Insulin naïve patients 0.1 to 0.2 U/kg/day basal insulin (rounded off in 2-unit-increments to be suitable for 1 ml-insulin-syringes)					Starting Dose for patients using insulin at home Calculate the total daily dose of insulin used at home if a twice daily (e.g. premix 30/70, Actraphane) or basal-bolus regimen was used
Weight	Glargine (once a day)	Green-coded insulin 2x per day (if Glargine not available)			
		AM	PM		Total Daily Dose (TDD)
<60 kg	4 units	2 units	2 units	←	10 units
≥60 kg	8 units	4 units	4 units	←	20 units
≥80 kg	12 units	6 units	6 units	←	30 units
≥100 kg	16units	8 units	8 units	←	40 units
≥130 kg	20 units	10 units	10 units	←	50 units
≥160 kg	24units	12 units	12 units	←	60 units
≥190 kg	28units	14 units	14 units	←	70 units
Adjust every ±3th day based on clear BG-patterns					Use dose on left side in the corresponding row

Please remember that the purpose of basal insulin is
not to treat hyperglycaemia but to prevent it

Bolus insulin is used before meals (or 6 hourly if not eating) to treat hyperglycemia

Glucose Management

Correction doses pre-meals (Actrapid)

Table 1: Low dose correction
Insulin naive / slender / at high risk for hypo's (elderly, RF, etc)

BG before meals	Bolus insulin
≥10 mmol/l	2 units
≥14 mmol/l	4 units
≥18 mmol/l	6 units

Table 2: Moderate correction
Insulin resistant (obesity, covid-19, on steroids) or Table 1 ineffective

BG before meals	Bolus insulin
≥10 mmol/l	2 units
≥12 mmol/l	4 units
≥14 mmol/l	6 units
≥16 mmol/l	8 units
≥18 mmol/l	10 units
≥20 mmol/l	12 units

Table 3: Aggressive corrections
(Table 2 not effective)

BG before meals	Bolus insulin
≥9 mmol/l	2 units
≥10 mmol/l	4 units
≥11 mmol/l	6 units
≥12 mmol/l	8 units
≥13 mmol/l	10 units
≥14 mmol/l	12 units
≥15 mmol/l	14 units

Glucose Management

Monitoring

TIME OF DAY:	BEFORE BREAKFAST			BEFORE LUNCH only if possible		BEFORE SUPPER			BG (mmol/l) during the night if indicated	
YEAR 2020 DAY & MONTH	BG (mmol/l)	BASAL INSULIN Green-coded insulin	BOLUS INSULIN CORRECTIONS/PRANDIAL	BG (mmol/l)	BOLUS INSULIN CORRECTIONS/PRANDIAL	BG (mmol/l)	BASAL INSULIN Green-coded insulin	BOLUS INSULIN CORRECTIONS/PRANDIAL	Bedtime	2am

BEFORE TESTING BG	Patient's hands should be washed & dried well before testing; BG is tested before meals and at least 2 hours after meals
MEALS & SNACKS	Encourage the intake of small & regular amounts of energy & protein rich food & drinks during the day – use Fresubin-Protein-shakes when not eating well
HYPOGLYCEAMIA	Treat BG < 4 mmol/l with 3 to 4 heaped teaspoons of sugar, wait 15 min; retest & if BG still <4 mmol/l, repeat treatment & notify doctor
HYPERGLYCEAMIA	Take action (using pre-meal correction tables) to keep BG in target; Check for ketones if BG ≥ 12 – 15 mmol/l ()notify doctor if ketones are present

Chronic Medication

- Continue ACE-i/ARB's
  - no evidence to support worse outcomes with these agents
  - stopping may exacerbate co-morbid conditions
- Immunomodulatory agents other than steroids
  - continue in mild disease
  - in severe disease – discuss with specialist

Indications for Intubation

- Severe hypoxaemic respiratory failure
- Failed standard therapy
  - sats < 90% on 40% FMO2
  - Pa_{O2} < 8.0 kPa
  - Pa_{CO2} rising
  - pH < 7.3
- RR > 40
- Exhaustion with laboured breathing pattern
- Inability to protect airway

Intubation Principles

- Prior preparation of equipment, drugs and fluids
- Minimise exposure
  - isolation area
  - full PPE
  - minimum number of operators (2 + 1 runner outside)
  - plastic over patient
  - linen saver/container for dirty equipment
  - clean equipment prior to doffing PPE
- Maximise chance of 1st pass success
  - most experienced operator
  - Glidescope with bougie

Basic Ventilation Information

- Lung protective ventilation as for ARDS
  - TV = 4 – 6 mL/kg predicted
  - low $p_{plat} < 30$ cm_{H2O}
  - permissive hypercapnia
  - moderate PEEP (8 – 12 cm_{H2O})
  - target sats > 90%
- Proning and sedation in severe ARDS
- Avoid disconnecting patient from ventilator

Initial Ventilator Settings

PSV	8 – 10
PEEP	8 – 10
FiO2	100%
I:E Ratio	1:2
RR	12 – 14

High Flow O_2

- Intubation in COVID-19 assoc with high mortality
- Impression patients do better on High Flow
- Delivers high flow of O2 through small bore cannula
  - reduced entrainment ensures accurate FiO2
  - effectively washes out upper airway dead space
  - reduces work of breathing
  - minimal PEEP (unless mouth closed: 0.7 cmH_2O per 10 L/min)
  - warmed and humidified for comfort and clearance of secretions
- Benefits
  - Reduces need for intubation (& complications) but not mortality
  - More comfortable, allows patients to talk and eat
- Highly aerosol generating ∴ need full PPE

Administering High Flow O_2

- Best done in a monitored setting
  - Improving patients can potentially be nursed unmonitored
- Flow Rate
  - start at 20 – 35 L/min
  - increase in 5 L/min increments acc to sats and work of breathing
- F_iO_2
  - maximise flow rate 1st to try to keep FiO2 ≤ 60
- Monitor for complications
  - abdominal distension
  - aspiration
  - barotrauma/pneumothorax

Palliative Care

Who is likely to require palliative care in our setting?

1. Patients with severe disease that are not candidates for ICU
2. Patients discharged for palliation from ICU

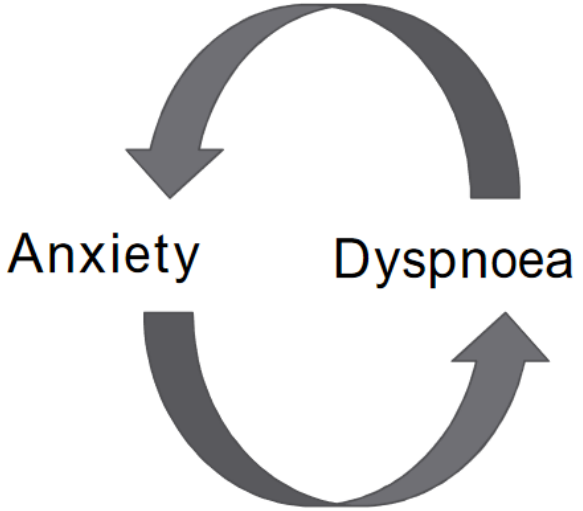
What do we have available to us?

Medication – route, rationalisation

Place of death

Spiritual care

Relatives



Palliative Care

Opioids **do not** hasten death and are safe to prescribe at the end of life; they are used for pain and dyspnoea

Subcutaneous route – can remain in for much longer than an IV line and is less painful to insert, prescribing S/C morphine is often easier for nursing staff

PRNs are tricky – not much patient contact with COVID

Palliative Care

Oral

Dyspnoea – Morphine 2.5 - 5mg PO 4 hourly (**for opioid-naïve patients**)

Anxiety – Lorazepam 1-2mg S/L 2 hourly PRN until settled, then 6-12hrly PRN

Fever – Paracetamol 1g 6 hourly

*NEVER FORGET ANTI-EMETICS AND STOOL SOFTNERS WITH MORPHINE

Palliative Care

Subcutaneous Boluses

Given via a butterfly – it can remain indwelling

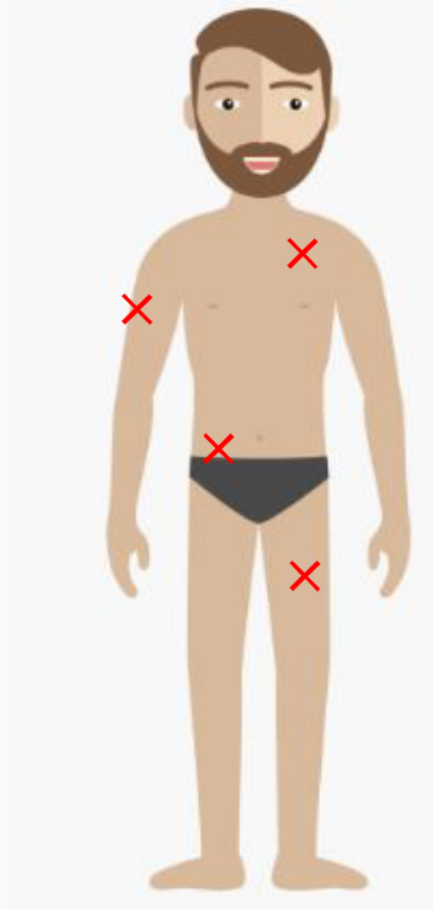
Dyspnoea – morphine 1-2mg SC hourly until controlled

Anxiety – midazolam 5mg SC

Nausea – metoclopramide 10mg SC 8 hourly

Agitation – haloperidol 2.5 -5mg SC stat

Secretions - hyoscine butyl bromide 20mg 6 hourly



Palliative Care

Syringe Driver

Morphine 15mg over 24 hours as a continuous infusion; decrease in the elderly and renal failure
(Adjuncts – breakthrough doses [1-2mg S/C], lactulose, anti-emetic; if not opioid naïve increase by 25%)

Anti-emetics – haloperidol can also work as an anti-emetic, but the mainstay is metoclopramide 30mg IV over 24 hours

Secretions – hyoscine butyl bromide (Buscopan) 20 – 40mg over 24 hours

Anxiety – midazolam 10mg–15mg over 24 hours

Agitation – haloperidol 5mg over 24 hours

*You can give 2 litres in 24 hours subcutaneously

De-isolation

- Asymptomatic patient
  - 10 days of initial positive test
- Mild disease
  - 10 days after symptom onset
- Severe disease
  - 10 days after clinical stability (de-escalation of O_2 therapy)
- Repeat testing not required
- Separate protocol for HCW's – discuss with senior

Selected References