

Blood Clot Disorders

# Social Insights: Healthcare + Patients

Understanding industry trends and  
the voice of the patients & HCPs



# Inside this report



1

## To identify insights

Regarding the existing digital & social landscape in this market and industry. To discover top channels and main conversation drivers.

2

## To understand competitors

Analyze the competitors' digital & social presence, strategies, techniques and gaps in this market. Competitor Benchmark & Insights.

3

## To identify target groups and audiences

Audiences that can potentially consume or prescribe Trombate III. Identify HCPs/KOLs/ Advocacy/ Organizations that are actively using social media platforms. To understand these target groups' behaviour, motivation, and needs throughout their digital journey.

4

## Strategic insights & recommendations

Based on market insights, this report provides a series of strategic recommendations to better align the future of the brand's digital & social strategy with this market's needs.

This social listening report contains **intelligence gathered** from social networks. In this report, you will learn what target audiences are discussing around this topic, as well as additional competitor and market insights.

The report also aims to provide insights to **identify customer segments, understand their behaviour, and engage with them more effectively** through a digital & social strategy.

The featured brands and the listed competitors were chosen based on an **analysis of revenue, overall market share, the online share of voice and industry trends**.

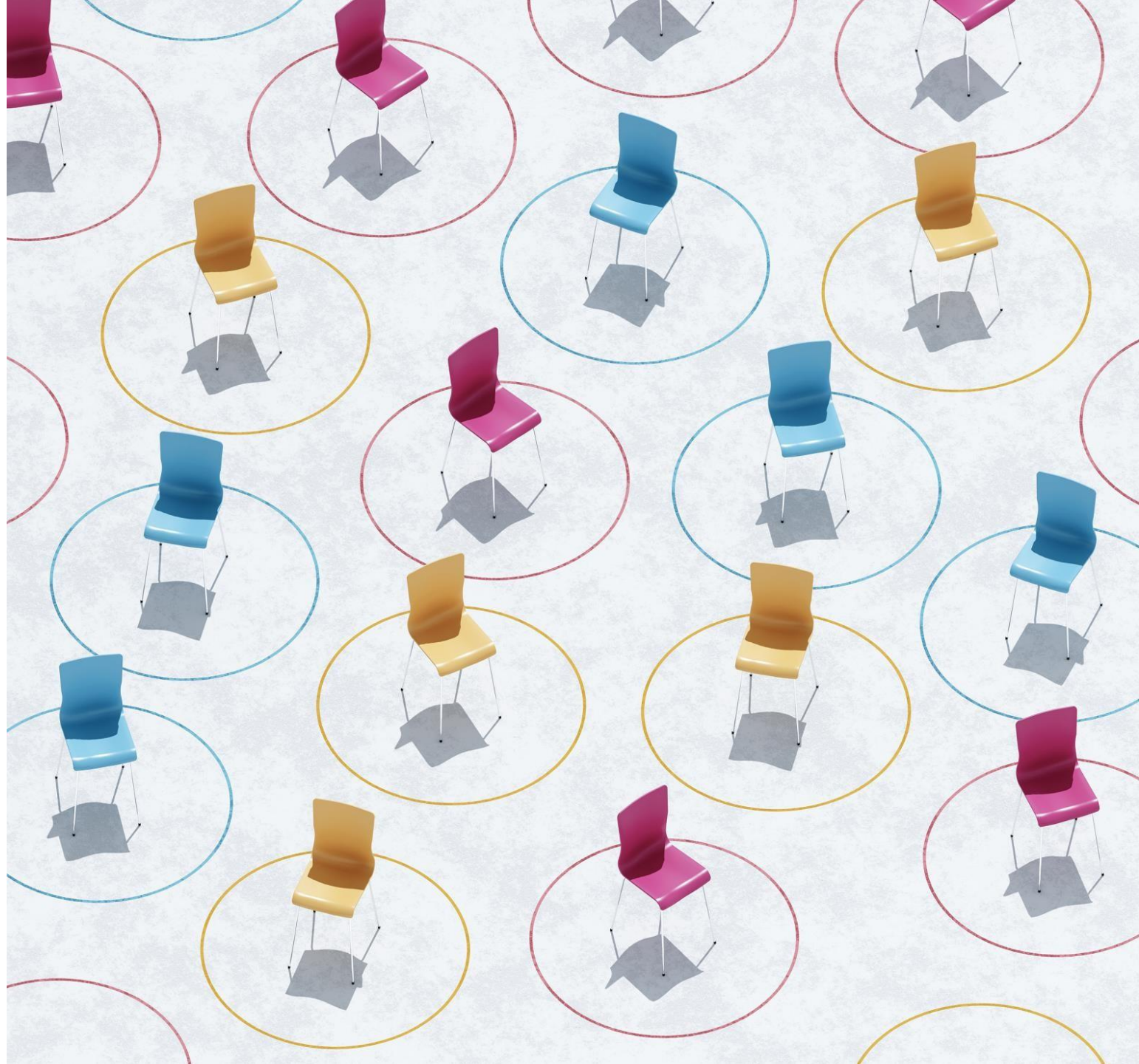
Timeframe Analyzed: **January 1, 2021, to September 30, 2022**

Country: **US/EN**

Channels Analysed: **Twitter, Blogs, Forums, Reddit, Reviews, News, YouTube, Facebook (public page), Instagram (hashtags research).**



# Industry Overview

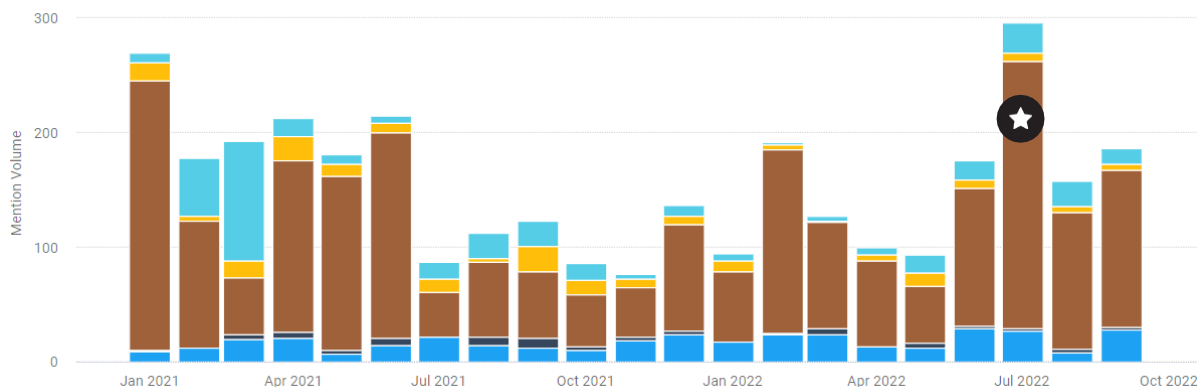


## INSIGHTS

# Antithrombin resources online that drive share-of-voice

Top Trending Topics: "Blood clotting" & "Surgical Procedures" - Antithrombin is used in surgical procedures to prevent blood clotting.

TOP RESOURCES TO SHARE-OF-VOICE



Top News Stories:  
Global Antithrombin Market - Trends, Analysis and Forecast till 2030.



\*News websites include: General News/Digital Newspapers/Specialize Magazine/News media

## DEEP DIVE

Twitter social media channel leading the conversations regarding antithrombin.

	IMPACT ②	TWITTER ②	DEMOGRAPHICS ②
TWEETER	AVERAGE ▾	FOLLOWERS	ACCOUNT TYPE
@ASH_hematology	48.4	53 868	Individual
@JAMASurgery	46.5	45 378	Organisational
@StopTheClot	44.1	5 839	Individual
@BloodAdvances	42.8	29 045	Organisational
@benni1028	39.8	732	Individual
@pjlynch	37.9	3 205	Individual
@elliottthaut	34.7	11 987	Organisational
@jporter228	32.5	28	Individual
@DocsDel	29.7	21	Organisational
@HubBucket	24.5	5 578	Individual

**ASH\_hematology (ASH)** @ASH\_hematology   
#ASH21 Late-Breaking Abstract Press Release: 📌 Fitusiran, an Investigational siRNA Therapeutic Targeting Antithrombin for the Treatment of #Hemophilia: <https://t.co/sVMI7t1DtA> <https://t.co/RTos3SCeGA>

**JAMASurgery (JAMA Surgery)** @JAMASurgery  
Prospective study of Level 1 adult trauma patients found that antithrombin activity was an independent predictor of venous thromboembolism and dose-dependently influences enoxaparin responsiveness. <https://t.co/TuGpqo5oth>



KEY QUESTION: Which players are driving the antithrombin conversations?

## MARKET OVERVIEW

# ANTITHROMBIN DRUG, ATRYN<sup>®</sup>, APPROVED BY FDA.

ATryn<sup>®</sup>, an anticoagulant, is the first ever biologic product produced by a genetically engineered (GE) animal – a goat. It is for patients with a rare disease known as antithrombin (AT) deficiency.

MONTHLY SOCIAL VOLUME FOR ATRYN



--- Median Monthly Mention Volume ● Atryn



The growing use of antithrombin, in conjunction with heparin, is the key driver of the global antithrombin market.



Most sharing News by PRNewswire "Antithrombin market is expected to clock US\$ 776.1 million by 2030".

**Increasing FDA approval of Anticoagulant drugs.**  
The development of advanced Antithrombin enables increased demand and provides various options to patients and healthcare professionals.

## DEEPDIVE

### 'Competitive Landscape'

Some of the prominent market players operating in the global antithrombin market are:

Gilead Sciences Inc
Strategic Developments
Bristol-Myers Squibb Company
Novartis International AG
Merck & Co
Shire Plc
Kedrion S.p.A
Scripps Laboratories Inc
Lee BioSolutions, Inc
Grifols S.A
SCL Behring

Published an article by Growth Plus that is shared in News online such as [prnewswire.com](https://prnewswire.com).



ATRYN (antithrombin recombinant) injection, powder, lyophilized, for solution [rEVO Biologics, Inc.] - [dataemia.com/?p=590317](https://dataemia.com/?p=590317)

2:11 PM · Sep 11, 2021 · MasMaz



Content video talking about Hereditary AT Deficiency as a blood-clotting condition.

**The BA**  
@TheBalancingActTV  
48.1K subscribers

## HIGHLIGHT EVENTS

# February 28 World Rare Diseases Day celebration

## Project

Rare Disease Awareness Project by Oregon State University. Researching ways to support to people with rare disorders to reduce the stigma of feeling alone, runs an outreach campaign on Rare Disease Day.



### HIGHLIGHTS:

#### •HOW TO HELP RAISE AWARENESS:

Take a selfie with a sign saying "I'm rare because..." and share on social media. Un acceso homogéneo a las diferentes opciones terapéuticas para la PTI

Hashtags: #ShareYourRare #RareDiseaseDay

•Impact: A Positive Sentiment

[Link](#)

## Demand

Rare Disease Week on Capitol Hill, organized by the EveryLife Foundation for Rare Diseases brings together advocates to promote education about federal legislative issues that affect people with rare diseases and their caregivers, as well as public strategies to advocate for further change.



### HIGHLIGHTS:

- An easy way to spread disease awareness and make an impact is through sharing messages on social media!
- The purpose of Rare Disease Day® is to harness the creative energy of the millions of people around the world with rare diseases — and the millions who care about them — to raise awareness and generate action.
- Impact: A Positive Sentiment

[Link](#)

## Initiative

The US Food and Drug Administration (FDA) announced a series of efforts and a day-long conference centered on addressing the unmet needs of patients with rare diseases. FDA leaders announced the initiatives in recognition of Rare Disease Day.

## FDA on Rare Disease Day: New initiatives and an upcoming conference

### HIGHLIGHTS:

- FDA will be holding a rare disease-focused virtual public meeting. At the meeting, FDA plans "to highlight strategies to support rare disease product development," according to the announcement, by sharing examples of past rare disease product development programs
- Impact: how patient engagement can inform the product development path.

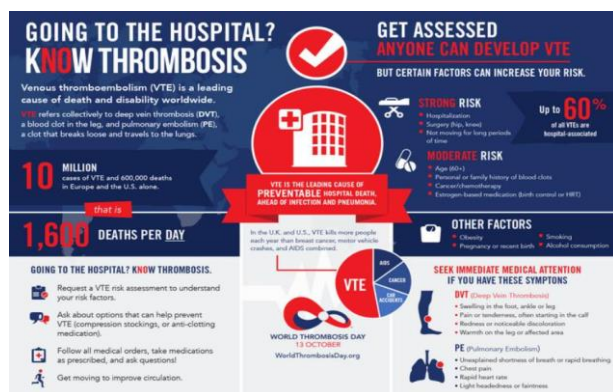
[Link](#)

## HIGHLIGHT EVENTS

# October, 13 World Thrombosis Day celebration

## Project

The WTD campaign has organized and unified more than 3,000 medical and health organizations from every continent to support this cause of spreading global awareness of this silent killer. It is centered on World Thrombosis Day, Oct.13, but comprises education and awareness activities throughout the year.



### HIGHLIGHTS:

- campaign that focuses attention on the underappreciated condition of thrombosis or blood clots.

[Link](#)

## Demand

World Thrombosis Day Campaign Unites Thousands of Global Partners to Shine a Spotlight on Blood Clots as an Urgent Health Problem.



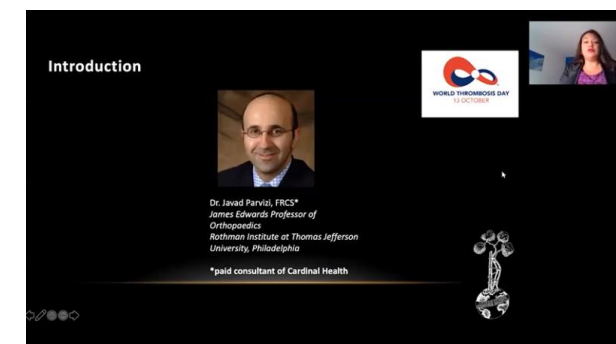
### HIGHLIGHTS:

- To support World Thrombosis Day, this year Arjo is offering a virtual pack, which includes ISTH-approved educational materials, as well as Arjo VTE Prevention materials.

[Link](#)

## Initiative

Cardinalhealth is a community that customized education on VTE prevention. Developing VTE Prophylaxis Consensus.



### HIGHLIGHTS:

- Celebrate World Thrombosis Day this October by raising awareness for venous thromboembolism (VTE) prevention and protocol.
- FRCS discusses the problem of healthcare-associated venous thromboembolism (VTE), the need for a global consensus around VTE protocol in orthopaedics, and the process of global consensus, followed by a question-and-answer session.

[Link](#)

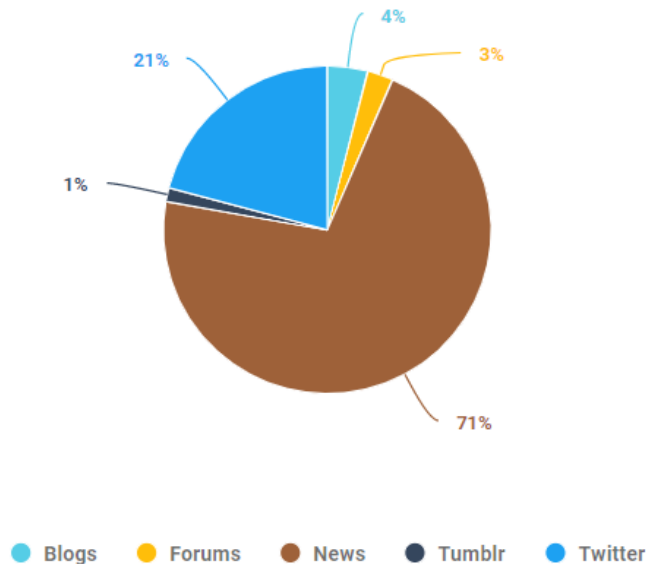


# Competitor Benchmark & Brand Analyse



# CONVERSATION VOLUME BY SOCIAL CHANNEL

1530 relevant Bivalirudin conversations occurred across all social channels during the evaluation period from January 1, 2021, to September 30, 2022. Most discussion topics are regarding **Dr John Maraganore**, who invented and led the discovery and development of ANGIOMAX® (bivalirudin) for injection, a **comparison of Bivalirudin vs Heparin** and discusses anticoagulation options.



**71%** Of all social chatter occurs on **News**. GNS Appoints **John Maraganore, PhD**, as **Strategic Advisor** for the most shared articles on News sites.

**21%** **Twitter** is occasionally utilised. The majority of the conversation is about the comparison of **Bivalirudin vs Heparin**, and Bivalirudin is a safe and effective alternative to heparin for anticoagulation in ECM.

**1%** **Forums, Blogs and Tumblr** is rarely utilised by those giving some advice.

**3%**

**4%**

## DEEPDIVE

### 'Social Media Landscape'

- The most engaging retweet we found in The **Society of Critical Care Medicine @SCCM** tweeted, "**education in mortality in adults who received bivalirudin compared to heparin**" and "**for Maintenance Systemic Anticoagulation During Adult and Pediatric**".
- News sites majority of conversations are about **DR. John Maraganore, a biopharma industry leader developing Bivalirudin for injection**.

**CircInterventions**  
@CircIntv

Is there a role for Bivalirudin in primary **#PCI** for **#STEMI** in current era of **#RadialFirst?** @FrobertOle **#AHAJournals** **#thienopyridines** **#stent** **#MI** **#heparin** [ow.ly/Ie8R50Hblpv](https://ow.ly/Ie8R50Hblpv)

**Doc\_USA 2.0**  
@MD\_Doc\_USA

Bivalirudin (without routine glycoprotein IIb/IIIa inhibitor) is associated e substantially less bleeding than heparin plus glycoprotein IIb/IIIa inhibitor, although it may have numerically increased CV events. Bivalirudin has similar efficacy compared to abciximab but better

4:07 AM · Sep 22, 2022 · Twitter for iPhone

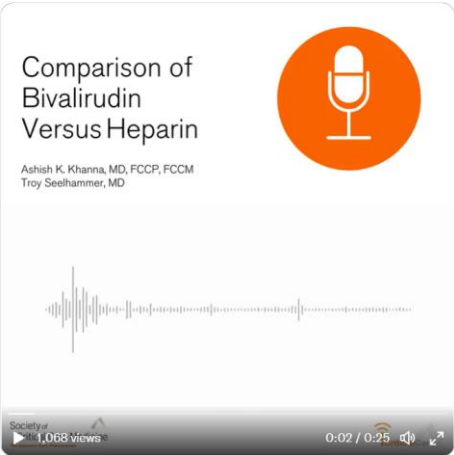
# Social channels

Three most popular posts where BIVALIRUDIN is mentioned around the United States.

Driving conversations from news online about Bivalirudin regarding Heparin versus Bivalirudin-based and anticoagulation after primary PCI.

1 Podcast

Link



**iCritical Care Podcast.** This podcast will be a comparative analysis of **conventional heparin- versus bivalirudin-based** systemic anticoagulation in adult and pediatric patients.

2 Twitter

Link



Patrick Wieruszewski  
@pwierusz

Replying to @FOAMecmo @ELSOOrg and 3 others

Bivalirudin is our first choice for all ECMO at @MayoAnesthesia unless there are strong convincing reasons not to use it, mainly: non-pulsatile LV, turn down assessments (we usually still keep it running and just bolus heparin) or inability to accurately measure APTT (eg lupus).

6:51 PM · Aug 30, 2022 · Twitter for iPhone

@MD\_Doc\_USA is a diagnosis & management of complex medical problems and this tweet concerns **Bivalirudin as the first choice for all ECMO at @MayoAnesthesia.**

3 Tumblr

Link

Anticoagulation After Primary PCI: The Land of Promises and Uncertainty

Anticoagulation After Primary PCI: The Land of Promises and Uncertainty

Introduction

"We are too weak to discover the truth by reason alone."—Saint Augustine

Patients with ST-segment elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (PCI) require an intense antithrombotic therapy to facilitate myocardial reperfusion and mitigate the risk of stent-related and spontaneous recurrent coronary events.<sup>2</sup> Parental...

Antithrombotic Strategies After Primary PCI			
Cath-lab	Cardiac Care Unit / Cardiology Ward	Post-discharge (Up to 1 year)	Long-term (Beyond 1 year)
DAPT	DAPT	DAPT/SAPT	SAPT
Full procedural anticoagulation (UFH, enoxaparin, bivalirudin)	Enoxaparin 40 mg SC od [ATOLL] Bivalirudin 1.75 mg/kg/h IV [MATRIX]	Rivaroxaban 2.5 mg oral BID [ATLAS ACS 2, GEMINI ACS 1]	Rivaroxaban 2.5 mg oral BID [COMPASS]

Show a graph about the **Antithrombotic strategy after primary PCI.** Patients with ST-segment elevation myocardial infarction (STEMI).



# Topics that are driving conversations on Social Media

Morgan Wolfe, 40, from Aurora, received the one-dose shot on April 1. Soon after, she began experiencing a headache, dizziness and changes to her vision. At the time, the Centers for Disease Control and Prevention (CDC) had advised that patients experienced clots after getting the J&J shot not be given a popular blood thinning medication called heparin.

Instead doctors tried an alternative known as **bivalirudin**.

Not only did it help break up Wolfe's blood clots but she was able to leave the hospital and go home just six days later.

## Side Effects

[Link](#)

**Source: HMP Global Learning Network**

Doctors tried an alternative known as bivalirudin instead of Heparin as patients experienced clots after getting the J&J and headache, dizziness and changes to vision side effects.

REVIEW article  
Front. Pharmacol., 11 July 2017  
Sec. Drugs Outcomes Research and Policies  
<https://doi.org/10.3389/fphar.2017.00410>

**Safety and Effectiveness of Bivalirudin in Patients Undergoing Percutaneous Coronary Intervention: A Systematic Review and Meta-Analysis**

## Symptoms

[Link](#)

**Source: Frontiers' website.**

Recent clinical trials have shown that while bivalirudin exhibits similar efficacy to heparin, it offers several advantages over heparin, such as a better safety profile. Bivalirudin appeared to be related to a higher risk of stent thrombosis when compared to heparin.

**Evaluation of Bivalirudin-Associated Major Adverse Cardiac and Hemorrhagic Events in Acute Coronary Syndrome Patients on Chronic Dialysis Following Percutaneous Coronary Intervention**

## Prescription

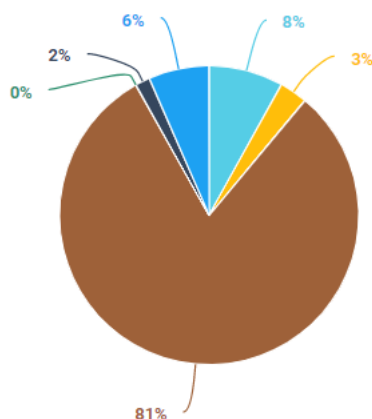
[Link](#)

**Source: HMP Global Learning Network**

They are the force behind Healthcare Made Practical—a multichannel leader in healthcare events and education has an article published about a study to explore the safety and efficacy of the anticoagulant Bivalirudin in treating patients on dialysis who underwent PCI.

# CONVERSATION VOLUME BY SOCIAL CHANNEL

2415 relevant FFP conversations occurred across all social channels during the evaluation period from January 1, 2021, to September 30, 2022. Most discussion topics are regarding **receiving FFP, a survey reported and packed red blood cells**.



● Blogs ● Forums ● News ● Review ● Tumblr ● Twitter

81%



Of all social chatter occurs on **News**. Articles published such as Market Research recently published a report, "**Blood Collection Market**".

6%



**Twitter and Blogs** are occasionally utilised. Most of the conversation is about "**Fresh frozen plasma transfusion in acute variceal haemorrhage: Results from a multicentre cohort study**".

8%



2%



**Forums, Blogs and Tumblr** is rarely utilised by those giving some information about **What is, use, FFP vs Platelets**.

3%



## DEEPDIVE

### 'Social Media Landscape'

Celebrities on Twitter: twin brothers and NFL standouts **Jason & Devin McCourty**. The McCourtys have had distinguished careers in the National Football League, and a Twitter account focused on **a campaign to promote awareness and fundraising for children with sickle cell disease**. **Non-profit blood centers** in the U.S. mention @McCourtyTwins for supporting blood donation.

<...200 presenting donors, 173 units of red blood collected, 56 Fresh Frozen Plasma manufactured, 223 lives saved!...>



EmbraceKids  
@EmbraceKids

A special message of thanks from @McCourtyTwins to everyone who rallied to donate blood and give the gift of life at the @TackleSC at @RWJUH with @newjerseyblood!



kalamityjack (Ciprian Gheorghe MD PhD)  
@kalamityjack

@solomonmissouri Surgery. But liver bleeds like hell. So get your neighborhood surgeon an Interventional Radiologist on board, Get a bunch of blood and fresh frozen plasma and platelets ready and pray

Twitter · 18 Dec 2021

🐦 julian\_roessler (Julian Rössler, MD) @julian\_roessler

1 Sep

🩸 Top reasons the give **fresh frozen plasma #FFP** in acute bleeding 🩸 A thread 🧵 on coagulation management. 1/x

# Social channels

Three most popular posts where FFP is mentioned around the United States.

Driving conversations from news online about comparing FFP vs Prothrombin complex Thrombotic Thrombocytopenic Purpura Market Insights and explanation about Blood products.

1

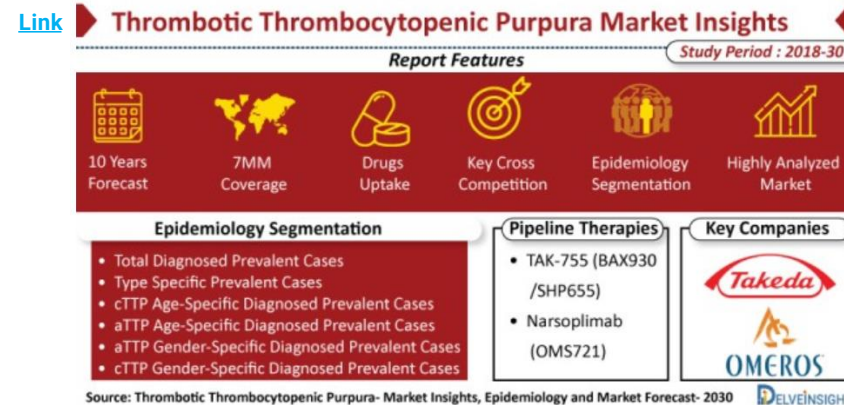
Twitter



@RPTHjournal Research and Practice in Thrombosis and Haemostasis with 10.3K followers tweet regarding comparing the efficacy and safety of **fresh frozen plasma (FFP)** with **prothrombin complex concentrate (PCC)** in the preprocedural management of patients with coagulopathy of liver disease.

2

News



Key players such as Takeda, Omeros Corporation and others are developing therapies to enhance treatment modalities in the **Thrombotic Thrombocytopenic Purpura** market. In this article, **Takeda** is mentioned in this article about developing some drugs that use **a large volume of fresh frozen plasma**. Now more at Taketa website: [Link](#)

3

YouTube



@ICUAdvantage YouTube with 471 subscribers, video from 1 year ago with 87K views. A series of videos talks about blood and bleeding in critical care: they kick things off by discussing the different types of blood products that are commonly used. Explain **how they relate to whole blood, how they are derived**, and some common use cases and expectations for each.



## Topics that are driving conversations on Social Media

### Blood Transfusion Recovery

After the procedure, patients may experience some soreness near the puncture site, but this side effect

## Side Effects

[Link](#)

Source: Unitek College

Step-by-Step Guide to Blood Transfusions article to learn the procedures, steps, risks, and requirements for performing a blood transfusion. Patients may experience some soreness near the puncture site, but this side effect should dissipate quickly. In addition, the patient's doctor might request a check-up after the transfusion.

Prognostic Value of Antithrombin Levels in COVID-19 Patients and Impact of Fresh Frozen Plasma Treatment: A Retrospective Study

## Treatments

[Link](#)

Source: NIH National Center for Biotechnology Information.

Study regarding assessed the prognostic values of antithrombin (AT) activity levels and the impact of fresh frozen plasma (FFP) treatment on outcome.

Fresh frozen plasma: the most commonly prescribed hemostatic agent

## Prescription

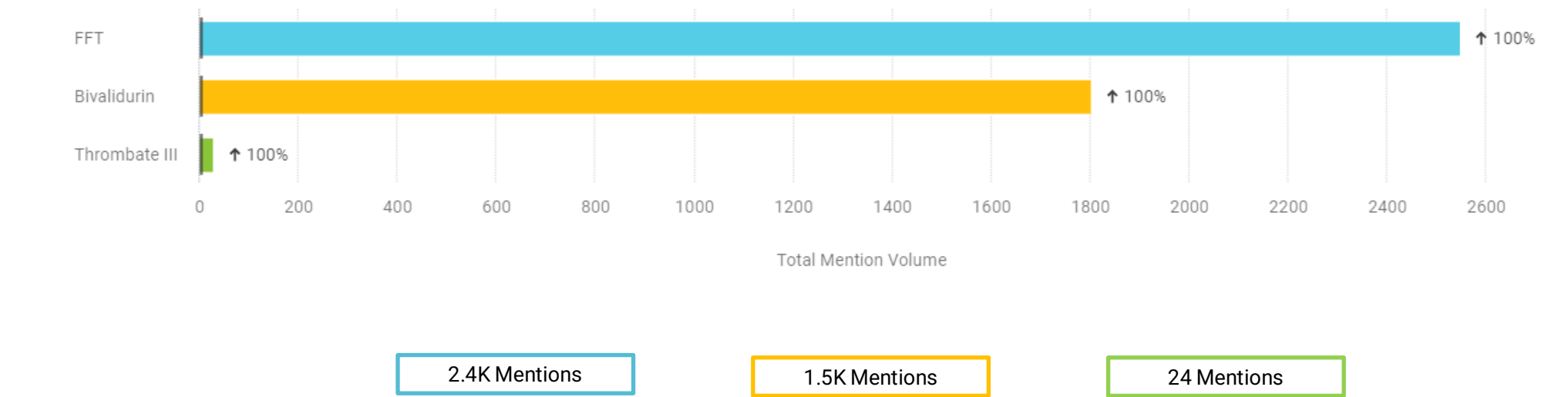
[Link](#)

Source: PubMed

Although fresh frozen plasma (FFP) is one of the most commonly prescribed therapies in clinical practice today, there is little medical evidence supporting its use. Recent guidelines have called for limiting FFP transfusions.

This chart shows the volume from January 1, 2021, to September 30, 2022, regarding Thrombate III vs competitors' mentions in the US market.

- **Fresh Frozen Plasma, Bivalirudin, and Thrombate III** have the highest conversation volume on **News sites**, followed by the **Twitter** platform. More conversations were found about **FFP**, followed by **Bivalirudin**. Conversations about **Thrombate III** are rare, indicating low brand awareness.
- The most discussion comes from **HCPs, local health authorities, and news media sharing information and safety precautions**.



Keywords Insights – Thrombate III

★ This table shows the keywords most used by Thrombate III in the digital content analysed from January 1, 2021, to September 30, 2022.

KEYWORDS	VOLUME	CPC
antithrombin	2.4K	\$0
cardiac	450.0K	\$1.49
deficiency	74.0K	\$0.16

SPOTLIGHT

Most popular posts use the top keywords and mention Thrombate III. Sources: News, Blogs, Tumblr and Twitter.

antithrombin

Link

**bibo**  
@amielbenj\_

antithrombin III (Thrombate II)  
- coagulation inhibitor  
#SPCArchangels  
#SPCBukodTangi  
#SPCMakabagongJuan

Link

**Anesthesia&Analgesia**  
@IARS\_Journals

A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of Preoperative Antithrombin Supplementation in Patients at Risk for Antithrombin Deficiency After Cardiac Surgery  
[buff.ly/3VhY4Uo](https://buff.ly/3VhY4Uo)  
From Drs. Moront et al from Clinical Thrombate Study Group  
@iars360

cardiac

Link

**Antithrombin Market Report Up to 2031**  
09-29-2021 04:01 PM CET | Health & Medicine  
Press release from: [Visiongain Pharma](#)

Latent AT-III      Activation      Inhibitory AT-III

Link

**Visiongain Ltd**  
27 December 2021 · 6-min read

Visiongain has published a new report on [Antithrombin Market Report](#) to 2031.

deficiency

Link

**Mediastinal Bleeding**

**9Mediastinal Bleeding**

Link

**Anesthesia&Analgesia**  
@IARS\_Journals

A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of Preoperative Antithrombin Supplementation in Patients at Risk for Antithrombin Deficiency After Cardiac Surgery  
[buff.ly/3VhY4Uo](https://buff.ly/3VhY4Uo)  
From Drs. Moront et al from Clinical Thrombate Study Group  
@iars360




★ This table shows the Hashtags most used by Bivalirudin in the digital content analysed from January 1, 2021, to September 30, 2022.

HASHTAGS	VOLUME	CPC
#ecmo	110.0K	\$2.78
#Bivalirudin	6.6K	\$0
#anticoagulation	5.4K	\$1.88


SPOTLIGHT

Most popular posts use the top hashtags and mention Bivalirudin. Sources: News, Blogs, Tumblr and Twitter.

#ecmo

[Link](#)**John Daniel, MD, MS**  
@JohnDanielMD

Always a privilege to participate in a panel discussion at [#ELSO2022](#) with these great people! Great learning on cannulas, pumps, and bivalirudin! [#ECMO](#) [#PedsICU](#) [#neoTwitter](#)

[Link](#)**ELSO**  
@ELSOOrg

Optimizing perfusion on [#ECMO](#) at [#ELSO2022](#)

- 🔴 Tissue oxygenation
- 🔴 Getting rid of limb ischemia in peripheral VA ECMO
- 🔴 Transfusion practices
- 🔴 Refractory hypoxemia on VV ECMO
- 🔴 Bivalirudin vs heparin for anticoagulation

🗣 Discussion  
📅 Sep 14-17  
🔗 [bit.ly/ELSO2022](https://bit.ly/ELSO2022)

#Bivalirudin


[Link](#)**Tania Ahuja**  
@TaniaAhuja

[#heparin](#) **VS** [#bivalirudin](#) for VV [#ECMO](#)  
**1** ❤️ in-circuit [#thrombosis](#): 32.7% **VS** 17.3%  
**2** 🩸 : 40.7% **VS** 11.7%  
😬 perhaps we don't need better [#cvCoags](#) to monitor [#anticoagulants](#)  
😬 maybe the 🗝 is predictable pharmacokinetics w/bival @ 📌 drug 💰 but 📌 resources 🧑🏻🔬

[Link](#)**Igor Areinamo, MD**  
@areinamo21

Nice study in [@ArtifOrgans](#) looking at [#bivalirudin](#) vs. [#heparin](#) for pediatric [#ecmo](#). Similar survival but Bival was associated with less circuit interventions.  
[#PedsICU](#) [#pedsCICU](#) [#MedTwitter](#) [@PIPSQC](#)

#anticoagulation

[Link](#)**Robert H. Pass**  
@RobertHPass

🔊 New Podcast! "Pediheart Podcast #179: Bivalirudin Use For Pediatric Ventricular Assist Devices" on [@Spreaker](#) [#anticoagulation](#) [#bivalirudin](#) [#cardioed](#) [#cardiologia](#) [#cardiologie](#) [#cardiology](#) [#cardiotwitter](#) [#criticalcare](#) [#heartfailure](#) [#heparin](#) [#science](#)

[Link](#)**Dan Fein MD**  
@whatdrfeinsaid

Dr. Swati Chandhoke (future [#PedsICU](#) fellow [@childrensatl](#) [@EmoryUniversity](#)) on use of Bivalirudin for [#anticoagulation](#) in pediatric [#ECMO](#)

[#CoagulationCascade](#)

★ This table shows the Hashtags most used by Fresh Frozen Plasma in the digital content analysed from January 1, 2021, to September 30, 2022.


HASHTAGS	VOLUME	CPC
#MedEd	2.9K	\$26.88
#plasma	165K	\$1.98
#FFP	9.9K	\$0

SPOTLIGHT

Most popular posts use the top hashtags and mention Fresh Frozen Plasma. Sources: News, Blogs, Tumblr and Twitter.

#MedEd

Link



Tim Montrief

@EMinMiami


Interesting retrospective study from @PittCCM looking at bival vs UFH for VA ECMO anticoagulation in @asaiojournal

Bival associated with:

- time to thrombosis
- major bleeding events
- total red blood cell and fresh frozen plasma administration

#MedEd #MedTwitter

Link



Joseph Shatzel

@Clotmaster


"Routine correction of hemostasis laboratory values (in cirrhosis), for example by fresh frozen plasma or platelet concentrates, with the aim to avoid spontaneous or procedure-related bleeding is not indicated."

#hematology #meded #foamed #cirrhosis

onlinelibrary.wiley.com/doi/10.1111/jt...

#plasma

Link



Accumen Inc.

@AccumenInc

During 2017-19, a NCBUS survey revealed the price paid for blood components by hospitals for leukoreduced red blood cell units, leukoreduced apheresis platelet units & for fresh frozen plasma units continued to decrease. [hubs.ly/HOVLGnNO](https://hubs.ly/HOVLGnNO) #plasma #hospitals

Link

asiannews


Follow

Entegriion, Inc. and Velico Medical Enter Into Intellectual Property Transfer Agreement For Spray Dried Plasma

Entegriion, Inc. and Velico Medical Enter Into Intellectual Property Transfer Agreement For Spray Dried Plasma

#FFP

Link




The Phlegmfighter

@phlegmfighter

At the seafood counter last night, I realized that Fresh Frozen Plasma is an #oxymoron. It's either fresh, or it's frozen, but it can't be both. Perhaps "plasma, wild caught, once frozen" would be most accurate #FFP #plasma #freshfrozenplasma #hematology

Link



Julian Rössler, MD

@julian\_roessler

🩸 Top reasons the give fresh frozen plasma #FFP in acute bleeding 🩸

A thread 📖 on coagulation management. 1/x

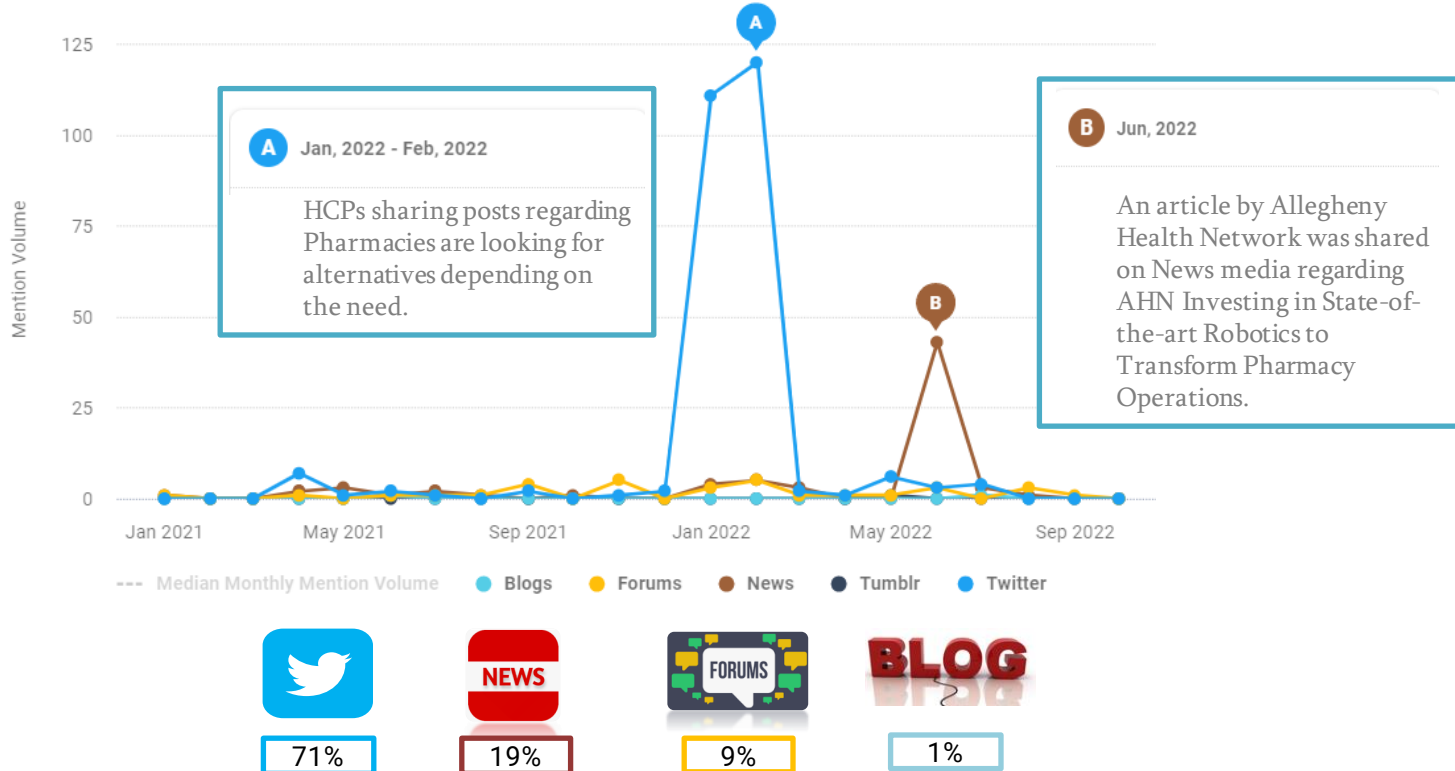


# HEPARIN SHORTAGE

## HEPARIN SHORTAGE

# CONVERSATION VOLUME BY SOCIAL CHANNEL

368 relevant “Heparin shortage” conversations occurred across all social channels during the evaluation period from January 1, 2021, to September 30, 2022. Most discussion topics include the shortage of heparin flushes, robotics to transform pharmacy operations and switching to heparin from Lovenox.



## DEEPDIVE

### 'Social Media Landscape'

Hospital and Pharmacist staff leading in conversations regarding the Heparin shortage on the Twitter platform.

➤ Main conversations found:



Larissa Madden, PharmD  
@LMad\_PharmD

Working in a cardiac unit during a bumex and heparin shortage



Sejal Patel, PharmD, BCPS, BCCCP  
@SagetheEDRPh

Replying to @D\_Nice\_PharmD

How about heparin bag shortage???

2:26 AM · Feb 21, 2022



Sandani Wijerathne  
@SandaniRW

Heart surgery at Karapitiya hospital is at the verge of collapse due to the shortage of an essential drug called Heparin. Anyone willing to help kindly inbox me. Thanks in advance. ❤️

3:25 AM · Jul 27, 2022



# Popular posts where Heparin Shortage is mentioned around the US.

Hospitals and Pharmacists are driving conversations from social media about the Heparin shortage.

## TWITTER

**Denise Lamm, PharmD from @D\_Nice\_PharmD**  
Twitter accounts Tweet regarding how she manages the **Heparin Shortage when Heparin patients consult her.**

She tries to **switch to Loenox.**

This tweet got **4 retweets and 70 likes.**



Denise Lamm, PharmD  
@D\_Nice\_PharmD

My goal every time I get a new heparin consult or I'm following up on one is to try and get it switched to Lovenox is the patients able. Ain't nobody got time to be checking PTTs every 6 hours with this nursing shortage

6:00 PM · Feb 20, 2022

EM Pharmacist @osfhealthcare | EM PGY-2 @DMC\_Receiving | PGY1 @LoyolaHealth  
👉👉👉 | @UICPharm Grad '20

[Link](#)

## NEWS

**Becker's Healthcare** equips healthcare leaders with the information and forums they need to learn, exchange ideas and further conversations about the **most critical issues in American healthcare.**

**Mackenzie Bean** with @mackenzie\_bhr Twitter account. She is the **managing Editor for Becker's Hospital Review**, covering news on patient safety, clinical quality and infection control.

She published an article on Becker's website regarding the **drugs that are currently in shortage.**

\* Source: **FDA website** - View the full list of drug shortages [here](#).

### 114 drugs currently in shortage, per FDA

Mackenzie Bean (Twitter) - Tuesday, January 11th, 2022



Nationwide, more than 100 drugs are in short supply, including antibiotics, diuretics, opioids and heart failure medications, FDA data shows.

As of Jan. 11, 114 drugs were in shortage, according to the FDA's database of current and resolved drug shortages, which is updated daily. The current tally is a continuation of shortage levels seen last year. In November 2021, the FDA reported 112 drug shortages.

The most recent drug added to the FDA's shortage list was heparin sodium and sodium chloride 0.9 percent injection, an anticoagulant, on Jan. 7. Dexmedetomidine injection, a sedative used for patients on ventilators, was added Dec. 27, 2021.

[Link](#)

## FACEBOOK

**Karen Chouinard Fernandes** is the admin of the **Advocacy for Medical Transitions** Facebook private group. She posts on a Facebook group regarding The 5 most pressing **drug shortages in the US** (one of them is Heparin).

Here's what **Dr Fox, a pharmacy professor** at the Salt Lake City-based University of Utah who helps run the **American Society of Health-System Pharmacists' drug shortage website**, listed as the top five drug shortages:



Karen Chouinard Fernandes » Advocacy for Medical Transitions  
September 29 · 🌐

The 5 most pressing drug shortages in the US

As pharmacies and hospitals **struggle** with the nationwide dearth of Adderall generics, drug shortage expert Erin Fox, PharmD, spoke with *Becker's* on Sept. 28 about frustrations with ongoing shortages, how the issue bleeds into staffing shortages and the "silver lining" to running low on older treatments.

Here's what Dr. Fox, a pharmacy professor at the Salt Lake City-based University of Utah who helps run the American Society of Health-System Pharmacists' drug shortage website, listed as the top five drug shortages:



[Link](#)

# Is there a shortage of blood thinners?

## Reason for the Shortage:

- **Pfizer and Sagent** have heparin injections in shortage due to increased demand and manufacturing delays.
- **Fresenius Kabi** did not provide a reason for the shortage.
- **Hikma** did not provide a reason for the shortage.
- **Meitheal Pharma** has heparin injection available.
- **Mylan, Sky and Techdow USA** have heparin injections available.

Source by **ASHP**: the collective voice of pharmacists who serve as patient care providers in hospitals, health systems, ambulatory clinics, and other healthcare. Read more about the products affected and available [Drug Shortage Detail: Heparin Injection \(ashp.org\)](https://www.ashp.org/drug-shortage-detail/heparin-injection)

## <<< Voice of consumers >>>



Says **Paul Biddinger, MD, director of the Center for Disaster Medicine**. "We anticipate that our supply of all **heparin-related products** will continue to dwindle in the immediate future. **Hospital leaders are currently in the process of reviewing all conservation strategies and possible alternative treatments while also working with manufacturing companies** to examine the full extent of shipping delays and cancellations. Because this is a global shortage, we are not sure how long it will last, but we are actively **doing all we can to address the situation.**"

Looking at the medication **shortage list** explains the two-week delay in **receiving heparin vials** for nocturnal home hemo use. **Shipped from a different supplier/manufacturer**. Thankfully we had a bit of extra on hand.

## INSIGHTS

Discussions are driving the community [Whattoexpect.com](https://www.whattoexpect.com) forum. Discussion about switching from heparin to Lovenox due to the heparin shortage.


 **LimonPA** Apr 15, 2021 at 10:44 PM

Last pregnancy (just a year ago) I switched to heparin at 36 weeks, this time they have us staying on Lovenox the whole time. Anyone else? It was initially due to the heparin shortage and now they have just decided to stick to this.

## REPLIES

 **sarahbishopshouse** Apr 16, 2021 at 1:25 AM


That would worry me. So if ur not induced and go into labor u can't get an epidural for x hours after ur shot? Oh hell nah. I'd demand a change to heparin. My doctor told me at my first visit switching at 36 weeks is the plan so I'm counting on that. Don't need the added stress of potentially being in agony for 12 hours gahhh lol

 **LimonPA** Apr 16, 2021 at 1:48 AM

@sarahbishopshouse, I'm ok with not having an epidural - had a horrible experience with it last time. Last time labor was 38 hours but I heard the second can be quick. I think I'm a little worried about bleeding too much 😬😬. I will have a planned induction at 39 weeks but my last came at 38, so I guess anything can happen.

 **clyner** Apr 17, 2021 at 12:42 AM

I have had two lovenox babies. We never even discussed switching to heparin. The second was vainly delivered 12 hours or so after my last shot and included an epidural. No issues at all. lbwas home 36 hours later.

 **JMAOS** Apr 17, 2021 at 2:19 AM

I didn't switch for my second pregnancy. I actually skipped two doses leading up to my induction because I was nervous - not recommending that, just sharing that I was nervous!! It worked out well!

 **teemarie90210** Apr 17, 2021 at 2:25 AM

I also stayed on lovenox and didn't switch to heparin, my thrombosis dr told me that there wasn't a need to switch since they are the same thing and it can be reversed if I were to go into labour earlier than induction date which I was required to stop injection at least 24 hrs prior

 **mandi122394** Apr 20, 2021 at 4:01 AM

My doctor was thinking about switching me to heparin, but she said she did more research about it, because she wants to do the right thing, and she said it actually isn't necessary. She did schedule an induction where I am supposed to not take lovenox for at least 24 hours before I come in.





# Main Communities

- **National Blood Clot Alliance**
- **Thrombophilia Support Group**
- **Foundation for Women & Girls with Blood Disorders**





## Social Media channels owner analysis – National Blood Clot Alliance, Thrombosis and Thrombophilia Support Group and Foundation for Women & Girls with Blood Disorders

Facebook is the platform on which all communities have an account. National Blood Clot Alliance has a notable presence online regarding social media channels, with seven active social media accounts. However, their TikTok channel is not a very active account even is no TikTok logo account on their website page.

Foundation for Women & Girls Blood Disorders has accounts in the leading social media channels. Thrombosis and Thrombophilia Support Group is a private Facebook group.

SOCIAL MEDIA CHANNELS	FACEBOOK	INSTAGRAM	TWITTER	YOUTUBE	LINKEDIN	PINTEREST	TIKTOK
National Blood Clot Alliance	✓	✓	✓	✓	✓	✓	✓
Thrombosis and Thrombophilia Support Group	✓	✗	✗	✗	✗	✗	✗
Foundation for Women & Girls with Blood Disorders	✓	✗	✓	✓	✓	✗	✗

➤ The table shows how many have on social media channels and which are these.



# Social Media channels owner analysis – National Blood Clot Alliance, Thrombosis and Thrombophilia Support Group and Foundation for Women & Girls with Blood Disorders

Regarding followers, the associations have the most volume on Facebook platforms. National Blood Clot Alliance has the most volume of followers on owned social media channels as the total followers are almost 50K followers.

Foundation for Women & Girls with Blood disorders have a lower follower volume on the LinkedIn platform.

SOCIAL MEDIA CHANNELS	FACEBOOK Followers	TWITTER Followers	YOUTUBE Subscribers	LINKEDIN Followers	INSTAGRAM Followers	PINTEREST Followers	TIKTOK Followers
National Blood Clot Alliance	38K	6,654	2.31K	1,491	-	1.2K	13
Thrombosis and Thrombophilia Support Group	1.0K	-	-	-	-	-	-
Foundation for Women & Girls with Blood Disorders	1.3K	628	838	195	-	-	-

➤ The table shows how many followers have on social media channels and which are these.

# The three posts with the most engagement generated positive sentiment.

Each posting began with a very different purpose, resulting in conversations that generated positive sentiment across the platforms such as **Twitter/Facebook/YouTube**. The topics are about **November Family Health History day, building community among people who are affected by a blood clot and educational videos that build public awareness.**

## ► Family Health History Facebook Live

FACEBOOK

An **educative program on Facebook live to discuss blood clots**, driver by **Beth Waldron Alliance's communication director** and also a blood clot patient and **Doctor Stephen, a hematologist and also one of the founders of the National Blood Clot Alliance.**

An engagement of 1.2K views, 157 comments and 43 likes.



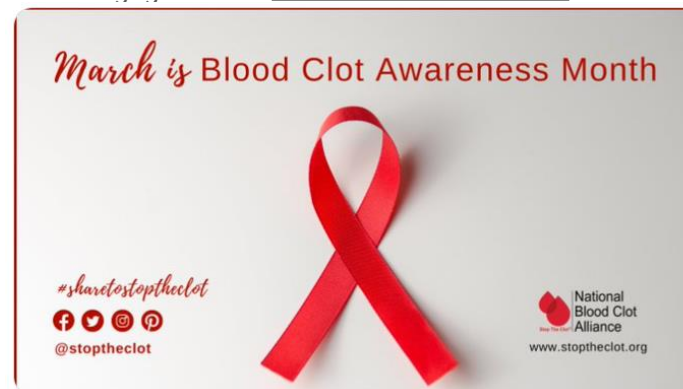
[Facebook Link](#)

## ► The most important time of the year for their community

TWITTER

The most important time of the year to connect with the clotting and clotting disorders community. The purpose is **to build awareness and building community among people who are affected by blood clots or who are at increased risk.**

An engagement of 40 Retweets and 57 likes.

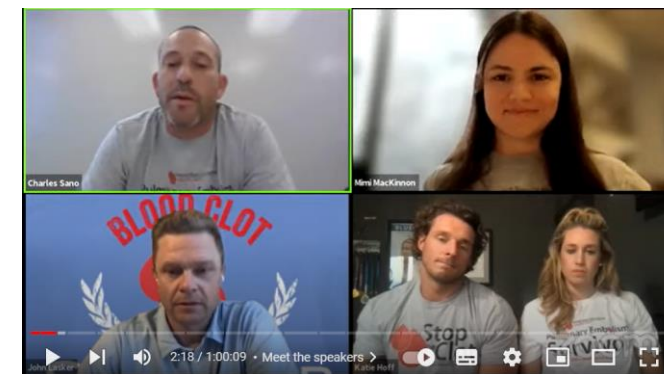


[Twitter Link](#)

## ► Programs that build public awareness

YOUTUBE

**Katie Hoff** discusses her blood clot experience. An educational video's **mission is through programs that build public awareness, educate patients and healthcare professionals and promote supportive public and private sector policy.** An engagement of 2.7K views, 23 comments and 43 likes.



[YouTube Link](#)

# The three posts with the most engagement generated positive sentiment.

Each posting began with a very different purpose, resulting in conversations that generated positive sentiment across the platforms such as **Twitter/Facebook/YouTube**. The topics are about **Educational Programs and Webinars, Bleeding Disorders and FWGBD webinars**.



## Educational Programs and Webinars

FACEBOOK

**Kimberly Roque** is responsible for ensuring excellence in the **educational programs and webinars offered by the Foundation for Women & Girls with Blood Disorders**. She has recently served as education director for a **health services organisation and a philanthropic association**.

An engagement of 1 comment and 10 likes.



We're excited to welcome Kimberly Roque, MPA to our team! Kim has responsibility to ensure excellence in the educational programs and



[Facebook Link](#)



## Short animation video about Bleeding Disorders and Periods

TWITTER

**FWGBD shared a video from the @HemeConnect** Twitter account. FWGBD Board member Sarah O'Brien, MD, MSc, participated in its creation. **Haematologists, gynaecologists and nurses developed the video**. This program is supported through an independent educational grant from **Takeda (Jan 2022)**. An engagement of 82K views, 10 Retweets 44 Likes.



Excited to share this helpful video about [#heavymenstrualbleeding \(#HMB\)](#). FWGBD Board member Sarah O'Brien, MD, MSc participated in its creation. Great job! [#hematology](#) [#gynecology](#)



[Twitter Link](#)



## FWGBD Webinar State-of-the-science Webinar

YOUTUBE

Hosted by the FWGBD, detailed disseminated **information on the diagnosis and management of vaccine-induced immune thrombotic thrombocytopenia (VITT)** post-vaccination. The Webinar **featured a leading expert in the area of heparin-induced thrombocytopenia (HIT)** and the **most recent information regarding its background, diagnosis, and clinical management**. An engagement of 3K views and 48 likes and comments are turned off.



[YouTube Link](#)



Once we analyse this Private Facebook group, we can determine that it is addressed to HCPs and non-professionals, as in the example we show below.

The main purpose of this group is to **get answers from the group, where members can ask other members for advice or recommendations, even HCPs promoting their services**—the main driving conversations about Thrombosis and Thrombophilia. In terms of sentiment, we can consider that most posts **generate a positive sentiment with likes, sharing and “tone-of-voice ” from the members.**

- The most engagement posts & relevant content -

Member of since July 6, 2021

Member since March 15, 2022

Member since January 24, 2022

Former member of **Thrombosis and Thrombophilia Support Group**

**Brittney Nichols**  
March 1 · 🌐

Do you receive infusions at least once every 3 weeks as part of treatment for a chronic illness or rare disease? If so, you may qualify to participate in a survey about infusion treatment preferences. Your input is valuable, and researchers are waiting to hear your thoughts. Must be 18 or older and have been on infusion therapy for at least 3 months to qualify. You may be reimbursed for your time. Click the link to learn more.

If you live in the US: <https://healthsurveyonline.com> See more



**Anja Fischbach**  
July 6, 2021 · 🌐

Thanks for adding me to this group. I have Post Thrombosis syndrome following a blood clot in my upper left thigh. Not sure how as I am fit and eat an incredibly healthy diet. I'm 45. Yesterday I went to see a consultant and was told I could have the swelling for life, which I found really upsetting. In fact the whole way he dealt with me wasn't very acceptable. He said the veins are now damaged. I'm doing all the things...elevation, exercise (although unfortunate... See more

👍❤️👍 8 4 comments

Like Comment Send

Write an answer...  
Press Enter to post.

**Joao Gaspar**  
Anja Fischbach maybe you saw here the 60% statistic? It was about DVT recovery, not PTS recovery. Sadly.

Can you recover from post thrombotic syndrome?

Approximately 60% of patients will recover from a leg DVT without any residual symptoms. 40% will have some degree of post thrombotic syndrome, and 4% will have severe symptoms. The symptoms of post thrombotic syndrome usually occur within the first 6 months, but can occur up to 2 years after the clot.

Like Reply 24w

**Ann Marie Apicco Ellis**  
I had multiple( 13)DVTs and PE in early May 2021. I've been recovering, no blood clots as of my 2nd ultrasound scan since then. But, I too have experiencing post thrombotic symptoms. I have throbby pains, stiffness and I have swelling mostly in ankl... See more

Like Reply 1y Edited

**Ann Zablocki Huth-Fretz**  
Had a clot 20 years ago That leg still swells on occasion now but quickly goes back to normal once elevated. I run on it without issues at least 3 days a week.

Like Reply 1y

**Sarah Stewart**  
Go easy with yourself. It can take a while. So just know that it is likely to be a slow process and so you'll be able to handle how things need to be for a while. It may not be permanent change. Listen to your body as you go. Take care.

Like Reply 1y

**Victoria Hetherington**  
March 15 · 🌐

Hello! Thank you for adding me! I'm wondering if anyone has had a thrombosis in their iliac artery? I was diagnosed in the er with peripheral artery occlusion and iliac artery thrombosis. They said I need an arterial Doppler for bilateral lower extremities. I can't get into a vascular surgeon until April 28! Is it ok to wait that long? I have MTHFR (I think that's the right letters!) I had a clot in my breast like 10 years ago- I'm not sure if that's relevant or not?

19 comments

Like Comment Send

Most recent

Write an answer...  
Press Enter to post.

**Lucy Rose**  
Do they have u on blood thinners?

Like Reply 39w

**Victoria Hetherington** Author  
Lucy Rose nope. I haven't seen vascular yet.

Like Reply 39w

9 Replies

**Lucy Rose**  
What country are u in hun?

Like Reply 39w

**Victoria Hetherington** Author  
Lucy Rose USA

Like Reply 39w

**Victoria Hetherington** Author  
Lucy Rose it's not in my CT results though, my PCP checked because we were curious if it was missed. I had a CT in March of last year and MRI in July and nothing in either results.

Like Reply 39w

5 Replies

Reply to Lucy Rose...  
Press Enter to post.

**SELF-CARE TIPS FOR ARTHRITIS PATIENTS**

- Be Active
- Balanced Diet
- Lose Weight
- Sleep Well
- Regular Physiotherapy Exercises
- Know About Arthritis Do's and Don'ts

**DR NAHID REZA**  
MBBS MD (PAIN)  
FPM(FELLOW PAIN MEDICINE)

fb- Doctor PainMed  
Instagram - Doctor PainMed  
HELPLINE WHATSAPP 62907 79679

Doctor PainMed is at Kolkata - The City of Joy.  
November 4 · Kolkata, India · 🌐

Know self-care tips for Arthritis 🌟🌟🌟

Dr Nahid Reza  
MBBS MD - (Physical Medicine) FPM - Fellowship in Pain Medicine(Germany)  
#Arthritis #dinhidreza #kolkata #cityofjoy #jointspain #bone #painmanagement #treatment #painrelief #selftreatment #DoctorPainMed #barasat #Madhyamgram #park Circus #Banga

Member since April 21, 2022

**Arfa Kalkar**  
April 21 · 🌐

Hello is there any thrombosis specialist in the group kindly inbox me...



# Relevant Publications

- JAMA Network
- PubMed ([nih.gov](https://pubmed.ncbi.nlm.nih.gov/))



# Overview of attention for article published in JAMA Surgery, August 2022

## Association of Changes in Antithrombin Activity Over Time With Responsiveness to Enoxaparin Prophylaxis and Risk of Trauma-Related Venous Thromboembolism

### Demographic breakdown

Type	Count
Scientists	8
Members of the public	6
Practitioners (doctors, other healthcare professionals)	2
Science communicators (journalists, bloggers, editors)	1

### Relative article published on News

Published: 12 May 2021

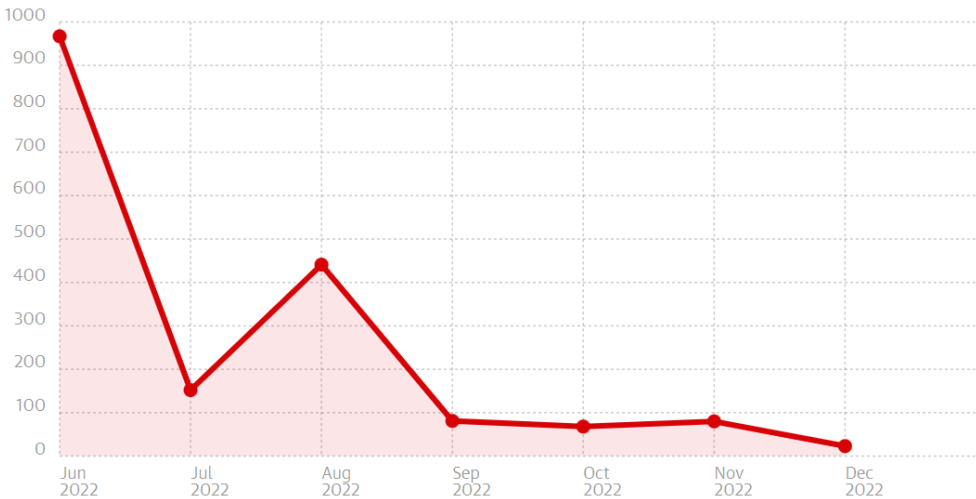
Impact of antithrombin III and enoxaparin dosage adjustment on prophylactic anti-Xa concentrations in trauma patients at high risk for venous thromboembolism: a randomized pilot trial

Supplementation with antithrombin III ex vivo optimizes enoxaparin responses in critically injured patients

### Metrics

Total Views	1,511 Pageviews
1,812	301 PDF Downloads

Since 6/1/2022



# 20 tweets from 17 users, with an upper bound of 74,604 followers.

## SPOTLIGHT

HCPs share the article on their Twitter accounts with a positive sentiment.



**Robert Campbell**  
@racampbell04

RT @JCCardenas52: Excited to share our recent publication in JAMA Surgery!

28 Jun 2022



**David Faraoni**  
@faraonidmd

RT @JCCardenas52: Excited to share our recent publication in JAMA Surgery!

28 Jun 2022



**Jennifer Bailey Lundberg, PhD**  
@DuctalvsAcinar

RT @JCCardenas52: Excited to share our recent publication in JAMA Surgery!

28 Jun 2022



**Kellie Machlus**  
@thecloththickens

RT @JCCardenas52: Excited to share our recent publication in JAMA Surgery!

28 Jun 2022



**Jessica Cardenas**  
@JCCardenas52

Excited to share our recent publication in JAMA Surgery!

28 Jun 2022



**Nelson Royall, MD FACS**  
@nelsonroyall

RT @JAMASurgery: Prospective study of Level 1 adult trauma patients found that antithrombin activity was an independent predictor of venous...

24 Jun 2022



**JAMA Surgery**  
@JAMASurgery

Prospective study of Level 1 adult trauma patients found that antithrombin activity was an independent predictor of venous thromboembolism and dose-dependently influences enoxaparin responsiveness. <https://t.co/rxU2Bn9lnQ>

24 Jun 2022



**Syed Shahrul Naz**  
@drshahrul80

RT @NoobieMatt: An interesting and important study - sick trauma patients may be both more prone to VTE and relatively resistant to enoxapa...

23 Jun 2022





# Overview of attention for article published in PubMed (nih.gov), July 2022

## A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of Preoperative Antithrombin Supplementation in Patients at Risk for Antithrombin Deficiency After Cardiac Surgery

### Demographic breakdown

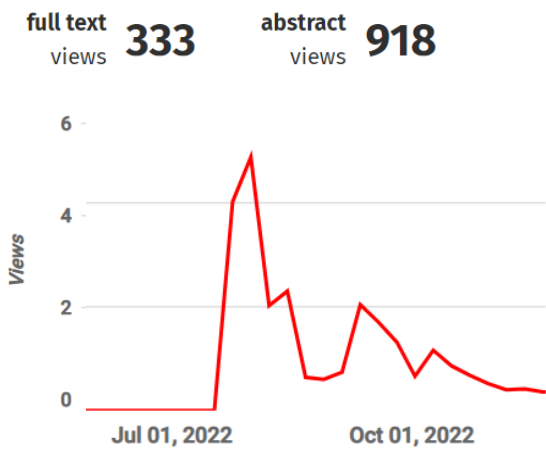
Type	Count
Members of the public	2
Science communicators (journalists, bloggers, editors)	2
Practitioners (doctors, other healthcare professionals)	1

### Relative article published on News

HEMOSTASIS AND THROMBOSIS  
**The Rise and Fall of Antithrombin Supplementation in Cardiac Surgery**  
 Ranucci, Marco MD, FESC; Baryshnikova, Ekaterina PhD (Biol); Pistuddi, Valeria;  
 Author Information ⓘ  
 Anesthesia & Analgesia ():ANE.00000000000006314, December 06, 2022. | DOI:

CASE REPORTS  
**Non–Antithrombin-Mediated Heparin Resistance During Cardiac Surgery: Two Case Reports**  
 Edwards, J. Kirk MD; Sniecinski, Roman M. MD, MSc; Scott, Korrin J. MD  
 Author Information ⓘ  
 A & A Practice 13(6):p 211-214, September 15, 2019. | DOI: 10.1213/XAA.00000000000001034

### Metrics



# 6 tweets from 5 users, with an upper bound of 17,376 followers and 1 on Facebook public wall post.

## SPOTLIGHT

HCPs share the article on their Social Media with a positive sentiment.



**Laura Downey**

@LADowneyMD

RT @IARS\_Journals: A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of Preoperative Antithrombin Supplementation in Patien...

21 Oct 2022



**CCAS**

@PedsCardiacAnes

RT @IARS\_Journals: A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of Preoperative Antithrombin Supplementation in Patien...

17 Oct 2022



**Anesthesia&Analgesia**

@IARS\_Journals

A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of Preoperative Antithrombin Supplementation in Patients at Risk for Antithrombin Deficiency After Cardiac Surgery <https://t.co/VnmhXWPEGC> From Drs. Moront et al from Clinical Thrombate

17 Oct 2022



**Anil Panigrahi**

@AnilPani

RT @IARS\_Journals: Here's a link to the electronic version: <https://t.co/rHELYpOyVe> Antithrombin supplementation did not attenuate advers...

26 Sep 2022



Anesthesia & Analgesia, 17 Oct 2022

A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial of Preoperative Antithrombin Supplementation in Patients





# Target Group Audiences

- **Consumer/Patients with hereditary antithrombin deficiency - (>35 Y).**

**Customer/HCP - all age groups (>18 Y):**

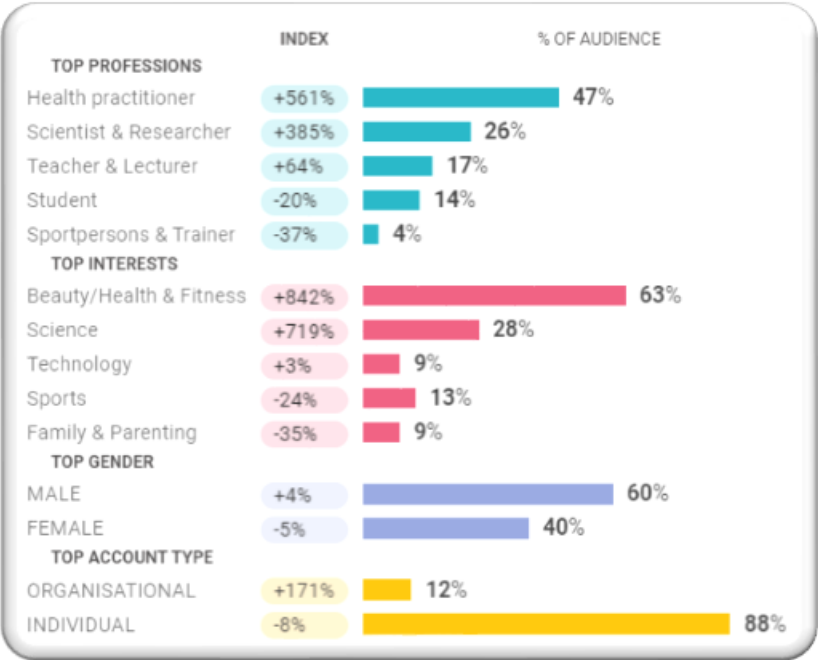
- **Cardiovascular Anesthesiologists**
- **Anesthesiologists**
- **Perfusionists,**
- **Infusion Centers**
- **Intensivists**
- **Hospitalists**

# Professions, Interests, Gender - Cardiovascular Anesthesiologists on Twitter.

The HCP audiences are broken down by demographic classifications - demographic compared to the average person on Twitter.

TOP INTERESTS

Demographics (vs Twitter Average)



Top Keyword

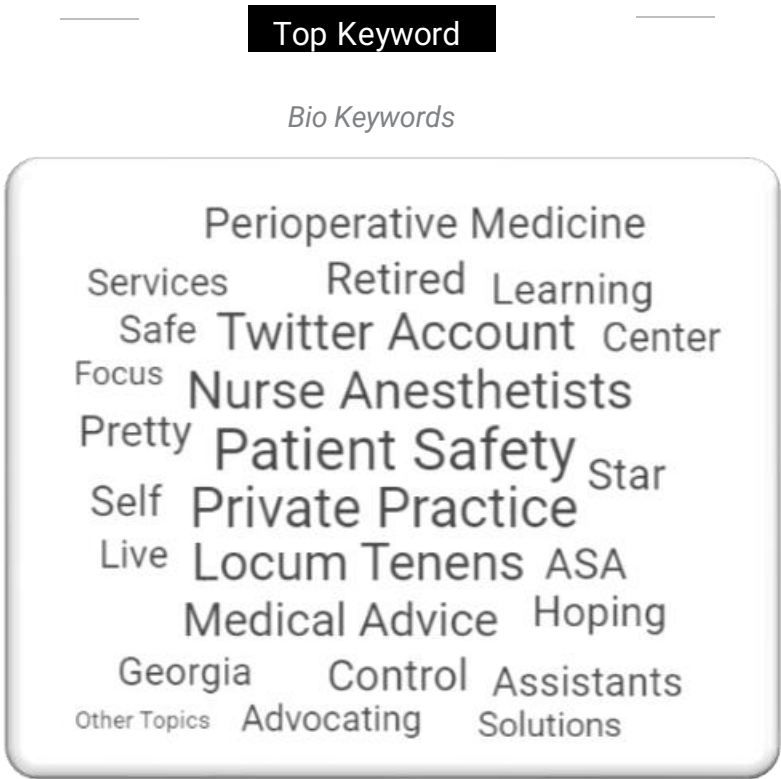
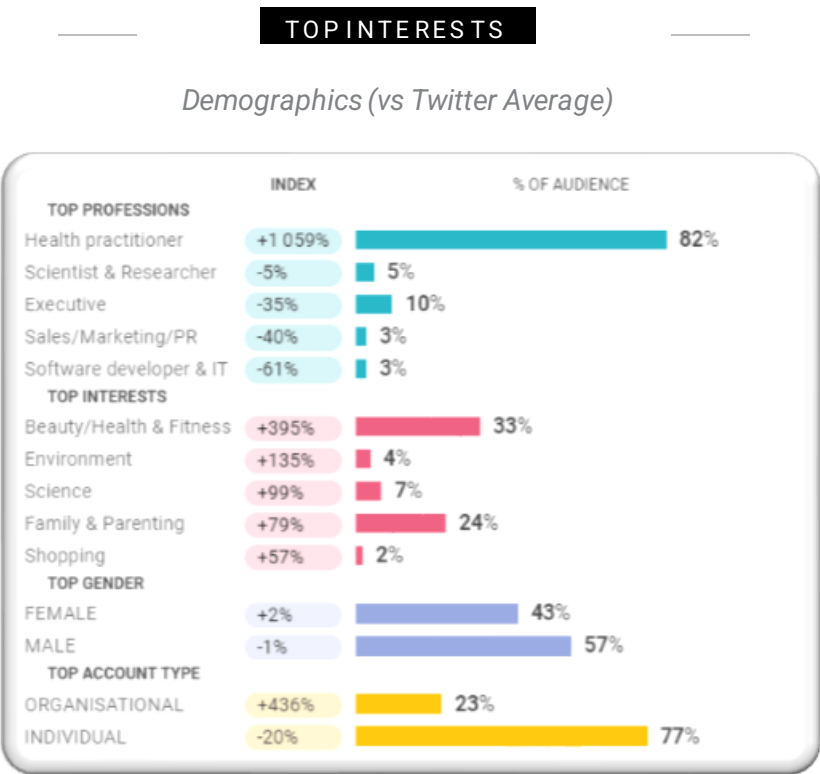
Bio Keywords





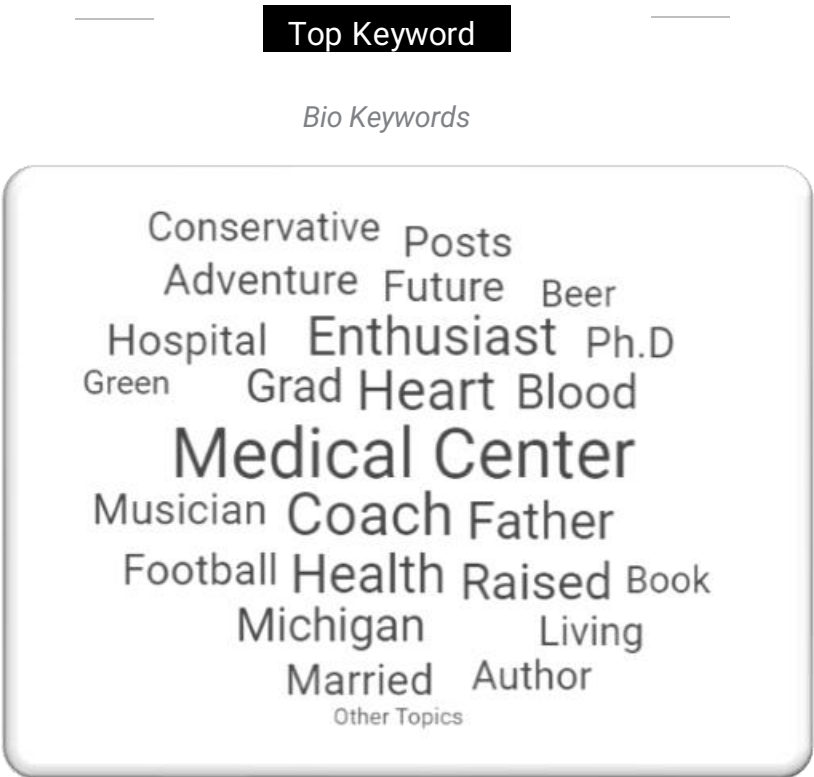
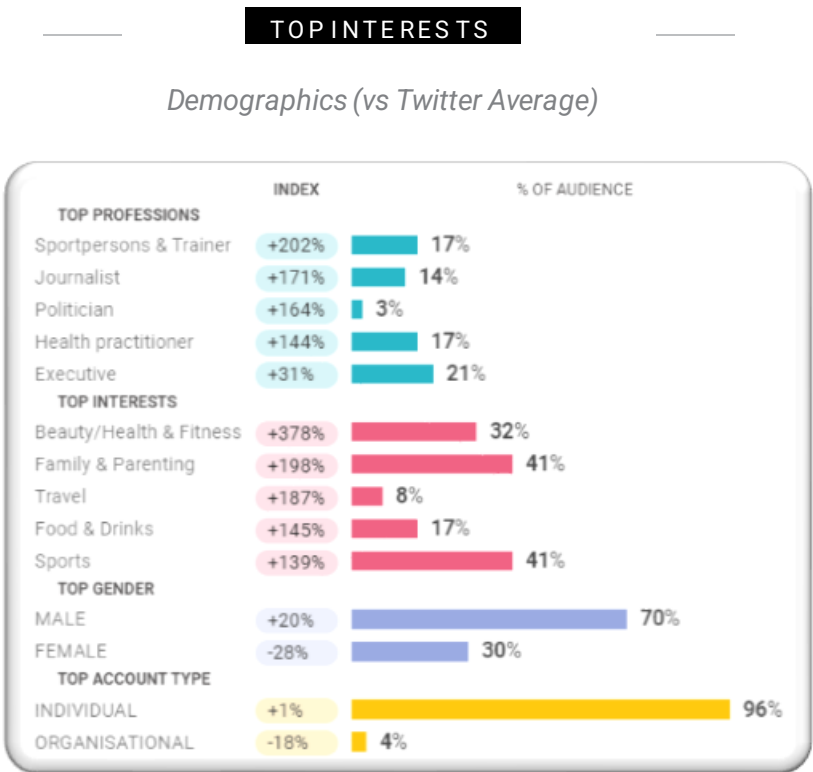
# Professions, Interests, Gender - Anesthesiologists on Twitter.

The HCP audiences are broken down by demographic classifications - demographic compared to the average person on Twitter.



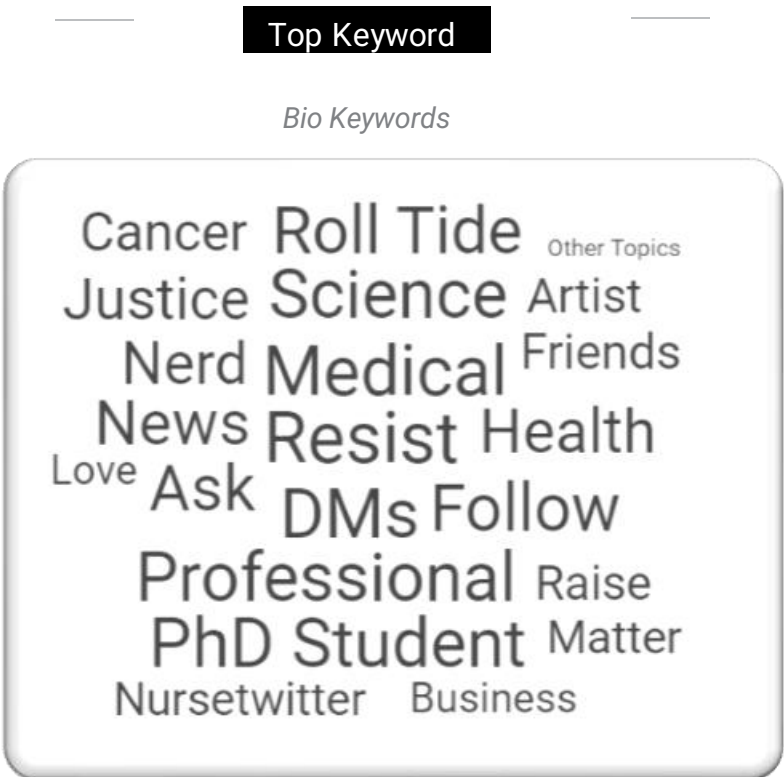
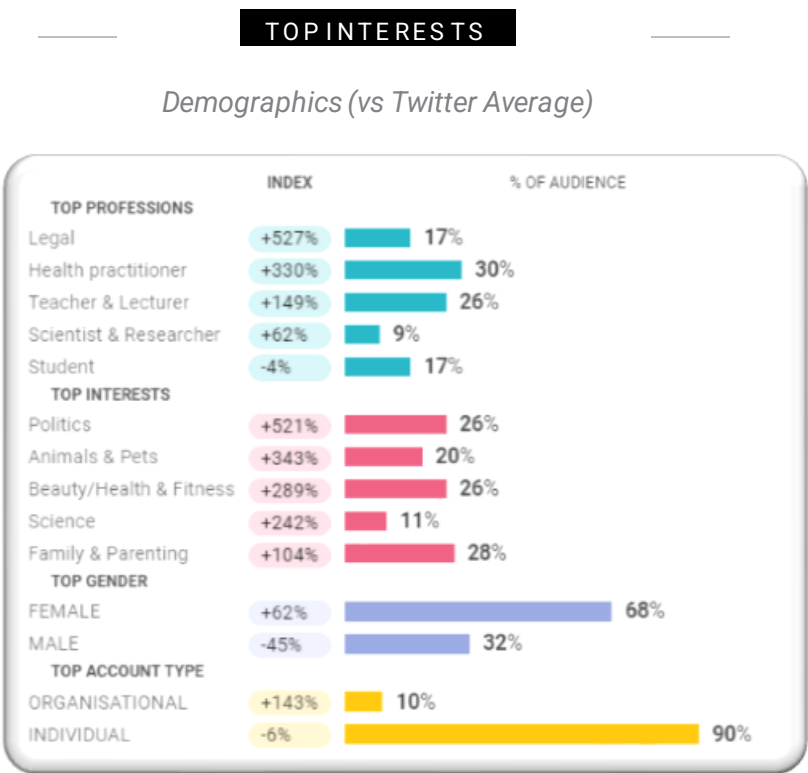
# Professions, Interests, Gender - Perfusionists on Twitter.

The HCP audiences are broken down by demographic classifications - demographic compared to the average person on Twitter.



# Professions, Interests, Gender - Infusion Centers on Twitter.

The HCP audiences are broken down by demographic classifications - demographic compared to the average person on Twitter.

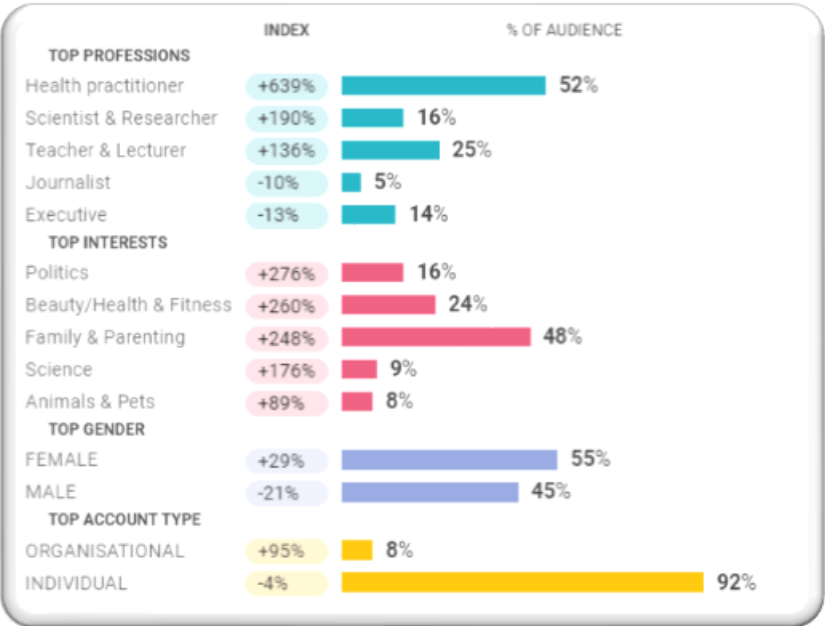


# Professions, Interests, Gender – Intensivists on Twitter.

The HCP audiences are broken down by demographic classifications - demographic compared to the average person on Twitter.

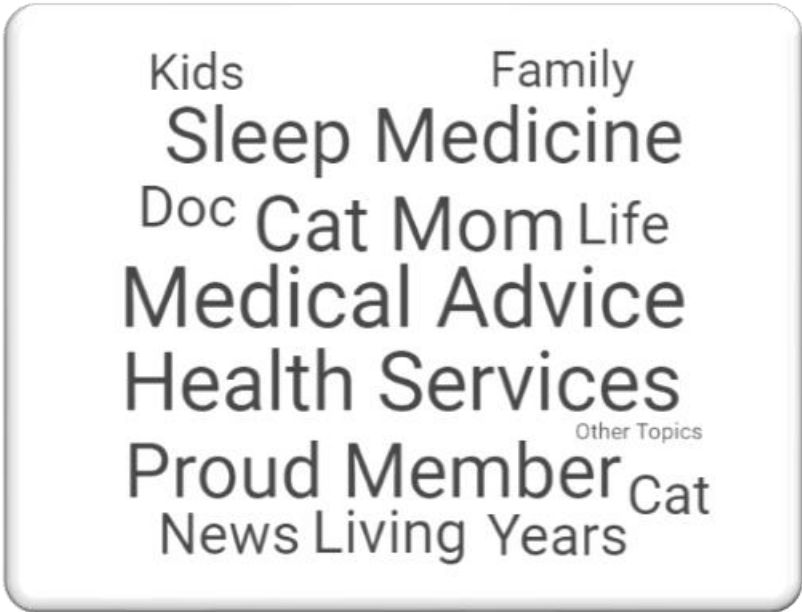
TOP INTERESTS

Demographics (vs Twitter Average)



Top Keyword

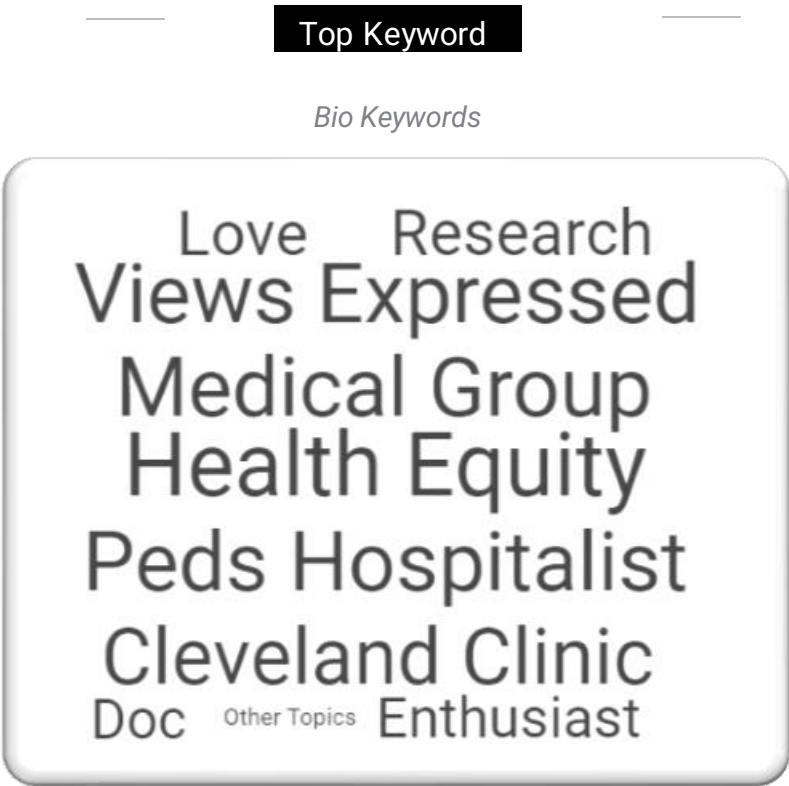
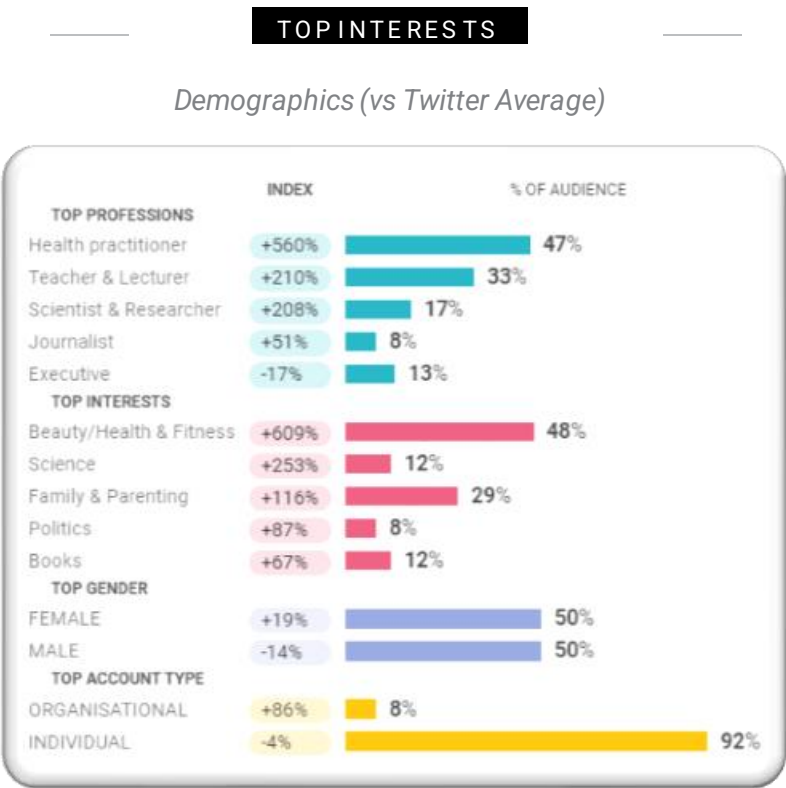
Bio Keywords





# Professions, Interests, Gender – Hospitalists on Twitter.

The HCP audiences are broken down by demographic classifications - demographic compared to the average person on Twitter.



KOLs driving  
conversations regarding  
Antithrombin III –  
Tweets where the  
relevant topics are  
mentioned in the US.

# POTENTIAL KEY OPINION LEADERS – Individuals & Organizations



**Aaron Goodman - “Papa Heme”**

@AaronGoodman33

Hematologist/Bone marrow transplant at UCSD/educator - loves teaching all of Twitter medicine, husband+father/Guitar 🎸/Nirvana best band ever!/Loves tacos

📁 Medical & Health ⓘ 📍 San Diego, CA 📅 Joined April 2017

253 Following 106.4K Followers

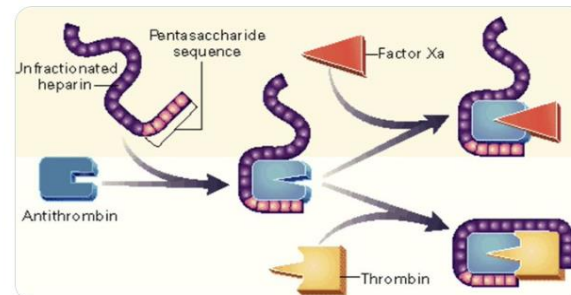


**Aaron Goodman - “Papa Heme”** @AaronGoodman33 · Jun 24  
**Antithrombin** III deficiency - A Hematology Classic

Heparin is a long rope  
Brings together ATIII+thrombin = inhibition thrombin

No ATIII = heparin can't inhibit thrombin

Heparin resistance = ATIII deficiency  
Inherited or acquired (after asparaginase)  
No ATIII  
Heparin won't work



🗨 46 ❤ 201 📤



**Silvija Gottesman MD**

@SGottesmanMD

Assistant Professor #Dermatology & #Pathology North Shore University Hospital @NorthwellHealth| #SoMe Chair @ASDPTweets. Founder @dermpathJC. Tweets=med advice.

📍 Long Island, NY 🔗 dermpathjc.com 📅 Joined October 2015

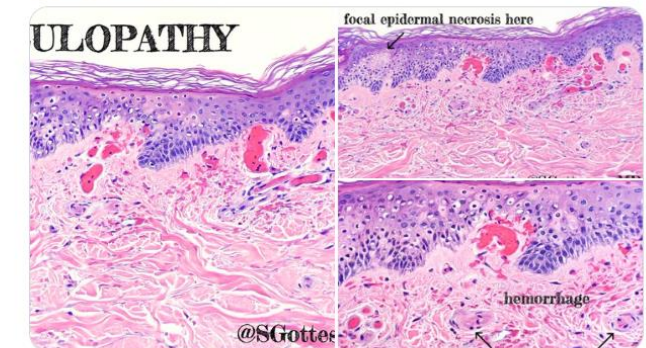
3,199 Following 7,837 Followers



**Silvija Gottesman MD** @SGottesmanMD · Sep 18, 2020

Livedoid Vasculopathy, or ASK!

- 💡 Sick patient? DIC, TTP, Cholesterol emboli, P.Fulminans, warfarin/heparin-induced skin necrosis, Sneddon Sy
  - 💡 Well patient? Type 1 cryoglobulinemia, cryofibrinogenemia, MDS, APA Sy, proteinC/S, **antithrombin**, F5Leiden mutation
- #dermpath #tweetorial



Silvija Gottesman MD and 8 others

🗨 3 🗨 46 ❤ 79 📤

KOLs driving  
conversations regarding  
Antithrombin III –  
Tweets where the  
relevant topics are  
mentioned in the US.

## POTENTIAL KEY OPINION LEADERS – Individuals & Organizations



**Ed**

@Rx\_Ed

Internal Medicine & Clinical Pharmacology

📎 Education ⓘ 📍 New York, NY 🔗 [Medquest.st/PharmQBANK](https://medquest.st/PharmQBANK)  
📅 Joined December 2011

37 Following 45.5K Followers



**Ed** @Rx\_Ed · Dec 23, 2021

Heparin resistance is a REAL thing!

Causes of heparin resistance:

- Congenital or acquired **antithrombin** deficiency
- ECMO
- Thrombocytosis
- ↑ heparin binding proteins
- ↑ factor VIII level
- Drugs like tranexamic acid and aminocaproic acid

Tx is with FFP.



5



16



123



**Kam Ghadimi, MD, MHS, FAHA** ❤️🤝🔥

@KamGhadimiMD

👨‍⚕️ Anesthesiologist | #ICU 🧑‍⚕️ | Assoc Professor & Clinical Research director  
@Duke\_Anesthesia | #Trials, Coag, 🩸, 🧬 #PH, #RV | برای آزادی 🌍

📎 Anesthesiologists ⓘ 📍 Tweets are my own, USA  
🔗 [anesthesiology.duke.edu/profile/kamrou...](https://anesthesiology.duke.edu/profile/kamrou...) 📅 Joined July 2016

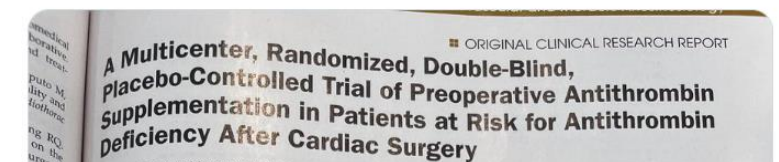
716 Following 989 Followers



**Kam Ghadimi, MD, MHS, FAHA** ❤️🤝🔥

@KamGhadimiMD

Double blind MCT on Antithrombin supplementation in Cardiac Surgery. @IARS\_Journals @iars360 @KeyvanKarkouti @JerroldLevy @ShoreIsShore @scahq



KOLs driving  
conversations regarding  
Antithrombin III –  
Tweets where the  
relevant topics are  
mentioned in the US.

# POTENTIAL KEY OPINION LEADERS – Individuals & Organizations



**J Roberts**

@JonRob08

Classical hematologist; hemostasis/thrombosis, hemophilia, VWD, rare bleeding disorders specialist; severe hemophilia A blood brother 🩸, opinions my own

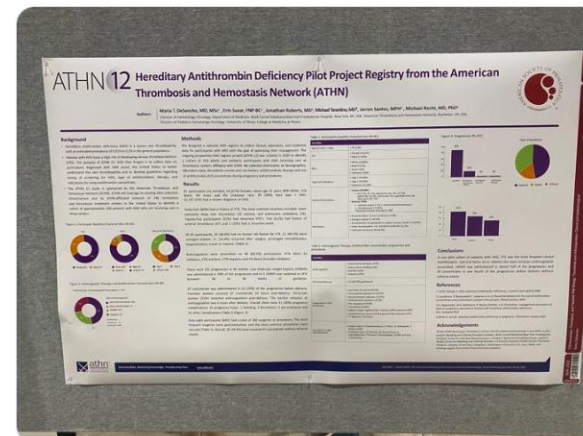
🏥 Medical & Health ⓘ Illinois, USA 🔗 [ilbcdi.org](http://ilbcdi.org)  
📅 Joined December 2019

517 Following 445 Followers



**J Roberts** @JonRob08 · Dec 12

Important to better understand hereditary **antithrombin** deficiency. Collaboration through@ATHNnews. [#thrombosis](#) [#anticoagulation](#) @BloodExpertsLL



🗨 1 🔄 1 ❤ 5 ↗



**Shematologist, MD** ✓

@acweyand

Peds hematologist oncologist, mother, dreamer, pacifist, justice seeker.Clueless Mother Theresa [#HCWvsHunger](#) [#CakeForBreakfast](#) [HCWvsHunger.org](#)

📍 Ann Arbor, MI 🔗 [mottchildren.org/profile/4492/a...](https://mottchildren.org/profile/4492/a...) 📅 Joined January 2017

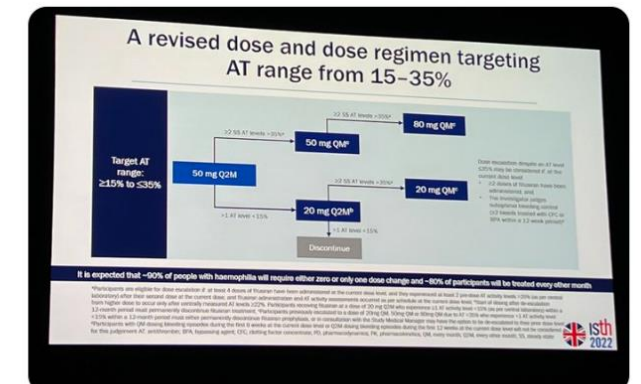
5,940 Following 65.1K Followers



**Shematologist, MD** ✓ @acweyand · Jul 12

New modified regimen of fitusiran presented by @MiPipeline at #ISTH2022 based on **antithrombin** levels to preserve efficacy & decrease thrombotic complications.

And every other month dosing!



🗨 2 ❤ 9 ↗



KOLs driving  
conversations regarding  
Antithrombin III –  
Tweets where the  
relevant topics are  
mentioned in the US.

# POTENTIAL KEY OPINION LEADERS – Individuals & Organizations



**Geoff Barnes**

@GBarnesMD

Vascular Cardiologist @umichCVC. #thrombosis, #CVcoag, #ImpSci. Co-director @MAQI\_2. Board of Directors @AnticoagForum. Tweets my own. RT≠endorsement.



Medical & Health ⓘ Ann Arbor, MI ⓘ [ihpi.umich.edu/our-experts/gb...](https://ihpi.umich.edu/our-experts/gb...)  
Joined September 2014

632 Following 4,691 Followers



**Geoff Barnes** @GBarnesMD · Jul 20, 2021

While Factor V Leiden is the most common inherited thrombophilia, the absolute #VTE risk is still <1/100 pill-years when combined with oral contraception. Different story for antithrombin and Protein C/S deficiency! #ISTH2021

**COC, Thrombophilia & VTE Risk**

Thrombophilia	VTE Risk on COC (Per 100 COC y)
Population (age 20 y)	
No FHx	0.04
Positive FHx	0.08
AT/PC/PS Deficient	4.3 – 4.62
Non-deficient	0.48 – 0.70
FV Leiden/Prothrombin Homozygous or Combined	0.86
Non-carrier	0.19
Factor V Leiden/Prothrombin Heterozygous	0.49
Non-carrier	0.19

\*Resume baseline VTE risk of 0.01%/y; RR of VTE with OCP use=4 (levonorgestrel + ≤35 ug ethinyl estradiol) and RR of VTE with positive family history=2

Van Vlijmen EPW. J Thromb Haemost. 2016;7:1393-1403. DOI: 10.1111/jth.13349  
<https://onlinelibrary.wiley.com/doi/10.1111/jth.13349>

11 21



**Guy Young**

@GuyYoungMD

#hemophilia doc involved in patient care, research, and education. I'm also an author: [lulu.com/shop/guy-young...](https://lulu.com/shop/guy-young...)

Hermosa Beach, CA ⓘ [chla.org/htc](https://chla.org/htc) ⓘ Joined December 2019

186 Following 938 Followers



**Guy Young** @GuyYoungMD · Jul 13, 2020

Really great and diligent work from @kumar\_riten on antithrombin deficiency. It takes persistence to get good prospective research done but it's worth the effort. Congrats and keep up the good work.



2 1 10

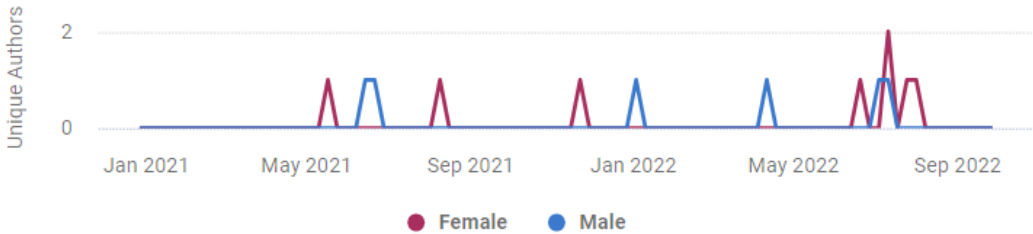
# Professions, Interests, Gender – Millennials Patients with hereditary antithrombin deficiency on Twitter.

Patients are broken down by demographic classifications - demographic compared to the average person on Twitter.

Gender split

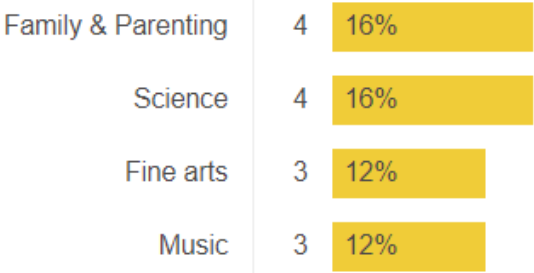


Gender split trend



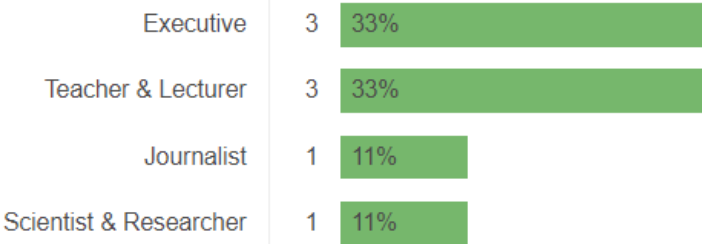
## TOP INTERESTS

of people are most likely interested in:



## Top Professions

more likely to discuss topic than the general population





# The Voice Of Consumer on Twitter during the evaluation period from January 1, 2021, to September 30, 2022, in the US.

Most discussion topics are regarding patients and families' patients with Antithrombin III deficiency and having a test.

## - The most engagement posts & relevant content -

### Daniel Lawson

@Lawdog85

Father of 3, Husband of 1, child of the King. Pastor Kelly's Chapel Baptist Church Grove Oak, Assembly and Automation Manager at Tier 1 Honda Supplier.

Joined June 2010

2,202 Following 795 Followers

**Lawdog85 (Daniel Lawson)** @Lawdog85 15th Jun  
@TheSCMayor @FeliciaEntwined @TheTxPundit @charliekirk11 I have a genetic condition called **Antithrombin** III deficiency. For **me** I have to weigh risk vs risk. My disorder makes me prone to clotting. Otherwise, I have always been very healthy. So I opt to follow the science and not get the vaccine for something that is 99% survivable.

[Link](#)

### shiella tequila

@shiellatequilaa

I do what I want

Queen\$ Joined April 2011

207 Following 271 Followers

**stepville (Stephanie Land)** @stepville 20th May  
My husband did not have tests. There was never a question. I even asked for him to have tests and they said no. It was all about how **my** body was fucking failing. **Antithrombin** 3. MTHFR gene. Age. "Old" age for sure. It was **my** fault, not his.

[Link](#)

### MaryRichardsKallman

@mrkallman

Owner of The Quilt and Kvell, creating Olson-style designer masks to help beat COVID19 Be Kind, Wear a MASK

Hancock, MI Joined March 2009

719 Following 454 Followers



**mrkallman (MaryRichardsKallman)** @mrkallman 28th Mar  
@AXECOP Sorry this has happened to you. It was **me** in February. Tests: **Antithrombin** III (+), V Leiden (-), Homocysteine (H), Factor 8 (+). Rxd Eliquis. The body will absorb the clot, blood thinners keep another from forming, takes time. Hematologist should consult, genetic testing helpful

[Link](#)

### benni

@benni1028

LMSW. Nolite te bastardes carborundorum in Latin Don't let the bastards grind you down. FU Supreme Court. #BLM No DMs. No Groups. Proud mama of 🏳️ daughter.

Joined August 2013

679 Following 1,112 Followers







**benni1028 (Radical Benni)** @benni1028 14th Apr  
@dremilyportermid @labyrinthweaver @mmpadellan Look up Dr. Stephen Moll. He has done research on clotting disorders. He is considered to be an expert on clotting disorders. He has tested **me** for FVL. Negative. He has tested **me** for **antithrombin** III deficiency, negative. Protein S. Negative. Protein C. Negative. Now, I did have





[Link](#)

# The Voice Of Consumer on Forums during the evaluation period from January 1, 2021, to September 30, 2022, in the US.

Most discussion topics are regarding patients looking forward to hearing about any personal experience, antithrombin deficiency patients who got a positive pregnancy and Lovenox injections treatments.

## - The most engagement posts & relevant content -

 TRWaters2014 - babycenter.com <b>Another Scheduled C Section question...</b> I was originally scheduled for September 10th, my OB is now exploring the possibility of September 7th. I will be 38 weeks and 6 days, she said she would contact my MFM and see what their opinion is on this date. I have GDM, baby is breech and I have <b>antithrombin</b> deficiency cannot transition to Heparin bc of allergies. My worry is will she be...	31 Aug
	<a href="#">Link</a>
 nicck - whattoexpect.com <b>LOVENOX QUESTION</b> ..., I'm aiming for a VBAC, but since I've already had a prior c-section, I cannot be induced. That's the tough part. I have <b>Antithrombin</b> III deficiency and Lovenox is ideal for that specific disorder, but Heprin would be ideal for spontaneous labor because of the short half life. They said that being on Lovenox is tough because of how long it lasts...	19 Aug
	<a href="#">Link</a>
 nicck - whattoexpect.com <b>LOVENOX QUESTION</b> Hi ladies! So, I'm currently on Lovenox and planned on switching to Heprin at 35-36 weeks in order to try for a VBAC since the half life is a lot shorter than Lovenox, which allows me to have an epidural (and of course, go into labor spontaneously). I spoke with Maternal Fetal Medicine and they were suggesting that my <b>Antithrombin</b> III level was...	18 Aug
	<a href="#">Link</a>
 TRWaters2014 - babycenter.com <b>Advice for Lovonox due to RPL</b> I had 2 miscarriages within 6 months, my Doctor did a blood work up and just by happenstance we discovered I have <b>antithrombin</b> deficiency, I got a positive pregnancy test in January and was put on Lovenox injections and progesterone suppositories up to 13 weeks. I am currently 35 weeks pregnant and we are still doing well on the Lovenox.	11 Aug
	<a href="#">Link</a>

 FTM27XO - babycenter.com <b>Interesting known cause of SCH</b> ...have a genetic clotting issues but I wanted to double check just in case, so my doctor ordered the blood clotting blood work. Behold, my <b>Antithrombin</b> iii numbers were low and my protein S activity was also low. I am 14 weeks pregnant and am now super worried that I should have been on blood thinners this whole time. I found it interesting that you...	28 Mar
	<a href="#">Link</a>
 AMorgan2017 - babycenter.com <b>Pregnant after Pulmonary Embolism</b> I just found out I'm around 5 weeks pregnant. I have a history of a PE and clotting/bleeding disorder. I'm pretty sure I will get put on lovenox. Did you guys see your Dr prior to 8 weeks because of being high risk or did they make you wait? My Dr also started me immediately on Lovenox injections. I also had to do weekly infusions, due to a...	3 Apr
	<a href="#">Link</a>
	
 Mari- - inspire.com <b>Mari Journey</b> ...asked, 'if I wanted drugs,' I had gone to her due to the dizzy spells. Months later I went to emergency and the ER doctor said I had a tumor in the center of the head. So the gallbladder, uterus and head had tumors - non cancerous but caused damage. Then in 2019, I went to MAYO and they told me I have LUPUS, Sjogren, and <b>AntiThrombin</b> III deficiency...	15 Feb
	<a href="#">Link</a>



# The Voice Of Consumer on Social Media during the evaluation period from January 1, 2021, to September 30, 2022, in the US.

Most discussion topics are regarding Blood Clot awareness month, family history, and a mom who has a question about how you cope with knowing she could or have to give this disorder to her kids. One of the reply posts talked about his haematologist telling him they can be tested after age one.

## INSTAGRAM



[Link](#)

## FACEBOOK



[Link](#)

# Strategic Insights & Recommendations





# Recommendations & Insights

## The value of listening to non-HCP Groups

While it is possible to listen to **HCPs, they often speak behind privacy walls in closed networks**, which cannot be accessed for market research purposes.

There is a much **larger volume of journalists, support worker caregivers other consumer conversations, which is also valuable**, and a missed opportunity if excluded from the analysis.

Understanding the views of these groups, particularly journalists, **provides the brand with an insight into the needs of the end-users of their products.**

- Although webinars with expert opinions on Hematologic, Thrombosis , Thrombophilia, etc., could deliver a considerable volume of the target audience, we found that the most **successful impact in terms of engagement views and attending webinars is when offering a space addressing patients that can be involved in participating it** and an expert can respond to their queries.
- We can determine that this content could address **more volume audiences even if the expert ponent can explain their experience as a patient**. For instance, the **Stop The Clot webinar**, an educative program on Facebook live to discuss blood clots, by **Beth Waldron Alliance's communication director and blood clot patient**.
- We encourage you to join the **Thrombosis and Thrombophilia Support Group private Facebook group** with highly positive sentiment to learn more about the conversations with patients and HCPs and to know the trends conversations are running.
- This group is created to ask and get answers about specific diseases such as Thrombosis. Even HCPs promote their services. Genera a high impact on the target audiences with a **positive sentiment**.
- We don't collect enough data regarding **Thrombate III mentions online to evaluate the perception of Target Audiences**; however, **antithrombin has considered the volume of mentions** (over 3K from Jan 2021 to Sept 2022) **for assessing the perception of consumers and HCPs and almost 70% on News.**





# Recommendations & Insights

**The world-leading haematology journal** - [The Lancet Haematology Home Page](#)

The world-leading haematology journal, with a strong clinical focus, provides an independent voice for the haematology community and advocates for the improved lives of patients with haematological diseases around the globe. They publish various content types that encompass all aspects of clinical haematology: Articles, reviews, Comments, News, Clinical Picture, and Correspondence. They mention antithrombin III in their Twitter account and offer banner ads; we found Takeda banner ad on the top home page.

- **Tactics and campaigns to promote the brand include Facebook Ads, Instagram and App. Heparin has an app (Android & iPhone) to promote the brands, i.e. Xarelto, Heparin app.**
- **Consider including hashtags and keywords more used for competitors like Bivalirudin in your content strategy plan and paid search. i.e. #ECMO, #anticoagulation.**
- **Recommend support communities such as Foundation for Women & Girls With Blood Disorders – YouTube.**

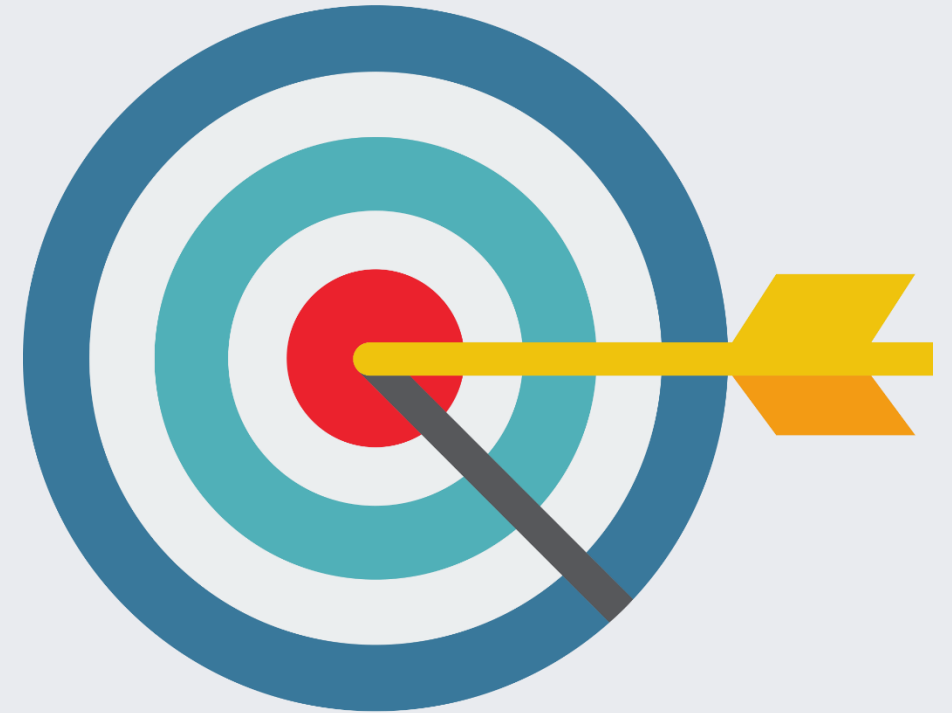
## Blood Disorder Network

					
American Society of Hematology 23.5K subscribers	ClotConnect 244 subscribers	Hemophilia Federation of 802 subscribers	stopthecLOT 2.32K subscribers	National Hemophilia Foundation 1.47K subscribers	
<a href="#">Subscribe</a>	<a href="#">Subscribe</a>	<a href="#">Subscribe</a>	<a href="#">Subscribe</a>	<a href="#">Subscribe</a>	



# Target Group Insights

- HCPs Twitter authors were also segmented according to their engagement level, both in terms of volume and over time. **This allows Thrombate to track the impact of potential KOLs over time.**
- Once identified, further analysis of **KOLs can reveal the most pertinent topics for these groups compared to others.** Similar identification and filtering practices can create target groups of other KOL types, including key figures in the market.
- In this study, the aim was to discover the key author groups interested in them inform messaging and channel strategy for the brand. **We encourage you to follow these influencers' authors to understand their key channels and conversation drivers.**



# KOLs & Strategy Insights

Your brand health will ultimately deeply impact the consumer awareness of your brand and your bottom line.

1

**Influencers and micro-influencers drive conversations regarding** Causes of heparin resistance, Thrombocytosis, Antithrombin supplementation in Cardiac Surgery, a better understanding of hereditary antithrombin deficiency, different stories for antithrombin and Protein C.

2

**The authors were split into their speciality** groups to understand the HCP conversations on Twitter better. **Hematologists, Clinical Pharmacology and Cardiologist, drove almost 75% of mentions.** This suggests that HCPs concerned with patient support/well-being could be a **key online target group interested in Antithrombin medication.**

3

Regarding the type of content, **videos drive more views and engagement** than other posts. Regarding **content ideas such as:** The topic of **Thromboembolic Disorders** mentions different anticoagulant proteins and brands. **Building community among people affected by a blood clot and educational videos that build public awareness. Educational Programs and Webinars, Bleeding Disorders.**

4

**Conclusion:** The importance of emotional support for patients was underlined ("counselling"), and the links **between treatment and side effects.** Understanding existing topics of interest can inform the **creation of compelling content for the community.** There was also a group of patients talking openly on Twitter; however, patients were also the most likely author group to chat in **online forums, driven by the ability to speak anonymously.**

# Conclusion

**Hospital and Pharmacist staff** leading in conversations regarding the Heparin shortage on the Twitter platform.

**Pharmacies are looking for alternatives depending on the need.** Discussions are driving the community **Whattoexpect.com** forum. Discussion about switching from heparin to Lovenox due to the heparin shortage. **Doctors tried an alternative known as bivalirudin instead of Heparin.**

We've been doing quite a few studies on **micro-influencers**. **If you're a well-known brand, you have the ability to create influence and identify those up-and-comers** and have an influence on your campaigns. Build relationships, and reach people a brand can't.

The majority of **non-HCP online authors using/exposed to the medication and likely to mention a product** tend to use generic terms rather than specific drug or manufacturer names.

**Patients were the most likely to be concerned with the ability to live a normal life** when on effective treatment, even more so than an extended one. **Regaining normality is a message likely to resonate with patient advocacy groups.**

Combined with the **channel insights, this data** could underpin a wider social engagement strategy.

**Consumer conversations in social media frequently detail their lives, situations and experiences**, providing granular insights akin to those possible in focus groups. Many online authors and conversations provide a scale more similar to questionnaires.

**Lastly**, unprompted data allows for discovering potential **"unknown unknowns"**.

