THE UNIVERSITY OF KANSAS HEALTH SYSTEM
Care Collaborative

Patient Label

Presumed or Positive COVID-19 ADMISSION ORDER SET

RN Noting Orders	Date Time	PHYSICIAN'S ORDERS MUST BE SIGNED BY PROVIDER

Primary Diagnosis: _____

☐ Suspected Covid-19 Case (+ travel/exposure Hx; Negative Influenza A/B screen & Negative Respiratory Viral Panel)

☐ Positive Covid-19 Case ☐ Confirmed

☐ Sepsis, unknown/known cause (+SIRS+ likely source of infection + evidence organ dysfunction)

Any patient who screens as high risk for severe Covid-19 should be transferred to high level of care (see Table 2 below to categorize patients for early transfer)

Table 2: Risk Factors for Severe COVID-19 Disease

Epidemiological – Category 1	*Vital Signs – Category 2*	*Labs – Category 3*
Age > 55	Respiratory rate > 24 breaths/min	D-dimer > 1000 ng/mL
Pre-existing pulmonary disease	Heart rate > 125 beats/min	CPK > twice upper limit of normal
Chronic kidney disease	SpO2 < 90% on ambient air	CRP > 100
Diabetes with A1c > 7.6%		LDH > 245 U/L
History of hypertension		Elevated troponin
History of cardiovascular disease		Admission absolute lymphocyte count < 0.8
Use of biologics		Ferritin > 300 ug/L
History of transplant or other immunosuppression		
All patients with HIV (regardless of CD4 count)		

Secondary Diagnoses:

☐ Congestive Heart Failure, unspecified ☐ COPD ☐ DM

☐ Other Co-morbid Conditions:_____

Allergies/Reactions: _____

Admission HT: _____ WT._____

☐ Admit patient into airborne isolation room with isolation precautions (airborne + contact + face protection). Only dedicated staff should be assigned to these patients and limit movement within health system to prevent cross contamination and excess use of PPE.

Code Status:

☐ Full ☐ DNR Comfort Care ☐ DNR Comfort Care-arrest ☐ Palliative Care

☐ Need to discuss status with family - DISCUSSED With: ☐ Patient and/or ☐ Family

Consults: Hospitalist/Intensivist: _____

Other: _____

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1. ☒ **VS q 4 hours, Accurate I & O, Weigh Daily.**
☒ **Complete SOFA q 4 hours**

2. Oxygen: Titrate oxygen saturation greater than or equal to 90% and monitor oximetry.
Call provider if O2 sat <92% despite > 5 L/min by nasal cannula or NRBFM.
If NIV considered, weight risks/benefits to patient and staff and best use of resources.

Intubated Covid-19 patients typically require > 1-week ventilatory support so NIV is only a short-term consideration and carries significant risk of aerosolization – staff must be in airborne PPE.

Consider transfer to higher level of care/intubation if inflammatory markers rise significantly after admission and/or RR >35-40 bpm, or PaCO2 > 50 with pH <7.30 in non-COPD patient, or PaO2 <65 mm HG or SpO2 >92% on NRBFM

3. ☒ **IV access:** Large bore 18 G or larger peripheral IV lines with NS at ____ cc/hr
☐ Other-Saline lock

4. ☒ **Telemetry**
☐ Arrhythmias: Monitor and notify provider if rhythm change, SVT, > 6 PVC/min, V-tach, 2nd or 3rd degree AV block, new onset Afib, or bradycardia <50.

5. ☐ **Foley cath PRN, then DC within 48 hours or when clinically stable**

6. Activity: Place and maintain anti-embolic stockings in combination with pharmacological VTE prophylaxis as needed.
☒ Early proning while conscious strongly encouraged if on O2 and Covid suspected
☐ Head of bed: 30 degrees or greater ☐ HOB exemption from elevation
☐ Bed rest with bedside commode

7. Diet: (Please select all that apply)
☐ NPO (except for meds past midnight, if for testing) ☐ 2 grams salt (Recommended for heart failure)
☐ ADA ____calories ☐ Other

8. Lab tests on admission (if not done in ED)
☒ STAT: CBC with differential, CMP, Serum Lactate, Urine with microscopy ☒ CRP
☒ Procalcitonin ☒ Respiratory Viral Panel (Biofire, etc.) ☒ Influenza A/B screen
☒ DIC Panel (D-Dimer, PT/PTT/INR)
☒ ABG
☒ Blood Culture x2 sites STAT ☒ Urine Culture (if indicated)
☒ Sputum Culture (if indicated) ☒ Wound Culture (if indicated) Site:_____
☒ Troponin ☒ CPK ☒ BNP

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Lab Tests on Admission – Continued

☒ EKG ☐ 12 lead EKG daily NOTE if QTc interval is >470 ☐

☐ Consider Hepatitis panel if LFT's elevated

☐ Glucose (if <70 or >300 contact provider for orders) ☐ POC glucose AC and bedtime

☒ Repeat CMP and Lactate in 2 hours if initial Lactate was > 2.0

☒ Continue to repeat CMP and Lactate every 6 hours until Lactate < 2.0; **Also continue to check CRP, CPK, and D-dimer levels as significant elevations warrant early transfer to higher level of care.**

9. Radiology:

☒ CXR II or ☐ PCXR

☐ CT Chest (Negative RT-PCR tests on oropharyngeal swabs despite CT findings suggestive of viral pneumonia have been reported in some patients who ultimately tested positive for SARS-CoV-2

☐ ECHO/Left Ventricular Assessment:

10. Other Consults:

☐ Smoking cessation instruction if applicable

☐ PT/OT for functional assessment

☐ Pharmacy consult to review meds and assist in monitoring drug therapy and drug-drug interactions or risks of adverse drug reactions.

11. Medications

Pharmacologic Treatment of COVID-19

- For outpatients with COVID-19, we do not recommend therapy. Currently, there are no established antiviral therapies for COVID-19 infection. A number of agents are being investigated based on in vitro or extrapolated evidence.
- No approved drug treatment but off-label use of some medications being used. Regimens under investigation (excluding vaccine candidates): Sarilumab (antibody against IL-6R-alpha), Nitric Oxide gas inhalation, Remdesivir, Chloroquine or Hydroxychloroquine, monoclonal antibodies from convalescent serum, Lopinavir-Ritonavir combination, Lopinavir-Ritonavir combination + interferon-beta.
- U.S. Clinical Trials: 12 actively recruiting clinical trials using Sarilumab, Nitric Oxide Gas Inhalation, Remdesivir, Hydroxychloroquine, monoclonal antibodies from convalescent serum or Lopinavir-Ritonavir combination
- No active therapeutic clinical trial in Kansas as of 3/30/2020

For patients with mild Covid-19 disease and low risk factors (able to maintain O2 sats >92% on room air or < 3L/min O2 via NC and they have no risk factors for severe disease - provide supportive care.

Management of such patients consists of ensuring appropriate infection control

A. ☐ Supportive Care: as per your usual protocols

Analgesics and Antipyretics (no solid evidence that NSAID's should be avoided)

☐ Acetaminophen 325 to 650 mg every 4-6 hrs or 1 g every 6 hrs as needed (max 3-4 g/day)

☐ Ibuprofen 200-800 mg every 6 hrs as needed (max 3200 mg/day)

☐ Naproxen 250-500 mg every 12 hrs (max 1 g/day)

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B. Statins

Continue statins if already prescribed, whatever the agent is. If no contraindication, and for those who have a guideline indication for a statin, consider starting:

□ Atorvastatin 40 mg daily or □ Rosuvastatin 20 mg daily

(Note cardiovascular disease is a major risk factor for COVID-19 disease severity.) In addition, statins may help promote antiviral innate immune response. If elevated CPK >/= 500 U/L, consider not starting a statin. Avoid statins if ALT > 3x ULN.

C. Based on recently released studies, further information is available that may guide your approach to treatment. With guidance from Infectious Diseases/Pharmacy, develop criteria for and consider adding:

1. **Hydroxychloroquine** -400 mg BID x2 followed by 400 mg daily while hospitalized, up to 5 days. (Note chloroquine has activity but limited supply so hydroxychloroquine preferred. Check ECG prior to initiation given risk of QT prolongation. Risk is increased in patients on other QT-prolonging agents.
2. **Azithromycin** 500 mg day one and 250 mg daily days 2-5 NOTE: The true clinical benefit is not yet established, and the potential additive risk of QTc prolongation should be carefully considered!

D. Glucocorticoids - The WHO and CDC recommend glucocorticoids not be used in patients with COVID-19 pneumonia unless there are other indications (eg, exacerbation of chronic obstructive pulmonary disease). Glucocorticoids have been associated with an increased risk for mortality in patients with influenza and delayed viral clearance in patients with Middle East respiratory syndrome coronavirus (MERS-CoV) infection.

E. Nebulizer therapy – requires PPAR use since can increase aerosolization of secretions and should only be considered for acute bronchospasm. Use of MDI's with spacers are strongly recommended over nebulizer therapy.

a. Bronchodilator/glucocorticoid/anticholinergic MDI therapy

_____

b. Albuterol/Ipratropium aerosol – use only if staff using airborne PPE when patient receiving treatment. 1 vial (3 ml) every 6 hours to max of 6 treatments/day. If asthmatic exacerbation can use up to 8 inhalations every 20 minutes as needed up to 3 hours.

F. VTE prophylaxis – pharmacologic thromboprophylaxis rather than mechanical methods or no prophylaxis and LMW heparin is preferred. (monitor platelet counts)

□ Intermittent pneumatic compression boots and/or graduated compression stockings

□ Enoxaparin 40 mg SQ once daily (30 mg daily if CrCl < 30 ml/min)

□ No prophylaxis other than early ambulation.

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G. Antibiotics - We do not recommend routine antibiotics for patients with COVID-19 unless there is another indication for antibiotics. (Consider broad spectrum coverage based on likely source for infection if procalcitonin levels are > 2 ng/ml)

H. Angiotensin-receptor blockers and Angiotensin converting enzyme blockers
There is no consensus on whether these drugs would exacerbate or ameliorate COVID-19 disease. No clinical data currently exist to guide the initiation or cessation of these agents in patients with SARS-CoV19 infection.

If patients are currently taking these medications for known beneficial indications (HF, HTN, or ischemic heart disease) be advised to continue them.

☐ ARB/ACEI order: _____ _____mg every_____hrs

☐ Contraindicated -
- ☐ Angioedema
- ☐ Bradycardia
- ☐ EF ≥ 40%
- ☐ Renal insufficiency (Cr is > 2.0 and eGFR is < 30);
- ☐ Other:
- ☐ Significant asthma or COPD
- ☐ Hypotension

I. Miscellaneous

☐ **Bowel Protocol:**

Antacid:

☐ Aluminum/Magnesium Hydroxide with Simethicone 30 ml PO QID PRN dyspepsia

☐ Famotidine (PEPCID) tablet 20 mg, Oral, TWICE DAILY

Sedative/Sleep Aid

☐ Temazepam (Restoril) _____ mg PO every night as needed for sleep

☐ Zolpidem (Ambien) 5 mg PO every night as needed for sleep

Monitor patient closely for deterioration in condition that may require early determination for transfer to higher levels of care. Use Table 2 above from Mass General.

Also, remember that in your sepsis protocol, other considerations for early transfer would be those with SBP <90 or MAP <65 after 30 ml/kg over 1 hour fluid bolus, vasopressors required and no ICU level of care onsite, or Lactate >4.0 on initial labs

J. Discharge Planning

A complete assessment of the patient's psychosocial environment – including identification of a home support system – is essential prior to discharge.

1. Discharge criteria

Consider discharge for patients' who meet the following clinical criteria:
Resolution of fever >48 hours without antipyretics
Improvement in illness signs and symptoms (cough, SOB, and oxygen requirement)

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Discharge for patients with unstable housing or who leave Against Medical Advice (AMA) – need to develop resources for patients with unstable housing and requests for AMA discharge.

2. Confirmed COVID-19 Discharge Checklist

If unable to complete any components of checklist: review community resources, discuss transportation and post-acute care options with care coordination and consider ongoing hospitalization

Discharge contingencies

□ Verify and document contact number for patient and primary support person; ensure active phone service, voicemail functioning, and language preference correctly documented
□ Verify residence with private room, ability to adhere to home isolation instructions and risk of transmission to persons with immunocompromising conditions in the home
□ Confirm ability to manage ADL/iADLs with degree of support at home
□ Confirm that patient has resources/social support to receive 1-2 weeks of food and other necessary supplies while under quarantine
□ Perform DME needs assessment and consider sponsorship from hospital if item unable to be delivered or obtained by primary support person

Discharge medications/supplies

□ Provide 30-day supply of medications to cover duration of home isolation, recommend meds-to-bed delivery if available
□ Provide a surgical mask as available to infected patients who are discharging home (instructions for use in discharge instructions)

Transportation

□ Verify patient has a ride by private vehicle or arrange transportation via ambulance (infected person should wear mask in vehicle)

Discharge instructions

□ Counsel patient on voluntary isolation procedures

Ambulatory follow-up plan

□ Verify and document patient's primary care provider
□ Provide warm handoff via phone or in-basket message to patient's primary care

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provider and confirm that they are able/willing to answer questions post-discharge.

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Precautions Related to Self-Isolation/Quarantine following Acute Care Discharge

If transferring to LTC or Assisted Living, note the CDC recommendations below as well as when removing the patient from Transmission-Based Precautions.

The decision to discontinue Transmission-Based Precautions should be made using a test-based strategy or a non-test-based strategy (i.e., time-since-illness-onset and time-since-recovery strategy). Meeting criteria for discontinuation of Transmission-Based Precautions is not a prerequisite for discharge.

1. Test-based strategy.

a-Resolution of fever without the use of fever-reducing medications and
b-Improvement in respiratory symptoms (e.g., cough, shortness of breath), and
c-Negative results of an FDA Emergency Use Authorized COVID-19 molecular assay for detection of SARS-CoV-2 RNA from at least two consecutive nasopharyngeal swab specimens collected ≥24 hours apart (total of two negative specimens)

2. Non-test-based strategy.

a-At least 3 days (72 hours) have passed since recovery defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms (e.g., cough, shortness of breath); and,
b-At least 7 days have passed since symptoms first appeared

When a Testing-Based Strategy is Preferred

Hospitalized patients may have longer periods of SARS-CoV-2 RNA detection compared to patients with mild or moderate disease. Severely immunocompromised patients (e.g., medical treatment with immunosuppressive drugs, bone marrow or solid organ transplant recipients, inherited immunodeficiency, poorly controlled HIV) may also have longer periods of SARS-CoV-2 RNA detection and prolonged shedding of infectious recovery. These groups may be contagious for longer than others. In addition, placing a patient in a setting where they will have close contact with individuals at risk for severe disease warrants a conservative approach.

The test-based strategy is preferred for discontinuation of transmission-based precautions for patients who are

a-Hospitalized or
b-Severely immunocompromised or
c-Being transferred to a long-term care or assisted living facility

If testing is not readily available, facilities should use the non-test-based strategy for discontinuation of Transmission-Based Precautions or extend the period of isolation beyond the non-test-based-strategy duration, on a case by case basis in consultation with local and state public health authorities.

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		Additional Orders: _____ _____ Provider signature:_____ Reviewed and confirmed admission Orders with _____@ _____ RN signature:_____

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MASSACHUSETTS GENERAL HOSPITAL

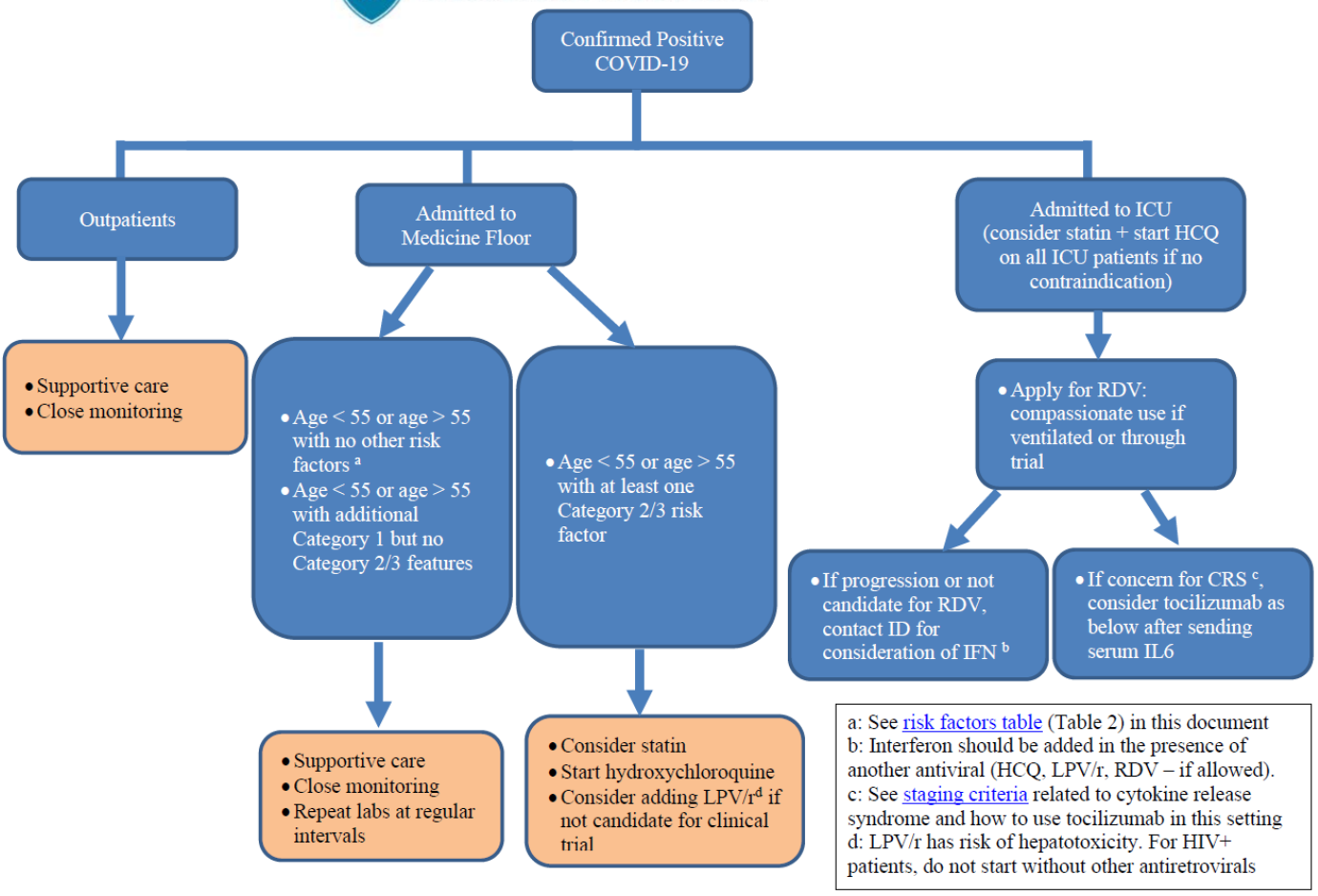

Table 2: Risk Factors for Severe COVID-19 Disease

Epidemiological – Category 1	*Vital Signs – Category 2*	*Labs – Category 3*
Age > 55	Respiratory rate > 24 breaths/min	D-dimer > 1000 ng/mL
Pre-existing pulmonary disease	Heart rate > 125 beats/min	CPK > twice upper limit of normal
Chronic kidney disease	SpO2 < 90% on ambient air	CRP > 100
Diabetes with A1c > 7.6%		LDH > 245 U/L
History of hypertension		Elevated troponin
History of cardiovascular disease		Admission absolute lymphocyte count < 0.8
Use of biologics		Ferritin > 300 ug/L
History of transplant or other immunosuppression		
All patients with HIV (regardless of CD4 count)		