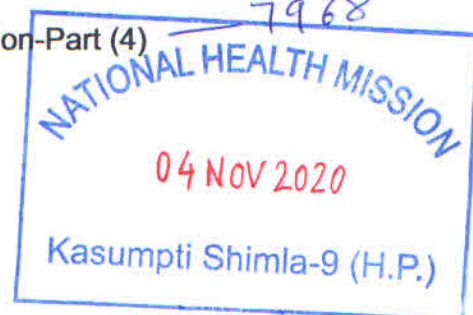




No. NHMHP-IDSP/1/2020-IDSP-Section-Part (4)  
National Health Mission  
SDA Complex, Kasumpti, Shimla-9  
Himachal Pradesh  
Dated: Shimla-171009, the



To,

All the Chief Medical Officers,  
Himachal Pradesh

Dated Shimla-9 the

**Subject :** Recommendations of State COVID Clinical Team  
Sir/ Madam,

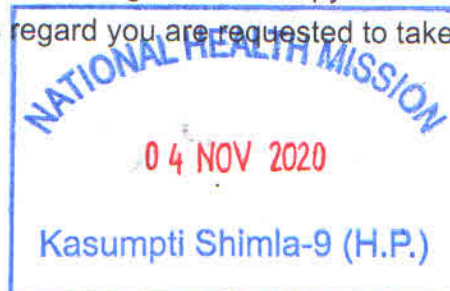
The State COVID Clinical team has made following recommendations that needs to be taken into pursuance:

1. Nodal Officer of SLBSGMC Nerchowk is requested to organize training and sensitization workshop for all doctors working in ZH Mandi and Private hospitals regarding Protocol-driven testing and management of suspected COVID 19 patients.
2. At the DCCC level, patient should be subjected to 6-minute walk test (6MWT) (In elderly, 3-MWT) in order to track patient early who develop exercise-induced desaturation and may get benefit from steroids or may help in early referral.
3. ARDS, Pulmonary Embolism and cardiac dysfunction (arrhythmia, myocarditis) should be kept as differential diagnosis in the following groups of patients of COVID-19 infection: Severe hypoxemia, hypotension and tachypnoea. The threshold for CTPA should be low in COVID-19 patients with the above manifestations. Active screening of pulmonary thrombo-embolism in hospitalized COVID+ve patients should be done routinely by modified Well's and other validated criteria.
4. Panchayati Raj Institutions be involved for IEC activities regarding seeking medical help at the earliest if anybody develops flu-like symptoms.
5. The patients with comorbidities attending hospital (for non-COVID reason) should be counselled, by treating doctors, to seek medical help at the earliest in case of developing fever or influenza-like symptoms.
6. The State COVID clinical team has revised the death summary format that is to be submitted by COVID Clinical Committees of Government

Medical Colleges of the State for the reporting of COVID Deaths as per Annexure 1.

7. Patient with a D-dimer level of above 3000 ng/ml may be subjected to ULTRASOUND screening of legs/lungs and CTPA (refractory severe hypoxemia with minimal Radiological changes). In case of CTPA not available, Echocardiography may be advised to rule out acute PTE.
8. Home isolated patients should be assessed telephonically at least twice a day by the nodal person of the District or any other health officials and patient should be educated about the warning signs and symptoms of COVID-19 infection and to report early to the healthcare facility in case of worsening of symptoms.
9. The State COVID clinical team has recommended the protocol for the anticoagulation therapy in COVID 19 infection as per Annexure 2.

In this regard you are requested to take necessary steps at the earliest



Yours sincerely,

*Nigam* 4/11/20  
Mission Director, NHM  
Himachal Pradesh, Shimla - 9

Endst. No. As above. Dated Shimla-9 the  
Copy for information and necessary action to:

1. Secretary (Health) to the Govt. of Himachal Pradesh
2. All Deputy Commissioners, Himachal Pradesh.
3. Director Health Services, Himachal Pradesh: The State COVID Clinical team has suggested the provision of ECMO machine in DCH for the management of refractory hypoxemia. You are therefore requested to take further necessary action in the matter.
4. Director Medical Education & Research, Himachal Pradesh
5. All the Medical Superintendents, Himachal Pradesh.
6. All Nodal Officers, CCC/DCHC/DCH in Himachal Pradesh.
7. All the District Surveillance Officers in Himachal Pradesh.
8. State COVID Clinical Team
9. COVID Clinical Committee of all the Medical Colleges of Himachal Pradesh



10. SPO EMRT, NHM. The State COVID Clinical team has suggested regular training of EMT of ambulance service and every ambulance dedicated for the shifting of COVID patient should have Pulse oximeter, stand-by oxygen cylinder and transport ventilator. You are therefore requested to take further necessary action in the matter.

  
Mission Director, NHM  
Himachal Pradesh, Shimla – 9

**ANNEXURE 1 - Death Summary Format**

1. Name of facility
2. Name
3. Age
4. Gender
5. Address
6. IPD no.
7. Address
8. Date of Admission
9. Date of Death
10. Brief history including type and duration of symptoms
11. Comorbidity: mention the name including duration and status (controlled/uncontrolled)
12. Referred from and reason for referral
13. Clinical Diagnosis at admission
14. Diagnosis on death
15. Course during hospital stay (in few lines)
16. 6-minute walk distance (3 minute for elderly) test

17. Details of investigations and treatment: mention basic investigation, inflammatory parameters, and DIC screen

18. Imaging study

- Chest Xray
- CT Thorax if done: CORADS and severity score

19. ECG and Echocardiography(if done)

20. Treatment given

21. Details of antiviral drugs

22. Any other

23. Remarks by COVID Clinical Committee

24. Remarks by State COVID Clinical Team

#### ANNEXURE 2 - Protocol for Anticoagulation therapy in COVID-19 infection

- Monitoring:

D-dimer, PT/international normalized ratio (INR), aPTT and fibrinogen should be monitored at baseline and every 48 hours. Elevation of D-dimer level at least 6 times the upper limit of normal (3,000 ng/mL fibrinogen equivalent units [FEU]) is taken as the threshold value to define high-risk patients.<sup>1</sup>

- Risk stratification may be based on factors such as:

1. Location of patient's care (e.g. critical care/general ward)
2. Disease severity (e.g. need for CPAP, high oxygen requirements (e.g.  $\text{PaO}_2/\text{FiO}_2 \leq 300$ ), SIC score  $\geq 4$ )
3. D-dimer thresholds > (D-dimer greater than 3,000 ng/ mL FEU)
4. Clinical features suggestive of possible VTE

Indications of imaging study to rule out Thromboembolism:

3. - point compression point of care Ultrasonography (POCUS) examination of the bilateral lower extremities or Echocardiography

or CTPA

A. Non-critically ill COVID-19 patients

2. High-risk patients (D-dimer greater than 3,000 ng/ mL FEU)
3. Any patient with sudden cardiopulmonary decline that cannot be explained by an alternative etiology (Worsening hypoxemia despite improving X-ray and good lung compliance)

All patients (including non-critically ill) who require hospital admission for COVID-19 infection should receive LMWH prophylaxis in the absence of any contraindications.<sup>2</sup>

**Contraindication:**

- Active bleeding: Use mechanical thromboprophylaxis
- Platelet count less than  $25 \times 10^9/L$
- Crèatinine clearance  $<10$  mL/min: use unfractionated heparin (UFH)
- Current or prior Heparin-induced thrombocytopenia:  
Fondaparinux (**Abnormal PT or APTT is not a contraindication**)

**Dose:** Enoxaparin 40mg SC /daily

**Dose modifications of LMWH:**

1. Creatinine clearance  $>30$  ml/min: Enoxaparin 40mg SC /daily
  2. Creatinine clearance 10-30 ml/min: Enoxaparin 30mg SC /daily
  3. Creatinine clearance  $<10$  mL/min: unfractionated heparin (UFH)
  4. BMI  $>40$ : Enoxaparin 40 mg SC BID
- B. Critically-ill patients such as need for CPAP, high oxygen requirements (e.g.  $PaO_2/FiO_2 \leq 300$ ), SIC score  $\geq 4$ , higher D-dimer and inflammatory parameters: therapeutic dose thromboprophylaxis
- C. Admitted patients who are on a direct oral anticoagulant or Warfarin as an outpatient therapy (eg. for Atrial fibrillation, h/o VTE, Prosthetic valves): Should be switched to therapeutic dose of LMWH

**ALWAYS ASSESS THE RISK FOR BLEEDING AND CHECK**



**CONTRAINDICATION:**

1. D-dimer greater than 3,000 ng/mL, imaging is warranted. If imaging not feasible and patient deteriorates clinically, give therapeutic dose.

**Enoxaparin:** 1 mg/kg BID subcutaneously (dose adjustment in renal failure)

2. Critically-ill patients, SIC score >4, and/or D-dimer greater than 3,000 ng/mL, but imaging is negative: **therapeutic** DVT prophylaxis

**Enoxaparin:** 1 mg/kg BID subcutaneously (dose adjustment in renal failure)

3. POCUS +ve/Echocardiography (If evidence of acute, otherwise unexplained right heart strain, or intra-cardiac thrombus)/CTPA+ve: management as per standard protocol of VTE followed by therapeutic anticoagulation

**Table-1 showing Sepsis-induced coagulopathy (SIC) score:**

Item	Score	Range
Platelet count (×10 <sup>9</sup> /L)	1	100-150
	2	<100
PT-INR	1	1.2-1.4
	2	>1.4
SOFA score	1	1
	2	≥2
Total score for SIC	≥4	

Table-1: Dosages of anticoagulants and dose modification<sup>3</sup>

	Category 1 D-dimer < 3,000 ng/mL FEU Standard prophylaxis	Category 2 D-dimer > 3,000 ng/mL FEU High-intensity prophylaxis	Category 3 Confirmed VTE
Standard dose	Enoxaparin 40 mg SC q24h	Enoxaparin 40 mg SC q12h	IV Heparin DVT/PE nomogram or Enoxaparin 1 mg/kg SC q12h
Renal failure	CrCl > 10-30mL/min: Enoxaparin 30 mg SC q24h	CrCl < 30 mL/min or AKI: Enoxaparin 40 mg SC q24h	IV heparin DVT/VTE nomogram
<u>*AKI definition:</u> Doubling of creatinine in 48h or anuria	CrCl < 10 mL/min or AKI*: UFH 5,000 U SC q12h	CrCl < 10 mL/min or AKI*: UFH 7500 U SC q12h	
	CRRT: 500 U/h through circuit Circuit clotting: IV ACS nomogram	CRRT: 500 U/h through circuit Circuit clotting: IV ACS nomogram	
Obesity			
Standard	> 100 kg: Enoxaparin 40 mg SC q12h > 120 kg: Enoxaparin 60 mg SC q12h	> 100 kg: Enoxaparin 60 mg SC q12h > 120 kg: Enoxaparin 80 mg SC q12h	IV Heparin DVT/PE nomogram or Enoxaparin 1 mg/kg SC q12h – up to 150 mg  Above 150 kg use UFH
Renal failure CrCl < 30mL/min or AKI*	≤ 120 kg: 7,500 U q12h > 120kg: 10,000U q12h	≤ 120 kg: 7,500 U q8h > 120kg: 10,000U q8h	IV heparin DVT/PE nomogram
<u>*AKI definition:</u> Doubling of creatinine in 48h or anuria	CRRT: 500 U/h through circuit Circuit clotting: IV Heparin ACS* nomogram	CRRT: 500 U/h through circuit Circuit clotting: IV Heparin ACS* nomogram	
IV Heparin ACS nomogram: initial dose 60-U/kg bolus, 12 U/kg/h			
- Target aPTT 49 – 67 seconds			
- Target heparin anti-Xa 0.2 – 0.5 until/ml			

### Extended thromboprophylaxis in COVID-19 (POST-DISCHARGE)

- Routine post-discharge VTE prophylaxis is **not recommended** for patients with COVID-19. Any decision to use post-discharge VTE prophylaxis should consider the individual patient's risk factors, including reduced mobility, bleeding risks, and feasibility.

#### Regimens:

- Rivaroxaban 10 mg daily
- Apixaban 2.5mg PO BID
- Enoxaparin 40 mg daily S/C

Standard prophylactic dose of LMWH or DOAC for 4 weeks may be a reasonable approach.<sup>4</sup>

**Extended thromboprophylaxis should be considered for:**

- **Modified IMPROVE-VTE score  $\geq 4$  at discharge; OR**
- **Modified IMPROVE-VTE score  $\geq 2$  at discharge and D-dimer  $>2$  times ULN; OR**
- **Age  $>75$  years; OR**
- **Age  $>60$  years and D-dimer  $>2$  times ULN; OR**
- **Age 40-60 years and D-dimer  $>2$  times ULN and previous VTE or Cancer**

Indications of extended thromboprophylaxis:

Extended thromboprophylaxis should be considered for:

- **Modified IMPROVE-VTE score  $\geq 4$  at discharge; OR**
- **Modified IMPROVE-VTE score  $\geq 2$  at discharge and D-dimer  $>2$  times ULN; OR**
- **Age  $>75$  years; OR**
- **Age  $>60$  years and D-dimer  $>2$  times ULN; OR**
- **Age 40-60 years and D-dimer  $>2$  times ULN and previous VTE or Cancer**

VTE risk factor	VTE risk score
Previous VTE	3
Known thrombophilia	2
Current lower limb paralysis or paresis	2
History of cancer	2
ICU/CCU stay	1
Complete immobilization $\geq 1$ d	1
Age $\geq 60$ y	1

References:



1. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020; 395(10223):497–506. doi:10.1016/S0140-6736(20)30183-5.
2. ISTH guideline Thachik et al. *J Thromb Haemost.* 2020;18:1023–1026
3. CCJM 2020.
4. BTS Guidance on Venous Thromboembolic Disease in patients with COVID-19 Updated 4 May 2020.