

# COVID-19 SUMMARY

## Disease progression

1<sup>st</sup> week : Fever,, non-productive cough  
Vomiting , nausea, diarrhoea  
2<sup>nd</sup> Week : Deterioration – Dyspnoea , SOB , Chest tightness

### Typical evolution :

Day 6 post exposure – Dyspnoea

Day 8 - Admission

Day 10 - ICU admission / Intubation

Deterioration or recovery most commonly occurs at Day 6-7 of illness

## Characteristics

The most associated co-morbidities with ICU admission were diabetes and hypertension.

Most patients are around 70 years old

Obesity is a frequent co-morbidity

Net prevalence in the male population

\*\*\*Interstitial pneumonia / Reps failure +/- Flu like symptoms treat as COVID +ve  
DO NOT BLINDLY trust negative swab if symptoms / pneumonia with suggestive CXR\*\*\*

## Organ Failure

Hypoxaemic respiratory failure > 90 %

Shock 30 %

Akl 10 – 30% (RRT 20%)

## Bloods

ABG – Mild acidosis with normal lactates, severe base deficit, high AG.

Raised CK especially in younger patients

Lymphopenia common

Very elevated CRP

Often thrombocytopenic (mild ) <100 rare

WBC tends to be normal

LFTs abnormal ~ 30 %

Difficult glycaemic control – frequent ketoacidosis

## Imaging

CXR :Interstitiopathy, Bilat infiltrates common and gravitational distribution.

Chest CT – NOT indicated due to high difficulty in transportation, high risk of spreading the contagion

- Ground glass appearances, crazy paving , bilat infiltrates , atelectasis .

Lung USS – Diffuse B-line profile – Responds well to PEEP  
Consolidation / parapneumonic / atelectasis.

ECHO – Attention to dyskinesias – Proportion of patients have troponin rise. Thought to be secondary to stress cardiomyopathies secondary to virus . Not ACS.



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## Airway

Pre Oxygenate with C-Circuit and tight fitting face mask / two handed grip to minimise leak  
Avoid bagging if able (Aerosalising) – If required insert LMA  
Consider videolaryngoscopy as first line  
Do not positive pressure ventilate until cuff inflated – Attach to ventilator immediately post intubation  
Use closed suction system  
Airway management by most experienced practitioner  
Cricoid pressure case dependant – avoid if able  
Avoid unnecessary circuit disconnection – clamp ETT and place ventilator on standy  
Use out-of-room and in-room checklists and formulate plan

## Ventilation

### PRVC

Lung Protective Ventilation – 6mls/kg

- Often High PEEP required >15cmH20.
- Patients usually have good compliance
- PRONING – 18-22hr - Often 7 rotations necessary - Fio2 >0.60
- NEGATIVE fluid balance
- NMBA's and Deep sedation

Worsening of ventilatory failure with refractory hypercapnia in week 3 – Secretion retention /dead space ventilation

Consider early tracheostomy <7 days – reduce sedation requirement / aid weaning

Be careful with early spontaneous ventilation due to risk of de-recruitment

Patients requiring 14-21 days invasive ventilation

\*\*\*HFNO / NIV not recommended\*\*\*\*

## Interventions

NG tube post intubation – early enteral nutrition

CVC line – Recommended USS guided ( Dedicated USS for COVID-19 lines ) – Needs decontamination .

1<sup>st</sup> line vasopressor : Noradrenaline (4mg/50ml 5% Glucose)

In event of increased numbers of patients / limited numbers of pumps – Move to peripheral noradrenaline – (8mg/250ml ) (see separate policy / ICU Cons decision)

## Renal

CRRT – approx. 20% pts

Reserve for patients with favourable outcomes:

- Filtration / dialysis teams
- Logistics of disposal of waste
- Increased nursing load

## Medications

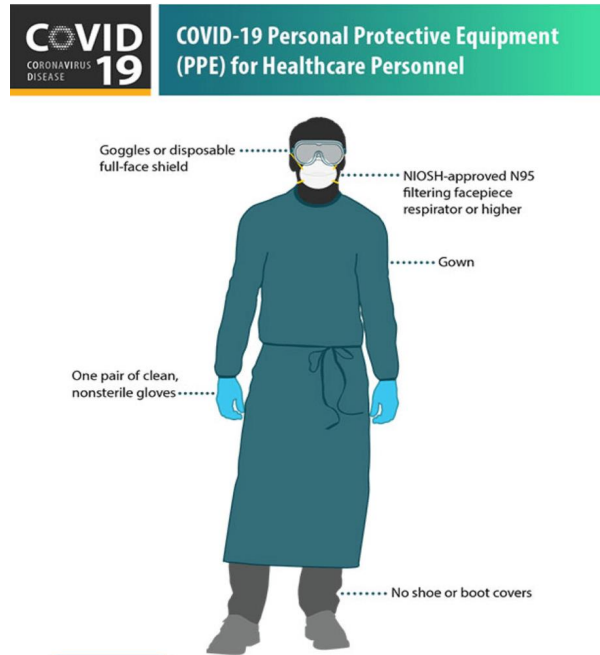
Steroids – No benefit in Steroid use. May increase viral shedding

Antibiotics – Not unless severe disease with potential of bacterial overlay – Yes in late infection

Antivirals – Consider in deterioration – scant evidence base.

# COVID-19 SUMMARY

PPE  
(See separate  
Donning/ doffing)



## The swabbing process:

Gather 3 red topped nasopharyngeal swab packets, get 6 microbiology sample bags, remove the paper from 3 of the bags (leaving just the colourless plastic pouches), attach patient labels to remaining 3 sample bags, place all 6 sample bags and 3 swabs in a white tray with sharps bin. Gather one of the large white cylindrical transport containers and place everything on a silver trolley with wheels.

Get PPE ready and don (see trust guidance)

Buddy unpeels swab packet

Swabber takes out swab and swabs the throat

Buddy takes red lid off container

Swabber places swab in container and snaps end of stick off

Swabber places end of stick in sharps bin with no-touch-technique

Buddy screws red lid on container

Buddy labels the container

Buddy places the container in an empty plastic pouch, seals the pouch then places that in to the 1st labelled sample bag and seals it


This process is repeated for sample 2 and 3.

Once all 3 samples have been taken and bagged, buddy places them inside the transport container (everything else that was in the transport container needs to stay in there too) and screws closed the lid.

# COVID-19 SUMMARY

## PRINCIPLES\* OF AIRWAY MANAGEMENT IN CORONAVIRUS COVID-19

FOR SUSPECTED/REPORTABLE\*\* OR CONFIRMED CASES OF COVID-19



### BEFORE

#### STAFF PROTECTION

- Hand Hygiene
- Minimize Personnel During Aerosol Generating Procedures\*\*\*\*
- Full Personal Protective Equipment\*\*\*
- Airborne Infection Isolation room (if available)

#### PREPARATION

- Early Preparation of Drugs and Equipment
- Formulate plan Early
- Meticulous Airway Assessment
- Connect Viral/Bacterial Filter to Circuits and Manual Ventilator
- Use Closed Suctioning System
- Use Video Laryngoscopy

### DURING

#### TEAM DYNAMICS

- Clear Delineation of Roles
- Closed-loop Communication Throughout
- Clear Communication of Airway Plan
- Cross-monitoring by All Team Members for Potential Contamination


#### TECHNICAL ASPECTS

- Airway Management by Most Experienced Practitioner
- Lowest Gas Flows Possible to Maintain Oxygenation
- Tight Fitting Mask with Two Hand Grip to Minimise Leak
- Rapid Sequence Induction and Avoid Bag-Mask Ventilation When Possible
- Ensure Paralysis to Avoid Coughing
- Positive Pressure Ventilation Only After Cuff Inflated

### AFTER

- Avoid Unnecessary Circuit Disconnection
- Strict Adherence to Proper Degoing Steps
- Hand Hygiene

- If Disconnection Needed, Wear PPE and Standby Ventilator +/- Clamp Tube
- Team Debriefing



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\*Principles of Airway Management of COVID-19 may apply to Operating Theatre, Intensive Care, Emergency Department and Ward Settings. Similar principles apply to extubation of COVID-19 patients.  
 \*\*There are regional and institutional variations on definition of a suspected/reportable case. Please refer to your own institutional practice.  
 \*\*\*Personal Protective Equipment according to your own institutional recommendation, may include: Particulate Respirator, Cap, Eye Protection, Long-sleeved Waterproof Gown, Gloves  
 \*\*\*\* Aerosol Generating Procedures: Tracheal Intubation, Non-invasive Ventilation, Tracheostomy, Cardiopulmonary Resuscitation, Manual Ventilation before Intubation, Bronchoscopy

References:  
 1. World Health Organization. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected Interim guidance. January 2020.  
 2. Center for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Patients with Confirmed 2019 Novel Coronavirus (2019-nCoV) or Persons Under Investigation for 2019-nCoV in Healthcare Settings. February 2020.

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# COVID-19 SUMMARY

## OUTSIDE-ROOM CHECKLIST FOR SUSPECTED #COVID19 PATIENT

DR. DAVID LYNSS (CRITICAL CARE SOCIETY, UK)  
DR. JONNY WILKINSON (NORTHAMPTON GENERAL, UK)  
& MIDLANDS CORONAVIRUS ICU GROUP

### CLEAN SPACE CHECK

- SUITABLE FOR INTUBATION?
- NAME CHECK + ASSIGN ROLES
- POCKETS EMPTY CHECK
- TICK OFF 'KIT DRAWER' AGAINST LIST
- CHECK MCGRATH & LARYNGOSCOPES
- INTUBATION DRUGS (SEE BELOW)
- REVIEW INTUBATION PLAN
- DISCUSS F.O. NECK ACCESS
- DISCUSS CPR/DNACPR
- IV ACCESS PLAN
- ROUTE TO ICU ARRANGED

**- TRUST-GUIDED PPE**  
**- ASSISTANT/2ND INTUBATOR**  
**- CLARIFY ROLES**

INDUCTION AGENT ?KETAMINE - DISCUSS WITH TEAM  
ROCURONIUM 100MG  
PHENYLEPHRINE / METARAMINOL / EPHEDRINE  
OTHER EMERGENCY DRUGS + OXYGEN

### DON KIT AND MAKE READY

- IDENTIFY AREA INSIDE TO USE AS TABLE
- DRESS IN PPE AS PER TRUST POLICY
- ENSURE NAME AND ROLE LABEL VISIBLE
- STOP!! SPIN AROUND AND 'BUDDY' CHECK PPE**
- READY?
- USE INTUBATION GUIDELINE AS PER 'IN-ROOM' SHEET
- HAND THIS PIECE OF PAPER TO THE RUNNER
- TAKE KIT DRAWER AND DRUGS INTO COVID SPACE

#### ROLES

- PRIMARY INTUBATOR
- SECOND INTUBATOR
- ASSISTANT INSIDE?
- OUTSIDE RUNNER

THE RUNNER SHOULD CONFIRM TRANSFER ROUTE AND CONFIRM THIS WITH THE INTUBATOR IN THE ROOM

2ND INTUBATOR SHOULD BE READY, IN PPE, OUTSIDE THE ROOM

### WHEN CLEAN AGAIN

## DEBRIEF

**ANY RETROSPECTIVE ISSUES WITH:**

- PPE?
- KIT?
- INTUBATION?
- TRANSFER?
- VENTILATOR?
- COMMUNICATION?
- UNEXPECTED HAZARDS?
- STRESS LEVEL?
- ANY CONCERNS AT ALL?

- RESTOCK KIT
- PREPARE RESOURCES TO GO AGAIN

DISCONNECT = CLAMP TUBE

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## IN-ROOM INTUBATION CHECKLIST FOR SUSPECTED #COVID19 PATIENT

DR. DAVID LYNSS (CRITICAL CARE SOCIETY, UK)  
DR. JONNY WILKINSON (NORTHAMPTON GENERAL, UK)  
& MIDLANDS CORONAVIRUS ICU GROUP

### PRE-INTUBATION

- LARYNGOSCOPE CHECK
- CONSIDER VL AS 1ST OPTION?
- ETT, SYRINGE & TIE
- BOUGIE/STYLET
- LMA/IGEL
- VENTILATOR CIRCUIT SET UP (1+2)
- CAPNOGRAPHY WORKING
- SUCTION WORKING
- PATIENT POSITION
- IV ACCESS CHECKED
- PLAN DRUG DOSES

**- TRUST-GUIDED PPE**  
**- ASSISTANT/2ND INTUBATOR**  
**- CLARIFY ROLES**

CIRCUIT ONE

CIRCUIT TWO

### INTUBATION

STOP AND RECHECK THEN GO

PRE-OX VIA C-CIRCUIT (1)  
AIM FOR BEST ET<sub>O2</sub> OR 3-5MINS PREOX

GIVE DRUGS

AVOID BAGGING IF POSSIBLE (AEROSOL)

PLAN A

INTUBATE - CONSIDER VL 1ST?

FAIL X

PLAN B

LMA/IGEL  
STOP - CAN YOU VENTILATE? !

IF YES, CONSIDER DISPOSABLE FIBROSCOPE AND EXCHANGE CATHETER

FAIL X

TRADITIONAL PLAN C LEFT OUT DUE TO AEROSOL RISKS - CONFIRM YOUR DEPARTMENT POLICY

PLAN 'D'

DECLARE CICV  
DECLARE FRONT OF NECK ACCESS  
SCALPEL, BOUGIE, SIZE #6 ETT !

### POST-INTUBATION

**SUCCESS**  
ATTACH TO C-CIRCUIT + FILTER (1)  
**STOP**  
CHECK CAPNOGRAPH + CHEST MOVEMENT  
SECURE ETT

**CHANGE TO OXYLOG?**  
100% O<sub>2</sub>  
CLAMP TUBE  
DISCONNECT C-CIRCUIT (1)  
CONNECT TO VENTILATOR CIRCUIT (2)  
UNCLAMP TUBE + VENTILATE  
INSERT NG TUBE

**TRANSFER?**  
CHECK CANNULAE  
SEDATION OPTIMISED  
CHECK 'GOOD TO GO' FROM OUTSIDE THE ROOM  
O<sub>2</sub> SUPPLY AND CONNECT  
COVER PATIENT WITH CLEAR PLASTIC SHEET

**CHANGE TO ICU VENTILATOR**  
STOP OXYLOG  
CLAMP TUBE  
TRANSFER FILTER AND THE CAPNOGRAPH TO VENT  
ATTACH INLINE SUCTION  
ATTACH VENTILATOR  
UNCLAMP TUBE  
CHECK VENTILATION

**FULL DEBRIEF**  
COMPLETE ADMISSION HANDOVER  
REMOVE PPE CAREFULLY  
COMPLETE OUTSIDE CHECKLIST

DISCONNECT = CLAMP TUBE

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