The use of social media and online communications in times of pandemic COVID-19

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Abstract

The use of social media as a tool for professional communication and education in healthcare has been increasing; pros and cons of such platforms were extensively debated in recent years with mixed results. During the COVID-19 pandemic, social media use has accelerated to the point of becoming a ubiquitous part of modern healthcare systems. As with any tool in healthcare, its risks and benefits need to be carefully considered. In this article, we review the use of social media in the current pandemic. Importantly, we will illustrate this using experiences from the perspective of large medical organisations and also identify the common pitfalls.

Keywords

COVID19, digital, pandemic, social media

Introduction

The term social media describes 'interactive computer-mediated technologies that facilitate the creation or sharing of information, ideas, career interests and other forms of expression via virtual communities and networks'.[1] This definition includes a wide variety of popular platforms, including Twitter^{TM}, Facebook^{TM}, Instagram^{TM}, Linkedin^{TM}, blogging platforms, WeChat and Whatsapp^{TM}.

With social media playing an integral role in our daily lives, the way we communicate has dramatically changed. Despite the debate surrounding its use in medical education, it has become established at medical conferences and as a platform for sharing information.[2,3]

The novel Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV2) and its subsequent disease COronaVIrus Disease-2019 (COVID-19) have resulted in a pandemic of viral respiratory failure. Many countries have managed this outbreak through the use of 'physical distancing' strategies, which largely involves restriction of physical contact to the bare minimum required for daily living. This has increased the use of and dependence upon social media platforms to stay connected for work, education and social purposes; platforms such as Zoom^{TM} and Microsoft Teams^{TM} have seen an exponential growth in users during this time.[4]

With such drastic measures needed to contain the spread of the virus, it is now imperative that social media is appropriately utilised to maximise its benefits to the workforce and education, while recognising the associated limitations.

An innovative application of social media as a means of location-tracking and hence contact tracing has materialised directly as a result of the pandemic,[5] however, this manuscript will focus on the work and educational aspects relevant to the healthcare professional.

Social media and healthcare pre-pandemic

The use of social media in medical education and healthcare prior to the COVID-19 situation has been controversial. Despite the number of healthcare

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professionals and organisations who engage on social media platforms continually increasing in recent years,[2] there remains significant debate as to the merits of social media in terms of actual learning and improvement in the quality of care provided.

In a similar vein, the use of social media-based strategies to disseminate scientific articles has led to increased citation rates and Altmetric scores of these articles,[6] however, the degree of amplification is likely to represent a function of social media in addition to any true increases in readership.

Social media in times of pandemic

Following the widespread cancellation of almost every international medical conference this year, there has been a plethora of online events held by major education providers such as the European Society of Intensive Care Medicine (ESICM).[7] The speed with which various organisations have been able to adapt to the new, online-only environment has been remarkable, with over 100,000 people tuning in to the ESICM 7-h webinar marathon on 28 March 2020. Existing organisations have been able to pool their considerable number of expert groups into streams of digital educational output available to any healthcare practitioner working within intensive care with access to the internet.

International organisations such as the World Health Organisation (WHO) and Centre for Disease Control (CDC), regional societies such as the Intensive Care Society (ICS) in the UK, the European Society of Cardiology (ESC), and the UK Royal College of Anaesthetists (RCOA) have all provided repositories of information on their respective websites. Dedicated sections (i.e. pages on websites and blog categories) have been swiftly demarcated to promote the sharing of open access content related to the pandemic. Such content, typically comprising important articles, useful educational links, guidelines/protocols, etc., with updates as the pandemic evolves, is actively distributed via their social media streams.

This pervasive use of social media platforms to rapidly disseminate consensus and expert opinion by major medical organisations is a considerable addition to their pre-existing social media capacity, and serendipitously, coincides well with the necessity for both contributors and staff to work remotely.

Instead of a podium at a conference venue, international experts have been using simple software to record their lectures and present them to a vast online audience. An added advantage of this setup is that video recordings of these lectures are made available online to those who were unable to view the broadcast. Live moderation and the ability of a diverse audience to ask questions of the experts in real-time have provided a dynamic and reactive dimension to these presentations. Whilst webinars are by no means

a new phenomenon, their ubiquity during this pandemic is significant, both in terms of the rapid acceptance by more traditional speakers and the relative simplicity by which they can be deployed.

This ability to organise large webinars at short notice allows content providers to be at the forefront of knowledge dissemination and innovation. Statistics are no longer embargoed to be discussed at a conference, but rather delivered at shorter and often more timely intervals.

To quote Dr Michael Ryan, the Executive Director on the WHO Health Emergencies Programme who said, in laying out the WHO strategy for COVID-19:

> Perfection is the enemy of the good when it comes to emergency management. Speed trumps perfection and the problem in society we have at the moment is everyone is afraid of making a mistake, everyone is afraid of the consequence of error. But the greatest error is not to move, the greatest error is to be paralysed by the fear of failure and I think that's the single biggest lesson I've learnt in Ebola responses in the past.[8]

Information sharing

Guidelines, protocols and standardised operating procedures, usually kept within institutions, are being shared at an unprecedented rate during the pandemic, with social media being used as an effective vehicle. Messaging and conferencing platforms such as Zoom, Skype, Whatsapp, etc. are complemented by free and simple-to-use collaboration software such as GoogleDrive, DropBox and Slack.

Such sharing is of immense value. Document creators have effectively been able to crowdsource peer reviews from a variety of healthcare workers, obtaining quick and useful feedback that would have otherwise taken significantly more time and effort. Social media has always been considered a form of near-instantaneous communication, though the pandemic has highlighted how major societies and stakeholders are now embracing the ability to interact directly with content creators, implement checklists and issue revisions at a rapid rate and on a vast scale.

International knowledge and guidelines have also been shared beyond geographical and language barriers. The Chinese guidelines on management of COVID-19[9] were translated into English within a few days of their release; information from the first of a series of large Italian Intensive Care meetings (organised by the Gruppo italiano Valutazione interventi in Terapia Intensiva, GiViTI – Italian Group for Evaluation of interventions in Intensive Care) was also made available to international colleagues. Notes from the meeting, documenting first impressions of the management of COVID-19[10] by intensivists from the Lombardy region, in particular their

experience on the use of lung ultrasound, were translated and shared in the form of infographics, shaping many lung ultrasound protocols as the rest of the world began to deal with their own outbreaks.[11]

Whatsapp, an instant messaging app already commonly used for social communication, has become a powerful repository for sharing information. Multiple dedicated WhatsApp groups have been created, within which information is distributed widely and rapidly. Many of the authors were receiving up to 200 WhatsApp messages a day during the initial phase of the outbreak, containing everything from protocols and research articles, to updates about the wellbeing of colleagues.

Some examples of documents that have been shared on social media are summarised in Table 1.

Research groups have also been actively engaging on social media; recruitment to ongoing research trials has been promoted via Twitter and Facebook, with early results rapidly disseminated. A prime example of this is the COVID-19 intubation database[12] (an idea conceived over social media) which continues to register data on all COVID-19 intubations. Other large national and international studies such as GENOMICC,[13] REMAP-CAP,[14] RECOVERY,[15] ECMOcard[16] and EuroELSO survey[17] continue to recruit and report via social media.

While all these adaptations, heavily reliant on social media, should be applauded for their near seamless integration into the way in which we work and learn in times of pandemic, this paradigm shift comes with important caveats.

The bad side

The speed at which the pandemic has consumed the world, combined with the volume of communication, content and data generated on a daily basis can present several problems to the healthcare professional who uses social media. In the early stages of the pandemic, prior to formal publications or webinars, the only sources of information available were via the internet and social media. Sharing/re-tweeting is a mechanism by which original content is distributed to fellow social media users – items that gain traction can be passed on hundreds or thousands of times within days. This is advantageous when useful content reaches a large audience but can also significantly amplify any inaccuracies in the content.

Transparency is crucial when information is received from users who may be completely unknown to us, other than mutual presence on a social media platform. Personal opinions, inherent biases and erroneous information can be difficult to identify when we are constantly bombarded by a huge volume of evolving content. Translational issues and the curtailing of social media messages to a required size may impose limitations on the content being relayed.

It is easy to see how misinformation can result from over-rapid analysis of preliminary results, published with abbreviated or no peer-review process. There has been an unparalleled rush to publish content; even major journals have apparently not been spared. Case reports/case series and even preliminary reports have been published (and thus widely diffused to a large audience) with little emphasis on limitations and bias, instead using catchy titles to attract readership, provoke interactions/impressions and hence attain prominence on social media.

From the perspective of content recipients, healthcare professionals can misinterpret material that they have read if they do not pay attention to the finer detail or critically appraise the material. Implementing information out of context can also be harmful, especially if the practice spreads, further perpetuating the initial mistake.

Table 1. Examples of documents being shared on social media platforms.

Guidelines/Protocols/SOPs
- A ward round checklist for intensive care was created in Cardiff and refined by sharing on social media, incorporating helpful suggestions.
- A checklist on using anaesthetic machines as ICU ventilators was created in Birmingham and widely distributed on social media platforms.
- Some advice and an informal algorithm by two Italian intensivists from the Lombardy region involved in the surge since the first local outbreak have been designed into an infographic with the purpose of supporting physicians caring for patients with severe COVID-19 induced respiratory failure, so as to standardise their approach, thereby optimising outcome and resources consumption. Based solely on the original post on Twitter, the Italian version of the infographic has to-date generated 11,836 impressions and 761 reactions, with the English translation generating 49,548 impressions, with 5508 engagements.
- An infographic on the principles of airway management in COVID-19 incorporating infection control procedures to reduce the transmission risk of SARS-CoV-2 infection was drafted by the Anaesthesia and Intensive Care Department of the Prince of Wales Hospital in Hong Kong. This was translated into 17 languages through collaborations with colleagues and centres internationally.
- A single email written after a COVID-19 briefing was shared on Whatsapp, disseminated through multiple Whatsapp groups and eventually appeared on social media platforms where it was shared by thousands of users, much to the bemusement of the intensivist who wrote the email.

The sharing of medical images on social media has always been contentious. The same standards of anonymity of patient data that applies in print media should apply to digital images, however, social media users have sadly shared images without patient consent and/or with patient details still visible.

It must also be remembered that medical information present on social media can be read by anyone, including patients and relatives, the result of which can be undesirable and potentially damaging. Some of the misconceptions raised include the following:

- Intubation is a fatal procedure; one of the authors has witnessed patients refusing intubation based on what they had read on social media.
- Medical professionals falsify death certificates for profit.
- Patients are made to sign 'Do not resuscitate' orders by medical staff.

These inaccurate and often sensationalist soundbytes are frequently picked up and reported by mainstream media, causing unnecessary distress to patients, their families and of course the healthcare professionals, whose working relationship with their patients are founded on trust.

There is no robust way to control how information is released and distributed on social media. In an ideal world, all social media users should produce and spread information in a morally responsible manner. In reality, however, this is often not the case, especially in the face of crisis, e.g. the current pandemic, when emotions run high. The onus remains heavily on the reader to verify the content they are viewing to be accurate prior to acting upon that information.

The ESICM experience

In recent years, the ESICM has been using social media platforms to facilitate member engagement and disseminate educational resources during their events such as the annual LIVES conference. Initially Twitter-based, the ESICM now has accounts on all the main platforms as well as a dedicated social media team to coordinate activities at all times.

During the pandemic, several educational events and meetings have had to be cancelled but the ESICM has moved quickly to organise a series of online webinars. These hour-long live webinars are broadcasted on a dedicated website (www.esicm-tv.org), YouTube and Facebook, further supplemented by live Twitter commentary. Blog summaries (www.esicm.org/blog) that cover the webinar content, with links to further online reading are also provided immediately after the broadcast. The main event was a 7-h webinar (hashtag COVIDmarathon) which brought together international colleagues to provide updates and share their experiences.

The feedback from viewers has been overwhelmingly positive with analytics demonstrating viewership and participation across the world (Tables 2 and 3).

The 10 countries with the highest viewership numbers were India, Germany, UK, Italy, US, Spain, Brazil, Malaysia, Argentina and Slovakia. It was interesting to note the viewership of countries outside of Europe.

The ELSO experience

The Extracorporeal Life Support Organization (ELSO) and the International Chapters have social media accounts on Twitter, Facebook, LinkedIn and Instagram. These are routinely used to share recent literature related to extracorporeal life support (ECLS) techniques, free open access extracorporeal membrane oxygenation (ECMO) educational tools and information, as well as live distribution of content and updates from the annual conferences, courses and workshops.

These platforms have been deployed since the beginning of the COVID-19 outbreak to spread early reported data and growing literature, particularly focused on the implementation of ECMO in COVID-19 patients; dedicated pages for sharing SARS-CoV2 related have been launched on the ELSO website (https://www.elso.org/COVID19.aspx), ELSO blog (www.ELSO.blog), and EuroELSO (the European Chapter) website (https://www.euroelso.net/covid-19/) Subsequently, they have proven extremely useful in the sharing of the ELSO response, position statements and interim guidelines on ECMO use during the pandemic. Key documents have been translated into multiple languages to facilitate widespread utility. An ECMO Capacity Map and a registry of the ECMO runs in COVID-19 patients are available on the ELSO website with data updated live as reported.

A dedicated survey on ECMO support in COVID-19 in European countries has been supported by EuroELSO, with weekly updated data diffused via all European chapter social media accounts and website (https://www.euroelso.net/covid-19/covid-19-survey/). To meet an increasing demand for data on ECLS in COVID-19, as well as to provide practical advice on issues including patient selection and management, infection prevention during cannulation, bedside care and transport, a series of dedicated webinars has been organised. To date, four webinars have been conducted through the ZOOM platform and streamed live on the YouTube channel (www.youtube.com/ecmoed). Before and during the webinars, followers are able to submit questions to the speakers; at the end, full video recordings are made available, along with the slides, any additional comments and detailed infographics to summarise the content into concise visual reference aids (www.elso.blog/webinars).

Table 2. Summary of COVID-19 specific social media resources.

Resource	URL
Internet Book of Critical Care: COVID-19	https://emcrit.org/ibcc/covid19/
ICM Anaesthesia COVID-19	https://icmanaesthesiacovid-19.org
Intensive Care Society COVID-19 Hub	https://www.ics.ac.uk/ICS/COVID-19/COVID19.aspx?hkey=d176e2cf-d3ba-4bc7-8435-49bc618c345a
ESICM COVID 19 blog	https://www.esicm.org/blog/
ELSO Covid 19 resource page	https://www.elso.org/covid19
COVID 19 at St Emlyn's	https://www.stemlynsblog.org/covid-19/
NEJM COVID 19	https://www.nejm.org/coronavirus
Point of care ultrasound in COVID-19	https://criticalcarenorthampton.com/ultrasound-in-covid/

ELSO: Extracorporeal Life Support Organisation; ESICM: European Society of Intensive Care Medicine; ICM: intensive care medicine; NEJM: New England Journal of Medicine.

Table 3. Number of viewers for ESICM online events.

Webinar	YouTube views	Facebook views	Website views
COVID Marathon	64,115	78,100	7277
How to ventilate COVID-19	5237	58,500	3231
Heart lung interactions in COVID-19	1387	11,500	1597
Acute kidney injury in COVID-19 patients	1473	16,800	1356
Haemodynamic management in COVID-19 patients	5643	8800	2075
Sedation strategies for COVID-19 patients	2460	3800	1756

ESICM: European Society of Intensive Care Medicine.

EuroELSO and the Latin America and South-West Asia Chapters (ELSO LATAM and SWAAC ELSO respectively) have also run or have planned open-access webinars.

The intensive care society experience

The UK Intensive Care Society (ICS) has social media outlets on Facebook, Twitter, Instagram, Youtube and Linkedin. A multidisciplinary Digital Media team is responsible for the output from these channels; contact and discussion over content have been maintained via WhatsApp and email during the pandemic.

Early on, the ICS created a dedicated web page for COVID-19 information, where regular updates and articles were shared (https://www.ics.ac.uk/ICS/COVID-19/COVID19.aspx?hkey=d176e2cf-d3ba-4bc7-8435-49bc618c345a). This led on to a collaboration between the ICS, the RCOA and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) called https://icmanaesthesiacovid-19.org. Both websites have been used to archive guidelines and share important updates, including:

- Point of care ultrasound guidance specific to COVID-19
- Information on ongoing clinical trials and how to recruit
- Guidelines for patient management, such as awake proning

- Legal guidance for patient management during the pandemic.

Since mid-April, some of these updates have been shared in the form of webinars (Tables 4 and 5). These have proven popular, and the ICS now has plans to increase its output in the following months.

A fundraising campaign was also launched using the hashtag #wearecritical, with the funds used in multiple projects, including clinical psychologist support for ICUs.

Conclusion

Social media brings a new dimension to healthcare by providing a common channel for healthcare professionals, patients and the public to communicate regarding health issues, with the potential to improve health outcomes. It is a powerful tool for social interaction and ongoing education, and facilitates collaboration between users.

There are definite benefits to the use of social media for health communication in times of pandemic where time urgency, physical distancing and the need to widely distribute information have compelled us to find alternative ways of working and learning. However, it is of prime importance that social media users monitor the information exchanged for quality and reliability, and respect patient confidentiality when participating in clinical discussions.

Table 4. Number of views for ELSO webinars.

Webinar	YouTube views	Zoom views	Blog views
Preparing to support COVID-19 patients with ECMO	9756	148	5443
ECMO for COVID-19 in Japan	4296	678	3116
ECMO in COVID-19: The power of connection	1625	261	1246
ECMO in COVID-19: What have we learned so far	1166	662	476

ECMO: extracorporeal membrane oxygenation; ELSO: Extracorporeal Life Support Organization.

Table 5. Number of viewers for ICS online events.

Webinar	YouTube views
Lung ultrasound	346
COVID19 research	247
Panel of shared experiences	40

ICS: Intensive Care Society.

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Olusegun Olusanya is a member of the Digital Media team for the Intensive Care Society, a member of the Social Media Team for ESICM, and a co-opted member of the ESICM Editorial and Publishing Committee.

Velia Marta Antonini social media editor for ELSO, social media team of ESICM, EuroELSO, ASAIO journal.

David Lyness is a member of the Digital Media team for the Intensive Care Society, a member of the Social Media Team for ESICM and a co-opted member of the ESICM Editorial and Publishing Committee.

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References

1. Obar JA and WIldman S. Social media definition and the governance challenge: an introduction to the special issue, https://www.sciencedirect.com/science/article/abs/pii/S0308596115001172?via%3Dihub (accessed 4 October 2020).
2. Wong A, Capel I, and Malbrain M. Social media in critical care: fad or a new standard in medical education? An analysis of international critical care conferences between 2014 and 2017. *J Intensive Care Soc* 2019; 20: 341–346.
3. Olusanya O, Day J, Kirk-Bayley J, et al. Free open access Med(ical edu)cation for critical care practitioners, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5606351/(accessed 4 October 2020).
4. https://www.marketwatch.com/story/zoom-microsoft-cloud-usage-are-rocketing-during-coronavirus-pandemic-new-data-show-2020-03-30 (accessed 4 October 2020).
5. https://www.socialmediatoday.com/news/digital-data-tracking-and-privacy-the-future-implications-of-covid-19/575480/ (accessed 4 October 2020).
6. Ladeiras-Lopes R, Clarke S, Vidal-Perez R, et al. Twitter promotion predicts citation rates of cardiovascular articles: a preliminary analysis from the ESC Journals Randomized Study. *Eur Heart J* 2020; 41(34): 3222–3225.
7. Esicm.tv (accessed 1 September 2020).
8. https://www.who.int/docs/default-source/coronaviruse/transcripts/who-transcript-emergencies-coronavirus-press-conference-full-13mar2020848c48d2065143bd8-d07a1647c863d6b.pdf?sfvrsn=23dd0b04_2 (accessed 4 October 2020).
9. Chinese Clinical Guidance for COVID-19 Pneumonia Diagnosis and Treatment (7th edition), http://kjfy.meetingchina.org/msite/news/show/cn/3337.html (accessed 4 October 2020).
10. Langer T and Bottino N on behalf of Study Group on management of critically ills COVID-19 patients – Niguarda Ca' Granda Hospital & Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico. Managing critically ills with COVID-19 on mechanical ventilation. Graphics by Antonini MV, https://elso.blog/2020/03/11/covid-19-infographics/ (accessed 4 May 2020).
11. GiViTI COVID-19, https://www.youtube.com/watch?v=9CegCk3FwvQ (accessed 4 May 2020) (Italian).
12. INTUBATE-COVID, https://www.intubatecovid.org/ (accessed 4 October 2020).
13. GENOMICC trial https://genomicc.org (accessed 4 October 2020).
14. REMAP-CAP trial https://www.remapcap.org (accessed 4 October 2020).
15. RECOVERY trial https://www.recoverytrial.net (accessed 4 October 2020).
16. ECMOCard trial https://www.elso.org/COVID19/ECMOCARD.aspx (accessed 4 October 2020).
17. EuroELSO survey https://www.euroelso.net/covid-19/covid-19-survey/ (accessed 4 October 2020).