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A Systematic Approach for Managing Venous Thromboembolism in Patients with COVID-19: A Multinational Consensus Statement from the International Society on Thrombosis and Haemostasis (ISTH) on Behalf of the International Thrombosis Community

Introduction

With more than 6.7 million confirmed cases worldwideⁱ and nearly 400,000 deaths to date (7th June 2020) during 2020,ⁱⁱ the COVID-19 pandemic is one of the most significant healthcare crises of our time. The spread of COVID-19 has been varied, with some regions having sporadic transmission and relatively few hospitalized patients with COVID-19 pneumonia, and others where significant transmission has overwhelmed health services. While the disruption to health services continues, it is vital for the World Health Organization (WHO) to share the lessons of how best to prevent, diagnose, and treat patients with COVID-19 with health systems globally, and to learn about agreed clinical best practice approaches, which may improve patient outcomes.

The WHO should be congratulated on the publication of interim guidance on the Clinical Management of hospitalized patients with COVID-19ⁱⁱⁱ, the second iteration of which was published by the WHO in late May, which serves as a useful first step resource for health systems internationally. However, more must be done to meet the needs of front-line clinicians caring for patients with COVID-19 to ensure quality care, by addressing significant gaps in expert clinical guidance surrounding the prevention and management of venous thromboembolism (VTE) in COVID-19 patients.

COVID-19 and Venous Thromboembolism (VTE)

Venous thromboembolism (VTE) is a condition in which a blood clot forms most often in the deep veins of the leg, groin or arm (known as [deep vein thrombosis](#), DVT) and travels in the circulation, lodging in the lungs (known as [pulmonary embolism](#), PE). Together, DVT and PE are known as VTE - a dangerous, potentially deadly, medical condition.^{iv} [Hospital-associated VTE](#) (describes VTE occurring in hospital and 90 days post discharge) accounts for 60% of all VTE.

Emerging research indicates that:

- **People with COVID-19, especially those hospitalized with the moderate (requiring supplementary oxygenation) and severe (requiring mechanical ventilation) COVID-19 pneumonia have a high incidence of VTE^v**
 - **COVID-19 pneumonia is associated with a marked hypercoagulability, including high levels of fibrinogen and very high D-dimer levels;**
 - **In patients with COVID-19 pneumonia, there is a major inflammatory response which can lead to micro-clots – immunothrombosis - within the lungs. This likely contributes to the high levels of mortality seen in patients with COVID-19 pneumonia;**
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- **Some countries are facing difficulties in accessing low molecular weight heparins (blood thinners), a WHO essential medicine, that is a vital prophylactic and treatment for VTE in hospitalized patients with COVID-19.**

Call to Action on WHO in Relation to COVID-19-Related VTE

To reduce harm from COVID-19 associated VTE, the International Society on Thrombosis and Haemostasis, together with the undersigned national, continental and international clinical representative organizations, urgently calls on the WHO to endorse and share the application of a system-wide approach to VTE management on a global scale, as part of the international COVID-19 response that seeks to:

- Highlight the importance of a systematic approach to VTE prevention, diagnosis and treatment for patients with COVID-19; including those isolating at home, those hospitalized and those post discharge;
- Meet the needs of front-line clinicians caring for patients with COVID-19 to ensure quality care by improving health worker education about VTE in COVID-19 management that incorporates up-to-date consensus recommendations in the next iterations of WHO interim guidance on the Clinical Management of COVID-19 (ensuring a VTE expert(s) is enlisted to the Guideline Development Group);
- Signpost hospitals to accredited up-to-date evidence based clinical information portals on VTE related COVID-19 clinical guidance, such as the ISTH [COVID-19 Resource Page](#);
- Highlight to member states the importance of making available all WHO Essential Medicines, in particular low molecular weight heparins (blood thinners), which provides vital prophylactic and treatment for VTE;
- Improve COVID-19 VTE data collection and research to support regular updates of evidence-based clinical recommendations; and
- Encourage the implementation of a global VTE risk assessment tool for hospitalized patients.

VTE not only can kill, but can also have devastating co-morbidities, which significantly impact the quality of life for patients who survive COVID-19 and an associated VTE^{vi}.

It is critical for the WHO to address this public health challenge by prioritizing the development of systematic and integrated approaches to COVID-19-related VTE prevention that can be implemented in secondary and tertiary settings globally.

We urge the WHO to act now and offer our collective resources and expertise to assist in such an endeavor.

Signed on behalf of ISTH

Claire McLintock
President












Jeffrey Weitz
President-Elect

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Chair, World Thrombosis Day






Endorsed by:

<p>Aktionsbündnis Thrombose</p> 	<p>American Heart Association</p> 	<p>American Society of Hematology</p>  <p>Covid-19 Resource Page</p>
<p>Anticoagulation Forum</p> 	<p>APS Foundation of America</p> 	<p>Armenian Association of Hematology and Oncology</p> 
<p>Armenian Association of Hemophilia</p> 	<p>Armenian Hematology Association</p> 	<p>Asian Pacific Society of Cardiology</p> 
<p>Asian Pacific Society of Thrombosis and Haemostasis</p> 	<p>Asociación Peruana de Trombosis y Hemostasia</p> 	<p>Association of Physicians of Uganda</p> 










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<p>Brazilian Society on Thrombosis and Haemostasis</p>  <p>BSTH Brazilian Society on Thrombosis and Haemostasis</p>	<p>Canadian Venous Thromboembolism Research Network</p>  <p>Canadian Venous Thromboembolism Research Network</p>	<p>Centre of Excellence in Thrombosis and Anticoagulation Care</p>  <p>CETAC Centre d'excellence en thrombose et anticoagulation Centre of Excellence in Thrombosis and Anticoagulation Care</p>
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<p>Dutch Society for Thrombosis and Haemostasis</p> 	<p>European Thrombosis and Haemostasis Alliance</p> 	<p>European Association for Haemophilia and Allied Disorders</p> 
<p>Gesellschaft für Thrombose- und Hämostaseforschung</p> 	<p>Global Innovative Foundation For Transforming Society (GIFTS NGO)</p> 	<p>Groupe Francophone Thrombose et Cancer</p> 
<p>Grupo Cooperativo Latino Americano de Hemostasia y Trombosis</p> 	<p>Health First Europe</p> 	<p>Hemophilia Կենտրոնի Thrombophilia Center</p> 
<p>Hospital de Clínicas, Facultad de Medicina, Universidad de la República</p> 	<p>Hungarian Society of Thrombosis and Haemostasis</p> 	<p>Institute for the Study and Education on Thrombosis and Antithrombotic Therapy</p> 

<p>International Council of Standardization in Haematology</p> 	<p>International Initiative on Thrombosis and Cancer</p> 	<p>International Society on Thrombosis and Haemostasis</p> 
<p>International Society on Thrombosis and Haemostasis Scientific and Standardization Committee</p> 	<p>Iranian Association for Hemophilia and Thrombophilia</p> 	<p>Japanese Society on Thrombosis and Hemostasis</p> 
<p>Kenya Society on Thrombosis and Haemostasis (KSTH)</p> 	<p>Korean Society on Thrombosis and Haemostasis</p> 	<p>Kyrgyz Society of Cardiology</p> 
<p>Lithuanian Heart Association</p> 	<p>Macedonian Society for Transfusion Medicine</p> 	<p>Moroccan Society of Vascular Diseases</p> 

<p>Myanmar Society of Haematology</p> 	<p>National Blood Clot Alliance</p> 	<p>Nigerian Society for Haematology</p> 
<p>Norwegian Society on Thrombosis and Haemostasis</p> 	<p>PERT Consortium</p> 	<p>Preventative Cardiovascular Nurses Association</p> 
<p>Romanian Society for Vascular Surgery</p> 	<p>Romanian Society of Hemostasis and Thrombosis</p> 	<p>Russian National Association on Thrombosis and Hemostasis</p> 
<p>Russian Scientific Inflammation Society</p> 	<p>Slovak Society on Haemostasis and Thrombosis</p> 	<p>Sociedad de Hematología del Uruguay</p> 

<p>Sociedad de Investigación y Ciencia en Homostasis y Trombosis del Uruguay</p> 	<p>Sociedad de Medicina Interna del Uruguay</p> 	<p>Sociedad Española de Trombosis y Hemostasia</p> 
<p>Sociedad Mexicana de Trombosis y Hemostasia (SOMETH)</p> 	<p>Sociedad Uruguaya de Patología Clínica</p> 	<p>Società Italiana per lo Studio dell'Emostasi e della Trombosi (SISSET)</p> 
<p>South Asian Society on Atherosclerosis and Thrombosis</p> 	<p>Stroke Association of Ghana</p> 	<p>Swedish Society on Thrombosis and Haemostasis</p> 
<p>Swiss Society of Hematology</p> 	<p>Thai Society of Hematology</p> 	<p>Thrombosis Hemostasis And Angiology Society of Turkey</p> 

<p>Thrombosis & Haemostasis Society of Australia and New Zealand</p> 	<p>Thrombosis Canada</p> 	<p>Thrombosis Guidelines Group</p> 
<p>Thrombosis Ireland</p> 	<p>Thrombosis UK</p> 	<p>Turkish Society of Hematology</p> 
<p>Unidad de Hemostasis y Trombosis, Hospital de Clínicas</p> 	<p>VTE Ireland</p> 	<p>World Thrombosis Day</p> 

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ⁱ https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200527-covid-19-sitrep-128.pdf?sfvrsn=11720c0a_2

ⁱⁱ Ibid

ⁱⁱⁱ <https://www.who.int/publications-detail/clinical-management-of-covid-19>

^{iv} www.worldthrombosisday.org/issue/vte/

^v "Clinical Guidance on the Diagnosis, Prevention and Treatment of Venous Thromboembolism in Hospitalized Patients with COVID-19," *Journal of Thrombosis and Haemostasis (JTH)*.

^{vi} Ibid