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Medical Writing



Social media

Also in this issue...

- Challenges of working from home during the COVID-19 pandemic:
A survey to inform working practices
- Exploring the classical roots of medical terminology



EUROPEAN MEDICAL WRITERS ASSOCIATION



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Medical Writing is the official journal of the European Medical Writers Association (EMWA). It is a quarterly journal that publishes articles on topics relevant to professional medical writers. Members of EMWA receive *Medical Writing* as part of their membership. For more information, contact mew@emwa.org.

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Editorial: Social Media 1
Diana Ribeiro

From the Editor 2
Raquel Billiones

President's Message 3
Beatrix Doerr

EMWA News 4

Feature Articles

**But it is work:
My perspective on social media** 6
Jennifer Bell

**Capitalising on social media
marketing to raise confidence in
COVID-19 public health information
and vaccines** 12
Nicole Bezuidenhout

Sleepless in times of COVID-19 16
Raquel Billiones

**Challenges of working from home
during the COVID-19 pandemic:
A survey to inform working practices** 18
Timothy C. Hardman,
Peter Llewellyn, Steven Walker

**Social media video content
for the healthcare industry** 30
Ekaterina Bulaeva, Amalia Iljasova

**A wonderful "Medium" for
medical writers** 36
Archana Nagarajan

**Social media scheduling:
How not to spam your followers** 40
Mariana Rickmann

**Social media and rise of predatory
journals: A case report** 46
Adriana Rocha, Petal Smart

**Social media, communication
challenges, and the role of a scientific
writer in standing up for science** 52
Surayya Taranum

**Social media and altmetrics:
The pharma perspective** 56
Martin Delahunty

Social Media Snapshots

**Biomedical articles and
social media** 39

**Are there MedDRA codes for
misinformation and conspiracy
theories?** 61

**Science communication on social
media: Good practices** 65

**The two most important keys
on your keyboard** 79

Regular Features

News from the EMA 62

Medical Devices 66
• Social media in the medical device industry as a tool for post-market surveillance

Veterinary Medical Writing 69

Regulatory Matters: 70
• Calling all medical writers: Focus your writing with lean authoring

**Medical Communications
and Writing for Patients :** 72
• PUS, PEST, and clickbait: An exploration of scientific Communication and Viral Divulgement

Gained in Translation: 76
• Exploring the classical roots of medical terminology

Good Writing Practice 80

**The Crofter: Sustainable
Communications** 84

Getting Your Foot in the Door 88

Out on Our Own 91



Medical Writing

Social media

“For many people, the internet can feel like a lonely place. It can feel like... a big, endless, expansive void where you can constantly call out to it but no one’s ever listening. But... I found, in sharing my feelings with the void, eventually the void started to speak back”¹

This excerpt from Jonny Sun’s TED Talk crystallises the otherworldliness of the internet, especially what is found in social media (SoMe) platforms. Each with its own set of rules, particular vocabulary, and different dwellers; SoMe vastness can be hard to navigate.

Still, all the different platforms can become a place of gathering and sharing, where we can find like-minded people and amplify our voice beyond the limits of physical reach. One can learn a new skill, keep in touch with loved ones, and even grow a business with the help of SoMe. For medical writers, SoMe can alleviate the isolation that comes from working in their home offices, help them to have a chat with distant colleagues, or share a laugh over some nerdy wordplay.

In this issue, we explore the various facets of SoMe and how medical writers can dip their toes – or cannonball-dive – into the vastness.

First, **Jennifer Bell** discusses how she has leveraged LinkedIn to get some work coming her way for the past 10 years, including some techniques to increase reach to a wider audience. **Nicole Bezuidenhout** sheds light on a dark facet of SoMe, analysing how it has been used to spread misinformation about COVID-19 and what strategies can be applied to combat it. Next, social media crusader **Melvin Sanicas**, who fights against misinformation, is interviewed by **Raquel Billiones** in a piece that lays bare the challenges of this fight. Working from home has become the new normal since the first lockdown imposed by the pandemic, but it comes with its own set of challenges, which **Timothy C. Hardman**, **Peter Llewellyn**, and **Steven Walker** compiled through a survey. One of the findings:

43% of respondents report spending more time on social media. **Ekaterina Bulaeva** and **Amalia Ijasova** draw on their entrepreneurial experience to provide insights about the best way for the healthcare industry to leverage video content in SoMe. Next, **Archana Nagarajan** gives counsel on how we can use Medium to grow as a writer, while **Mariana Rickmann** guides us on the many tools to schedule SoMe posts. Geoff Hall scholarship winners **Adriana Rocha** and **Petal Smart** explore how social media contributed to the rise of predatory journals. Finally, **Surayya Taranum** delves into the role of a scientific writer using SoMe to stand up for science, and **Martin Delahunty** describes the use of altmetrics in the context of medical research publications.

Happy reading!

Diana Ribeiro

Acknowledgements

To all the people I contacted via SoMe asking for a contribution, I offer my sincerest thanks. You sure make the internet a less lonely place for me.

Many thanks to Raquel Billiones for the comments on this editorial. I look forward to seeing what the next years bring to *Medical Writing*.

References

1. Sun J. Transcript of ‘You are not alone in your loneliness’. [Cited 2021 Feb 6]. Available from: https://www.ted.com/talks/jonny_sun_you_are_not_alone_in_your_loneliness/transcript.

About the Guest Editor

Diana Ribeiro, MPharm, is a freelance medical writer based in Cascais, Portugal. Having worked in healthcare for more than 10 years, she has now exchanged verbal interactions with patients for written documents that reach a wider audience. Her long-time interests in health literacy and medical education were recently joined to a budding attraction to medical devices and regulatory writing. When she is not working, you can find her running, cooking, or (of course) scrolling through social media.

GUEST EDITOR



Diana Ribeiro

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From the Editor



On social media: Once a passive observer – now an active user

It is with great pleasure that I write my first editorial for this amazing issue on social media. The idea of this issue came to me in 2019, inspired by two special colleagues.

I had social media accounts even before I became a medical writer. I recall setting up a Facebook account in 2005 and a Twitter account in 2006. This was followed by LinkedIn a few years later when I started freelancing. Take note – I said I had the accounts. But I seldom, if ever, posted anything. I was more of a passive observer who viewed social media as a frivolous pastime. It wasn't until 2019 that I became an active user.

When I met Melvin Sanicas, MD, in 2019 (see interview p. 16), he was already a social media powerhouse, strongly advocating for science. In a kind of “reverse mentorship”, millennial Melvin encouraged me, a boomer, to share on LinkedIn topics I feel strongly about, including planetary health, sustainability, and research transparency.

Diana Ribeiro helped me take my LinkedIn activities to the next level. When I first met her at the 2019 autumn EMWA conference in Malmö, Sweden, she introduced me to the concept of pre-scheduling social media posts (check out Mariana Rickmann’s article on the topic on p. 40). She even followed up a few days later with a self-made “how to” video clip, the kind that even dummies like me could follow step by step. I was hooked, and the idea of a social media issue of *Medical Writing* was born. And Diana was the ideal guest editor.

So if you’ve been following me on LinkedIn

these past few months, blame it all on Melvin and Diana.

So why am I doing it?

There comes a point in one’s life when one has to stop “ostriching” and face reality. There is no denying that social media has become an important part of our professional life. Look at the wide range of articles in this issue. Check out a few examples of how social media is impacting science communications (p. 65), biomedical publications (p. 39), and even drug safety (p. 61).

Let’s be realistic. There is no way to make lemonade out of Corona lemons. But there are some silver linings to the pandemic clouds. In 2020, changes in my employment situation and the pandemic gave me the push to dig myself out of the sandpit and embrace technology of all sorts.

For example, my running app tells me that I did a total of 180 jogging runs in 2020, up by 25% compared to the previous year. I realised that in 2019, I spent too many hours sitting in cars, planes, and meeting rooms. My health, and that of the planet, definitely seemed to have benefited from the pandemic.

I got to understand global health better. For want of reliable sources of information, in March 2020, I started listening to the WHO media briefings on COVID-19 during those jogging runs. Amidst criticisms, political turmoil, and

funding cuts, they remained a steady anchor in the global storm of COVID-19.

I also got to know my family better as we got to share more meals, play more card games, and take more walks together than in previous years.

And finally, I had time to be more engaged in social media, at least on LinkedIn.

And yes, I also could take on the responsibility of this journal, *Medical Writing*.

We are all professional communicators and social media has become the most influential communication tool on this planet.

If you are not yet on social media, go in and give it a try. If you are a passive reader who prefers to fly under the radar, that’s perfectly fine, too. Be generous with your likes. If you are already an active user, take care before you share. However you engage with and use social media, please remember – act responsibly.

As we move forward in 2021 and continue to navigate the choppy waters of the pandemic and the accompanying infodemic, social media will be a powerful tool to build together a healthier and safer world. Let’s do it!

There is no denying that social media has become an important part of our professional life...however you engage with or use it, please remember – act responsibly.

Raquel Billiones
Editor-in-Chief
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President's Message

It fills me with sadness that we had to cancel our spring face-to-face (F2F) conference in Riga. It's been 1 ½ years since our last in-person meeting! Yet we hope that we at least will have the chance to meet in Cascais this autumn.

But I also have good news to report!

First, we are aiming for an outstanding virtual conference this May wherein we will have even more options to interact with each other than we did at the virtual conference last November. Furthermore, we will have many speakers from outside of Europe, something we could not afford at regular F2F conferences. The conference will be held May 4 to May 7 and will be structured similar to a F2F meeting. We will have an opening ceremony, an annual meeting, a Freelance Business Forum, expert seminars, a symposium on "New Trends in Clinical Trials", and other seminars. This will be followed by two weeks of offering up to four workshops a day.

Second, I am happy that we can address many of the suggestions we received from the online survey:

- **F2F spring and virtual autumn conferences:** Around 75% of you are in favour of spring conferences being F2F and autumn conferences being virtual, and the Executive Committee accepted your vote. Personally, I think this is the right decision for the future as it provides the option for in-person networking and to personally meet your peers from all over the world in spring. Yet it also offers the possibility to attend virtual conferences in autumn for those who cannot travel. This will most likely be implemented in 2023.
- **Direct exchange amongst EMWA members:** The pilot virtual round table discussion format of the MD-SIG (Medical Device-Special Interest Group) will be rolled out to other SIGs, now called "Meet & Share". The sessions will be announced via the news blast. Depending on the SIG, these will be held twice a year or as often as once a month. The first official Meet & Share session was held by the MD-SIG group in February, with the topic "Safety Reporting and Risk Quantification for the SSCP". We hope that the roll-out to other SIGs will run smoothly and you will find this new initiative useful.
- **Podcasts:** The Freelance Business Forum group recently suggested starting a series of podcasts. Setting up a podcast series within the framework of an organisation is quite an

I am happy that we can address many of the suggestions we received from the online survey.

endeavour, but I am positive that you will be listening to the first one soon.

- **Opportunity to gain credits outside of the spring and autumn conferences:** While we cannot offer an additional conference, we have established a certificate for webinars. Those of you who attend a webinar live can now request a certificate of attendance against a small administrative fee. This does not yet apply for archived webinars.
- Furthermore, to increase the visibility of the EMWA foundation and advanced certificates, we will be able to provide **electronic badges** in the future that display your certificate in a professional manner. You can use these badges for your LinkedIn account, your emails, or your website. Clicking on the badge will enable others to see the requirements of gaining such a certificate. For more information, see <https://www.youracclaim.com/organizations/credly/badges>. Please contact info@emwa.org if you are interested in receiving the badge. We also plan to give badges to workshop leaders in recognition of having delivered a certain number of workshops.
- **List of EMWA members by city of residence:** To enable you to connect locally, we have added an opt-in button to the membership profile (section preferences) that allows your geographic details to be listed in the membership area. If you want to participate, please update your profile accordingly.



Other than that, the AMWA-EMWA-ISMP Joint Position Statement on Medical Publications, Preprints, and Peer Review will be published soon in *Current Medical Research and Opinion* (CMRO). This is another milestone in positioning EMWA as an organisation that is driving change and furthering the trustworthiness of publications. Reviewers included representatives from the EFSPI (European Federation of Statisticians in the Pharmaceutical Industry) and the Editor-in-Chief from *Vaccines*, so we can expect a wide outreach.

Finally, the Sustainability SIG is looking into EMWA's carbon footprint. As part of this initiative, we are now offering the possibility to opt out from receiving paper copies of *Medical Writing*. Please check your membership profile for this option.

I hope you will find these changes useful.

Stay safe and healthy!

Beatrix Doerr



Virtual conference planned for May 2021

As previously announced by EMWA President Beatrix Doerr, we will not hold a face-to-face meeting in May 2021, but instead a virtual conference. Here you will find everything you need to know to attend: www.emwa.org/news/information-about-the-emwa-conference-in-riga-in-may-2021/.

As a teaser, get a taste of what this unique online learning experience is like in this short video: <https://www.emwa.org/news/new-emwa-conference-video/>.



Freelance Business Forum report

During the first virtual EMWA conference in November, the **Freelance Business Group (FBG)** also took up the challenge to run the **Freelance Business Forum (FBF)** online. We maintained the structure that the FBF has had over many years:

an introductory presentation by the FBG chair, a guest speaker (Shaun Foley), and roundtable discussions, which happened in the form of breakout rooms. We had an impressive 74 people in the Zoom meeting, and it was described as a big success.

Read the online report to find out more:
www.emwa.org/media/3529/emwa_fbf_virtual_meeting_nov2020.pdf.

EMWA 8th Symposium – Research Integrity and The Medical Communicator: What We Do When No One Is Watching

The 8th EMWA Symposium brought together researchers, journal publishers, and representatives from the pharmaceutical industry and medical communication agencies. In this virtual event, they shared their perspectives on the importance of research integrity and how it can be achieved.

A culture of change is required across all stakeholders, which the symposium faculty identified as a significant challenge. COVID-19 has only amplified a long-standing problem of pressure to publish too quickly but, to quote one of the faculty, we need to ensure that we “operate at the speed of science.”



The 50th EMWA Conference: EMWA's first-ever virtual conference

We had more than 300 registrants from 27 countries, and 5 different continents – an accomplishment for a member-driven organisation!

The opening session had 180 participants, and the experience was nothing less than an in-person assembly.

We thank all the attendees, the conference team, the workshop leaders, and everyone who helped it bloom.



The new web editorial is online

“For Here is Bespoke Windbagerry: Vacate the Hall, and the Podium too” by Jack Aslanian. Read the full article: www.emwa.org/about-us/emwa-news/web-editorial-archive/for-here-is-bespoke-windbagerry-vacate-the-hall-and-the-podium-too/.

Ambassador's Programme

Abe Shevack gave a virtual presentation to students attending the **Birkbeck-University of London's Virtual Annual Careers Fair 2020**.

Altogether 30 participants were online for the talk on November 2. Following the talk, Abe operated a virtual exhibitor booth visited by 120 participants who were greeted by various videos about medical writing from EMWA members and a sample issue of *Medical Writing* dedicated to careers in the field.

If you are an experienced medical writer and EMWA volunteer and are interested in becoming an EMWA Ambassador, or if you know of any upcoming career events in your locality, please contact the head office (info@emwa.org) or Abe Shevack (asp scientist@gmail.com).

Are you interested in helping with our webinar programme?

We are looking for new members to join the webinar team to help run our live webinars. We will provide training on using the webinar software and the procedures we use on the day. You will need to be available to run a webinar live on the day.

For more information, contact webinar@emwa.org.



EMWA Webinar Programme News - Preview for 2021

April 2021 (exact date to be confirmed)

Transitioning from Medical Translation to Medical Writing

Laura C Collada Ali, freelance medical writer

Paz Gómez-Polledo, freelance medical writer and translation consultant

July 2021 (exact date to be confirmed)

Health Writing for a Healthier Life

Andrea Rossi, medical writing, medical communications, and scientific affairs consultant

2021 (exact date to be confirmed)

MedCom via Video? Veterinary Medicine on YouTube as an Example of Communicating Medicine to a Lay Audience

Karim Montasser, freelance MedComms writer and YouTuber



Download your 2021 EMWA member logo now

We have updated our exclusive **EMWA member logo** for the year 2021. EMWA members can now download it from the

members-only area of the EMWA website. It is available in a variety of sizes to suit different media.

There is also a LinkedIn banner.

Feel free to use it on your website, on social media, and in your email signature.

But it is work: My perspective on social media

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Abstract

When I was asked to write about using social media for work and collaboration, one “professional” social media platform immediately sprang to mind – LinkedIn. This article discusses LinkedIn, one of many social media platforms in a prosperous market. The content of this article is about my personal experience of using LinkedIn to get noticed and get work over the last 10 years. I am not an expert. Nothing I have written is definitive. This article is intended to provoke thought. I hope what I have shared of my own experience is beneficial.

When I sat down to write this article, I realised there are so many more social media platforms out there. And there are platforms you can use to manage interactions with them. The global revenue from social media was €39 billion in 2019.¹ Social media is a key driver in the growth of content marketing. The content marketing market is set to grow by USD 269.24 billion during 2020–2024.² This growth is partly due to a greater demand for digital magazines among other things.

There are many places to promote what you do

Facebook recorded c.2.8 billion active users per month in 2020 Q4 – over a third of the global population per month.³ Businesses increasingly promote themselves on platforms thought of as “personal” social media sites (Table 1).

Yet, over 80% of lead generations are on LinkedIn.⁶ LinkedIn is the most effective

platform for business-to-business (B2B) lead generation. Lead generation helps increase potential customer numbers and can result in paid work. So, keep in mind that the more profile views you receive the better. A few recruitment consultants have told me that attracting work is a numbers game.

My history with LinkedIn

I opened my LinkedIn account in 2010 for professional networking, and I check it most days. I use my profile as my electronic CV or resume, I find it a great place to receive professional news, and I enjoy interacting with my network. My network has grown organically over the last 10 years. It is made up of people from various experiences I have had over my lifetime. I am even connected to people I was in kindergarten with. My network spans a wide community of interest.

As a freelance medical writer there is an ongoing discussion about the importance of setting up a website. When I set up my writing company, I learned a little about web development. I attended a Local Enterprise Office course where I live, and I decided not to set up a website early on. I wanted to apply what I learned to my online presence, things like search engine optimisation (SEO), post content development, target market definition, and to identify my preferred sites to follow and connect with.

I also took advice from Virginia Bautista. She is a LinkedIn marketing consultant and personal branding strategist. She posts content

on how to get noticed on LinkedIn. Her posts help people increase the quality and quantity of traffic to their profiles.

I am aware that LinkedIn has an option to create a company page that is connected to your profile, and I might use it in the future. Click on the “work” grid at the top right of your profile and scroll down to the bottom to see how to begin this process. I have thought about developing a more systematic posting activity but, as I am a freelance company of one, I don’t think it is necessary at this stage.

The following profiles give examples of where company pages and website links have or have not been used.

- Karandeep Singh Badwal is a medical device regulatory affairs and quality consultant. He uses his LinkedIn profile alone. He posts videos related to medical device quality and regulatory affairs on his profile. His posts are nuggets of gold and very topical as medical device companies transition to new industry regulations in Europe.
- Paul Palmer helps pharmaceutical quality directors achieve successful regulatory inspections by optimising processes. There is a link to his company page, Paul R Palmer, in his LinkedIn profile. Recently he authored a chapter in a best-selling book.
- Yan Kugel is a good manufacturing practice content architect and pharma podcast producer. His LinkedIn company page, Qualistery, is in his profile. From his company page there is a button linking to his Qualistery website.

Attracting work is a numbers game.

Table 1. Popular social media platforms that are increasingly used for marketing purposes.^{4,5}

Listed in no particular order.

1. Facebook	8. Tumblr	15. LinkedIn
2. YouTube	9. Qzone	16. Viber
3. WhatsApp	10. Tik Tok	17. Snapchat
4. Facebook Messenger	11. Sina Weibo	18. Pinterest
5. Weixin / WeChat	12. Twitter	19. Line
6. Instagram	13. Reddit	20. Telegram
7. QQ	14. Baidu Tieba	21. Medium



My posting activity is fairly organic. I post and share what is on my mind and what I think is beneficial to the health of the wider community from a professional perspective. I am connected to past, present, and future colleagues around the world who I want to keep safe and informed. I like to think they have enough confidence in me to pay attention to what I highlight.

I am not bashful when it comes to connecting on LinkedIn, nor am I overly selective about who I connect with. One connection might move to a job that is outside my work focus, and this does not mean that I delete them from my network. And, within reason, I will connect to people outside my work focus, particularly if they send me an invitation, because you never know.

Connecting to people on LinkedIn has resulted in a phone call or video conference and from there, some work (See Figure 1). I have had work from immediate connections. Sometimes someone they know who knows someone else has offered me work! I think networking is about promoting trust as much as it is about promoting what you have to offer. I like networking in person, and a lot of what I might do in person can be done with a global community on LinkedIn.

Learning about ways to get noticed

I have played around with my profile as my experience has grown over the last 10 years. LinkedIn has provided a space for my online CV

or resume. When you submit your CV or resume for a job, often it goes through an algorithm that picks up keywords. This helps your potential employer identify whose experience best matches a job description. Similarly this applies to LinkedIn where people actively look for jobs or job candidates based on keywords they use in their description or profile. If you want to do something that you haven't done before, consider describing how your experience fits with the expectations of what you want to do to help steer that type of work your way.

Good copywriting tactics

A LinkedIn profile is sectioned. Sections include intro, about, featured, background, skills,

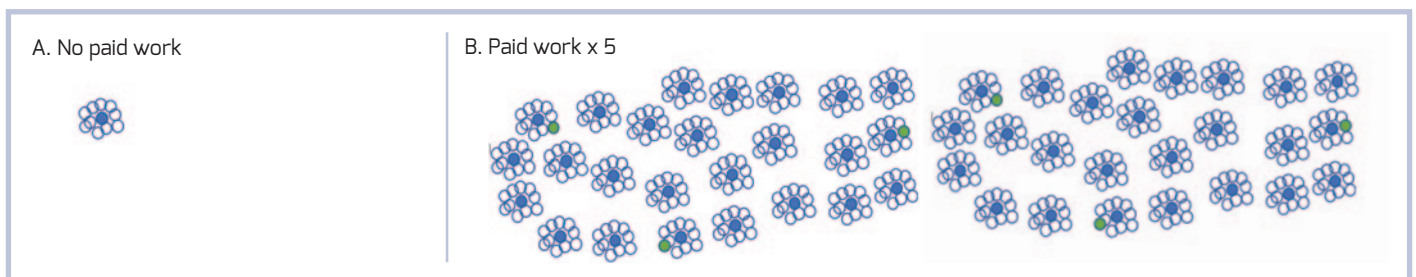


Figure 1. A schematic diagram showing that the greater the numbers of views you receive the greater the likelihood of paid work.

Blue dots = posts
 White dots = generated leads
 Green dots = paid work

A. No paid work denotes a low number of posts and generated leads.
 B. Paid work x 5 denotes a high number of posts and generated leads.

Table 2. Results of my experiments with my LinkedIn profile.

POST SUBJECT		MY ACTIVITY*						
		Months ago	My post	Text only	Hyperlink original	Hashtags#	I liked	I shared
1	Community of experts	24	X	X	n/a	n/a	✓	X
2	Plastic-eating protein	24	X	X	n/a	n/a	✓	X
3	The Cell and Gene Therapy Catapult	24	X	X	n/a	n/a	✓	X
	
4	EMWA Vienna 2019 attendee post DR	12	X	X	n/a	n/a	✓	X
5	Alfred Russel Wallace	12	X	X	n/a	n/a	✓	X
6	Medical Communications Day	12	✓	X	n/a	n/a	n/a	n/a
	
7	Support businesses during Covid-19	4	X	X	n/a	n/a	X	X
8	COVID-19 clinical readouts	4	X	X	n/a	n/a	✓	X
9	COVID-19 hackathon	4	X	X	n/a	n/a	✓	✓
10	Where's Waldo (social distancing edition)	4	X	X	n/a	n/a	✓	✓
11	COVID-19 face covering or mask	4	✓	✓	n/a	n/a	n/a	n/a
	
12	COVID-19 politics	2	X	X	n/a	n/a	✓	X
13	Employment search	2	X	X	n/a	n/a	✓	✓
14	COVID-19 science	2	X	X	n/a	n/a	✓	✓
	
15	Biological drugs are not chemical drugs (3 min)	1	✓	X	X	2	X	X
16	Biological drugs are not chemical drugs (2 min)	Not in my LinkedIn activity feed? Although there is a comment referring to it. It is not my						
17	Biological drugs are not chemical drugs (15 secs)	0.5	✓	X	X	2	X	X
	
18	Supply chain risk management article	0.25	✓	X	X	8	X	X
19	Should we call chemical drugs non-biologicals? article	0.25	✓	X	X	0	X	X
20	Pre-clinical testing article	0.25	✓	✓	✓	13	X	X
21	CER assessment template for notified bodies	0.25	✓	X	X	0	X	X
22	CER rough template	0.12	✓	X	X	1	X	X

*My LinkedIn activity data was collected on July 28, 2020 and collected again on **November 14, 2020.

accomplishments, additional information, and supported languages. When writing your profile, it makes sense to use words that your target audience is likely to use. You can optimise your profile keywords by paying attention to the number of suggested terms you get when you input words in your profile search bar. The higher the number of suggestions the greater the number of hits that word will receive. If you use that word in your profile copy, your profile will be among those hits.

In my opinion, keyword optimisation is intuitive to anybody who opens a LinkedIn account. They already have a professional persona, and they know

where they are and where they want to be in the short- to mid-term.

Aside from creating an online CV, there are other activities that raise your LinkedIn profile. I did some research and experimented on this while writing this article.

Search engine optimisation (SEO) tactics

SEO is about increasing the quantity and quality of traffic to your website or profile.⁷ Quantity relates to the “footfall” through your profile. This can be seen in the “who viewed your profile” record.

Quality relates to how likely the “footfall” wants what you offer. This can be determined by

I like networking in person, and a lot of what I might do in person can be done with a global community on LinkedIn.

reviewing who has looked at your profile and assessing if they are part of your target audience. I’ve received profile views since I set up my profile. Since experimenting with increasing “footfall” to my profile, I have noted that my profile views have increased as well as the number of my connections.

Conversion copywriting tactics

Conversion copywriting is about getting someone to read your profile and buy in to your service or what you are saying.⁸ If you post on LinkedIn it is important to maintain the same thread in your posts. Try to make your message consistent with your profile and the services you provide.

Virginia Bautista categorises some of the best ways people can interact on LinkedIn to get

MY ACTIVITY INTERACTIONS							
I commented	Degree of connection	Connection liked	Connections commented	Connections shared	Views of my activity	Views of my activity c. 4 months later**	
X	2	n/a	n/a	n/a	n/a	n/a	n/a
X	1	n/a	n/a	n/a	n/a	n/a	n/a
X	1	n/a	n/a	n/a	n/a	n/a	n/a
...
X	1	n/a	n/a	n/a	n/a	n/a	n/a
X	1	n/a	n/a	n/a	n/a	n/a	n/a
X	n/a	6	n/a	û	580	582	
...
X	n/a	5	1	û	778	783	
X	1	n/a	n/a	n/a	n/a	n/a	n/a
X	2	3	0	0	230	233	
X	n/a	5	0	0	195	199	
✓	n/a	4	0	0	427	435	
...
✓	1	4	0	0	n/a	n/a	
X	1	9	2	0	817	823	
X	not connected	2	0	0	269	274	
...
✓	n/a	12	1	1	879	885	
imagination that it was there once.							
✓	n/a	10	2	0	211	221	
...
✓	n/a	9	2	0	818	852	
✓	n/a	1	3	0	353	386	
✓	n/a	0	0	0	163	228	
✓	n/a	Initially 7, after 4 months 8	3	0	672	750	
✓	n/a	Initially 19; after 4 months 23	3	0	951	1566	

noticed.⁹ Each interaction converts your content into likes and shares and maybe even jobs:

- **Content creators** publish original content to help their network succeed.
- **Content curators** share useful third-party content with their network.
- **Engagement champions** like, comment or share what is useful.
- **Super connectors** introduce connections to each other to help them get an opportunity.
- **Community builders** foster mutually beneficial relationships to help each other grow.
- **Influencers, motivators and inspirers** get people to act by sharing their content.

My social media experimental methods

While writing this article I decided to take the

opportunity to look at my activity history (Table 2; Rows 1–14) and to consciously play in LinkedIn to see what works for me (Table 2; Rows 15–22). My posts were set up with increased and decreased video content, a hyper-link, and hashtags (Table 2; Rows 15–22).

I also followed guidance from my Twitter account, which I use to a lesser extent compared to LinkedIn. For example, Twitter allows a 280 maximum character count per post in my region. You can include up to four photos or a video with a maximum duration of two minutes, although 15 seconds is recommended. If you follow the most restrictive posting guidance from a number of social media sites, you can use the same post in multiple places without needing to modify your post in any way.

Sometimes less is more.

Increased and decreased video content

I have an informative animation called “*Biological drugs are not chemical drugs. It is important to consider how these molecules differ during their manufacture and distribution*” (Table 2; lines 15, 16 and 17). It features at three minutes in LinkedIn (June 24, 2020). I shortened the animation to two minutes for LinkedIn and Twitter (July 6, 2020). Then I shortened it to 15 seconds and posted it on LinkedIn and Twitter (July 14, 2020) keeping the original captions and hashtags the same.

The three-minute post accumulated 885 views, the two-minute post seemed to disappear, and the 15-second post accumulated 221 views about four months after posting them. Perhaps if I had posted the 15 second animation first it would have received 885 views. In this case, it does not seem that less is more.

Posts with links

At the time of writing this article, apparently less is often more in a LinkedIn post. Text posts without links will go further as the LinkedIn algorithm holds back posts that contain a link.⁹ I tried it out and saw my text-only post received 189 views on day one. Using the same text, I added a link and saw the post received 101 views on day one. So, it could have been held back. Equally, my connections might not have been as interested in seeing the same post a second time, albeit with a link.

Using hashtags

Hashtags help to identify messages on a particular subject and can help your post reach a more defined audience (Table 2; Rows 15–22). I have not consistently applied hashtags to my posts. However, I have learned the importance of making sure the hashtag I want to use exists in LinkedIn.¹⁰ Select “add #hashtag” when you are posting something and start writing #<whatever comes to mind>. There is a list of the most popular LinkedIn hashtags that you might like to use,¹¹ a list that might help you to create your own.

Once I select my hashtags, I check the content of each hashtag to make sure it is consistent with my message and that it has a reasonable number of followers (one hashtag might have three followers while another hashtag has thousands of followers). And just because you think a hashtag represents your audience of choice, your assumption is not always correct.

As I tuned in to my writing inspirations, I gained clearer focus on how to project myself and my service consistently. I remain a fan of meeting people face-to-face, which can be done by video conferencing using Zoom, Facetime, WhatsApp and whatever other platform you have at your fingertips.

Conclusion

I think the greatest measure of the success of a post is in line with engagement – how many shares, comments, likes, and views it receives. My medical device clinical evaluation report rough template post received more views compared to any of my other posts. This post provided something useful to the community. At the same time, the numbers of views my posts receive are small considering there is potential for a post to receive thousands of views on day one. Clearly, there is more that I could do to develop my own



LinkedIn activity. I am not a social media expert, and I am open to hearing what tweaks (not Tweets) I can make to my own LinkedIn profile.

I take everything I read about getting noticed on LinkedIn with a pinch of salt. There are strategies to make your post go further. Yet, I do think the message that is being conveyed is more important. If your negative post receives a lot of views, maybe you should start watching your back.

I try to be clear about what I offer. I support pharmaceutical and medical device industries as far as LinkedIn is concerned. I do not support drug and device services. I don't want those unversed in the pharmaceutical and medical device industries to be confused about what I offer.

The discussion in this article is fairly loose but should help you hone how to use your LinkedIn account if you are inclined to do so. LinkedIn is a firm favourite of mine and is likely to remain that way for some time to come.

Disclaimers

The opinions expressed in this article are the author's own and not necessarily shared by her employer or EMWA.

Conflicts of interest

The author declares no conflicts of interest.

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Capitalising on social media marketing to raise confidence in COVID-19 public health information and vaccines

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Abstract
Widespread misinformation about COVID-19 has incited harmful behaviour that has undermined the public health response to the global pandemic, and posed a major threat to public health. To our detriment, social media has contributed to the spreading of misinformation and exacerbated its effects, including reduced willingness to accept a COVID-19 vaccine. With the recent approval of several COVID-19 vaccines and failure of current strategies to combat misinformation, it is crucial to develop new strategies. A social media marketing approach that builds trust in public health information has shown promise in other areas of healthcare, and could be beneficial to improving vaccine positivity and compliance with public health guidelines.



Social media. It's where more than half of the world's population, or 3.8 billion people, spend approximately six hours per day consuming, sharing, and creating information.¹ It's not necessarily the source we turn to, but the place we are most likely to be exposed to and influenced by fashion, food, travel, entertainment, and perhaps most alarmingly, news. I say alarmingly because the concept of news, which used only to include the reporting of factual information as it relates to current events, has been transformed into a slew of opinions rooted in falsehoods or misinformation. To our detriment, this phenomenon poses serious risks to societal well-being, as evidenced by the major threat that misinformation about COVID-19 posed to public health in 2020.²

The danger of misinformation

Throughout the pandemic, several rumours, hoaxes, and misinformation have persisted on social media platforms regarding the origin, prevention, treatment, and outcomes of COVID-19.³ However, it's not the existence of misinformation that poses a threat *per se*, but its

ability to drive potentially harmful decision-making and behaviour. To this point, a recent survey, conducted across the UK, Ireland, the USA, Mexico, and Spain, demonstrated a clear link between people's susceptibility to misinformation and both compliance with COVID-19 public health guidance and willingness to vaccinate.² Widespread misinformation about COVID-19 has led to confusion among the general population as well as healthcare providers, and has had significant consequences including: creating social stigma around COVID-19; reducing adherence to social distancing and home quarantine recommendations; and increased questioning regarding the legitimacy of scientific discoveries involving potential treatments or vaccines.³ In several other instances, the negligent spread of misinformation resulted in even more devastating outcomes. In Nigeria, for example, numerous cases of chloroquine (a drug used to treat malaria) overdosing were observed following the spread of misinformation regarding the effectiveness of the drug against COVID-19.⁴ In India, a father of three committed suicide after over-consuming online content about the virus led him to believe he was infected.⁵

Although social media is not entirely to blame, its very nature exacerbates the detrimental effects of misinformation,³ and undermines the public health response to the global pandemic. Compared to traditional media, social media has a wider and faster reach, often reports and spreads unreliable demographic data, and allows open conversation to occur on a much larger scale. Additionally, despite easy access to reliable and accurate information about COVID-19, from national and international agencies such as the WHO, there are still small groups of people who find misinformation about COVID-19 more reliable than accurate information.² This suggests that people either don't understand accurate information, have lost trust in the people providing the information, or have fundamentally different beliefs or views than those represented by accurate information or its providers.

Whatever the reason, misinformation, and the ultimate influence it has on healthy behaviours essential to protecting against COVID-19, highlights the need for the development of strategies to improve critical thinking and trust in science, and combat mis- and disinformation.

Curbing misinformation on social media platforms

An obvious strategy to mitigate misinformation involves fact-checking or removal of harmful misinformation on social media platforms using,

Evidence from political communication and social psychology studies indicate that fact-checking is of limited use and has the potential to worsen the situation by motivating audiences to defend their pre-existing beliefs.

for example, advanced natural language processing or text-mining technologies.⁶ Such data-mining algorithms have previously been used in the detection and removal of misinformation on social media,⁷ and major social media platforms such as Twitter and Reddit have implemented these digital filters to successfully identify and remove fake accounts and product reviews.³ A prominent example is the removal of several pieces of misinformation about the severity of COVID-19 spread by former U.S. President Donald Trump on Facebook and Twitter.⁸

Another strategy would be to promote accurate information. Indeed, the WHO has partnered with several social media and tech giants such as Facebook, Google, LinkedIn, Reddit, and Twitter to mitigate misinformation by promoting crucial updates from healthcare agencies.^{3,9} Still, mis- and disinformation are rampant on social media, and evidence from political communication and social psychology studies indicate that fact-checking is of limited use and has the potential to worsen the situation by motivating audiences to defend their pre-existing beliefs.⁶ This calls for the development of new strategies.

Time for a different strategy

The varied nature and audiences of COVID-19 misinformation suggests that multiple approaches aimed at different audiences would be more effective in combating misinformation. One such strategy includes the use of social media marketing in health promotion campaigns. In

addition to the unbelievably high number of social media users around the world, an estimated 59% of the global population are internet users, 67% of which use their mobile phone to access the internet.¹ Taking advantage of these numbers and the increased need for on-demand access to accurate information could improve the effectiveness of public health strategies against COVID-19, when implemented correctly. Using social media marketing to spread public health messages has previously been implemented to increase, for example, human papillomavirus vaccination education.^{10,11} Although these studies did not report increased vaccination rates, they and others recognise the potential of social media marketing in health communication; and highlight the importance of appealing to both logic and emotion to build trust in accurate information that will translate health messaging into action.^{12,13}

Social media marketing strategies in which credible well-informed members of the community are involved could be crucial in establishing or rebuilding trust in accurate information and mitigating misinformation.^{14,15} A significant contributor to misinformation susceptibility is distrust in the agencies or individuals providing the accurate information. After all, emotion plays an important role in decision-making.^{13,16} It is, therefore, unsurprising that audiences are less likely to adhere to public health recommendations from people they don't trust. Communication of accurate information from credible members of the community that the audience already trusts, e.g., doctors and nurses, reputable scientists and science teachers, but also celebrities and social media influencers, could increase confidence in accurate information, especially when communicated on platforms they already frequent.

As *Medical Writing* went to press, more than 2.4 million people had died from COVID-19, while more than 110 million had been confirmed positive for the virus.¹⁷ On top of the tragic loss of loved ones, many have lost their jobs and are unable to support themselves and their families, while others have suffered mental breaks and burnout. With the approval of several COVID-19 vaccines, we find ourselves at a pivotal point in the pandemic. Gaining public trust and combating misinformation is more important than ever. The current levels of willingness to accept a COVID-19 vaccine are alarmingly low and don't meet the requirements for population

immunity¹⁸ threatening an exhausted population with the prolongation of an already dire situation. Capitalising on social media marketing in a way that actively rebuilds trust in accurate information could provide communities the opportunity to build scientific literacy, increase confidence in vaccines, and combat related misinformation.

Disclaimers

The opinions expressed in this article are the author's own and not necessarily shared by her employer or EMWA.

Conflicts of interest

The author declares no conflicts of interest.

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Sleepless in times of COVID-19

An interview with social media crusader and digital health enthusiast Melvin Sanicas, MD

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Abstract

Melvin Sanicas, MD, is a physician, scientist, and medical communicator with a very strong social media presence. On top of his day job as medical director at Takeda Vaccines (Zurich, Switzerland), he does pro bono work for many not-for-profit organisations, including the WHO (as a digital health expert since 2019), the World Economic Forum, and TEDEd. In addition, he is a fellow of the Royal Society of Tropical Medicine and Hygiene, the Royal Society for Public Health, and the Royal Society of Arts. I am delighted to have interviewed Melvin for this issue of *Medical Writing* (MEW) on social media.

MEW: You have been active on social media since 2016 (long before COVID-19!). How did it start and what was the main motivation?

Melvin: I have been active in science communication and writing global health news articles and op-eds since January 2016. With more and more anti-science misinformation (false or inaccurate information) and disinformation (deliberate spread of incorrect information) on the internet and in social media, I felt there was a need to speak up. With encouragement from fellow scientists like Dr Peter Hotez (who were already actively speaking up for science), I got myself a Twitter account three years ago and started to simplify scientific news, debunk falsehoods, and engage scientists and science communication organisations. [**Note:** Peter Hotez is an American scientist, paediatrician, and

advocate in the fields of global health, vaccinology, and neglected tropical diseases. He is the author of several books, including *Vaccines Did Not Cause Rachel's Autism: My Journey as a Vaccine Scientist, Pediatrician, and Autism Dad.*]

MEW: You are active on several social media platforms. Do you have a favourite? What are the differences between these platforms?

Melvin: I am active on Facebook, Twitter, and LinkedIn. These platforms have slightly different audiences. Facebook is for family, friends, friends of friends, and primary/high school/college/university classmates. LinkedIn is mainly for your business and professional network, such as current and former colleagues. LinkedIn connects professionals while Facebook connects people in general. Twitter also connects everyone (unless you keep your Twitter account private), but the conversation on Twitter is here and now, timely, dynamic, and constantly changing. In Twitter, time is of the essence, not so much on accuracy – hence misinformation and disinformation travel faster on Twitter. For content less focused on timing, Facebook is a better platform. Twitter allows people to follow topics, people, and conversations that they find interesting. It is more about ideas than social connection. It really depends on the topic and the audience you are trying to reach. LinkedIn status posts can be up to 1,300 characters, Twitter has a 280-character limit, whereas Facebook allows you to write as long as you want. There must be a character limit, but I have not experienced being told that my post is too long. [**Note:** Melvin also contributed to past issues of MEW].^{1,2}

MEW: How has the COVID-19 pandemic affected your social media activities?

Melvin: Before COVID-19, I had over 2000 followers on LinkedIn and only 11,000 followers on Twitter. Both accounts grew over 300% since end of January 2020 due to the pandemic. Currently, I have 6,850 followers on LinkedIn

and 33,250 on Twitter. My followers include ministers of health, supranational organisations, scientific institutions, etc. In January 2021, I had 9,800 profile visits, 1,750 new followers, and 720,000 impressions.

New pathogens, including the novel coronavirus SARS-CoV-2, are accompanied by high levels of uncertainty. The public understandably wants answers and we see people turning to social media. One of my most liked tweets on the pandemic was featured by several news organisations and platforms like Vox.³ I was the first one to summarise different infectious diseases, their respective R_0 (R_0 naught/basic reproduction number), the case fatality rates and compare them with the novel coronavirus (as it was called in January 2020).

MEW: World leaders, celebrities, health experts, follow you on social media and repost/reshare/retweet you. What was for you, the most significant and memorable retweet?

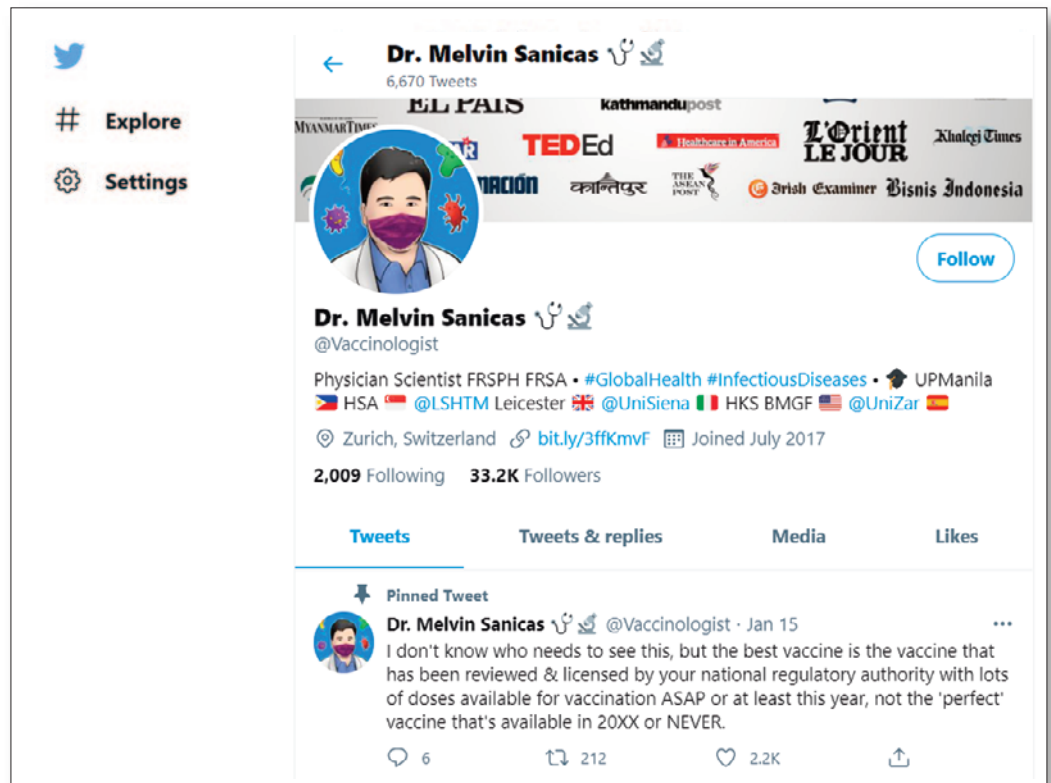
Melvin: My most “memorable” retweets were from the actor and UN Sustainable Development Goals advocate Forest Whitaker, as well as Chelsea Clinton, and the Liverpool F.C. goalkeeper Alisson Becker.

MEW: In addition to social media, you are also a TED educator and contribute content to the World Economic Forum. Can you tell us more about these activities?

Melvin: I have created some online lessons (on tuberculosis, influenza, meningitis)⁴⁻⁶ for TEDEd. TEDEd aims to celebrate ideas and knowledge, the sharing of different topics to teachers and students around the world. TEDEd is currently an award-winning education platform that serves millions of teachers and students globally. With the current pandemic, I have also supported lessons on coronavirus, ventilators, and vaccine development.

The World Economic Forum's Agenda takes

some of the world's most important and sometimes complex issues and makes them accessible to a broader audience. The blog is visited by over 5 million people every month. I have written 18 op-eds⁷ for [the World Economic Forum] on various topics including breastfeeding, immunisation, rabies, antimicrobial resistance, and fake news.



MEW: In 2019, you were designated by the WHO as one of their digital health experts. Can you elaborate more on this?

Melvin: In May 2019, WHO established a global multi-disciplinary technical group to advise them on issues related to digital health. The Digital Health Department aims to harness the power of digital health technologies and steer developments to contribute to the attainment of all people to the highest level of health through the General Programme of Work triple billion goals and Sustainable Development Goal 3 [Ensure healthy lives and promote well-being for all at all ages]. To support this work, WHO also established a roster of experts in various areas related to digital health.

MEW: You spend hours of your free time doing research and posting on social media. You are actively campaigning against disinformation and misinformation. All for voluntary causes. How do you manage your time?

Melvin: I don't sleep much on weekdays.

MEW: Why is it important for scientists and medical communicators to be active on social media? What are the risks and the benefits?

Melvin: Now more than ever before, the world needs more scientists who can translate their expertise into effective communication on global health issues. It is our responsibility as public health experts, scientists, and allies of scientists to speak up (in any way we can) with interviews,

op-eds, podcasts, blogs, or just our own immediate social circles through our personal social media posts. There is an important role for physicians, scientists, and public health specialists as advocates for society as a whole because when there is a void of accurate scientific-based information, what fills the vacuum? Bots, trolls, and conspiracy theorists spreading seeds of doubt and misinformation that may have dangerous consequences.

And social media misinformation and disinformation will only get worse unless people develop some critical media literacy skills.

Conflicts of interest

The interviewer and interviewee are employed by the pharmaceutical industry.

Disclaimer

The opinions expressed in this article are their own and do not necessarily represent those of their employers or EMWA.

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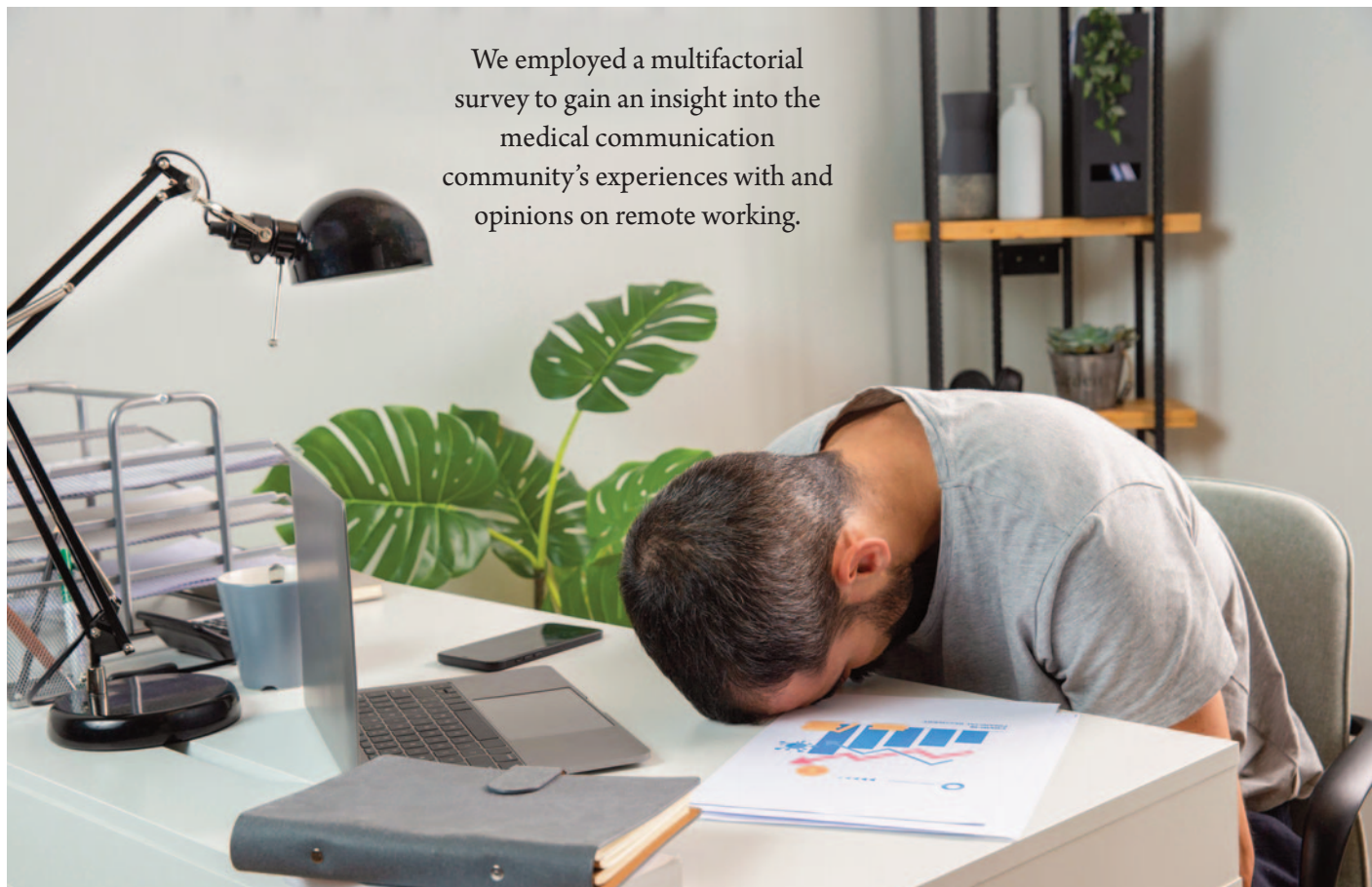
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Challenges of working from home during the COVID-19 pandemic: A survey to inform working practices



We employed a multifactorial survey to gain an insight into the medical communication community's experiences with and opinions on remote working.

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Abstract

In response to the COVID-19 pandemic working practices changed for members of the medical communication community. We devised a multifactorial online survey to better understand the impact of these changes. Of the 759 respondents, 85% had a positive experience: they enjoyed time at home, liked the freedom, felt secure in their posts, and remained cheerful. Most established a daily routine, coped with an interesting workload and felt valued. However, this was not true for all, 28% of

respondents reported feelings of loneliness and/or isolation. Others noted problems with vigour, rest, and concentration. Some consumed more alcohol and exercised less, while a similar proportion reported the opposite. Most respondents were neutral in respect their personal relationships (45%), with around a quarter noticing a positive effect and a similar proportion the reverse. With regards to finances, 18% were worse off, especially freelancers (37%). Most respondents believed the pandemic would change future working practices.

Introduction

The sudden imposition of remote working in response to the 2020 COVID-19 pandemic affected countless aspects of society.¹ Typically, these changes were introduced quickly, with little time for contemplation or preparation. The situation represented a unique opportunity to investigate whether members of the medical communication industry had been able to adapt to their new working environment.

We employed a multifactorial survey to gain an insight into the medical communication community's experiences with and opinions on remote working.

Methods

Study design and procedure

A confidential online survey was developed in English using Google Forms.² This tool enables secure and anonymous data collection. Voluntary completion was considered to signify consent. The survey was run between May 20 and June 11, 2020. Potential participants were approached by email with a link to the survey through the authors' professional networks, and the survey was promoted on social media platforms. The aim of the survey, to understand the challenges of home working during pandemic lockdown, was clearly described for potential responders.

Questionnaire

The survey included 50 multiple-choice, fixed-response questions and four free-text entry fields. It was designed to be completed in under 10 minutes. The questionnaire was based on an evidence-based model developed by the UK Department for Works and Pensions to examine wellbeing in the workplace. The model's components included health, relationships, security, environment, and purpose.³ We also sought a senior physician's views on assessing anxiety and adapted elements of the Generalised Anxiety Disorder Scale (GAD-7).⁴

Our survey comprised seven sections:

1. an explanation of the aim of the survey;
2. demographics;
3. workplace;
4. emotional health;
5. the working-from-home experience;
6. the psychosocial impact of working from home; and

Table 1. Survey participant sociodemographic characteristics

		n	%
Gender	Male	217	28.6%
	Female	542	71.4%
Age	< 25 years	43	5.7%
	26 – 30 years	104	13.7%
	31 – 40 years	161	21.2%
	41 – 50 years	216	28.5%
	50+ years	235	31.0%
Domestic status	Married / living with partner	584	76.9%
	Single	137	18.1%
	Lone parent	25	3.3%
	Other	13	1.7%
Accommodation	Own home	579	76.3%
	Renting with others	74	9.7%
	Renting alone	63	8.3%
	Living with parents	29	3.8%
	Other	14	1.8%
Living with children	Yes	466	61.4%
	No	290	38.2%
Location	United Kingdom	583	76.8%
	Canada and USA	67	8.8%
	Europe (not UK)	71	9.4%
	Other	38	5.0%

7. views on positive/negative aspects of the lockdown, recommendations, and learnings.

The demographics section sought to collect basic personal and professional data. Subsequent sections followed a standard five-point Likert-scale approach using a randomly selected mixture of positive and negative bias

Data analysis

Participant responses were collected automatically and exported into a Microsoft Excel spreadsheet. After harmonisation, quantitative data analysis was performed using IBM Statistics SPSS 25.⁵ The responses for each of the five Likert grades were counted and calculated as a percentage. After reviewing responses to Q8 ("What is your job title"), data were transformed into a new metric variable where responses were identified as being either "medical writers/editors", "VP-level managers or executives", or "other". Negative questions were reversed for better interpretability. Where entries were not provided, the data fields were left blank. Free-text responses were scored according to the number of respondents mentioning specific points.

For the purpose of analysis and interpretation, we assigned topics into five groups: work-from-home environment, emotional wellbeing, self-worth, work, and lifestyle.

Characteristics of respondents identifying as based at home prior to lockdown were compared with those of office staff new to remote working. Established homeworkers were identified as those who had a zero-hour commute and were working from home prior to the survey. The five response categories for each question were allocated a value of -2, -1, 0, 1, or 2, and the difference in the distribution of responses for each group was tested using the Mann-Whitney u test.

Results

"Lockdown" in the UK was announced on March 23, 2020. Our survey started on May 28 and closed on June 11, 2020, meaning participants had experienced homeworking for 10–12 weeks at the time of completion.

Respondents

Overview (Table 1)

There were 759 respondents, of which most were UK-based (76.8%) and female (71.4%).

Table 2. Responder work profile

		n	%
Where do you work	Medical communications/ education/ publishing industry	509	67.1%
	Biomedical, pharmaceutical or device industries	127	16.7%
	CRO	84	11.1%
	Other	39	5.1%
Time in current role	< 1Y	145	19.1%
	1-5Y	325	42.8%
	6-10Y	101	13.3%
	10+Y	187	24.6%
Hours worked	<15	18	2.4%
	16-29	101	14.5%
	30-40	465	61.3%
	40+	165	21.7%
Employment status	F/T	493	65.0%
	P/T	71	9.4%
	Freelancers	194	25.6%
Role	Medical writer or editor	303	39.9%
	VP or director	284	37.4%
	Other	172	22.7%
Managing others		425	56.0%
Financial status	No change in status	412	54.3%
	Financially worse off	136	17.9%
	Freelancers (n = 194)	70	36.1%
	Non-freelancers (n = 565)	66	11.7%
Commuting	FT + commute < 30 mins	167	22.0%
	FT + commute 30-60 mins	238	31.4%
	FT + commute > 60 mins	144	19.0%
Primarily homebased working before lockdown	Contractors/ freelancers (n= 194)	153	78.9%
	Full Time employees (n = 565)	51	9.0%
Option to work from home before lockdown*		445	58.6%
Working from home after lockdown		738	97.2%

*Option to work from home at least 2 days per week

Employment and roles (Table 2)

A high proportion were engaged in the medical communications/education/publishing industry (67.1%) and had been in their role for 1–5 years (42.8%). The majority worked full-time (30–40 hours/week), although more than one-fifth (mostly small business owners, directors, and VP-level managers) were active >40 hours/week (21.7%).

Most respondents were employed (65.0%), with freelancers making up one-quarter of participants (25.6%). The largest group comprised medical writers or editors (39.9%), with the remainder occupying senior positions; 56% had managerial duties.

Commuting (Table 2)

Getting to work was an issue for some before

lockdown, with a quarter travelling for >1 hour (19.0%).

Homeworking (Table 2)

Freelancers were generally working from home before lockdown, as were a small number of full-time employees (n=51, 9.0%)

Before the pandemic, 58.6% had the option to work away from the office but were not doing so consistently. By the time of the survey, 97.2% of respondents were working from home.

Finances

Approximately half of respondents reported no change in their financial status (54.3%), while 17.9% considered themselves to be worse off. The proportion of those experiencing financial concerns was greater among freelancers

(36.1%) than the research cohort (11.7%).

Equipment and safety

Most respondents believed that they were appropriately equipped for homeworking (87.7%). Only a minority (n=115, 15.2%) had completed a formal health and safety assessment of their home workspace.

Interacting with colleagues and clients (Table 3 and Table 4)

Data in Table 3 and Table 4 suggest that most respondents were able to work well from home, interact with colleagues, and serve their clients. These observations mirror the respondents' free-text statements, which demonstrated a generally positive view of this new arrangement.

Table 3. Responses to questions on working from home environment, feelings of self-worth, the homeworking experience and work life balance

		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Survey population's considerations of the working from home environment						
Briefing	Q29	57.2%	35.9%	5.5%	1.1%	0.3%
Freedom	Q32	38.8%	37.2%	15.7%	6.7%	1.6%
Training	Q36#	13.6%	34.4%	25.7%	22.8%	3.4%
Growth	Q37	17.0%	50.7%	22.3%	7.8%	2.3%
Survey population's considerations on their feelings of self-worth						
Valued	Q38#	27.9%	45.3%	14.1%	9.4%	3.3%
Engagement	Q34	25.4%	47.0%	19.2%	7.5%	0.9%
Recognition	Q35#	17.9%	37.9%	27.0%	13.2%	4.0%
Motivational	Q30	22.3%	36.0%	25.6%	13.5%	2.6%
Trust	Q39	45.4%	45.9%	7.2%	1.2%	0.4%
Survey population's considerations of their experience of working from home						
Daily routine	Q47	21.3%	48.3%	14.7%	12.7%	3.0%
Workload	Q31	35.5%	28.4%	20.7%	11.2%	4.2%
Issue resolution	Q33#	17.2%	40.5%	25.8%	14.0%	2.4%
Concentration	Q42	15.0%	39.0%	22.4%	19.4%	4.2%
Survey population's considerations of work-life balance and lifestyle behaviours						
Desk eating	Q43#	31.0%	33.2%	12.7%	13.6%	9.5%
Lunchtime	Q44	9.5%	25.7%	20.6%	31.3%	12.8%
Alcohol intake	Q45	26.1%	26.6%	15.5%	25.1%	6.7%
Exercise	Q46#	19.9%	24.9%	11.5%	25.7%	17.9%
Social media	Q48#	11.8%	31.1%	23.2%	27.2%	6.6%
Relationships	Q49	6.9%	19.7%	44.8%	24.0%	4.6%

= Negative response reversal

Questions:

- Q29: I have ready access to the information I need to do my job.
- Q30: I find working from home motivational.
- Q31: I have been busier than ever during the pandemic.
- Q32: I have more freedom to tailor the perfect working environment for me.
- Q33: I am finding it harder to resolve issues with clients and/or colleagues.
- Q34: I feel engaged and able to contribute to team decisions.
- Q35: I am getting less recognition for my hard work and effort.
- Q36: I feel that there fewer opportunities for me to learn and grow my skills at home.
- Q37: I am getting the feedback and support I need to perform my work.

- Q38: I don't feel valued.
- Q39: I feel trusted to deliver high quality work on time.
- Q42: I find it easy to concentrate.
- Q43: I eat lunch at my desk more frequently.
- Q44: I take more time for lunch.
- Q45: My alcohol consumption has increased since working from home.
- Q46: I worry that I am taking less exercise now I am working from home.
- Q47: I have been able to establish a good daily routine.
- Q48: I am spending more time on social media.

Opportunities for training (Table 3)

Over one-quarter felt that they experienced reduced opportunities for training.

Work (Table 3 and Table 4)

Most respondents indicated that during lockdown they felt that they had established a good daily routine, remained productive with manageable workloads, and felt supported. However, some experienced difficulties with concentration. Although 59.1% found work interesting, nearly one-quarter was less positive.

Work-life balance and lifestyle behaviours (Table 3)

Our results did not indicate widespread adoption of negative behaviours in terms of consuming more alcohol or exercising less, although there was increased social media usage. Levels of stress in personal relationships were generally unchanged, and more than half of the responders (69.6%) reported that they had not experienced any issues in keeping their work and domestic lives separate (Figure 1a). Responses about eating at their desk and time taken for lunch did not suggest increased pressure to meet deadlines.

The majority (85%) felt that work practices will be different after the pandemic.

Feelings

Emotional wellbeing (Table 3 and Table 4)

Overall, most respondents reported that homeworking was associated with positive wellbeing. However, in a small number of cases the responses to questions about vigour and rest suggested that the experience of some participants could, in the long term, impact on mental health (Table 3). Concerns over job security were relatively low and did not seem to

Table 4. Responses to questions on emotional wellbeing and working environment

		All the time	More than half the time	Less than half the time	Some of the time	At no time
Survey population’s responses regarding their emotional well-being						
Enjoyment	Q19	30.9%	43.5%	9.8%	14.5%	1.3%
Cheerfulness	Q20	18.5%	60.4%	10.4%	9.6%	1.1%
Anxiety	Q21#	37.2%	42.4%	9.3%	10.2%	0.9%
Vigour	Q22	11.4%	43.2%	19.1%	19.6%	6.3%
Job Security	Q25#	39.1%	37.4%	9.8%	8.2%	4.2%
Rest	Q23#	13.7%	42.3%	18.2%	19.4%	6.5%
Survey population’s working environment						
Interest	Q24	15.7%	43.4%	16.1%	21.0%	3.7%
Productivity	Q26#	32.5%	37.6%	12.6%	13.4%	4.0%
Contact time	Q27#	39.8%	34.1%	11.9%	10.7%	3.4%
Support	Q28#	34.0%	44.1%	8.6%	10.3%	3.0%

= Negative response reversal

Questions:

Q19: I enjoy working from home.
 Q20: I have felt cheerful and in good spirits while working from home.
 Q21: I have felt nervous, anxious and/or on edge since working from home.
 Q22: I have felt active and vigorous while working from home.
 Q23: I currently wake in the morning feeling refreshed and rested.
 Q24: My daily life has been filled with things that interest me while working from home.

Q25: I have been worried about job security since the COVID situation.
 Q26: I have found myself working less productively during the pandemic.
 Q27: I do not get enough contact time with the people I am working on projects with.
 Q28: I feel well-supported by my professional network.

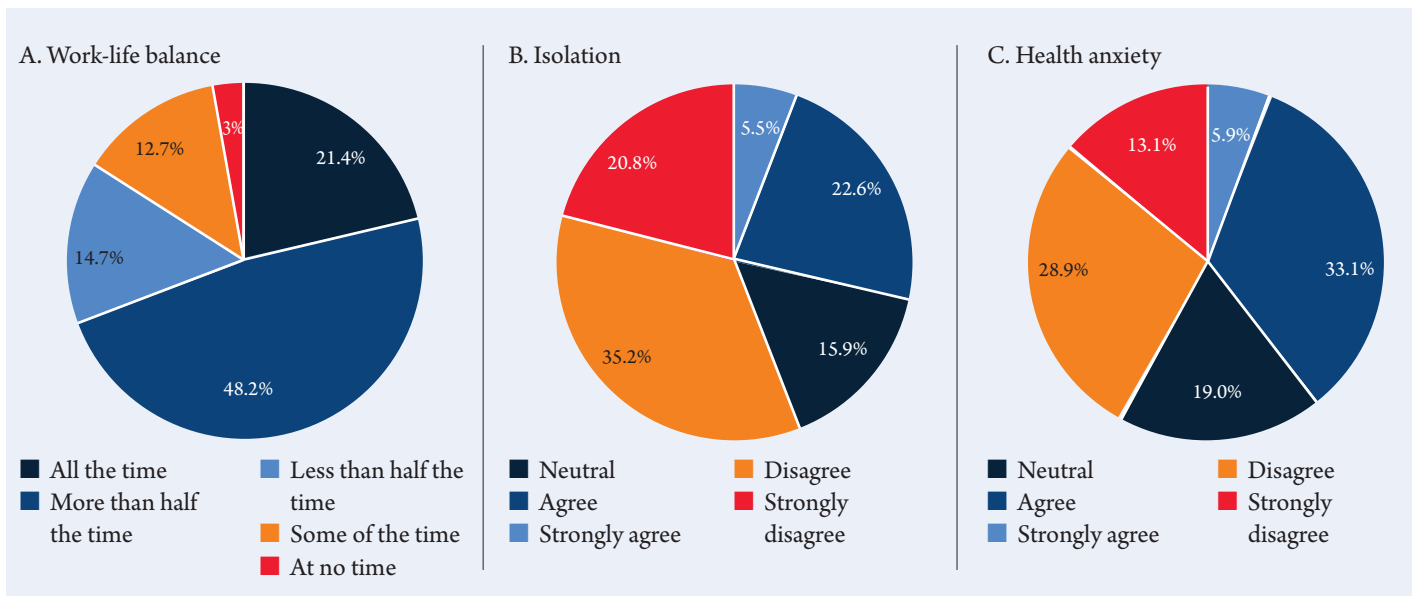


Figure 1. Percentage responses of all participants to the following statements:
 (A) “I have been managing to keep my work and domestic life separate.”
 (B) “I have felt lonely and isolated.”
 (C) “I have been anxious about my health.”



be associated with the poor emotional wellbeing scores.

Nearly one-third (28.1%) of respondents reported that they had felt lonely or isolated (Figure 1b).

Despite the ongoing pandemic, less than half

were concerned about their health during lockdown (Figure 1c).

Self-worth (Table 3)

Again, a high proportion of respondents (>80%) considered themselves valued by their co-

workers and clients and trusted by their employers. Whereas they felt engaged and able to contribute to team decisions (Table 4), 16.1% reported a lack of motivation and less recognition of their work (17.2%).

Box 1. Summary of advice for employers

1. **Be flexible.** Many responses mentioned flexibility in terms of hours worked and when employees should be working, relaxing strict 9-to-5 rules and 5-day weeks. Those employees who want to continue homeworking should be allowed to, or a hybrid model should be adopted to allow for days in the office for training, briefing, client meetings, and administration.
2. **Trust your employees.** Despite little evidence of concern in the survey (Table 4), many respondents commented on how employers should trust employees to work effectively, honestly, and productively.
3. **Optimise communication across the company.** It was generally agreed that employees benefited from regular updates on company performance, transparency and positive updates without the need for ‘propaganda’. Emphasis was placed on the importance of one-to-one sessions with line managers. Some respondents suggested that non-work, social meetings or company huddles could be fun and were good for morale.
4. **Don’t be intrusive.** While video meetings were popular, almost an equal number of respondents felt negatively about regular meetings, telephone conversations and instant messaging. Several commented on how they were an inconvenience and interruption to their day. Others viewed these as attempts as micromanagement.
5. **Adopt health and safety policies.** Optimise the homeworking environment.
6. **Offer employees the necessary tools.** Employers should provide employees with the equipment they need, or subsidise them for using their own equipment. Utility costs and fees for high-speed internet connections should also be considered.



The challenges of balancing childcare and home-schooling with busy work commitments was mentioned by 120 respondents, equating to more than one-quarter of those living with children.

Free-text statements

The four free-text entries generated over 41,000 words of insight on what they found difficult and rewarding, in addition to recommended techniques/approaches to optimise homeworking, and words of advice to employers (Box 1).

Lack of social interaction

Isolation from colleagues was the most frequently mentioned issue (140 respondents). These comments included comments on feelings of paranoia, withdrawal, and loneliness.

Childcare, homeschooling, and family distractions

The challenges of balancing childcare and homeschooling with busy work commitments was mentioned by 120 respondents, equating to more than one-quarter of those living with children. Many reported having to cope with regular family distractions and found it difficult to establish a satisfactory work-life balance. Respondents liked that homeworking offered them the opportunity to spend more time with their children/family/pet, exercise, and take breaks from work. Some appreciated being able to create a better working environment at home than in their formal workplace, and others commented on being able avoid stressful and/or toxic situations that often arose at the office.

Eighty respondents mentioned that there was no natural end to their day. Typically, they found themselves working longer hours late into the evening; they were replying to emails, performing admin tasks, and not able to “switch off”. For many, life was made harder by IT issues and frequent (often unnecessary) conference calls. Factors contributing to difficulties in establishing a routine included problems concentrating, a lack of motivation, and various distractions/temptations.

One reward of lockdown for many was the absence of the daily commute. Some 210 respondents noted that the time gained allowed them to be more productive. They saved money and felt more energised. Freedom and flexibility were mentioned 200 times. Respondents discussed setting their own work routine, taking breaks as they saw fit, and interspersing work with domestic chores.

Homeworkers also reported improved work satisfaction, with a halved attrition rate. On the negative side, promotion rates conditional, on performance fell.

Equipment

Many respondents offered advice on computer monitors, having initiated remote working with just their work laptops. Of the respondents, 170 recommended either purchasing a much larger screen or setting up dual screens. In many cases, employees had borrowed equipment from their work office, while others purchased themselves new hardware. Emphasis was put on the importance of having an appropriate office chair ($n=60$) and not “working from the sofa”; several respondents reported experiencing back issues because of their initial homeworking setups. Internet connection was another significant cause of irritation, with many respondents advocating not to rely on WiFi and to instead use a cable connection between the computer and router.

Dedicated workspace

Respondents advised against working at the dining table, and recommended recreating the office setup. Several (19 respondents) took the concept of adopting a formal working environment further by recommending that people should dress for work. Many liked having a (metaphorical) door ($n=37$) that could be closed when working and at the end of the day ($n=56$), at which point they could “walk away”.

Breaks

The importance of regular breaks ($n=112$), establishing a good routine ($n=72$), and planning your day ($n=55$) were common themes. Many recommended taking a proper lunch break and not eating at your desk, getting some “outside time” and exercise, and not working late.

Maintaining communication

The importance of maintaining lines of communication was often raised (e.g., scheduling employer-manager catch-up calls and morning briefings). Little things mattered, such as acknowledging that a message had been received and would be addressed. Whereas slow responses fostered a lack of trust, instant-messaging applications were noted both as an irritation and a lifesaver.

Comparison with established homeworkers

(Figure 2 and Figure 3)

Of the respondents, 207 (27.3%) identified themselves as pre-existing homeworkers, and of them, 69.6% (144 of 207) identified themselves as freelancers/consultants. Nearly twice as many established homeworkers felt they were worse off since the start of the pandemic (27% vs. 14%, respectively). Homeworkers were generally >40 years of age (82% vs. 51% of office workers) and more likely to be living with children <18 years old (47% vs. 35%).

While there were many similarities between the groups, office workers were not enjoying the lockdown as much as those already working from home ($P<0.05$, Figure 2), did not find their activities as interesting, or feel as cheerful ($P<0.05$; Figure 2). Fewer office workers felt active, vigorous, or motivated. ($P<0.05$; Figure 2). They were less likely to consider themselves valued or trusted by their employer ($P<0.05$; Figure 3), and experienced less contact time with colleagues ($P<0.05$).

By comparison, homeworkers felt their workload had increased during the pandemic, and found it harder to concentrate (both $P<0.05$; Figure 3). Although a slightly greater proportion of office workers (28.1%) felt lonely and isolated, almost one-quarter of homeworkers (23.5% Figure 3; $P<0.05$) reported similar feelings. Respondents reported that they took the opportunity (>60%) to eat away from their desk, especially office workers ($P<0.05$). Over half of respondents in both groups were concerned about exercising less and consuming more alcohol, particularly homeworkers ($P<0.05$).

Discussion

This survey found that the majority of respondents had a positive experience during the early remote working period, with many keen to continue homeworking. Our sample reflects a well-qualified, highly professional, “employment-fluid” population with predictable levels of staff turnover. The high proportion of female respondents (71.4%) may reflect the sex distribution across our industry.

All was not well for some, with nearly one-third (28%) reporting loneliness or isolation. While businesses continued functioning, our results suggest that working practices are likely to change, resulting in less reliance on a physical office. Free-text responses indicated that equip-

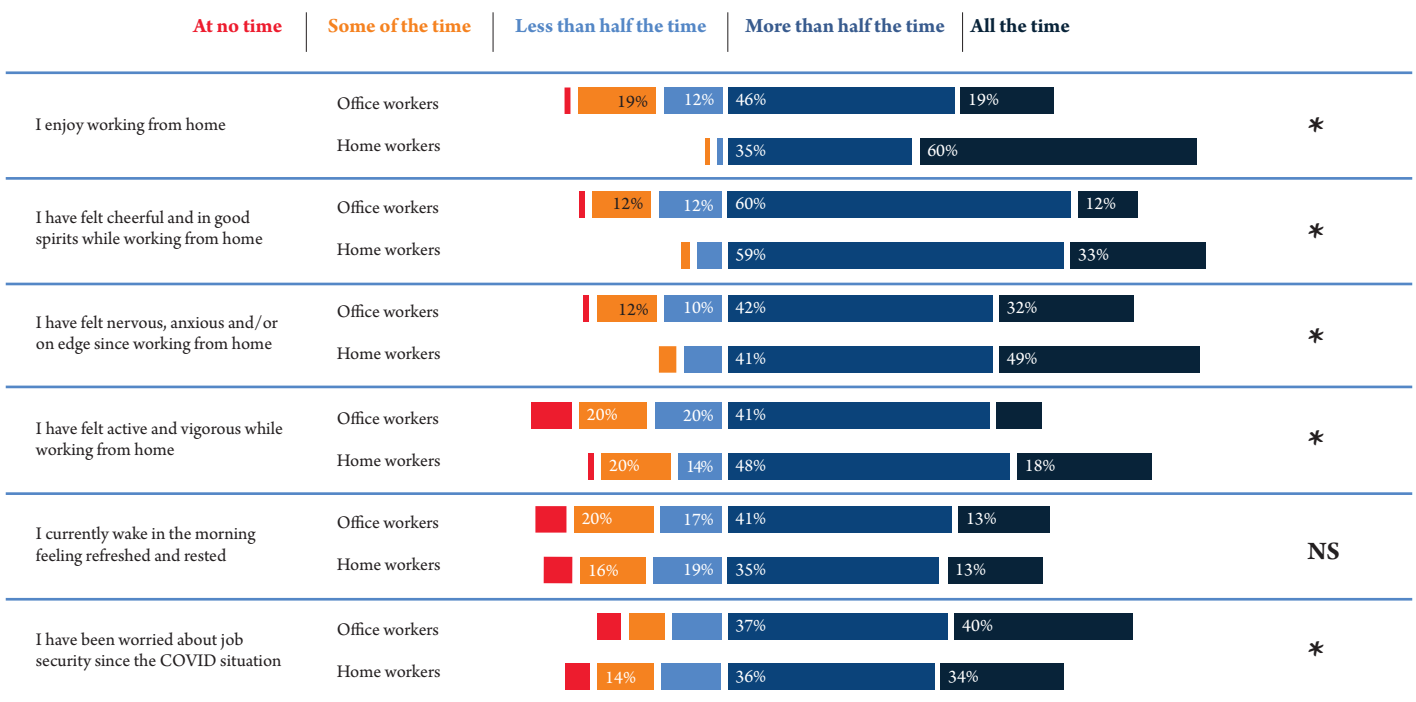


Figure 2. Comparison of emotional well-being responses in office workers versus home workers prior to lockdown (*Mann-Whitney u-test p<0.05; NS = not significant)

ment and agreed processes need to be established for this transition to succeed.

Pre-pandemic homeworking

Prior to the pandemic, our industry was becoming more accepting of a non-office model. We found that nearly 60% of respondents were permitted to work from home but it is unclear how many took up this option. In 2019, data from the Office for National Statistics reported that only 5% of employed adults in the UK worked primarily from home (up from 4.1% in 2018), with about 12% spending some of their week away from the office.⁶ The present study suggests that pre-pandemic twice as many members of the medical communication community work permanently from home (10%). This proportion is far from the major shift in working practice predicted by some.

The effects of change

Changes to the working environment can be challenging for employees. For example, a study by the American Psychological Association in 2017 found that restructuring, budgetary modifications, new IT, human resource systems, or new leadership cause stress, loss of trust, and desire to seek new employment.⁷ In the current crisis, the survey population faced a similar and simultaneous change in circumstance – even for those working from home before the pandemic.

The circumstances meant that many employees were left struggling with childcare and establishing functional workspaces.

How did we cope?

From the above data, one might expect negative findings, but this was not the case. Most respondents coped well, felt positive about the experience, and would welcome more homeworking in the future. Some argued that because companies had continued to function, homeworking should be adopted widely. Among the significant benefits of homeworking for employees were the time and money saved by not having to commute to the office, a finding previously recognised by the lead author.⁸ In 2016, a Royal Society for Public Health report highlighted a reversal of the negative effects commuting has on diet, stress, and high blood pressure.⁹ Another reason for the current positive findings could be the supportive nature of colleagues within our industry.¹⁰

Benefits for employers

Prior to lockdown, homeworking was not considered across the industry as a means of improving productivity. Some employers made the offer to attract or retain skilled staff. This study shows that more than four-fifths (82.7%: Table 4) felt they are just as or more productive working from home; cross-referencing with free-

text comments it seems that responders largely credited this to spending less time commuting, having fewer distractions, and being able to establish a tailored working environment, access professional network support and obtain the feedback they needed to perform their work (Figure 3). Our findings suggest there may be benefits for employers adopting greater homeworking.

Negative emotional findings

Almost a quarter of respondents did not fare well in terms of energy levels, rest, and concentration. Their low scores could be early signs of depression. Our findings on sleeping mirror those of a recent poll by Ipsos MORI and King’s College London suggesting that people slept longer during lockdown, and yet felt less rested.¹¹⁻¹³

Feeling lonely and isolation were issues for nearly one-third of respondents. It has been argued that these are candidate mediators of a depressogenic social milieu often observed in modern populations that are increasingly overfed, malnourished, sedentary, sunlight deficient, sleep deprived, and socially isolated.¹⁴ These changes in lifestyle can each contribute to poor physical health and affect the incidence of depression. Others have noted that increased stress and social isolation are associated with homeworking.¹⁵⁻¹⁷ A contributory factor for

COVID homeworking survey – Hardman et al.

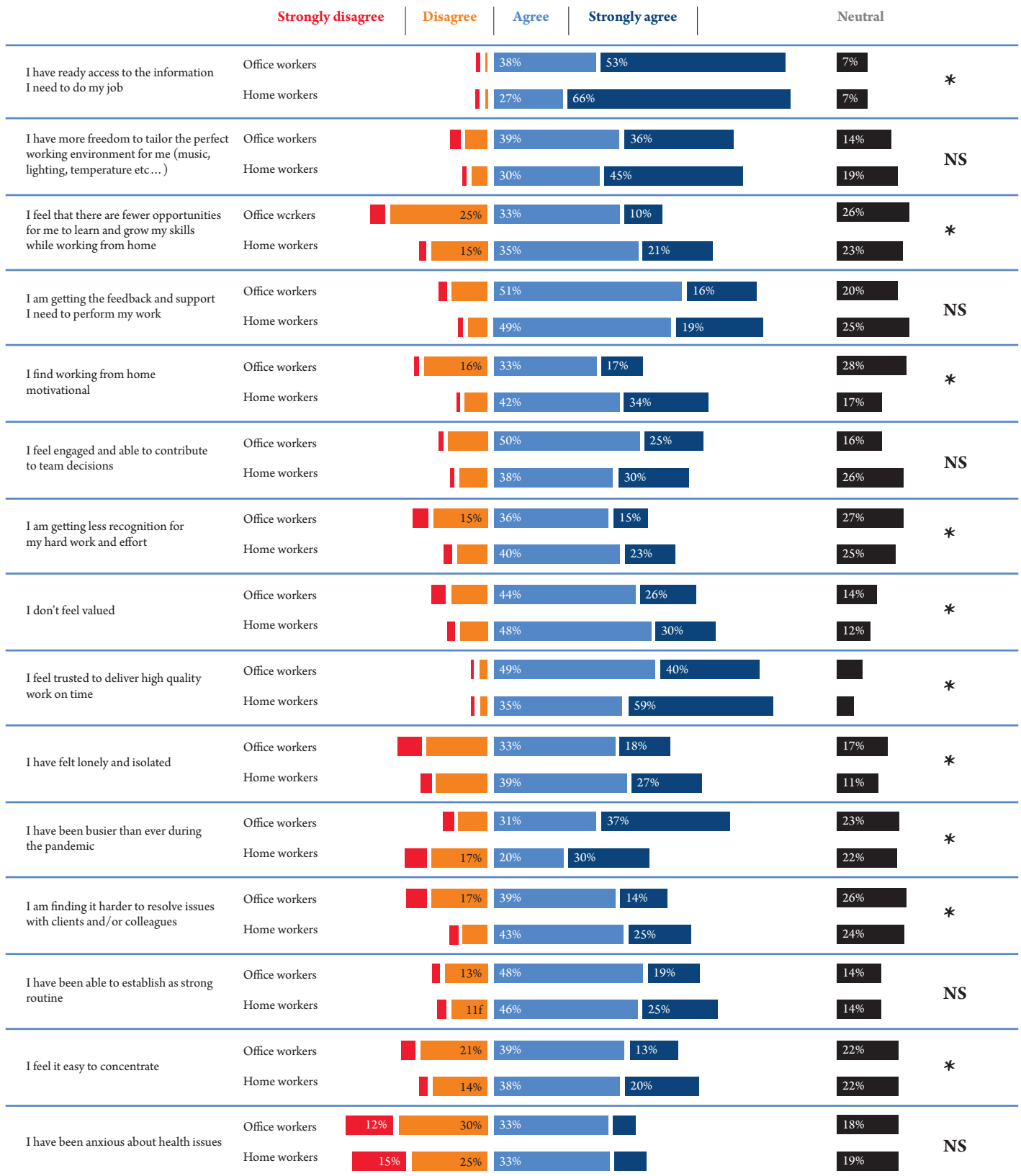


Figure 3. Comparison of self-worth, work profile and life-style responses in office workers versus home workers prior to lockdown (*Mann-Whitney u-test P<0.05; NS = not significant). Diverging Likert data plot with neutral responses (black data bars) off-set



some may have been lack of social support, while for those with families, balancing childcare and work responsibilities was likely a struggle.

The importance of good communication

It is fortunate that the current pandemic happened at a point in history when internet and other advanced technology are available to most of us. Data sharing, instant messaging, and conference calls enable teams to stay connected. In the survey's free-text responses, it was clear that most respondents welcomed regular contact and updates on company performance, video meetings, and one-on-one sessions with line managers. Social meetings or company huddles were also seen as being good for company morale. However, this degree of interaction was not universally welcomed – a few respondents felt negatively about regular interactions, seeing them as an interruption, a display of lack of trust, or an attempt at micromanagement.

The present study showed that it is not only those who have remote working sprung on them that suffer from loneliness and isolation – it also occurs in established homeworkers.

The hybrid office

An office-homeworking hybrid seems to be a likely way ahead for many. This model allows employees to determine their ideal pattern of working, support those who need it, help managers to manage, and reduce accommodation costs.

Conversation depends on watching body language, specifically indicators of depression or anxiety. These signs often go unnoticed by managers on video conference calls and possibly even more so on voice only calls. We found that some respondents were missing out on training and struggling with isolation. Social interaction and building company culture are important. Discarding the office altogether could impact the development of younger employees, who, when working at home, miss out on serendipitous and anecdotal learning even with well-established online training programmes. Our data also suggest that some people working from home struggle for recognition of their work and possible advancement.

Continuous homeworking can be detrimental to good mental health.¹⁵⁻¹⁷ The present study showed that it is not only those who have remote working sprung on them that suffer from loneliness and isolation – it also occurs in established homeworkers. For some, this experience may have been a consequence of the wider societal lockdown.

Findings from others

The experiences of others mirror our own. In a survey of 501 members of the UK financial service industry conducted during lockdown by YouGov on behalf of Deloitte, 70% of respondents reported a positive lockdown experience.¹⁸ Contributory factors were absence of commuting (76%), flexibility (43%), more time with family (39%), and greater opportunities to exercise (28%). By comparison, one in ten reported having a negative experience. Of these respondents, 51% indicated the problem was due a lack of interactions and/or the challenges of maintaining a work-life balance (41%). While more than one-third (36%) stated their wellbeing had improved, a quarter (24%) said it had worsened.

With regards to their work, more than three-

quarters (76%) felt more productive working from home, due to less commuting (72%), fewer distractions (54%), and a quieter working environment (52%).¹⁸ Going forward, many in this sector now expect homeworking to increase. Almost half (44%) suggested that wellbeing tools (e.g., apps giving reminders to take breaks) could be of benefit.

Also interesting are the results of the CTrip experiment, where sales staff working in a large Chinese travel company call centre volunteered to participate and were randomly assigned to either home- or office-working for 9 months.¹⁹ Performance increased in the homeworking group (13%). Reasons included working longer hours, taking fewer breaks and sick days, and having a quieter work environment. Homeworkers also reported improved work satisfaction, with a halved attrition rate. On the negative side, promotion rates conditional on performance fell. At the end of the experiment, employees were given the option to continue working from home. Around half decided to return, citing isolation and loneliness, suggesting staff placed a high value on social interactions at work.¹⁹

The freelancer experience

Prior to the pandemic, many freelancers appeared to function successfully from remote locations. Supporters of remote working claimed greater job satisfaction and reduced psychological strain.¹⁵ Our findings suggest that recent events have proven difficult for some. While a total of 136 (17.9%) respondents found themselves financially worse off, the proportion experiencing financial hardships was greater among freelancers (36.6%) than in the other respondents combined (11.7%).

Successful adoption of homeworking

Respondents were firm in their suggestions about employer responsibility. Regarding hardware, many felt that they should be provided with all necessary equipment for homeworking. Numerous studies have demonstrated marked improvements in performance with bigger and/or multiple screens.^{20,21}

It is disappointing that so few respondents had undergone a homeworking assessment. This process should be a joint responsibility for employers and employees, to ensure a workspace conducive to productive activity that mirrors what is available in the office. Elements should include a back-friendly chair, good lighting, stable

internet, temperature control, toilet and hand-washing facilities, and secure data storage. Employers and employees should agree on utility costs and insurance, and factor in reduced travel costs and potential gains in productivity.

The new age of employment throws up issues for staff and employers. Considered conversations will be needed regarding what might be termed a homeworking “charter”. Issues to consider include eligibility, flexibility, processes, supervision, and working hours. Respondents generally agreed that juniors needed greater direct supervision, an opinion supported by the findings of the current survey, which showed that those without managerial responsibility were often struggling at home alone. With regards to processes, do managers need to work longer hours to mirror employees who choose to work late? How do we support each other yet avoid accusations of micromanagement? All stakeholders need to appreciate that trust, a major point of contention in the survey, works both ways.

It is worth remembering that we are all individuals, and despite having a safe and comfortable environment with agreed processes in place and empathetic supervision, homeworking is not for everyone.

Study limitations

Surveys are a traditional method for seeking the views of individuals.²² Though challenging to develop, administer widely to a target group, and to interpret fairly, they remain a valuable research tool. Ideally, a good survey requires a protracted evaluation and refinement process. Our survey was developed quickly. Though based on a recognised template, it has not been validated. Dissemination was through our own channels and the organisations we are associated with. It covers a relatively short period of enforced homeworking mainly among UK staff, and some effects may only have become obvious with time.²²

Also, there is no baseline measurement – these responses may be nothing more than what we would have seen if the survey had been conducted before the pandemic. A further

limitation is that those who have responded may have self-selected because they are either having a great time at home or, alternatively, are miserable and want others to know. Finally, the study was conducted in people from different countries that were following different approaches to the pandemic and this may have skewed our data. However, we would note that 97% of our responders were working from home at the start of the survey and most of these had changed their working practice. Still, the

opinions of a large cohort, albeit generally of middle management (56%) and female (71.4%) workers, is of value in the absence of other published data on our industry.

Conclusion

Members of the medical communication community are ahead of the general population in homeworking, but only 10% were doing so full-time before the COVID-19 pandemic. Most respondents had a positive early lockdown experience: they enjoyed time at home, liked the freedom, felt secure in their posts, and were cheerful. Most established a daily routine, coped with an interesting workload, and felt valued. However, all was not

well for some, with 28% reporting loneliness or isolation. Others noted problems with vigour, rest, and concentration. Some consumed more alcohol and exercised less, while a similar proportion reported the opposite. Most respondents were neutral on their personal relationships (45%), with around one-quarter noticing a positive effect and a similar proportion the reverse. With regards to finances, 18% were worse off, notably freelancers (36.6%).

This study did not specifically look at benefits from an employer’s perspective, but our data may encourage them to adopt homeworking as a means of reducing office costs and increasing productivity. Homeworking will only be a win-win situation if we avoid isolation and take everyone with us on this journey.

A recent article poses the question: “Will Covid kill off the office?”²¹ Our survey shows that many people believe that the lockdown will change working practices, the office is not dead – just different.

This study did not specifically look at benefits from an employer’s perspective, but our data may encourage them to adopt homeworking as a means of reducing office costs and increasing productivity.

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Conflicts of interest

The authors receive no compensation for writing this article and declare no conflicts of interest.

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Social media video content for the healthcare industry

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Abstract

This paper describes the role of social media in healthcare and medicine based on the example of how a contract research organisation (CRO) uses video interviews to spread knowledge and expertise among professionals. Considering that in coming years, video content is expected to widely overtake text as the most common type of content on the internet, the article also provides recommendations for creators from the healthcare and medicine industries on how to leverage this channel.

Over the past two decades, social media has evolved to the point of accommodating the tastes of almost all existing cultures and generations across the globe. Previously a form of entertainment for youngsters, today social media is an omnipotent realm of communication and a powerful tool for the flow of information.

Below are some of the key characteristics that distinguish it from other sources of information and communication:

- Instantaneous reach means content can spread around the globe within hours, be it a corporate announcement or a tweet posted by a researcher.
- User-generated content has brought so many issues closer to people, unlike traditional media, where one had to be an organisation to have their voice heard.
- Limitless reach means a single tweet can reach billions of people regardless of where it originates.

The information landscape of healthcare and life sciences, like that of many other industries, has been affected by the surge of social media, which has developed numerous benefits in terms of data and knowledge spread.

On the one hand, healthcare and life sciences involves complex scientific content that tends to be challenging for many non-professionals to fully understand. Therefore, social media channels

can be an effective tool to spread basic knowledge of important concepts to a general audience. A study shows that of the 75% of internet users who spend time on social media, 80% browse for health-related information.¹

On the other hand, professional communities benefit as well (doctors, scientists and researchers, healthcare workers and other industry players), because social media enables them to leverage knowledge and exchange opportunities. For example, a survey by QuantiaMD found that 65% out of 4,000 physicians use social media for professional purposes.²

Without doubt, the importance of social media in healthcare has been highlighted in 2020 with the outbreak of the COVID-19 pandemic. Millions of stand-alone users and thousands of corporate and regulatory accounts (including the FDA and WHO) continually posted vital information about preventive measures, urging people to follow social distancing and wear masks. For instance, analytical sources traced over 20 million mentions of coronavirus on social media on March 11, 2020, alone.³

Glossary

- **SEO (search engine optimisation)** is the process of improving the quality and quantity of website traffic to a website from search engines.
- **Website traffic** refers to web users who visit a website. It is measured in visits, which sometimes are called "sessions".
- **Social media algorithm** is the mathematical calculation that social media platforms use to understand user habits and to customise the social experience. As a result, publications can appear in a user's feed based on relevancy instead of publish time.
- **Organic views** are views from visitors who find the video themselves, as opposed to sponsored links.
- **YouTube recommendations or referrals** are part of the YouTube algorithm that helps users discover more videos based on their previous video preferences and searches.



Creation and consumption of social media in healthcare and medicine

By users:

1. *General users:* patients, caregivers, and the general public. Search for data on lifestyle, certain diseases, early detection, treatment, and clinical trials. This information can be found on personal accounts, corporate accounts (pharmaceuticals, content research organisations (CROs), and other vendors) or regulator's accounts (FDA and WHO accounts).
2. *Experts:* doctors, researchers, and pharma employees. Use social media to raise discussion, highlight a certain topic, share tips, and advise on treatment, research breakthroughs, and organise clinical research of drugs and medical devices.

By purpose:

1. *Education:* spreading knowledge on self-care, importance of consulting a physician and seeking professional help. Used by schools,

and regulators, plus stand-alone opinions of leaders.

2. *Marketing:* promoting products (pharmaceuticals and devices) and services (treatment, clinical trial services and recruiting patients). Used by pharma, healthcare institutions and vendors.
3. *Professional networking:* sharing knowledge and initiating discussions within professional communities. Used by corporate players (pharma), healthcare institutions and regulators.

By content types:

There is an ever-increasing number of online social platforms and formats in which content appears. Among the key types of content there are: long reads (blog-type posts usually on Facebook or LinkedIn), short posts (e.g. tweets) with one or more brief points, videos and audio podcasts.

In this article we primarily focus on video as a powerful tool which is used to manage healthcare-related information, based on a real case study.

Pharmaceutical communication via video production and YouTube channels

Undoubtedly, video content has been revolutionising the healthcare sector and pharma industry for the past couple of decades. Unsurprisingly, the following statistics tell the story:

- YouTube is the second-largest search engine in the world with about 1 billion hours watched a day.⁴
- Pharmaceutical companies increase their conversion rate (how often a viewer performs a marketer's desired action, divided by the number of visitors to the site) by 86% when they include a video on their website and social media channels. The pharmaceutical marketing agency BlueNovius⁵ also notes that brands can increase their recognition value by up to 139% when they add videos to their marketing activities.

The trend towards video content is clear and in coming years, is widely expected to overtake text as the most common type of content on the internet. Having started several years ago, this trend has been propelled forward by the pandemic. With an ever-growing volume of accessible information, it is getting harder for users to absorb everything at once, and this is where video content is advantageous. For instance, explanatory and product videos are ideal for giving the viewer a 360° perception of a company. Emotion has been proven to resonate a lot better among users. Live streaming events and conferences are also used to keep their communities engaged.

YouTube differs from commercials with upfront marketing messages. Instead, it is a social platform that can be used as a means to start conversations, spread knowledge and expertise, engage viewers, and add brand value.

Case-study: Building a video channel for a professional community

Industry Voice⁶ is a YouTube project launched by OCT Clinical⁷, an Eastern European CRO, in October 2019. The channel features focused interviews with leading thinkers in the clinical research and pharma industry, who share their insights into and viewpoints on the most pressing and attention-worthy issues on the global research landscape. By combining current trends,



news, the latest regulatory updates, practical information for everyday practice directly from peers, and discussions with industry leaders from around the world, Industry Voice TV offers its audience an exclusive and advanced knowledge platform. To date, it is a unique project of its kind in terms of content and format.

The Industry Voice's views since its launch in 2019 have already totalled over 10,000. Although the numbers might not seem so impressive at first glance, there are several factors to consider. First, the highly specific content targets a niche audience, mainly pharmaceutical and clinical research experts. Secondly, the average watching time (see Figure 1) compared favorably to hundreds of similar pieces of YouTube content with the same number of views. And the fact that the channel proved an effective tool for driving sales as a result of added brand value, emphatically justifies its existence. The Industry Voice videos continue to circulate, receive comments, and generate discussion among experts. The number of subscribers started showing an upward trend only after the appearance of the interviews, and has increased fivefold in the past year.

The methodology of creating an expert video channel targeting industry professionals

Topic

We began by interviewing our target audience (pharma experts) about the type of professional content that interests them. Survey results from over 100 respondents helped build a content plan for the year ahead. The two most requested topics were "What does the Eurasian Economic Union entail for the pharma world?" and "Patient recruitment tools in Russia". This information has been corroborated by research from other platforms and discussion with our business development experts and clinical department.

Speakers

Our first guest speakers were OCT Clinical's in-house experts. Afterwards, we featured non-employee guests from the pharmaceutical industry, and clinical research experts from different countries.

Location and format

Initially, face-to-face interviews were planned, but with social distancing imposed by COVID-19 restrictions, we swiftly adapted to an online format. We found virtual interviews via online platforms like Zoom proved as effective for delivering video content to the global arena.

Results and analytics

The first issue was about pharma trends in 2020, discussed with an honoured member of the International WHO's WHO of Professionals and former FDA advisory committee member. The interview⁸ generated more than 500 organic views in 2 months. In the first month after publication, we received more than 20 website visits as referrals from YouTube. It was an outstanding outcome for a single channel, given general website traffic. To date, this video has brought us over 120 conversions.

Despite the project originating in Russia, the share of views from Russia makes up only about 10% to 15%, due to the wide range of subjects and English as the primary language. YouTube analytics captures quite an impressive geography of views from 17 countries. Among the leaders are the USA, Sweden, Germany, Korea, and Spain. It is worth noting that producing videos with global outreach which eventually might translate into more leads is one of the goals of the channel. This further highlights the benefits of running an online video channel.

The average watch-time for interviews is 5:40 minutes. From this we could conclude that videos longer than three to four minutes are unlikely to be watched to the end. However, it is interesting to note that watch time varies according to the audience age. The average watch time for an audience aged 24-34 is only 28% of the full episode length, while users aged 55 and older tend to watch the channel videos from beginning to end showing impressive 96.8% average watch time.

Topic relevance, especially to current trends, can pay off quite substantially in terms of increased views and subsequent website hits. We witnessed it first-hand with the issues on COVID-19 related topics such as vaccines and virtual trials. The episode on the COVID-19 vaccine case⁹ showed record high rates of audience engagement. Watch time in hours (total number of views in hours) was 6.5 times higher

The first step for any company looking to build its presence on social media via videos is content strategy.



than the average watch time of other videos on the channel. The graph (Figure 1) shows the difference in the performance of different videos.

YouTube recommendations also drive engagement and increase view numbers. YouTube's algorithm marked the content of the video as valuable and in high demand, and suggested it to people who had watched something on a similar, relevant topic. We found 19.6% of all views on our channel came from YouTube. We found other social media platforms also drove and generated views to the Industry Voice channel by 26.8% (Figure 2) – of which, many came from LinkedIn. This is direct evidence of the value of cross-promotion between different social media platforms.

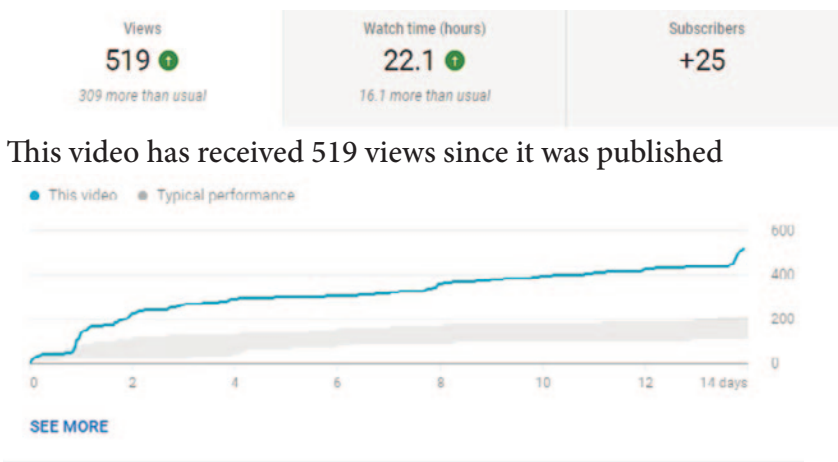


Figure 1. Watch time in hours
 This is a computer screen shot taken from the admin panel on YouTube that shows total number of views in hours, as of December 2020, for the Industry Voice episode featured in the case study. Reference: Analytics from Industry Voice by OCT Clinical https://www.youtube.com/watch?v=QXPc43U0Nfo&list=PLDfc_4URQOxrtZmeu Z0tVB7AFEnedHJ20.

Tips for creators

Strategy

The first step for any company looking to build its presence on social media via videos is content strategy. To build video-based content, ask yourself the following questions: What do you want to focus on? How will you create something unique, valuable, and important? What are the key pain points your clients face? What is happening in the industry? What is trending on social media now (in regard to your industry)? Are there topics or fields in which you have exclusive insights or more experience compared to the competition and other industry players? In short, participate, communicate, optimise, stay active, and scout for an audience.

Traffic source types ▲

Views · Lifetime

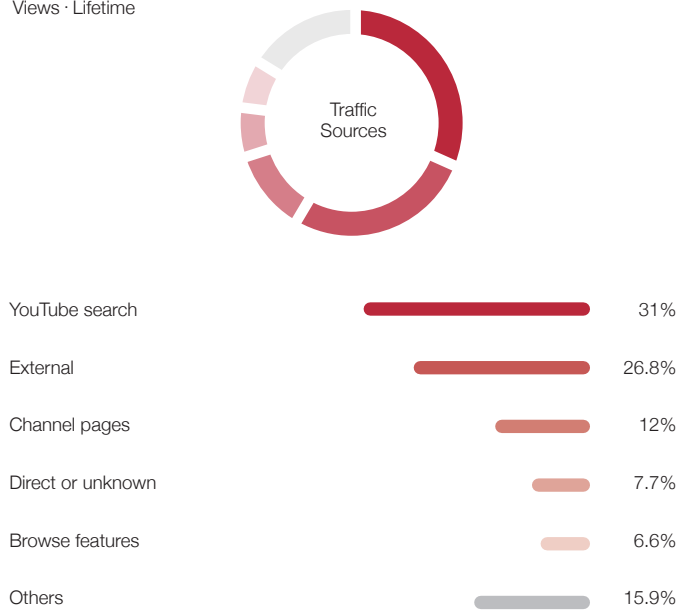


Figure 2. Traffic source types

This is a computer screen shot taken from the admin panel on YouTube that shows a breakdown of all the inbound traffic sources which all the Industry Voice views came from.

Reference: Analytics from Industry Voice by OCT Clinical https://www.youtube.com/watch?v=QXPc43U0Nfo&list=PLDfc_4URQOxrtZmeuZ0tVB7AFEnedHJ20

Content plan

Once the strategy is clear, we recommend starting by making a specific content plan. This is a plan of the issues that meet the objectives outlined in your strategy. A content plan includes the list of topics you want to cover with your future publications with potential speakers (or type of speakers) and the expected air dates assigned to each topic. Also, it is important your content is consistent. Remember, two videos are not enough to generate the desired effect. Content for your YouTube strategy should be planned one year ahead. As mentioned above, tools for fine tuning content ideas such as news monitoring, research, and surveys will help you find the most successful topics to focus on.

Frequency

Frequency is an important factor for the YouTube algorithm, which determines the visibility of a published video to general viewers, especially to non-subscribers, and its ranking on the platform's search and suggestions list. The recommended minimal frequency is about one video per month. Then, to grow your audience, you might consider

increasing the frequency depending on your audience's response and your internal resources.

Length limit

Video length is a most controversial point.

In general, most audiences are reluctant to watch long, extended videos. Yet in recent years, there has been an obvious trend towards longer videos. Videos can be as long as deemed necessary to convey the intended message without disengaging the audience. A low audience retention will have negative impact on your rankings. Interestingly, one remarkable thing we have noticed by looking at the numbers on our channel is that videos with the most views are generally longer than three minutes. But every particular project has its own individual indicators and numbers.

Filming

Before a shooting session, it is essential to set up in the right location, to prepare a detailed script

and consider all visual and audio aspects. The speakers must be well prepared, which means that they should have the list of all the questions for the forthcoming interview in advance, dedicate some time to revise the answers, rehearse the script, and do some additional research on the given topic, if necessary. If an interview is recorded remotely it will also be helpful to provide a speaker with a checklist on location setup (e.g., how to set up the light, sound and video equipment, background, etc). For all locations, it is important to think about the lighting. (Ideally, it should be natural light coming from a window). If you are considering shooting outdoors, bear in mind factors such as the weather forecast and transport of equipment. Also important is to discuss dress code options with a speaker and ensure that it coordinates with the general tone of the video content you create. In addition, it is important to establish a strong visual style through surroundings and interior layout, for instance using TV screens with a company logo or motto for speakers' background. Regarding script, once you have everything set, check your word count, then start reducing and rewording until it fits the formula – only as long as necessary and as short as possible. Remember that your script should be clear and concise. All questions for interviews should be discussed in advance with guest speakers. Try to practice everything beforehand. Ensure the speakers' gestures and body language look natural on camera. A video looks a lot more organised and shooting runs more smoothly when there is a strong script backing it up.

It is essential to set up in the right location, to prepare a detailed script and consider all visual and audio aspects.

Consider platform algorithms

Also, consider making the most of platform tools like translated titles, subtitles, and captions, which could help attract global audiences and generate more views. Optimise your video description texts by making sure you use natural language focused on one or two keywords, that also appear in the description and title. Following

these simple steps will ensure more effective SEO strategy, drive subscriptions and view counts, and improve your organic reach and ranking in YouTube's "suggested search" function.

Cross-promotion on other social platforms

Other channels like Facebook, LinkedIn, and Instagram are useful tools for cross promotion



and announce the video go-live to your followers. Additionally, consider the effectiveness of collaborating with relevant influencers to share your content, which can increase your exposure to a new audience. Also, teasers for the full-length video or interview are useful to gain optimum engagement on all channels.

Tone of voice, language, and style

With video being more dynamic and independent than traditional media, online social media platforms allow for a more relaxed delivery format, both for the written and spoken word. Although product content is not necessarily entertaining, and is mostly science-related, (compared for example to scientific journals and traditional media) tone of voice can be a little less formal and should be simple with shorter sentences and lighter paragraphs to be delivered in messaging tools (posts, tweets, videos, and audio casts).

Supporting copy

Accompany videos with subtitles and some relevant supporting written highlights which help to deliver complex information and highlight the most important points. This is particularly important as many viewers watch in mute mode, so subtitles can be crucial for retaining viewership.

Sensitive matters

While creating and publishing content it is important to make sure that the information presented does not result in controversy among all the parties involved, and general audience who will view the piece when it is aired. First, when featuring guest speakers all the content should be

pre-approved before publication. You should also back it up with informed consent forms signed by the featured guests. We recommend being extra careful with the type of information going out, especially when dealing with such sensitive areas as healthcare, to avoid unnecessary public backlash. Secondly, make sure to communicate to speakers beforehand that their role is to express their own expert opinion and offer food for thought, rather than speculating about third parties not present during the filming, or causing unnecessary controversy by making uneducated guesses outside their field of competence.

Multiple global cases show that video content for social platforms builds brand awareness and an expert image when combined with strong content marketing, concept strategy and channel advertising. Thus, YouTube and other social platforms can be an effective means to connect industry experts and potential clients, train teams, or even educate patients.

Conflicts of Interest

The authors are employed by OCT Clinical, a contract research organisation, that provided the case for this article. The authors declare no conflict of interest.

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A wonderful “Medium” for medical writers

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Abstract

With the advent of social media platforms and the increasing availability and access of information on the internet, we are not limited by information sources on any subject. Medium.com, since its inception in 2012, has become a very good blogging platform to find information on various topics of interest. In this article, I share my ideas on how to start blogging on Medium, the best practices for content generation, and whether Medium is one of the best options out there for medical writers/consultancies/agencies for advertising their writing skills.

Blogging has been a popular style of writing for the past 10-12 years. Most of us started our writing careers as bloggers (amateur or professional) and it goes without saying that the popular choices were WordPress, Blogger, etc., which are still decent. Some of us also write on LinkedIn, Facebook, etc. However, all these media rely on our existing customers/followers/friends as the audiences for our writing. Medium (www.medium.com) has been a trendsetter and a pathbreaker in terms of how we write blogs and has revolutionised blogging.

Medium is a “cool”, online place to write, blog, and share stories (articles or blogs are referred to as stories on Medium) on various topics that might interest us. Medium was started by Evan Williams, the co-founder of Twitter, in 2012 as an alternative to Twitter to write bigger ideas or stories.

We may sign up and start writing – it is as simple as that. With a free account, we have



Credit: Creative Commons

access to read five articles / month (no limits on writing, though). With a paid subscription, we can read an unlimited number of articles and also take part in the Medium Partner Program (explained later in the article).

One writes individual stories or curates stories of particular topics (called publications on Medium). An individual or even a brand or company can open a Medium account and start blogging!

A blogging Medium for individuals

For someone new to blogging, Medium has a shallow learning curve. The design elements, blogging styles, different headline styles, and various ways to display pictures (as inline images, full-width images or even as background images) are all great features available at a single click for an attractive and professional blog. This is a great platform where there are approximately 86 million new visitors every month! Thus, a well-written and/or featured blog can easily reach thousands of views. Unlike other blogging platforms, Medium does not rely on the

Medium does not rely on the popularity of the authors to sell content. The content sells itself.

popularity of the authors to sell content. The content sells itself. Medium also offers strong Search Engine Optimisation (SEO) support.¹

A marketing platform for companies

Many companies have started blogging exclusively on Medium due to its worldwide reach. If the company does not have the bandwidth to have its own website or finds it too cumbersome to maintain a blog on the web page, then publishing on Medium is ideal. It provides an opportunity for the content to be appreciated by people who might not have visited the company's website or followed the company on social media. Furthermore, individuals from these companies may become thought leaders, whose expertise people turn to in their respective specialised areas.²

The ins and outs of writing on Medium

While it is straightforward to start blogging (or rather publishing stories) on Medium, it takes a bit more effort to tap into the large audience

base. Here are some tips for those starting out on Medium.^{3,4}

1. *Catchy title.* A good title goes a long way. It need not be poetic, rather, a more obvious yet catchy one is sure to attract more attention.
2. *Determine your niche.* Although we can write about anything under the sun, if we want to attract a loyal reader base we need to think about the topics on which we want to write – topics that we are passionate about or have an expertise in. Health topics never go out of fashion. Thus, writing about the latest in healthcare, innovations, clinical trials, medical devices, medicine – any of these can be our niche and we can write on these topics or curate stories into publications. Keep your topics targeted to a particular audience, but do not make it too specialised.
3. *Think about the length of the story.* Medium has a unique way of showing the length of the stories to readers – we can find the “x min read” next to the title. This is an excellent feature, especially when one is in a hurry but can fit in few minutes of quality reading (e.g., on local transport, taking a short tea break at work). Medium reports that the ideal length of an article is a 7-minute read, or around 1600 words.
4. *Always add tags.* Adding relevant tags to the stories goes a long way so that the Medium curators can curate the articles. Curation helps reach new audience as the curated stories are highlighted by Medium. Tags also help readers find articles during their search and thus, provide more opportunities of the article being read.
5. *Add images /doodles /cartoons /illustrations.* Always add images or illustrations to enhance the article and make it more interesting. Use images from Creative Commons and credit the images appropriately. Horizontal pictures make for a better experience because scrolling through horizontal pictures on mobile devices is easier.⁵
6. *Add canonical tags/links.* When we republish our website/blog’s content (there is an import

tool and a WordPress plugin), Medium lets us add a canonical tag/link. A canonical tag/link is used when we republish content or publish very similar content and want one of the websites to remain the master website. This can help in redirecting a good amount of traffic to our own website.

7. *Publish regularly.* It goes without saying that the more we publish, the larger the audience we will have. As mentioned before, Medium is author-blind, if we regularly publish good articles (or have a publication with many stories), we will gain followers. One of the ways that Medium works is through claps (similar to the likes on LinkedIn and Facebook), responses (any comments or exchanges that happen), and re-posts of stories. Thus, more engagement with stories could mean longer shelf-life on Medium searches.

Can I earn through Medium?

The short answer is yes! When you join the Medium Partner Program, engagements with our story will earn us money. Depending on how many people read our stories, our engagement with the audience, and how many shares we obtain, our earnings can vary. The top-earning story on Medium ever

brought in more than \$16,000 over time, while the highest-ever monthly earnings of a single author (of multiple stories) totalled almost \$50,000.^{5,6} On average, the numbers are not this high, and most authors do not start earning immediately. Furthermore, the articles that earn money go behind a paywall. Thus, it depends on your purpose for writing these stories. If the idea is to get more readership or more advertisement for your website, it is better to forget about the earnings.

How can medical writers use Medium to their advantage?

Medium is an excellent place to write blogs as a medical writer because of its ever-increasing audience base. As the stories can be curated into publications, it helps to write regularly on certain topics, and for freelance writers it helps to add to their writing portfolio. Thus, writing on topics that one specialises in (clinical trials, medical devices, AI in healthcare, etc) can also help in showcasing your knowledge as well as writing skills to potential clients. It also helps in improving communication skills as the writers get to interact with interested readers. Furthermore, due to the inbuilt SEO, the articles can come up high on Google rankings and thus, in Google searches as well. Even if you are not keen to blog, contributing a few articles as a guest blogger in someone’s curated publications might be helpful too.

All that glitters ...

Not everything can be that simple and flawless, can it?? The blogging purists are unanimous that if we can, we should have our own website. As with any blogging platforms, articles on Medium are not entirely our own and we are at the mercy of the platform. If they shut down the platform, our articles will also vanish. Importantly, we





lose the traffic that is diverted to the website and possible business opportunities. Furthermore, one of the advantages of Medium is also its disadvantage. Since Medium is author-blind, this can lead to poor branding for the authors and the business, so the stories become branding tools for Medium and not the business. Also, sometimes the simplicity of the blogging structure can be a disadvantage.⁷ The blogs on Medium have a very basic structure of texts and pictures and there are not many options for individualisation.

As readers are only allowed five free articles to read per month, this is a limitation for medical writers and medical communication agencies who may use Medium for client access or to divert traffic to their websites.

Medium has some of the best writers that publish their blogs on it (Barack Obama uses it!). Thus, the competition is already pretty high. This is both an advantage and a disadvantage. Competing against big names is never easy, but if we find a way to make our articles stand out in this amazing pool of writers, then it does feel great.

I have written a few stories on Medium (individual stories as well as publications for a company) and I found the experience quite unique because I did not have to look for an audience for the article. In fact, three of my articles got curated by Medium and ended up getting good views in spite of no advertisements on my part.

If you are starting out and are intimidated by the idea of setting up your own website or

learning the ropes of setting one up, or you have a small consultancy/agency and do not have the time to maintain a blog, you can start by publishing your stories on Medium and who knows where it may take you!

Disclaimers

The opinions expressed in this article are the author's own and not necessarily shared by her employer or EMWA.

Conflicts of interest

The author declares no conflicts of interest.

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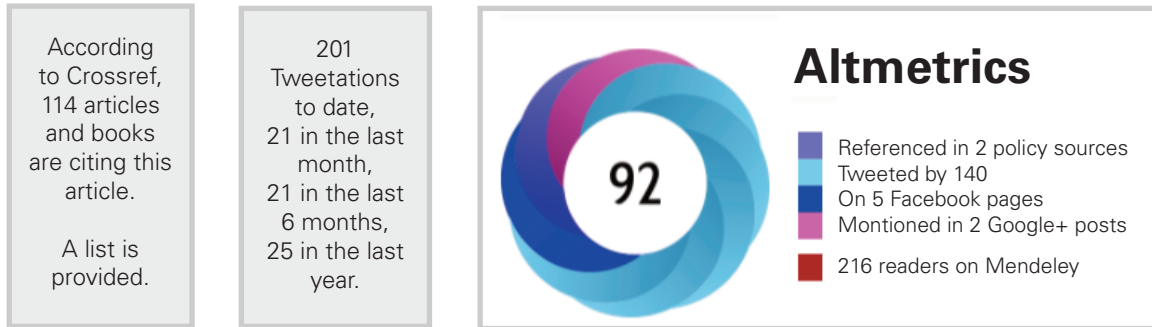
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Archana Nagarajan, PhD, is a medical writer at P95. She has been a medical writer and consultant for 2 years. She has extensive scientific research background and experience in writing medical communications and regulatory documents for medical devices and combination products.

Biomedical articles and social media

What can authors of biomedical articles learn from social media? From citations to tweetations, from readers' geography to demography, there are tools and metrics that can help authors track the impact of their scientific work. See an example below.

Editor



Altmetrics (altmetric.com) tracks mentions in real-time on different platforms. See Elmore SA. The Altmetric Attention Score: What Does It Mean and Why Should I Care? Toxicologic Pathology. 2018;46(3):252-255. doi:10.1177/0192623318758294

Article | Cited by (114) | Tweetations (201) | Metrics

Review

The Use of Social Media in Recruitment for Medical Research Studies: A Scoping Review

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TWITTER DEMOGRAPHICS

The date shown below were collected from the profiles of 140 tweeters who shared their research output



GEOGRAPHICAL BREAKDOWN

Country	Count	As %
United States	38	27%
United Kingdom	14	10%
Australia	9	6%
Canada	7	5%
France	4	3%
Spain	4	3%
Ireland	3	2%
India	2	1%
Italy	2	1%
Other	11	8%
Unknown	46	33%

Demographic breakdown

Members of the public	82
Scientists	32
Practitioners (doctors, other healthcare professionals)	24
Science communicators (journalists, bloggers, editors)	2

Crossref
 (www.crossref.org)
 enables cross-publisher citation linking in academic journals

Source:
<https://www.jmir.org/2016/11/e286/citations>

Used under the creative commons attribution
<https://support.jmir.org/hc/en-us/articles/115001745328-Can-you-give-me-copyright-or-the-permission-to-use-a-figure-or-other-material-from-a-JMIR-article-?source=search>

Social media scheduling: How not to spam your followers

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Abstract

Social media is, today, an indispensable part of networking and business. However, many professionals are still learning how to navigate the sea of social media. Big companies have a dedicated department, but small businesses, entrepreneurs, and freelancers need to manage their own social media presence without decreasing their productivity. This represents yet another task that adds burden to already busy professionals. Posting on social media channels is a way to have an online presence and engage in conversations with business prospects, clients, and peers. Taking the time to plan the posts we want to share is an efficient way to manage our social media presence. Using tools that help schedule and manage postings allows more time to engage with our readers – the ultimate goal of social media. This article reviews the pros and cons of social media scheduling, how to better plan your posts, and some helpful online tools.

Social media represents a great tool to connect with your clients, prospects, and peers. But erratic sharing of content and updates may actually be pushing opportunities away, not to mention wasting precious time.

If I sporadically post something, provide comments, or reshare something that moves me, my followers are probably thinking: Mariana has some free time again! Some of my followers may even view my activities as spamming.

But it doesn't have to be like this.

Social media scheduling offers a smart way to organise your posts so that you have more time

to create better posts or to engage with your followers.

An organised social media plan helps you maintain a professional online presence instead of irregular and erratic posting. Why is this important? Because when you post regularly and consistently, your followers learn to expect your updates and your articles, they learn to trust in you, and eventually, it will be your name that pops up when they need the services you offer.

When you have a constant, engaging online presence, your followers are more likely to recommend you because they *know* you.

In this article, I will focus on some popular scheduling tools for social media posts and how to use them wisely.

Your professional social media presence

The phrase “publish or perish” has a twist today: “if you are not online, you don't exist”.

The year 2020 has proven to us all that the technology for online work and networking is up and ready. Nevertheless, online security is something that worries us all: passwords and accounts get hijacked, somebody can use your photos without your permission, and so many other threats that we do not even comprehend. This is one big reason why people decide not to be online even today.¹

However, if you are a small business owner, a freelancer, or if you are looking for a job, having an online presence today is inevitable. In 2019, more than 50% of all European companies used at least one type of social media for marketing strategies. And this proportion is increasing steadily.²

Social media and productivity

Another reason why people avoid social media is time constraints. Social media can be a great platform to interact with clients, prospects, and your audience, but it can also significantly interfere with your productivity.³

I get easily caught in threads and articles; everything is so interesting. And before I know it, 20 minutes are gone, and I completely forget why I was there in the first place.

Working in the age of information and communication involves new skills like social media know-how.⁴ Having a professional online presence is essential. But we need to learn how to navigate the sea of social media without getting lost in it.

How to have an online presence without wasting time

Finding the sweet spot where your resources meet your social media goals and needs is a delicate balance that needs constant adjustment.⁵

For starters, you do not need to be on every social platform that exists. Focus on the platform that best aligns with your objectives. You may ask yourself: where could my clients or my future employer be?

LinkedIn: Start here

LinkedIn is today what the Yellow Pages were 20 years ago. When people look you up on the internet, LinkedIn is the first place that comes up,

probably even before your webpage. Initially, it was a job search tool. But today, it is one big worldwide networking event, the place where you engage with business prospects, peers, and clients.

Scheduling social media updates and posts

Scheduling is about having a regular rhythm in your online publications.

A sporadic burst of multiple posts in a span of 30 minutes can be compared to spam. Moreover, if after your publication bursts, your followers do not see

anything from you in weeks, they may lose interest or forget altogether about you.

Social media scheduling allows you to have a presence in social media and meet your followers when they are there, even when you are not.

When you post regularly, your followers learn to expect your updates and your articles, they learn to trust in you, and eventually, it will be your name that pops up when they need the services you offer.



It gives you more time to engage and connect, which is the ultimate essence of social media.

An hour a week is all it takes to put down everything you want to share and schedule your posting. The app does the work for you and frees up time so you can focus on other things.

However, do not schedule and then run away. The app can help with the scheduling, but the interaction must come from you, not from a software or a robot.

There is nothing less engaging than commenting on a post or asking something from the author only to find out nobody answers. Interaction is critical, and this part still requires you to do the work.

Scheduling tools

Even if you are an expert social media user, having an efficient scheduling tool at your fingertips is always helpful.

Scheduling tools are not only a useful way to queue up your posts, some can even be an overall social media management system.

These tools help you improve your efficiency, so you have more time to produce great content or develop connections with your followers in real-time.

An hour a week is all it takes to put down everything you want to share and schedule your posting. The app does the work for you and frees up time so you can focus on other things.

Below I mention some of the scheduling tools recommended by expert marketers and writers.⁶ This is not an exhaustive list but includes the most recommended and popular ones. These tools are continually evolving and have different offers according to your location, as well as special offers during the year. I recommend you check their webpages for updates. (See Table 1)

Buffer

- Simple, but still a good option. Buffer is specialised in scheduling.
- Buffer does not show answers to your posts; you will need to check them in the social media platform.

- The browser extension allows you to schedule directly from the web page you are in: the selected text gets marked as a quote, and you can customise your message.
- Excellent customer support.
- It has extensions to help you analyse your data, for a fee.
- The dashboard and the mobile app are straightforward to use.
- The basic plan is free, with some limitations: three social channels, ten scheduled posts, one user. For most people, this is sufficient.
- Buffer offers three different plans for entrepreneurs, freelancers, and small to big companies. It is very versatile and can be used by either B2B or B2Cs.

Recurpost

- Recurpost is a scheduling tool that repeats your schedule once it finishes publishing your library.
- The more posts you add to your library, the less your posts get repeated. The idea is that it reaches a different audience by posting automatically at other times.
- Similar to Buffer, you can also get a free account to try it out.



Table 1. List of some popular scheduling tools

	Website	Plans (monthly)*	Pros	Cons
Buffer	www.buffer.com	Publish: Basic: free Pro: 15\$ Premium: 65\$ Business: 65\$ Analyse: Pro: 35\$ Premium: 50\$	Simple and easy to use. The free option is ideal to start.	Limited features
Recurpost	www.recurpost.com	Standard: free Medium: 20.83\$ Large: 41.67\$	Suitable for resharing posts.	Limited features
Edgar	www.meetedgar.com	Edgar Lite: 19\$ Edgar: 49\$	Suggested variations. Unlimited content library.	The Lite version allows only three social accounts.
Hootsuite	www.hootsuite.com	Free plan Professional: 25 EUR Team: 109 EUR Business: 599 EUR Enterprise: Contact for pricing	The most complete and popular social media manager.	The free plan is minimal. High pricing. Some problems with Facebook images.
Oktopost	www.oktopost.com	Customised plans	B2B. Several options. Allows tracking of clients and sharing in groups.	It is not recommended for freelancers. Not for iPhone.
Coschedule	www.coschedule.com	Marketing Calendar: 29\$ Marketing Suite: contact for pricing	A complete social media and marketing manager. The calendar helps to have a broader vision.	High pricing, the panel can be overwhelming.

* Prices shown in providers' websites as of December 15, 2020, but are subject to change. Please check each website for local prices and special offers.

Edgar

- Edgar started in 2014 as a way to make social media scheduling faster and smarter, and today is much more than a scheduling tool. It offers more features than Buffer.
- It suggests variations of phrases from your links that you can use when posting.
- It offers an unlimited content library, auto-expiring content for seasonal or one-time promotions, and resharing of old posts.
- Edgar targets freelancers, growing brands, entrepreneurs or small businesses, with two pricing options and a free trial period of seven days.

Hootsuite

- More than just a scheduling tool, it is a proper social media management system. It works with more than 32 social network platforms.
- It allows you to interact with your followers directly from the app.
- Similar to other scheduling tools, you can manage all of your social networks from one dashboard, from a desktop computer or mobile phone.
- It also provides an analysis of your activity, for a price.
- It has a free plan that allows one user, three social media accounts, and 30 posts per month.
- Hootsuite focuses on B2C. Depending on your needs and the size of your business, you may want to have a look at all four different plans on offer.

Oktopost

- Similar to Hootsuite, it is a complete social media managing system that helps companies extend their marketing strategies to social media.
- Interestingly, it monitors for compliance with industry regulations in several sectors, including healthcare.
- It automatically offers you variations of your posts.
- It publishes in LinkedIn groups, allows for easy comment tracking and discussions.
- Oktopost also provides detailed analytics, like traffic activity on LinkedIn groups. It allows you to track a client from the first click until their first buy.
- Oktopost focuses on B2B and prices are tailored to each company's budget, allowing a free trial for beginners.

Box 1. 10 Key points to have in mind when scheduling your social media posts

1.	Be authentic.
2.	Keep the human touch. Monitor your posts for comments, respond and thank people for sharing your posts.
3.	Do not automate direct messages to people. People will be suspicious and may think there is nobody behind your account.
4.	Space your content. Share your posts at the time when your audience is more likely to be online.
5.	Be mindful of tragic or important events that may be happening at the moment of your scheduled post.
6.	Do not take hashtags and use them in meaningless ways.
7.	Analyse your impact to know if your scheduling strategy is working. Almost all social platforms have a way of measuring your activity.
8.	Try different strategies like changing days or time slots and different headings. What day of the week works best? Is there more activity when you post more often? What headlines raise more engagement?
9.	Focus on one or two platforms, the ones that help you best. When you try to be everywhere, you end up missing interactions in some platforms. Show up and engage in the ones you choose and make fewer but better connections.
10.	Listen. Listening to what people have to say is as important as sharing your own view. If you schedule your posts without interacting, you miss a significant opportunity to know what the people think about your topic. Like in real life, online communication has two sides: talking and listening.

Coschedule

- Coschedule is a marketing work management software that includes social media scheduling.
- It offers a marketing calendar, where you can see all your marketing projects, including social media posts, emails and events.
- The social media scheduling tool includes a template for scheduling similar types of posts, making the process very easy and intuitive.
- They offer two plans: The Marketing Calendar and the Marketing Suite, and similar to other tools, there is also a free trial period of 14 days.

Pros and cons of scheduling in social media

The main aim of scheduling your posts should be to spend more time and focus on the activities that have more value to you. Scheduling is not just a way of saving time, but a way to optimise your social media interactions.

The key points to keep in mind when scheduling your social media posts are summarised in Box 1.

These are the main benefits of scheduling:

- Organise posting and updates if you have several social network accounts.
- Increase traffic to your website.
- Become more productive.
- Engage with people who are online when you are not.



- Pace your posting as opposed to sporadic bursts.

Having a schedule of your social media posts could be beneficial for you and your audience, as long as you don't lose the "human touch".

Why you may not want to schedule:

- If you are very familiar with social media and can manage it without it interfering with your productivity.
- If you are only in one social network and are very disciplined with the time you spend on social media.
- In some cases, posting "by hand" avoids penalties from social media algorithms.
- If you feel that scheduling your posts is keeping you from connecting with your audience.

Like in real life, online communication has two sides: talking and listening.

But if you are starting to use social media for your business, scheduling your posts is an excellent way of engaging with your audience while focusing on what is important.

Our digital self has a place in social media

Our social media profiles reflect who we are, and this also applies to companies. Proper pacing gives the impression of reliability and consistency, attributes that business partners value.

While scheduling your social media posts frees you to engage in other activities, it does not engage with your followers for you.

Do not forget to keep the human touch.

After all, the whole aim of following your updates is to make a connection with a human being.

Disclaimers

The opinions expressed in this article are the author's own and not necessarily shared by EMWA, nor does the author or EMWA have any commercial link to the online tools presented in the article.

Conflicts of interest

The author declares no conflicts of interest.



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Google Scholar profile: <https://scholar.google.com/citations?hl=es&user=aWlcPhcAAAAJ>.





Social media and the rise of predatory journals: A case report

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Abstract

This is a report of our experience with a predatory journal that invited us to join them after having seen our winning essays on how to identify predatory journals.

We applied the system we recommended therein to investigate the true nature of the

journal and in so doing, provide readers a model of how to go through such an investigation. We also reflect on the extensive role of social media, ranging from helping these publications to target prospective authors with ease to increasing awareness and educational initiatives among researchers, publishers, and academic institutions.

Our winning essays, selected for the 2019 Geoff Hall Scholarship, were focused on identifying predatory journals.¹ We have now been targeted by one such journal. Five months after our essays were published in *Medical Writing*, we received 10 requests to become reviewers or contributors and join an editorial board. The fact that these requests all originated from a questionable journal was not only ironic, but baffling. We decided to take the opportunity to report this

case. We followed our own published advice¹ on how to systematically evaluate all relevant aspects of the journal, to show that it is indeed a questionable journal that should be avoided.

In this article, our aim is **not** to identify the journal or publishing group by name. The reason for this is two-fold: (1) denouncing a publication is not our primary goal, as there are other platforms dedicated to that practice (which will be mentioned later); and (2) we want this case report to be applicable to recognising *any* predatory journal, and be a useful example for readers to adopt their own identification strategies.

How did they find us? The link to social media

Medical Writing is primarily available to members of EMWA and is indexed in *Scopus*, *Google Scholar*, NIH National Library of Medicine, *ResearchGate*, and *EBSCO*.² In addition, we



Figure 1. One of 10 emails sent by the same journal
 Each email was sent with a different editor’s name and had a different colour scheme.

believe that social media sharing may have played a pivotal role in publicising our work among our peers and others. Articles published in *Medical Writing* are regularly promoted on LinkedIn and through the official EMWA Twitter account (@Official_EMWA). This questionable journal likely used the email addresses associated with each essay and did what they do best.

Clues and disparities

The disparities started at the very top with the sender’s names and email addresses. Each of the 10 emails received (at the time of writing),

although originating from the same journal, were sent by a different editor, each time with a different domain name. Some addresses corresponded with .org domains, while others with .com. The domain name associated with the email address, differed from those of the links within the email to obtain “more information”, which in turn, also differed from those on the journal’s website. They seemed to use one or two email templates for guidance, but

each email differed in colour scheme and showed slight differences in wording. Figure 1 shows just one of the 10 variations of emails sent by the questionable journal. Considering these editors were supposedly representing an academic publication, sentence construction was awkward and convoluted, both within the emails and on the journal’s website.

Website of the questionable journal

The title of the journal, as expected, closely resembled those of at least two other journals; one seemed to originate from a reputable publisher, while the other seemed to have questionable origins. Although we were cautious to avoid clicking the links within the emails, an online search of the journal’s title led to two separate websites, both of which seemed reasonably professional at face value. However, on closer examination, the disparities inevitably surfaced. Both websites featured the same journal title, one featured a blue colour scheme, while the other’s was red. As expected, the article processing charges (APCs) were prominently featured on both websites (Figure 2).

In addition to the relatively high number of journals published by the group (more than 500 titles), rapid publication times were prominently featured (generally within 50 to 90 days). A closer look revealed that 46% of the titles were some variation of “International”, “American”, or “European Journal of...” reflecting similarities to the names of legitimate publications, and thereby, effectively hijacking those titles. Contact information included a North American phone number and address, which ultimately led to a

rental office block in New York. However, it was not clear whether the publishing group was physically located at that address (Table 1).

The aims and scope of the journal had no association with the titles and topic of our essays. Nevertheless, the editors of the journal claimed to have been “greatly impressed by our papers” (on how to identify predatory journals!). Neither essay had an abstract, but that did not stop the various editors from referring to an abstract in each email. The homepage of the journal states that it has been listed in “14

Table 1. Application of the 5 Ws (Who, What, When, Where, and Why) to determine whether journal is legitimate or predatory

First contact: **Who – What – When – Where – Why**

WHO	<p>Do you recognise the name of the journal or publishing group?</p> <p>Online information about journal</p> <p>Online information about publisher</p>	<p>No</p> <p>Scope Journal website states that they publish research articles in the field of biomedical sciences. <u>Does not apply to our article</u> 68 editorial board members and 35 reviewers listed on the page – not common practice to list reviewers on a journal’s webpage</p> <p>552 open-access journals, of which: <ul style="list-style-type: none"> ● 149 “International Journal of” ● 96 “American Journal of” ● 8 “European Journal of” combined with variations of similarly named legitimate journals. Accounts for 253 of the 552 journals: 46% of their entire publication list</p>
WHAT	What do they want?	<ul style="list-style-type: none"> ● They are impressed with our article ● Asked us to publish articles in their journal, or ● Join as Editorial Board Member/Reviewer
WHEN	<p>Timeline of events</p> <p>Emails from journal</p>	<ul style="list-style-type: none"> ● Article published: June 2020 ● First contact: September 2020 ● Received 10 emails at the time of writing (December 2020) ● Flagged as spam ● Always different email domains ● Always different editor names
WHERE	Physical location of publishing group	Undetermined, the address is of an office block in New York. Block website only lists offices for hire and does not give any information about offices rented.
WHY	Journal invited us to become reviewers/ editorial members	<p>Per journal’s website requirements for potential reviewers/editorial members/Editor-in-Chief, we do not fulfil their criteria.</p> <p>Why did they actively invite us to apply to a position for which we are not qualified?</p>

Abstracting and Indexing” databases, most of which are unfamiliar. We accessed them all and the journal was actually indexed in eight databases. Three of those databases were dubious-looking paid indexes, and on closer scrutiny we found the membership fees prominently displayed on the webpages. The indexing criteria simply included possession of a valid International Standard Serial Number (ISSN) and a minimum of two published issues (characteristics of all journals, regardless of their legitimacy [Table 2]).

Peer review and impact factor

Although the words “peer review” or similar phrases appeared repeatedly in the emails, the process by which this is achieved was not clearly outlined on the website of the questionable journal. An impact factor could not be readily determined, and is currently listed as “waiting”, even though the first issue was published more than five years ago.

Blacklists, whitelists and Think. Check. Submit.

Currently, lists of predatory publications (blacklists) and lists of legitimate publications (whitelists) exist. The first and most popular blacklist was *Beall’s List*, which ran from 2011 to 2017. After Beall shut down the website, other scholars – who prefer to remain anonymous to prevent the harassment to which Beall was subjected – took up the job of maintaining and updating the list. At the time of writing, two major websites exist: *Stop Predatory Journals*³ and a new *Beall’s List*.⁴ Legitimate open-access journals are listed in accredited directories, such as the Directory of Open Access Journals (DOAJ)⁵ and the Open Access Scholarly Publishers’ Association (OASPA).⁶ Similarly, legitimate publishers should be members of the Committee on Publication Ethics (COPE).⁷

Our questionable journal and publisher failed the test on all lists and directories. While this is a major point to confirm that it is indeed a predatory journal, such listings should not be the only source of information. The number of predatory publications is steadily rising, and it is difficult to keep up with this growth and update blacklists on a regular basis. In addition, predatory journals sometimes sneak into whitelists and go unnoticed. A good method to guide such systematic analysis is *Think. Check.*

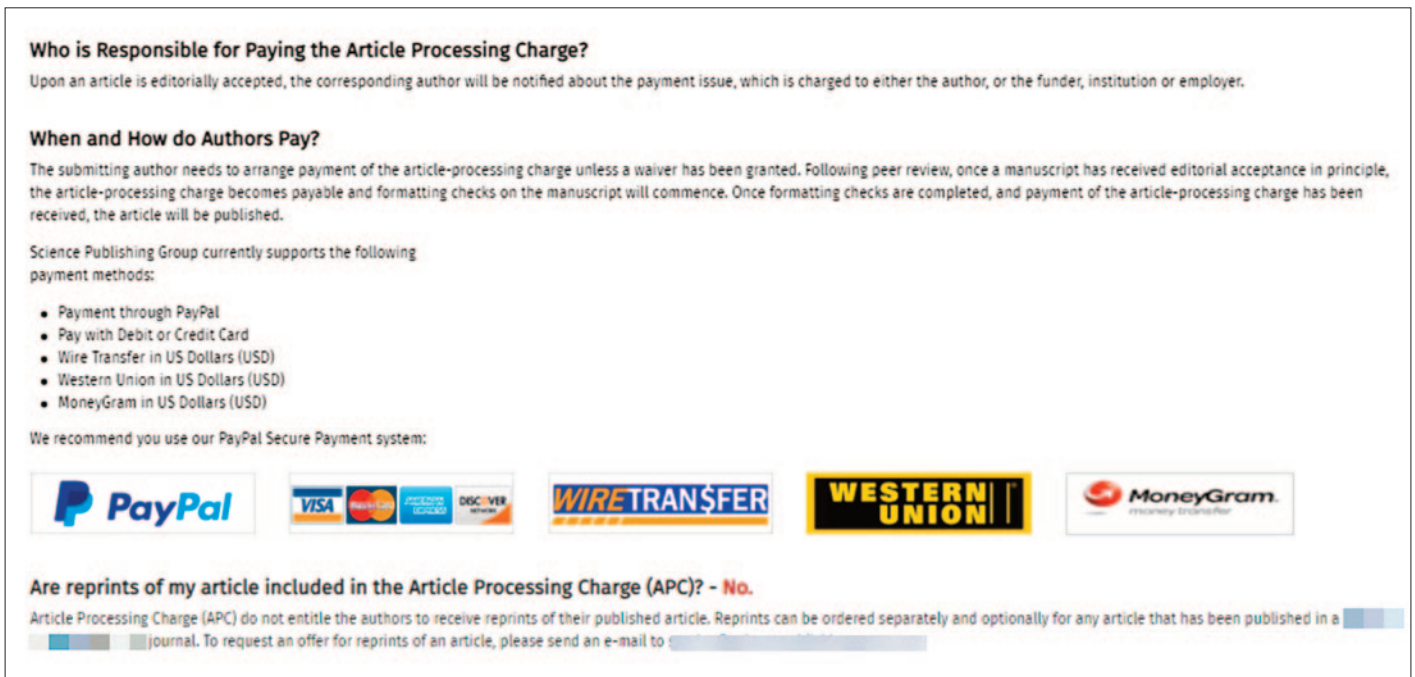


Figure 2. One section of an entire webpage of the questionable journal

Note the inclusion of various money transfer services.

Submit.⁸ This is an online checklist developed by a coalition of scholarly publishing organisations and the template we adapted to analyse our case report.

What’s the harm? Long-term consequences

The questionable publishing group has a presence on Twitter (with over 1000 followers), Facebook (over 4000 likes), and LinkedIn (over 1000 followers, and lists over 100 employees). Their content varied between popular science and their own articles.

The journal has a total of six volumes. Each volume has six issues, and each issue has between one (!) and five articles, meaning that the total in 36 issues range from 36 to 180 articles. A small percentage of what appears to be scientifically sound articles include pre-clinical research and the validation of a new analytical method, the authors of which belong to a pharmaceutical company that developed the specific method.

We also need to consider who these authors are. Some can be legitimately mistaken and unaware that they have submitted their articles to a predatory journal, while others might want to take full advantage of the model to increase their number of publications and supposedly improve their professional reputation.^{9,10}

But what exactly is the problem? Does it end there? Shouldn’t these researchers make their own choices and publish where they want? Not quite – researchers following the tenets of scientific method consult published data and build their own research

Table 2. Indexing and membership checklist (adapted and modified from Think. Check. Submit.)

Database Listings and Association Membership

WHAT THE JOURNAL CLAIMS	
Website: Journal is indexed in 14 databases	
<ul style="list-style-type: none"> • Indexed in 8 databases <ul style="list-style-type: none"> • 3 seem to be paid index databases with questionable membership criteria • 1 clearly states that it does not provide an indexing service and stakeholders should suspect any journal that says it is indexed in their website • 3 dead links • <u>Not indexed</u> in 2 databases • 1 is not a database but a career portal 	
WHERE THE JOURNAL SHOULD BE IF IT WAS LEGITIMATE	
Publisher belongs to COPE? publicationethics.org	No
If OA journal: listed on DOAJ database? doaj.org	No
If OA journal: publisher belongs to OASPA? oaspa.org	No
Article Processing Charges?	Process fully explained: amount to be paid by journal is clearly stated and the payment is only made after article undergoes peer review

Abbreviations. COPE, Committee on Publication Ethics; DOAJ, Directory of Open Access Journals; OA, open access; OASPA, Open Access Scholarly Publishers’ Association.

from it. However, if those data come from a questionable or predatory journal, without peer-review and no guarantee of fulfilling scientific criteria or data quality, any subsequent results will also be invalid.¹⁰ We can catch a glimpse of the true dimensions of the problem by considering the very high number of predatory titles. In 2017 there were 8000 predatory publications, with an output of more than 400,000 articles a year.¹¹ Considering the exploitative tactics of these publishers, these numbers must be considerably higher today – and may have a more considerable impact on legitimate scientific scholarship.

Social media: A tool to fight back

Since the inception of *Beall's List*, which effectively coined the term “predatory journal”, awareness about these publishers and their tactics has been steadily increasing. Academic libraries and publisher organisations now include sections on predatory publishing and tips on how to avoid it.^{12,13} In 2019, the American Medical Writers Association (AMWA), EMWA, and the International Society for Medical Publication Professionals (ISMPP) released a Joint Position Statement on predatory publishing.¹⁴ Further initiatives from EMWA include the Medical Communications Special Interest Group, which also shares a focus on predatory publications.¹⁵

At EMWA's Virtual Conference 2020,¹⁶ 85% of attendees at one presentation on predatory publishing claimed that they would like to see this topic developed further at future conferences.¹⁷

On both LinkedIn and Twitter, #PredatoryPublishing is used by editorial associations, publishers, and individual writers and researchers to share their experiences, denounce the practice, and increase awareness of these publications. One Twitter account, led by a group of academics with a focus on fake journals, claims their mission is to “rid scientific publishing of fake and predatory journals”. They have over 3000 followers and share regular tweets informing and educating the public about predatory journals.

Occasionally, researchers devote some time to sting operations that wonderfully illustrate both the lack of scientific rigour and the for-profit

model of these questionable publications. These operations tend to be both brazen and hilarious, which makes them highly “shareable” among professional/academic networks and social media, once the author reveals the deception. In

Although the words “peer review” or similar phrases appeared repeatedly in the emails, the process by which this is achieved was not clearly outlined on the website of the questionable journal.

March 2020 – with only four days between receipt and publication – the American Journal of Bio-medical Science and Research (a publication of the infamous OMICS group¹⁸) published an article linking COVID-19 to the consumption of Zubat, a Pokémon character.¹⁹ Not only was Gregory House M.D. one of the authors and Winnie the Pooh one of the references, the actual text of the article states “Epidemiologists believe it highly likely that a journal publishing this paper does not practice [*sic*] peer review and must therefore be predatory”. It really does not get more brazen than that.

To summarise, we have systematically explored all major aspects of identifying a predatory journal. We can confidently conclude that both this journal and their publishing group are predatory, with characteristic promises of fast publication times for a fee. Considering the low quality of individual articles, we felt there might have been a total lack of peer review. With this case report, we have shared our experience dealing with these publications and our strategies to positively identify them. We have also explored the role of social media, both in enabling these publications, as well as being used as a tool to educate others and raise awareness about the problem.

Now it's time for **you** to put these skills into action, so we can effectively identify these publications and collectively combat predatory publishing.

Acknowledgements

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Conflicts of interest

The authors declare no conflicts of interest.

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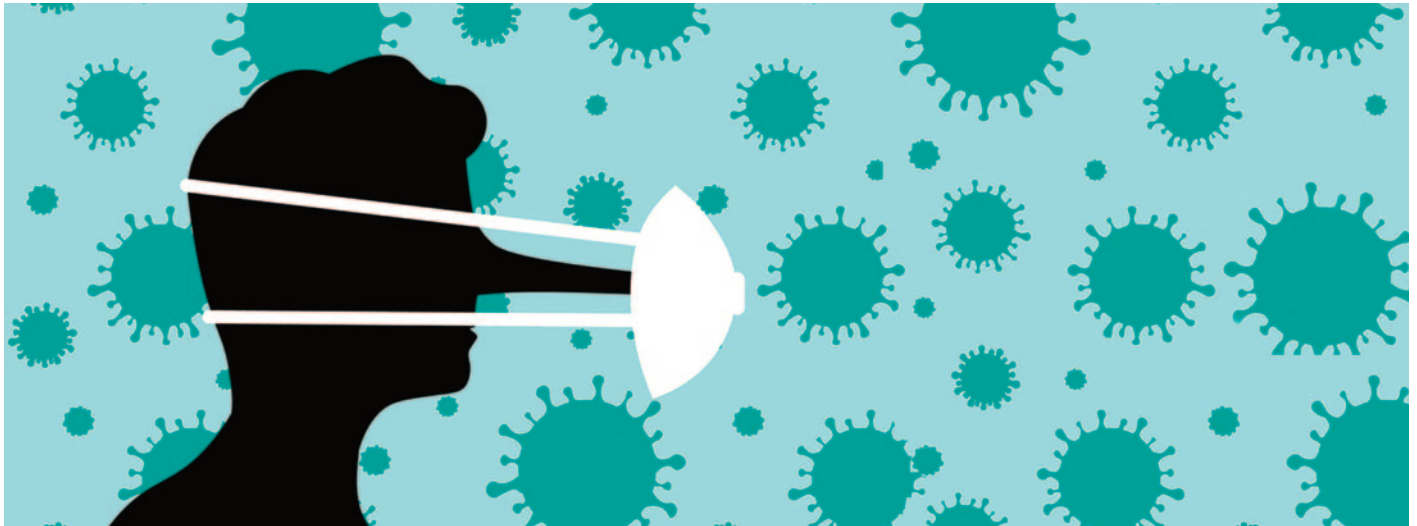
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Social media, communication challenges, and the role of a scientific writer in standing up for science



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Abstract

Social media and other communication technologies are great tools to raise awareness regarding public health challenges and measures to overcome them. At the same time, these modern technologies are used to spread misinformation and conspiracy theories on topics that include vaccines, genetically modified organisms, climate change, and most recently, the COVID-19 pandemic. The resulting *infodemic* makes it challenging for the lay audience to separate scientific facts from misinformation. This article invites the scientific writer to consider approaches used in public speaking and teaching to craft scientific articles and blogs that can be understood by non-expert readers.

Modern communication technologies, including social media, are great tools for delivering timely scientific and healthcare information. However, these unregulated tools can also be used to spread science-related misinformation and conspiracy theories. The overabundance of information available online makes it difficult for the lay person to separate facts from fiction, and the COVID-19 pandemic has thrown this challenge into sharp relief.

The term *infodemic*^{1,2} was coined to emphasise the impact of science and health misinformation on undermining the management of public health challenges (including disease outbreaks), trust in scientific research and knowledge, policy-making, and the evolution of public debate and narrative.³ For example, in the Ebola disease outbreak in West Africa in 2013–2016, people who believed in the misinformation that virus transmission was airborne or mosquito-borne were more likely to have used unsafe burial practices.⁴ Studies on global trends in vaccine confidence showed wide heterogeneity in responses between countries.^{5,6} A survey designed by the Wellcome Trust and conducted by Gallup Poll between April and December 2018 showed that people living in high-income countries had the lowest confidence in vaccines.⁷ According to this survey, in France, about 33% of people believe that vaccination is not safe and

over 55% of people believe that science and technology would reduce the number of jobs available.

The COVID-19 crisis has spawned a full-fledged misinformation campaign across all social media platforms (including Facebook, Twitter, Instagram, and YouTube) and news channels, amplifying rumours regarding health conspiracies, fictitious medical cures, and unsubstantiated claims regarding the origin of the virus, seriously undermining the efforts of public health authorities in managing the pandemic.^{8,9,10,11} In fact, recent studies suggest that fake news may spread faster and wider than scientifically sound information. So profound is the impact of misinformation that models developed to forecast the spread of virus now take into account the behavioural response of the public concerning health interventions and public health policy.¹²

“We’re not just fighting an epidemic; we’re fighting an infodemic”, stated the WHO Director-General Tedros Adhanom Ghebreyesus at the Munich Security Conference in February 2020.¹³ Once COVID-19 was declared a Public Health Emergency of International Concern, the WHO launched its WHO Information Network for Epidemics (EPI-WIN), as part of its infodemic management strategy, to share scientifically reliable information online with the

public.¹⁴ The EPI-WIN has since been actively disseminating research updates and public health recommendations. The WHO is also partnering with NewsGuard (an online platform that rates the credibility of news and health information on websites)^{15,16} and Wikipedia¹⁷ to track and counteract COVID-19 misinformation.

For a non-expert reader, despite an abundance of online information resources, the biggest challenge is deciding which health information is the most reliable. Often, science journalists without a science background tend to sensationalise scientific breakthroughs to capture the audience’s attention, a tactic that could potentially lead to the spread of misinformation. In contrast, most scientific literature written by researchers is dense, with excessive use of scientific jargon that makes it less accessible to the non-expert. Here are a few points a scientific writer should consider while writing a scientific article or blog, to improve its readability.¹⁸

Be clear on the five Ws: who, what, why, where, and when

Richard Feynman is widely considered to be one of the most important physicists of all time. He pioneered the field of quantum electrodynamics, and his work to advance our understanding of the interaction between light and matter earned him the 1965 Nobel Prize in Physics. Feynman was also a brilliant and eloquent speaker, with an exceptional ability to synthesise and explain complex scientific concepts to students with no prior knowledge of deep science topics.^{19,20}

The Feynman technique can be used to create scientific content that resonates with its readership. Just like someone preparing a speech or lecture, a scientific writer needs to know and understand their target audience. As a scientific writer, your goal is to make science accessible to your target audience. Consider the following questions while crafting the outline for your article or science blog:

1. **Who:** Is involved? Will benefit or be harmed? Is the audience?

2. **What:** Is your topic about? Is the impact you are aiming for? Is the objective – is it to inform, persuade, or explain? Are the goals for this project? Are the strengths and weaknesses of this research?
3. **When:** Does this take place? What impact does the timing have on your topic?
4. **Where:** Is the location important? If yes, in what context?
5. **Why:** Are you writing this article? Why is the topic important? Why is it relevant to the reader?

The Feynman technique encourages writing as if you are teaching a child. Avoid making it the reader’s responsibility to understand you. Focus on fewer points and develop them with supporting facts and illustrations to help the reader understand, and keep scientific jargon to a minimum. It has been said that if you can’t explain it to a 6-year-old, you don’t understand it yourself.

Keep it simple

There are 1.8 billion websites, 5.6 billion Google searches, and 500 million Tweets sent out every day. Over 55% of readers spend fifteen seconds or less on a piece of online content. Web readers have short attention spans and can easily get lost in the details.²¹

Make your text scannable, as the average reader will not remember all the details. Develop a strong framework that helps the reader make sense of the content and remember relevant points. Use the “inverted pyramid” model of online content writing to place the most important content – the who, what, when, where, and why – at the top of the page and develop the details with clear, well-written text in later

sections. For a more scientific audience, your aim should be to convey the content with clarity and consistency rather than showing off your writing ability. Simple writing will produce clear, strong, and coherent papers, and enhance their readability.

Writing that has the feel of speech makes the reader more engaged, and solid scientific information builds trust with the audience. Take the example of Dr Anthony Fauci, director of the US National Institute of Allergy and Infectious Diseases (NIAID). His media interviews during the COVID-19 pandemic have followed a simple, consistent structure focusing on *what we know*, *what we don’t know*, and *what we should do*;²² his

message is not lost in trying to convey as much data as possible. Instead, Dr Fauci focuses on key data and what steps we need to take based on the latest research in a way that inspires public trust in science.

Posing a question and developing the article to unpack and discuss it is another way to engage the reader. Consider this cycle when writing or editing your work: organise, simplify, and tell a great story that leaves the reader feeling enlightened

and curious to know more. Now that most scientific content is available online, the benefits of writing simply also include improved credibility, better search

The Feynman technique encourages writing as if you are teaching a child. Avoid making it the reader’s responsibility to understand you.



engine optimisation (SEO), and better readability on mobile devices. The latter is important as reading comprehension is reduced for the content presented on a mobile screen.²³

Taking a stand – or not

In general, the role of a scientific writer is in communicating about science rather than speaking up for it. However, advocating and gaining public support for science is critical, and effective scientific communication may also entail science advocacy.^{24,25,26,27} In an unprecedented first, last year, reputed scientific journals, including the *New England Journal of Medicine (NEJM)*,^{28,29} *Nature*,³⁰ *Science*,³¹ and the *Scientific American*,³² publicly condemned the Trump administration's response to handling the COVID-19 pandemic. While the *NEJM* (in an editorial signed by 34 editors) and *Science* discussed the mishandling of the COVID-19 response in the US, editors of *Nature* and the *Scientific American* endorsed Joe Biden for president.

The COVID-19 crisis has made it clear that the role of a scientific expert is open to public debate and criticism. Dr Fauci's approach of sharing accurate information and openness in discussing gaps in scientific knowledge humanises science and creates public trust in scientific research that is resilient to misinformation and political fact-spinning. Debates on topics such as climate change, vaccinations, and genetically modified organisms (GMOs) must be focused, relevant, and convincing to withstand public scrutiny and influence political decision-making.^{33,34} The use of patients' perspectives, patient advocacy groups, carers, and physicians in communicating health information that is based on lived experience can be a valuable resource in engaging public interest and tackling misinformation.^{35,36}

Social media are changing the ways in which people communicate with each other. At the same time, they are powerful tools that can be leveraged to inform and educate the public on health research and policy, and place medical professionals and healthcare systems in a better position to respond to public health emergencies.³⁷

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Social media and altmetrics: The pharma perspective

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Abstract

The increased prevalence of healthcare-related social media and other web-based communications has generated interest in tools that measure the attention and engagement of published content. In the context of medical research publications, the use of alternative metrics, or altmetrics, in place of article citations, has also grown. To date, pharmaceutical companies show limited interest in social media tracking and altmetrics tools, and their reluctance is driven by concerns about the sharing of fraudulent research and the risk of genuine research findings being misinterpreted. Despite these limitations, five strong areas of opportunity arise for pharmaceutical companies to explore, namely patient groups supporting rare diseases, the recruitment of patients into clinical trials, communications at scientific conferences, the supplementing of traditional data sets, and support for regulatory compliance.

Background

An increased global use of social media is one of the most far-reaching consequences of the COVID-19 pandemic. It is now reasonably argued that social media is an essential tool in the preparedness, response to COVID-19, and future public health challenges.¹

In the past decade, digital tools have been developed with the aim of tracking and measuring the attention and engagement associated with published content via social media and other web-based channels. These tools have been categorised as “alternative” metrics or “altmetrics” and are now widely used in medical

publications. Prominent examples include Altmetric, Plum Analytics, and ImpactStory.

The types of content surveyed include journal articles, book chapters, software, blogs, datasets, websites, and videos. Of particular interest for healthcare is the usage, impact, and influence of academic research publications within academic and professional digital communities and beyond, to patients and the general public.

Citation metrics – a time for change

Altmetrics have also generated huge interest over the past 10 years as a means of complementing, or potentially replacing, traditional citation metrics and, ultimately, the journal impact factor (JIF).

The Clarivate Analytics JIF was first devised in 1955. Despite all the intervening time and well-documented highlighting of its significant and fundamental flaws,² it continues to be heavily, if not exclusively, relied upon by governments, funders, and research institutions, as a proxy for the quality, impact, and influence of research publications.

It is only relatively recently that the scientific publishing community has collaborated to significantly improve the way in which journal research outputs are measured and evaluated.

This is now led by the Declaration on Research Assessment (<https://sfedora.org>), which promotes new digital tools and processes in research assessment and the responsible use of metrics that better align with core academic values and promote consistency and transparency in advancing science.

Altmetrics use within pharma

Although the potential for altmetrics is clear, the application remains relatively limited and is, in many cases, still exploratory. A number of studies have been published. From these, seven pharma-related activities can be identified in which social media share of voice is important

and hence, have potential for application:

Pharmacovigilance

Social media measurement and monitoring provides the opportunity to complement traditional surveillance methods that rely on proactive clinician and patient reporting via registries such as the FDA’s MedWatch; these, however, typically experience significant delays and systematic underreporting.

Besides surveying pharmacovigilance data and the scientific literature, social media measurement can be useful in identifying adverse drug events.^{3,4} For example, Instagram influencers frequently discuss health problems, including diagnosis, prescribed drugs, and side effects through photos and comments.

A recent literature review⁵ has reported that the task of extracting relationships between drugs and their effects from social media is a complex challenge owing to the characteristics of

social media texts.⁶ These texts, typically posts or tweets, usually contain many typographical errors, and patients use lay terminology to refer to diseases, symptoms, and indications.

Although the potential value of social data is increasing, research on social media-based pharmacovigilance is still not in a position to supplant more traditional methods.⁷ Data from traditional health systems and patient-generated data, however, have complementary strengths and, when combined, can lead to more robust public health systems.

The European Union’s Innovative Medicines Initiative WEB-RADR project has explored the value of social media^{8,9} and partnered with

It is now reasonably argued that social media is an essential tool in the preparedness, response to COVID-19, and future public health challenges.



PatientsLikeMe, u-Motif, and Voluntas. To date, however, WEB-RADR does not recommend the use of general social media for broad statistical analysis.

Finally, the Canadian Network for Observational Drug Effect Studies (CNODES) is an example of a nationally distributed network of researchers and data centres using social media for collaborative, population-based approaches to study drug-safety and-effectiveness. Recently, CNODES monitored and measured the social media impact of pharmaco-epidemiologic research using altmetrics.¹⁰

Patient experience

The Deloitte Centre for Health Solutions forecasts¹¹ that, as pharma moves from simply engaging with patients to becoming more patient-centric, more will be done to connect with patients and carers via social media.

The use of digital and social media tools as a natural source of information for patients and healthcare professionals alike is still difficult for pharma. Although it has become easier to provide patient apps, uncertainty over the

regulatory response remains. If patient-centricity is to reach its full potential, social media content and interactions must be measured as accurately and as honestly as any other activity or variable in drug development and delivery.

The impact and influence of social media on patients is clearly shown in a PWC Health Research Institute patient survey which reported¹² that 34% of respondents said that social media would affect taking of certain medications and 40% said it would affect how they coped with chronic illness or approach to diet and exercise.

In addition, patient recruitment and retention are the two biggest reasons for delays in completing clinical trials. For example, only a small percentage of eligible US patients participate in clinical trials, even though 70% are estimated to be inclined or very willing to participate. Social media combined with clinical trial search tools can help patients find

and enrol into trials with eligibility requirements matching their profiles.

Product marketing

Pharma is beginning to adapt to advertising strategies and partnering with influencers to promote new drugs and medical devices. Social media enables users to connect over shared interests, locations, and illnesses. Healthcare companies locate potential influencers who can use these commonalities to reach and build trust with an audience.

For example, Instagram has a particularly high user-engagement rate, with projected 1.1 billion users, 50% aged 18 to 29 years and where “influencers”

have paid advertising partnerships. One such influencer is Louise Roe who has 698k followers and suffers from psoriasis. She has a paid partnership with Celgene, which produces the patent-protected psoriasis drug Otezla.

Social media combined with clinical trial search tools can help patients find and enrol into trials with eligibility requirements matching their profiles.



Photo by Rodion Kutsaev on Unsplash

Clinical practice

Digital online networking communities for physicians are well established for the sharing of clinical opinion. Examples include, Doctors.net.uk, Doximity, and Sermo. Most of these, however, are closed communities with the ability to validate physician and healthcare professionals and, therefore, increase trust and transparency in the sharing of knowledge.

Physicians and healthcare professionals are also active on social media and, aside from fake or fraudulent research being spread on social media, there is also the risk of misinterpreting genuine research findings.¹³ Conclusions of research findings are often simplified and overly extrapolated in the media and this is an underlying factor in the pharmaceutical industry's reluctance to engage with social media tools especially when communicating with physicians.

Regulatory compliance

A constant concern and challenge for pharmaceutical companies is regulatory compliance for social media activities and dealing with each of the relevant regional authorities. Codes of practice and guidance, however, have been painfully slow to be established.

The Association of the British Pharmaceutical Industry code of practice permits monitoring of social media sites to allow pharma companies to “listen to” or “see” what the public is discussing, saying, or sharing about it, the diseases and conditions it treats, and its treatment options. Companies must always declare their presence and monitor all content on an ongoing basis, especially for adverse events and product complaints.

The US FDA code of practice gives guidance on the correction of misinformation about prescription drugs and medical devices on social media originating from independent third parties

but does not survey influencers or influencer posts owing to the limited availability of tools to search and report on non-compliant content.

A further complication for regulators is the advent of the preprint servers such as bioRxiv. With the publication of these non-peer reviewed studies on preprint servers, associated social media comments may flag up issues and concerns with study disclosures of conflict of interest and funding statements. Studies have shown that, although preprints are not well cited, they achieved significantly higher Altmetric scores.¹⁴

Drug development

Social media can influence the process of orphan and rare diseases drug development by assisting the study of orphan diseases, increasing the awareness of these diseases, and playing a vital role in the clinical trial process.¹⁵

As the early drug development process begins with understanding the needs of patients with

orphan diseases, companies can use social media to study disease progression at much earlier stages compared with traditional communications from physicians.

In addition, social media increases patient awareness of orphan disease and orphan drug developers. Because many patients with orphan diseases spend years seeking a correct diagnosis, they are more likely to actively engage in social media and web searches.

By engaging in content-rich social media activities, pharma companies can provide valuable information on orphan diseases to help patients better understand their symptoms, as well as promote the credibility of their brand and gain patient trust.

Also, for the purpose of patient recruitment, retention, and monitoring, social media is a powerful tool for serving geographically dispersed patients or those with transportation challenges.

Social media is vulnerable to breaches of patient privacy, the collection of unrepresentative data of uneven quality or may be compromised by unblinding. Nevertheless, it possesses great potential for improving the efficiency and economics of orphan drug development, if companies consider the positive

and negative aspects of using such a powerful tool.

Scientific meetings

Physician use of social media increases during major scientific meetings, resulting in a global sharing of predominantly scientific content.

For example, recent data¹⁶ show an explosive growth of Twitter use by physicians during major cardiovascular scientific meetings. Widespread, international use of Twitter should translate into facilitation of real-time scientific discussion as well as immediate dissemination of potentially practice-changing information to a large global audience.

Future studies to explore and better characterise user demographics, as well as educational content and value of tweets, is warranted as routine use of these platforms by physicians could significantly impact on patient education, disease awareness, and research.

By engaging in content-rich social media activities, pharma companies can provide valuable information on orphan diseases to help patients better understand their symptoms, as well as promote the credibility of their brand and gain patient trust.

education, disease awareness, and research.

Conclusions

Overall, pharmaceutical companies continue to show limited interest in social media monitoring and measurement using altmetrics, and continue

to take traditional approaches to success metrics, and primarily citations and publications.

Another underlying barrier is the pharmaceutical industry’s reluctance to engage with social media tools where there is the risk of fake or fraudulent research and, the risk of genuine research findings being misinterpreted.

Despite the known limitations of social media monitoring and measurement, Table 1 summarises priority areas for social media monitoring tools that were reported in interviews to Inspiring STEM by pharmaceutical and medical communications stakeholders.

In summary, although the potential value of social media monitoring and measurement is increasing with some interesting opportunities or further exploration, it is not currently in a position to supplant more traditional methods, for example, in pharmacovigilance or product marketing.

Conflicts of interest

The author is a director and owner of Inspiring STEM Consulting Limited, an independent scholarly academic and scientific publishing consultancy. The author declares no conflicts of interest.

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Table 1. Future priority areas for social media monitoring

Rare diseases	Facebook groups that allow for direct interaction between pharmaceutical companies, researchers, clinicians, patients and carers.
Clinical trial patient recruitment	Search tools, combined with social media channels, can help patients find and enrol into trials with eligibility requirements matching their profiles.
Scientific conferences	Harnessing the increasing growth in social media use by physicians during major scientific meetings.
Supplementing traditional data sets	Further development of computational methods for processing large data volumes and natural language processing methods for more detailed and sophisticated data analysis.
Regulatory compliance	Development of technologies and universal standards to monitor and police compliance.



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Are there MedDRA codes for misinformation and conspiracy theories?

This conversation was seen on LinkedIn on January 16, 2021.

Selected reactions to Saad Shakir's LinkedIn post are shown below. Take note that the suggestions should be taken with humour and a grain of salt. However, with widespread vaccine hesitancy and misinformation, I wonder if indeed, these terms should be included in the MedDRA dictionary. - **Editor.**



Saad Shakir • 2nd
 Director at Drug Safety Research Unit
 2mo • Edited •

A question to pharmacovigilance experts about coding
 Anti-vaxers demonstrating in London yesterday shouted with megaphones, "The vaccine is there to make you infertile..that vaccine is just going to make them able to control you,". The question is how to code "going to make them able to control you". Please advise us from system organ class down to preferred term.

🤔

Best wishes
 Saad
 Professor Saad Shakir
 Director - Drug Safety Research Unit (DSRU)
 Twitter @SaadShakirDSRU

Post used with permission from Saad Shakir

Comment 1:

"The obvious HLT [high-level term] is delusional Symptoms, I suggest PT Thought insertion is closest, although the LLT [lowest level term] delusion of observation which codes to Persecutory delusion is also with merit, however if this is considered to not meet the psychiatric definition of delusion as it is an idea accepted in a group of people, then PT patient dissatisfaction with treatment or Educational problem or Mentally late developer??"

Comment 2:

"Is there a code for vaccine hesitancy which stems often from legitimate concerns by individuals as well as parents or carers of their loved ones? It is important to distinguish between legitimate concerns and outright anti-vax sentiments. The impressive trial results of the few approved Covid vaccines is unlikely to be translated into reality without positive engagements with the public over their legitimate concerns."

Comment 3:

"These comments are hilarious, but seriously though – I wonder if MedDRA should have codes for misinformation? There will be AEs that have narratives laced with conspiracy theories. Those details may be evident in narratives but hidden in aggregate stats used for signal detection. Just as we stratify by reporter type to get clearer signal, misinformation is part of causality assessment in this new era. It would help increase the credibility of patient reports (and HCP too!)."

Comment 4:

"I think 'Going to make them able to control you' does NOT require coding in any safety database.

However, if this needs to be coded even on a conservative consideration, then my proposal would be to code with LLT Unevaluable event, and as incomplete case. It's corresponding PT and other hierarchy terms are very clear in the MedDRA (writing this response without looking at the MedDRA)."

Comment 5:

*"SOC = Psychiatric disorders
 PT = Involuntary muscle movement?"*

Comment 6:

"... also looking forward to discussions on medical assessment with inspectors on this.... and that chip in the vaccine- we have to make sure we report as medical device too!"

News from the EMA

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The articles included in this section are a selection from the European Medicines Agency (EMA)'s News and Press Releases archive. More information can be found on the Agency's website: www.ema.europa.eu

First CAR-T cell medicine for mantle cell lymphoma

October 16, 2020 – The EMA has recommended granting a conditional marketing authorisation in the EU for Tecartus (autologous anti-CD19-transduced CD3+ cells) for the treatment of adult patients with a rare cancer of white blood cells called mantle cell lymphoma (MCL) when the symptoms or the disease come back (relapse) or when they are not responding (refractory) after two or more lines of systemic therapy.

Tecartus is the third CAR (Chimeric antigen receptor)-T cell medicine to be recommended for approval in the EU. CAR-Ts are advanced therapies for cancer, they belong to a new generation of personalised cancer immunotherapies that are based on collecting and modifying patients' own immune cells to treat their cancer.

MCL is an aggressive subtype of non-Hodgkin lymphoma that develops from abnormal B lymphocytes (B cells), a type of white blood cell. Its name derives from the fact that these cells originate from an area called the 'mantle zone' in lymph nodes.

The current standard of care for MCL includes treatment with stem cells taken from the patient's own body and a number of different therapy regimens. While patients with MCL can respond well to initial treatments, it is common that their disease returns or that they no longer respond to treatment.

There are some therapeutic options for patients with refractory/relapsed MCL, including a class of medicines known as Bruton's Tyrosine Kinase (BTK) inhibitors. However, treatment of patients with these forms of the disease is challenging due to the development of resistance to chemotherapy. Therefore, there is an unmet medical need for these patients.

To create each dose of Tecartus, the patient's blood is extracted and its T-cells, a type of white blood cell that help the body fight infection, are collected and genetically engineered to have a specific protein (CAR-T) that helps the body recognise and eliminate lymphoma cells. These

modified immune cells are then infused back into the patient.

The safety and efficacy of Tecartus was studied in a multicentre clinical trial of adult patients with refractory or relapsed MCL. 74 patients received Tecartus with a 12-month follow-up that highlighted an objective response rate (ORR), i.e. the proportion of patients who experienced a certain tumour size reduction, of 84%, and a complete response, i.e. the disappearance of signs of cancer, of 59%.

The most common side effects are cytokine release syndrome (CRS), which is a systemic response to the activation and proliferation of CAR-T-cells causing high fever and flu-like symptoms, infections, and encephalopathy, i.e. a brain disorder. The consequences of CRS can be life-threatening and, in some cases, even fatal. Monitoring and mitigation strategies for these side effects are described in the product information and in the risk management plan that is an integral part of the authorisation.

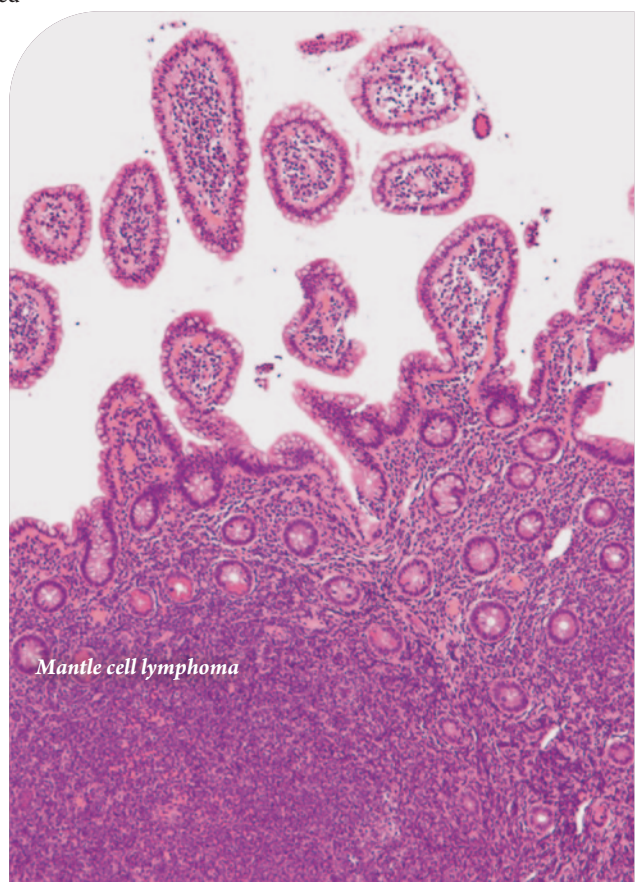
In its overall assessment of the available data, the Committee for Advanced Therapies (CAT), EMA's expert committee for cell- and gene-based medicines, found that the benefits of Tecartus outweighed the possible risks in the treatment of refractory/relapsed MCL in patients who had received more than two prior therapy regimens including BTK inhibitors.

The EMA's Committee for Medicinal Products for Human Use (CHMP) agreed with the CAT's assessment and positive opinion and recommended a conditional approval for this medicine. This is one of the EU's regulatory mechanisms to facilitate early access to

medicines that fulfil an unmet medical need. This type of approval allows the Agency to recommend a medicine for marketing authorisation with less complete data than normally expected, in cases where the benefit of a medicine's immediate availability to patients outweighs the risk inherent in the fact that not all the data are yet available.

Additional efficacy and safety data are being collected through the submission of long-term follow-up data from the main study and through a registry-based study that will also collect data on the long-term efficacy and safety of the medicine in specific subgroups (elderly, females, patients with severe disease).

Tecartus was supported through EMA's PRiOrity Medicines (PRIME) scheme, which provides early and enhanced scientific and regulatory support to medicines that have a particular potential to address patients' unmet medical needs. Tecartus was granted eligibility to PRIME in June 2018 for the treatment of adult patients with relapsed or refractory MCL.



Mantle cell lymphoma

First treatment for rare condition primary hyperoxaluria type 1: a small interfering ribonucleic acid

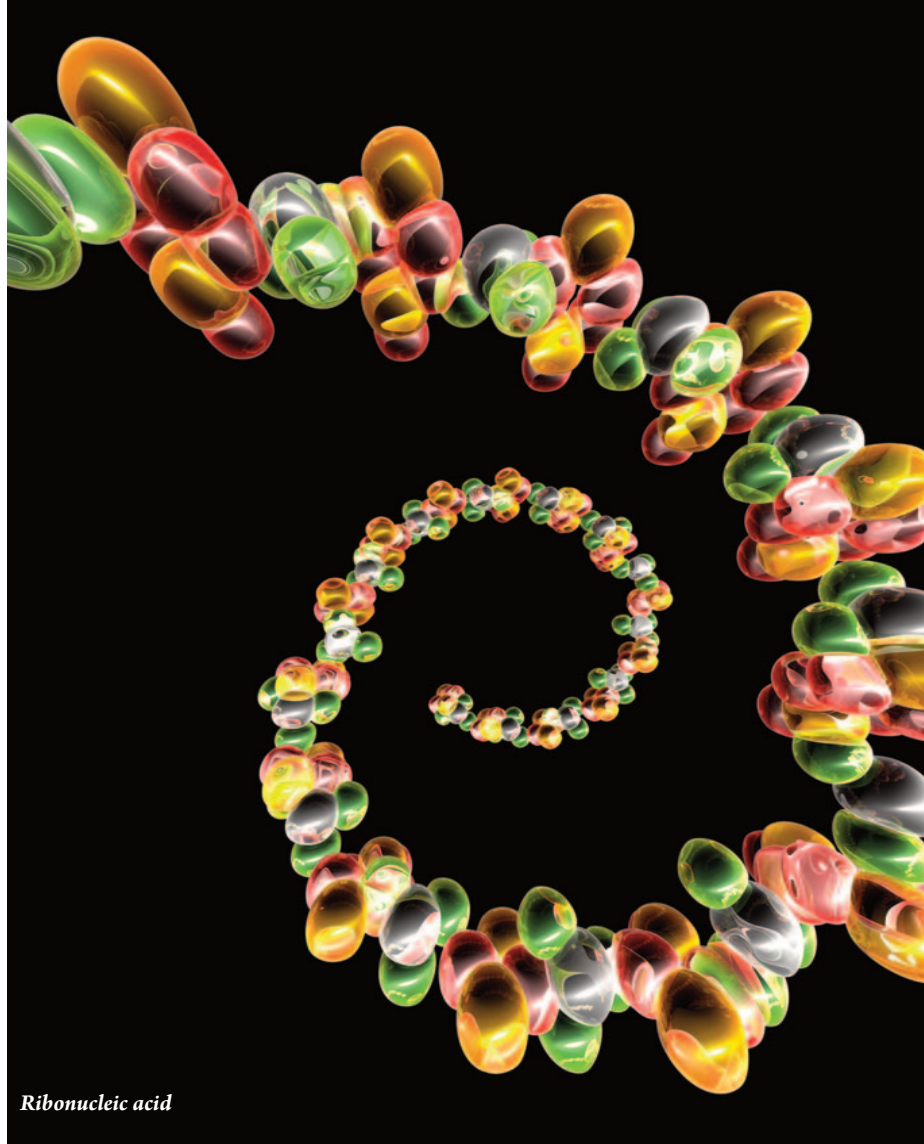
October 16, 2020 – EMA has recommended granting a marketing authorisation in the EU for Oxlumo (lumasiran) for the treatment of primary hyperoxaluria type 1 (PH1).

Primary hyperoxaluria is a rare inherited disorder characterised by the overproduction of oxalate. Oxalate can form calcium oxalate deposits, which can cause stones in the kidney and urinary tract (structures that carry urine) as well as injury to other organs such as the heart, eyes, bones, and skin. Characteristic symptoms of the disease include renal colic, blood in the urine, frequent urinary tract infections, and stomach pain.

PH1 is the most common and the most severe form of the disease, accounting for 80% of all cases. The condition is very rare with an estimated prevalence of 0.05 in 10,000 people in the EU.

There are currently no approved medicines for PH1 in the EU. Different treatments are used to prevent the accumulation of calcium oxalate such as dietary changes, drinking plenty of fluids, and taking vitamin B6. In certain cases, kidney and/or liver transplantation is required. Untreated PH1 leads to kidney failure, which is life-threatening.

Oxlumo will be available as a solution for



Ribonucleic acid

injection (189 mg/ml). The active substance of Oxlumo is lumasiran, a small interfering ribo-

nucleic acid that causes degradation of the messenger ribonucleic acid involved in the synthesis of the enzyme glycolate oxidase (GO) in the liver, leading to decreased GO enzyme levels in the body. This results in reduction of plasma and urinary oxalate levels, the underlying cause for the symptoms in patients with PH1.

The benefit of Oxlumo is its ability to reduce oxalate levels in the plasma and 24-hour urinary oxalate excretion, when compared to a placebo treatment. This was observed during a 6-month clinical trial involving 38 patients aged 6-60. In this study, treatment with Oxlumo resulted in normalisation of oxalate excretion in 52% of patients and near normalisation in 84% of patients. The most common side effects are injection site reactions and abdominal pain.

Oxlumo was accepted in EMA's PRIME scheme and has benefited from the extra support offered by the Agency to medicines that have a particular potential to address patients' unmet medical needs. EMA's human medicines committee (CHMP) reviewed the application for Oxlumo under its accelerated assessment procedure, which allows the speeding up of patients' access to medicines.



Cyberattack on EMA - update

December 22, 2020 – EMA has been the subject of a cyberattack, as reported on December 09, 2020. The ongoing investigation of this cyberattack was carried out by the Agency in close collaboration with law enforcement and other relevant entities and has revealed that the data breach was limited to one IT application. The perpetrators primarily targeted data related to COVID-19 medicines and vaccines and unlawfully accessed documents belonging to third parties. The companies concerned at this stage have been contacted and duly informed.

As the investigation proceeds, and all potentially suspicious activity is analysed, the Agency will ensure that any additional third party whose documents may have been subject to unauthorised access is notified. EMA will continue to provide information in due course, to the extent possible, given its duty towards the ongoing investigation.

The Agency and the European medicines regulatory network remain fully functional and timelines related to the evaluation and approval of COVID-19 medicines and vaccines are not affected.

Extra transparency measures for COVID-19 vaccines and therapeutics

October 30, 2020 – EMA has recommended implemented two further extra transparency measures for COVID-19 medicines, by publishing both the clinical data in support of the authorisation of Veklury (remdesivir) and information on the COVID-19 treatments and vaccines that have received scientific advice or informal guidance from EMA's pandemic Task Force (COVID-ETF). These are the latest measures in EMA's drive to maximise the transparency of its regulatory activities on

treatments and vaccines for COVID-19.

The publication of clinical data for Veklury is in line with EMA's landmark policy to proactively publish clinical data supporting marketing authorisation applications. The Agency had to suspend the publication of clinical data at the end of 2018 as a result of its move from London to Amsterdam. It currently remains suspended due to ongoing business continuity linked to the COVID-19 pandemic and human resource constraints. EMA has decided to exceptionally

publish clinical data for COVID-19 medicines given the unprecedented public interest for this information in the context of the ongoing pandemic.

The data package, consisting of 64 documents, is available on EMA's clinical data website and includes the clinical overview and summaries and the final reports from pharmacokinetic and phase I clinical studies, as well as interim study reports from phase III clinical studies and clinical data from the compassionate use programme. The data anonymisation report is also available. This explains the methods used to protect personal data, in line with a common approach agreed with Health Canada and the marketing authorisation holder for Veklury.

The list of medicines that have received scientific advice or guidance shows the stage of development when EMA gave its guidance. This guidance, which EMA provides at no cost, helps medicine developers prepare for an eventual marketing authorisation application, and can cover the best methods and study designs for generating robust data on a medicine's safety and effectiveness. It can also focus on quality aspects, such as manufacturing and testing, or on laboratory studies. The outcome of any consultation or advice from EMA is not binding on developers.



EMA and Health Canada publish clinical data used to support their authorisations of the Moderna COVID-19 vaccine share

March 2, 2021 — Openness and transparency are key to building confidence in COVID-19 vaccines. Today, EMA and Health Canada collaboratively published the full clinical data reviewed as part of their authorisations of the Moderna COVID-19 vaccine.

This international partnership highlights the shared commitment of both organisations to ensure the public has as much information as possible to make decisions regarding vaccination. Increasing access to clinical data can also have widespread benefits for the health care system and the research community. EMA and Health Canada are the only two jurisdictions in the world publishing this comprehensive information.

EMA and Health Canada are working together with manufacturers to expedite the publication of clinical information underpinning their authorisations for medicines and vaccines for COVID-19. The clinical data for the Pfizer-BioNTech COVID-19 vaccine is expected to be published shortly.

The clinical data package for the Moderna COVID-19 vaccine, presenting the interim safety and efficacy data generated in three clinical studies, is available on EMA's clinical data website and Health Canada's Public Release of Clinical Information portal.

The data anonymisation report is also part of the data package. It provides an explanation of the methods used to protect personal data in the clinical reports.



EMA publishes safety monitoring plan and guidance on risk management planning for COVID-19 vaccines

November 13, 2020 – EMA and the national competent authorities (NCAs) in EU Member States have prepared a safety monitoring plan for COVID-19 vaccines. The plan outlines how relevant new information emerging after the authorisation and uptake of COVID-19 vaccines in the pandemic situation will be collected and promptly reviewed.

The safety of COVID-19 vaccines will be monitored according to the guidance set out by EMA and NCAs in the good pharmacovigilance practices (GVP), that applies to all medicines. In view of the extraordinary circumstances, though, EU authorities have planned several activities that will apply specifically to COVID-19 vaccines.

Through the implementation of these activities, the EU medicines regulatory network will assess any safety data emerging from a range of different sources (spontaneous reporting, observational studies, etc.). Any potential safety concerns identified will be addressed by taking appropriate regulatory action to safeguard individual and public health and communicating

with the public in a transparent and timely manner.

The plan comprises new reporting obligations for companies that will have to submit monthly safety reporting summaries in addition to the regular updates foreseen by the legislation. Furthermore, the plan details the scientific studies already in place to monitor the safety, effectiveness, and coverage of COVID-19 vaccines after their authorisation. Lastly, it details the exceptional transparency measures set up by EMA as well as how the Agency plans to engage with a wide range of stakeholders.

In this context, EMA has also published guidance to support pharmaceutical companies' preparation of risk management plans (RMPs) for COVID-19 vaccines. As for any medicine, companies applying for a marketing authorisation for COVID-19 vaccines must submit RMPs. The RMP explains how the company must monitor and report on the safety of the vaccine once authorised, and what measures it must put in place to further characterise and manage risks.

RMPs are updated as new information becomes available. The RMP guidance for COVID-19 vaccines complements the existing guidelines on the RMP format in the EU and guidance on good pharmacovigilance practices, which apply to all medicines. Additional specific considerations in this guidance address, for example:

- Further information on vaccine safety that might be generated after the marketing authorisation in special populations, such as the elderly, children, or patients with comorbidities;
- Core requirements for lists of adverse events of special interest, methods used for signal detection, and follow-up of any safety signals identified in clinical trials;
- Submission of monthly summary safety reports by marketing authorisation holders to EMA in addition to the usual periodic safety update reports;
- traceability tools that can help record who has received which vaccine and from which batch.

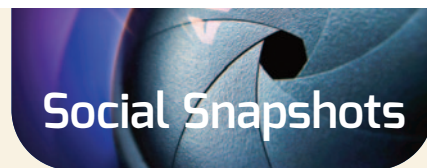
All activities that companies include in the RMP for a COVID-19 vaccine should take into account EMA's infrastructure to support the monitoring of the efficacy and safety of COVID-19 treatments and vaccines when used in day-to-day clinical practice.



Science Communication on Social Media: Good Practices

QUEST stands for **Q**uality and **E**ffectiveness in **S**cience and **T**echnology communication (<https://questproject.eu/>). The group consists of a team of experts, scholars, and media professionals across Europe who have come together to investigate current issues in science communication. Their objective is to develop tools, recommendations, and guidelines for communicators and practitioners working in the fields of journalism, social media, and museums.

One of their deliverables is the recommendation document Science Communication on Social Media: Good Practices, available at: <https://questproject.eu/social-media-improving-science-communication-by-the-tools-of-science/>



SCIENCE COMMUNICATION ON SOCIAL MEDIA

Good practices



quest



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 824634

Graphic used with permission from the QUEST team.



Editorial

Hello, medical device fans! Social media is increasingly integrated into all aspects of our daily lives, even for many of you non-digital natives (myself included). In this issue, we look at how the medical device industry is beginning to utilise social media as a tool to

monitor the safety of devices as part of post-market surveillance activities. Karelia Tecante, a post-market surveillance specialist, shares her insights into the use of these new tools and how social media listening could eventually become a standard source of adverse event reporting. I expect that some

of you may soon be integrating the outcomes of social media listening into your clinical evaluation reports and post-market clinical follow-up plans and reports. Happy reading!

Kelly

Social media in the medical device industry as a tool for post-market surveillance

With the European Union Medical Device Regulation publication (EU MDR 2017/745), it became clear that post-market surveillance (PMS) would require significant changes. The need to implement PMS activities different from traditional ones became apparent in white papers and conferences. As a result, the term *social media* first appeared under proactive PMS. In the medical device industry, social media has been used primarily for digital marketing and human resources recruiting, so several questions have emerged: what is meant by social media as a PMS activity, how can social media be used to gather information on the safety and performance of medical devices, how does this process work, and how many resources are required for this task?

Social media and social media listening

Concerning PMS, social media is directly related to social media listening (SML), which is the monitoring of public digital conversations on the internet to retrieve and understand customers' opinions about a brand, a product, or both. A common misconception is that social media only refers to platforms like Facebook or Instagram. However, it also includes forums, blogs, portals, community and microblogging sites (e.g., Twitter and Instagram), digital magazines and newspapers, online TV, and virtually every website on the internet (Figure 1).

SML as a tool for health monitoring and surveillance

SML is not a recent concept; it is directly tied to increasingly rapid uptake of social media in the

last 12 years, as people began using it more frequently to discuss their personal lives, health, and illness. Consequently, social media has gained increasing recognition as an essential information source in the health sector. For example, Boston Children's Hospital HealthMap was founded in 2006 as a platform that utilises informal online sources for disease outbreak monitoring and real-time surveillance of emerging public health threats (www.healthmap.org). The pharmaceutical industry has already recognised SML as a pharmacovigilance tool to detect adverse events (AEs) and adverse drug reactions (ADRs) and is notably ahead of the device industry. Many publications can be found on this topic, including articles on data mining solutions to analyse social media information for pharmacovigilance. Projects have been developed to explore the value of social media to identify AEs (e.g., WEB-RADAR and Vigi4Med); the FDA is even sponsoring projects with specific patient forums to detect AEs; and innovations in data mining solutions have been used to detect ADRs from Google and Yahoo search logs.¹⁻³ Hence, it is not surprising that regulatory authorities are now expecting SML as a proactive PMS activity in the medical device industry.

Nevertheless, to the author's knowledge, there are few to no publications on this topic applied to the device industry, and considering

this, one can only wonder if this procedure can be effectively applied to medical devices. Box 1 summarises the benefits and difficulties described by experts on pharmacovigilance that apply to the device industry.¹⁻⁶

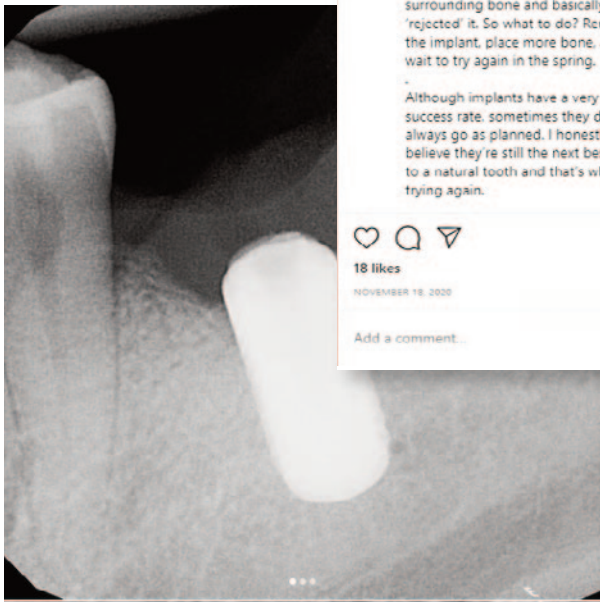
SML tools

Significant progress has been made in some technical aspects of SML that have overcome some of the challenges outlined in Box 1. Specifically, the automated search and retrieval of data based on initially given input has resulted in several software packages to support device manufacturers in making SML a less-time consuming task. Just to name a few, Talkwaker, BrandWatch, SocialBakers, Awario, Hootsuite,

Digimind, Sprout Social, Awario, Insights, Buzzsumo, Brand 24, and Synthesio offer different packages and support levels. Some of these programs are even used for pharmacovigilance and have capabilities to report AEs to competent authorities. These online platforms work on the same principle: a query for a determined topic with keywords like a brand and product name is created by pulling posts and comments, referred to as mentions, from the internet. Data can be gathered for a specific period or in real-time. Mentions

can be limited to different countries and languages; alerts can be created; and frequent posters or influencers can be identified. Data can

Overall, scholars agree that social media data could be a tool to augment PMS capabilities, but much work must still be done to overcome the associated challenges.



shinedentaloh • Follow

shinedentaloh Let's talk FAILURE.

This is a X-ray of my implant 4 months after it was placed... right before it was unscrewed right back out of my head. My bone failed to grow around the implant and lock it into place. Instead my body walled it off from the surrounding bone and basically 'rejected' it. So what to do? Remove the implant, place more bone, and wait to try again in the spring.

Although implants have a very high success rate, sometimes they don't always go as planned. I honestly believe they're still the next best thing to a natural tooth and that's why we're trying again.

18 likes
NOVEMBER 18, 2020

Add a comment... Post



traumaortho_gr • Follow
Spectrum Health

pain and greater trochanter avulsion fracture.

Patient was taken back to the OR the next day for revision surgery on traction table. Fracture reduced well with traction, but she had a massive thigh hematoma drained before incision was made. During surgery, she had a bent screw and a fracture that extended along the lateral wall to the level of the bent screw.

Intraoperative cultures were taken to r/o infection. The two-hole plate was removed and three-hole plate exchanged with trochanteric stabilization plate placed. Multiple locking screws placed into greater trochanter and head segment to increase stability and making it a fixed

69 likes
AUGUST 6, 2020

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dr.cherylpark_dds_facp • Follow
Center for Prosthetic Dentistry

dr.cherylpark_dds_facp Patient referred for jammed abutment removal on Straumann BI implant. Crossfit connection. Removed and replaced with healing abutment. #implantdentistry #dentalimplants #implantcomplications #prosthodontist #implantscrewremoval #implantabutments

57 likes
NOVEMBER 4, 2020

Add a comment... Post



op.dr.semml_koyuncu • Follow

op.dr.semml_koyuncu Dış merkezde femur kırığı nedeniyle opere edilmiş hastanın çivisinde hareket nedeniyle kırıkta kayma ve diz bölgesinde kemikte aşınma yaparak yeni kırık riski oluşturduğu için dizden #retrogradenail ile #basarılıtedavi sonucu #allahinizniyle ameliyat sonrası ilk gün yürütüldü ve merdiven inip çıkma çalışıldı.

#travma #femur #femurfracture #implantfailure #intramedullarynail #femorálnail #şifaallahtan #erkenhareket #harekethayattır #lifeismotion #beşehirdevlethastanesi

03 likes
JULY 4, 2019

Add a comment... Post

Figure 1. Examples of Instagram public posts related to the device industry

Box 1. Advantages and challenges of using social media to detect AEs

Advantages

- Large amounts of real-time, real-world usage information
- Geographic and population diversity
- Direct access to patient perspectives
- Opportunity for niche studies
- Identification of institutions through HCP posts for potential PMCF studies
- Potential to cover the known under-reporting of AEs

Challenges

- Conceptual – Value of data
 - Level, quality, and credibility of information
 - Risk of misinformation
- Environmental
 - Compliance
 - Regulatory framework
- Technical
 - Data mining/analysis
 - Large amounts of data; a significant amount of noise expected
 - Duplicate reports (parallel posting)
 - Text classification (e.g., colloquial language, misspellings)

Abbreviations:

HCP, health care professional; PMCF, post-market clinical follow-up; AE, adverse events.

be classified based on sentiment analysis, and many other analytical tools are available. Sentiment analysis algorithms may help identify AEs, but many mentions are still classified as neutral.

SML in PMS

Some primary considerations could be recommended to establish SML as a PMS activity:

- A. A clear purpose should be established when SML is used.^{1,4}
- B. Queries should be clearly defined and fine-tuned, including the number of queries and keywords for each query.
- C. A systematic process should be established including, for example, social media, data crawling, mentions analysis, alerts, automated reports, and team roles.
- D. Elements required for a valid AE should be defined, including (1) identifiable reporter (user name, handle, email), (2) identifiable patient (could be the reporter or a reporter with knowledge of someone else experiencing an event), (3) identifiable brand, and (4) identifiable AE.^{1,4,7}
- E. Reportability requirements must be established, specifically regarding how to proceed in case of incomplete information.^{1,4,7}
- F. Rules for follow-up with posters should be defined.⁴ Follow-up should not be a requirement when SM is used as a complimentary PMS activity.
- G. Adequate documentation to outline the

process to record and archive primary source data from SM should be created.

- H. Data protection laws, ethical standards, and regulatory compliance should be considered.¹

Considerations and future work

The use of SML in PMS has been abundantly discussed with different views. Some minimum criteria are needed to import social media mentions into PMS databases confidently.¹⁻⁶ Overall, scholars agree that social media data could be a tool to augment PMS capabilities, but much work must still be done to overcome the associated challenges. SML as a PMS activity may not be suitable for all medical devices as its utility

The introduction of implant cards in the coming years could facilitate this task because more accurate information on patients' knowledge and awareness will be gathered.

depends on the device's nature and market share. Reluctance to explore SML in the device industry seems to come from the overwhelming number of AEs; however, the many potential benefits make it worth exploring. The introduction of implant cards in the coming years could facilitate this task because more accurate information on patients' knowledge and awareness will be gathered. Finally, device manufacturers and regulatory authorities should expect to work more closely to reach agreements

and educate the sector on the value of SML in PMS.

Conflicts of interest

The author declares no conflicts of interest.

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Veterinary Medical Writing

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The placebo-by-proxy effect – another argument against homeopathy

Chances are you know about the placebo effect. There are many variables to study,¹ but in general, the placebo effect means that if you believe in a positive outcome of a drug, you will think the drug worked. It still won't act like a regular drug, but that might be fine if you just stubbed your toe and are looking for light pain relief. Ibuprofen would help you more with your pain, but a placebo will still let you feel the pain a little less simply because you believe in it.

But have you heard about the placebo-by-proxy effect? This is the more sinister, ugly relative to our regular placebo effect. As a veterinarian, I am in contact with it every single day. Now, some of you may be thinking, "well, I don't own a pet anyway". But perhaps you have children, so keep on reading to learn how placebo-by-proxy can affect all kinds of parents, including "pet-parents".

Three is a party

The usual setting for a doctor's visit is two adults talking to each other, with both parties (more or less) understanding what is being said. The challenge with pets and small children, however, is they cannot speak. This is why the vet must ask you about the last time your dachshund defecated rather than asking Sausage herself. Parents act as proxies for their child and need to "parent-splain" symptoms and medical records. This comes with quite a few problems.

"Whisper down the lane" but with drugs

The healthcare professional needs to rely on the proxy's knowledge of the patient's problem at first. Like in the children's game variously known as "whisper down the lane" or "telephone", a lot of information is lost in this process. This is why vets love objectively measurable tests. With objective data on top of the proxy's subjective information, it may be quite possible to properly analyse an ailment. The problems come with the treatment.



The placebo-by-proxy effect means that if the healthcare professional prescribes a drug and believes it to be effective, so will the proxy, and both will rate the drug as effective when asked even if it is not. This, of course, leads to massive problems if the people in charge believe the drug is working but the actual patient does not and cannot adequately communicate that he is still not feeling better.

Secretin cures autism?

Let's have a look at a prominent example of the placebo-by-proxy effect. Children with autism used to be "treated" with secretin, a hormone that regulates water homeostasis. Why? Because paediatricians and parents unanimously reported a decline in autistic symptoms after secretin administration.

We now know that secretin does not alter autism, and in fact, autism doesn't need to be "cured" but instead calls for strategies to help individuals adapt to a neurotypical world. These strategies were not, however, offered to children treated with secretin because people around them thought "they are fine now".^{2,3}

Other examples of the horrific consequences

of the placebo-by-proxy effect include cats with joint disease who regularly were administered too low a dose of analgesics. Again, the vets and the pet-parents thought "they are fine now", while the cat was still in pain. We only found out about this problem after using objective measurements of limb weight distribution in treated and untreated cats.⁴

So, how does this affect you?

Of course, you know that as medical writers, we need to be careful with data and knowing about the placebo-by-proxy effect is another hammer in your toolbox to get rid of those biases. In my opinion, this is an important one and mostly an argument against homeopathy. Especially the "but you know, it doesn't hurt you, why should we

not prescribe it" argument. You have heard it, right? We all have. Here's the answer: placebo-by-proxy. That's why.

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Regulatory Matters

SECTION EDITOR



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Calling all medical writers: Focus your writing with lean authoring

In today's medical writing environment, authors are routinely faced with expedited timelines to write documents about highly complex studies with overwhelming amounts of data. Reviewers are subsequently presented with complex content, with messages often hidden among unnecessary text and numbers. To ensure the important information within our documents is clear, medical writers must use lean authoring principles as standard practice.

Benefits of lean authoring

Lean authoring is a way of writing that removes unnecessary words and content to focus documents on key messages. Successful incorporation of lean authoring principles leads to streamlined documents that are easy to read, straightforward to interpret, and improve the overall reader experience. Benefits of implementing lean authoring principles include: 1. easily identifiable key messages; 2. reduced writing review and quality control time; and 3. increased quality.

The lean authoring process

There are three important questions to ask yourself when successfully using lean authoring principles to focus documents on the key messages (Figure 1).

1. Is the text needed?

- Understand the needs, priorities, background, and experience of your audience; knowing this helps drive what text is needed, and the document can be tailored accordingly. For example, introductions for regulatory authorities, which are therapeutic area experts, can be minimal, whereas introductions for academic audiences may require more therapeutic area context.
- Say messages once by using cross-references, keeping content in the section where it belongs, and relying on tables to present data while avoiding numbers in text.



2. Is the message clear?

- Be sure that every word is needed, either to add information or for correct grammar. Why say something in 15 words when you can say it in nine? Simpler language leads to easier comprehension. See Figure 2 for some examples highlighting the beauty of brevity.
- Use consistent terminology and a con-

sistent presentation order to allow readers to focus on the content and move more quickly through the messages. Many teams use a style guide or convention sheet to ensure consistent terminology within and across documents.

3. Is the presentation effective?

- Consider bullet points or tables to present

Important in medical writing:

- Large documents
- Data-driven content
- Short authoring timelines



Figure 1. The lean authoring process

your information. Visually organised information is easier to understand. For example, is this article easier to follow because of the bullet points?

- Engage your reader by starting with the most important information and by writing precise, nonbiased comparisons. Avoid words such as “always” and “never”, and be sure to use approximate terms such as “most” consistently. Consider establishing cutoff points for when to use terms such as “most”, “more”, “similar”, and “the majority”.

Implementing lean authoring

Lean authoring may be new, and new ways of working may be daunting to you, your teams, or your organisation. Some teams may be eager to adopt this writing strategy that is becoming our industry standard. For more hesitant organisations, successful adoption of lean authoring will depend on:

- Sponsorship and advocacy from senior leadership.
- Socialisation to gain support from authors, teams, and management.
- Effective training, then setting and reinforcing expectations across projects.
- Processing documents and templates as tools for successful implementation and execution.

1. Over the course of the study, a total of 31 participants were randomised (21 participants were randomised in Treatment Group 1 and a total of 10 participants were randomised in Treatment Group 2).

A total of 31 participants were randomised (21 in Treatment Group 1 and 10 in Treatment Group 2).

2. Table 10-4 displays the demographic information collected for the participants enrolled in the trial, which shows that the mean age of participants was similar in the PJ-123 treatment group and the Hapimab treatment group.

The mean age of participants was similar in the 2 treatment groups (Table 10-4).

3. The safety population included all participants who were dispensed study medication in the study and were documented to have taken at least one dose of investigational treatment.

All participants who received ≥ 1 dose of study medication were included in the safety population.

4. The proportion of participants who reported serious adverse events in Treatment Group 1 was lower than the proportion of participants who reported serious adverse events in Treatment Group 2, as shown in Table 12-5.

The proportion of participants with serious adverse events was lower in Treatment Group 1 than in Treatment Group 2 (Table 12-5).

Figure 2. The beauty of brevity

Instead of using the wordy sentences on the left, try using the clearer sentences on the right.



Our organisation has used lean authoring to reduce document length by 50% to 75%. However, lean authoring is not just about cutting content. It is also about improving the reader experience by efficiently using our documents to focus on the key messages and the most relevant content. Since implementing lean authoring, feedback from our document reviewers has been overwhelmingly positive. With less time needed to read the documents and with key messages easier to understand, many have expressed our documents are even “enjoyable to read” – an attainable goal for all writers and our industry.

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Medical Communications and Writing for Patients

Dear All,

As I write this, at least some of us are likely to still be in some form of lockdown or quarantine. I pray that you and your families are all managing to stay as sane as possible, and I sincerely hope that you all stay safe and healthy.

In this first edition of 2021's *Medical Writing*, I am delighted to present a piece from Filippo Vitale and colleagues. This is a truly fascinating article that discusses how we have communicated science and scientific facts throughout history and how changes in society

have affected how this is done and the outcomes that this has produced.

I found this article extremely thought-provoking (and at times a sad reflection of where we have come to as a global society) as the authors document and explain concepts like “clickbait” and “fake news”. Whilst it was truly educational to understand the evolution of these concepts, I totally echo the authors’ call to arms in their plea for us to be more aware of these phenomena and to do our utmost to counter them. As medical writers, we are uniquely placed

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to do this, and I consider it our duty to do so. What a way to start a new year!

In the meantime, stay safe and sane wherever you are, and see you in the next issue!

Bestest,
Lisa

PUS, PEST, and clickbait:

An exploration of scientific COmmunication and Viral Divulgation

The evolution of scientific communication and changes in society have led to the construction of a Public Engagement with Science and Technology (PEST) communications model. This model arose out of the perceived limitations of the “PUS” model, which was based on “public understanding of science” rather than an active engagement. In the PEST model, the general public is given the power of decision maker over scientific issues with a strong social impact. However, scientific communication has subsequently had to deal with the increasingly pervasive development of “network communication”, in which scientific content suffers a significant distortion. Phenomena like “clickbait” (featuring a headline capable of triggering a level of curiosity in the reader that induces him/her to click on a link to open its contents) and fake news must be countered if the general public are to receive robust scientific facts.

Scientific communication from 1660 to today

The founding act of the first scientific society dates back to November 28, 1660, in London in the middle of the Enlightenment era. It was the Englishman John Evelyn who, together with other scholars, coordinated the establishment of the Royal Society. In his writing, in the form of a diary, Evelyn paid particular attention to the objectivity of the narrative (*Diary of the Fires and the Plague of London, Bray*).¹ Already in 1665, the

first issue of *Philosophical Transactions of the Royal Society* shows that scientific accreditation practices were established, which are still in force today and which we know as *peer reviewing*. From 1665 on, this particular practice spread gradually in other countries. In 1751, “planches”, illustrated figures to facilitate the understanding of hypotheses and theories to a culturally oriented audience, were used for the first time in the *Encyclopedie ou Dictionnaire raisonné des sciences, des arts and des métiers*. In the nineteenth century, with the “*feuilleton scientifique*”, the daily press began to deal with the dissemination of scientific content to the “average reader”. It was the beginning of scientific dissemination. With the progressive refinement of technical equipment and research tools, the research process and dissemination of results became easier and quicker, and medical research results and scientific knowledge increased rapidly. The increasing complexity of the scientific content meant that scientific results were not easily understood by the general public. Rather, the difficulties of understanding scientific concepts caused confusion and diminished interest. With this came a new figure: the scientific journalist whose task was not only to simplify the scientific concepts, but to work at a linguistic level required to produce a widely accessible “translation” for the general public. Therefore “scientific communication”, both intra-epistemic (between experts) and extra-epistemic (between competent

specialists and general users), became itself a scientific domain with its own integrity as an object of research (in this way moving from the communication of science to the “science of communication”). In the 1940s, we witness the first introduction of the “Hypodermic Needle Theory”.² For the first time what was initially intended as an opportunity, that of training and informing the general public, was seen as a power. The public was considered an inert mass that is easily penetrated by the media, which behaves like a hypodermic needle or magic bullet.^{3,4} The general population is thus influenced in its behaviour and ideas by the propagandistic translation of some scientific concepts, deliberately manipulated or “injected” by the media.

This vertical relationship between the representatives of scientific knowledge and the general public over time and in response to the various subsequent sociopolitical changes, was replaced by a horizontal interaction model. In this new approach, the source of knowledge (scientists) and the object of disclosure (general public) were linked by the continuous return effects of the communication process.

In 1985, the Royal Society, with the publication of the Bodmer Report,⁵ signalled the dangerous deterioration of the relationship between science and the general public. The countermeasures taken were aimed at the mutual recognition between the two fields, Knowledge and Information, of the laws and rules that

Box 1. Public Understanding of Science Model (PUS, Deficit Model)

- Unidirectional flow of information
- Mass audience, intended as a passive agglomeration with restricted cultural background
- Simplified, trivialised scientific information
- The flow of information oriented on cultural and cognitive social gaps, hypothesised, or measured

Box 2. Public Engagement with Science and Technology Model (PEST)

- Bidirectional flow of information
- Strong interaction between science and society
- The general public become the protagonists of the flows of scientific information.
- The interests and needs of the general public guide the trajectories of scientific research.
- Feedback as a powerful means of evaluating the product offered

structured the specific functioning of each. With the so-called PUS (Public Understanding of Science, Box 1), the aim was to increase the scientific and literacy knowledge of the public according to a linear flow model (Deficit Model). This disseminated communication takes place by direct osmosis, from a place where knowledge is most concentrated, to a place where it is strongly diluted, by means of appropriate media devices capable of “democratising” the contents. The creation of various scientific entertainment programmes dates back to this period (one example was Quark, a popular Italian television programme). In 2002, *Science* magazine decreed the end of the PUS period⁶ with an editorial titled “From PUS to PEST”. Thus, the transition to a new communication vision was sanctioned, that of “Public Engagement with Science and Technology” (Box 2). With the advent and diffusion of the internet, it was considered essential to directly involve the general public by giving them the power of “decision maker” on scientific issues with a major social impact.

In other words, the PEST model no longer

aimed to encourage a simple understanding of science by the public but rather to arouse a widespread commitment to research topics through an open and equal discussion between scientists and non-experts. Research and scientific information were thus socialised. The goal was to promote engagement, a two-way integration between social dialogue and scientific development.

It is clear that the prerogative of the PEST model is to involve society so that it is possible to switch from “scientific research” to “scientific enterprise”. The bidirectionality of communication flow, and the possibility of interaction through feedback, define social trends capable of affecting the direction of scientific research. In other words, society becomes a part of the “scientific construction”. In this sense, scientific research may become a factory of “special products” (scientific information) that can be consumed and marketed. For this reason, disseminating scientific content to the widest possible audience becomes the nodal point and the most important link on the assembly line.

The PEST model was initially conceived as a permanent opportunity to promote the universal responsibility of knowledge and scientific research, but subsequently it had to deal with the increasingly pervasive development of the “communication network”, which led to significant distortion of scientific content. With the advent of computer communication, the style of writing has drastically changed. From the written printed text, we have moved on to the virtually written one. Above all, the largest transformation concerned the invention of the

Scientific research may become a factory of “special products” (scientific information) that can be consumed and marketed.

“hypertext”.⁷ It was Theodor H. Nelson who coined the term hypertext in the 1960s, referring to a series of linked text pieces that allow the reader to enjoy them through different paths. In hypertext, the information is connected to a myriad of others. Hypertext communication makes it impossible to isolate the contents, which are therefore dendritically connected to infinity, but at the same time atomised and vaporised. The structure of the text no longer enjoys any conceptual self-sufficiency. Unlike written communication, in electronic communication it is no longer possible to identify a textual nucleus separate from the concentric orbits of comment and individual opinion. Rather, the direction in which the

reading goes is centrifugal. In particular, there is a progressive decentralisation, and a possible subsequent recentring takes place according to the interests and subjective curiosities of the

In hypertext, it is not the author who guides understanding but the reader himself.

reader. In hypertext, it is not the author who guides understanding but the reader himself. In hypertext, the “outside” and “inside” of the content are separated only illusively. As the number of clicks increases, chasing the different and subsequent references, the reader may believe that they are going deeper into the topic

but in fact they are going through it from the outside. Each attempt to deepen turns out to be an exercise of “superficialisation”. This can be illustrated using the “Klein bottle” or the “Möbius strip” (Figure 1).

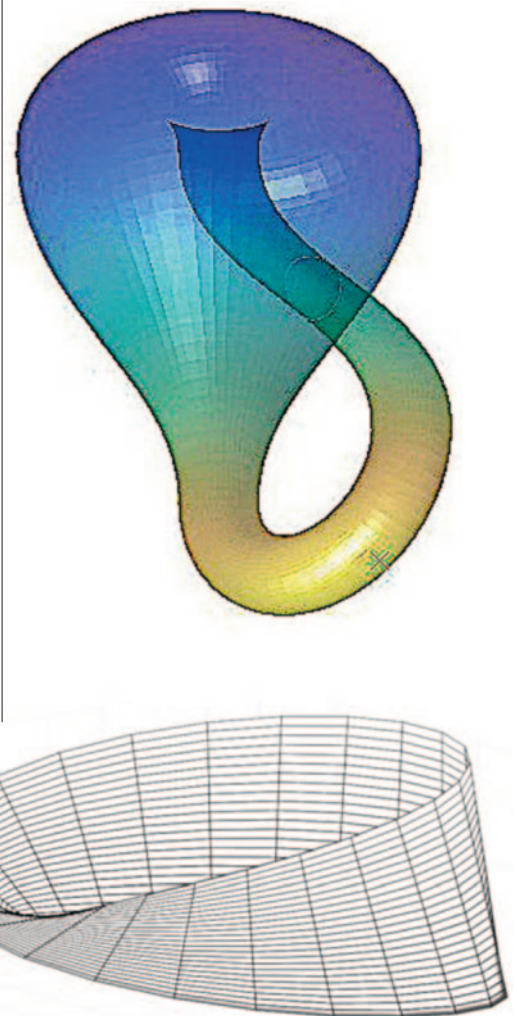
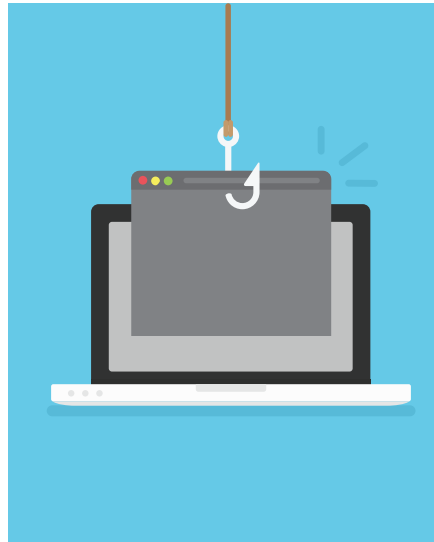


Figure 1. The Klein bottle (top) and Möbius strip (bottom) represent two topologic models of the “unavoidable superficialisation” of hypertext.

Going viral

Ultimately, information via the web becomes “viral”.⁸ When viral, the transmission of the information follows the law of “maximum diffusion” and moves in the same way as a virus in a pandemic. If one wanted to ironically borrow from the epidemiologic model of the “basic reproduction number” of social diffusion of trivialised scientific content, the value would far exceed the cut-off given to signify a pandemic. In the same way, continuing the virologic analogy, it could be concluded that as the number of replications of the same virus increases, the probability of additions and deletions of nucleotides and larger sequences increases, and the diffusion of the mutated scientific content is wider and the risk of additions and subtractions of words and phrases that could change the authentic meaning of the message is higher. (This may partly explain the genesis of some fake news with a scientific semblance).⁹ If we also consider that, as the German philosopher Peter Sloterdijk maintains, the systems of “knowledge” (Sciences, Religions, Narratives) exercise an immune function on people (being deputies to protect the psychic balance of human groups), then we can deduce that communicative virulence attacks the intimate defences of humanity.¹⁰ The “great narratives” of the past and present create an ideological network that allows people to be connected in a kind of mutual interdependence. Humanity recognises itself in common ideas and values that constitute an inclusive dimension, as if it were a sphere, or a kind of “Symbolic Uterus” with a protective and therefore immune function. It could be said that there is no “humanity” without “immunity”.

If this concerns some dynamics of the communication of scientific content between the places of knowledge and the general public, it is also worth further investigating intra-epistemic communication (between experts). As discussed, communication is configured as a marketing tool.¹¹ In 1994, George Loewenstein published an article whose title was “Psychology of Curiosity: A Review and Reinterpretation”.¹² Among his conclusions, he referred to the idea that curiosity was “an induced cognitive function that arises from the perception of a knowledge gap”. As an induced function, it would behave like all other driver-state functions, needing a certain amount of priming information to be induced and fed. More recently, a study by Kang et al.¹³ has established the relationship between curiosity and confidence in the knowledge of an



answer. An average level of confidence in the knowledge of a certain topic corresponds to the maximum level of curiosity. On the other hand, a lack of or “complete” knowledge of a topic only induces a reduced level of curiosity. An adequate “priming”, an average level of curiosity, and a moderate knowledge of the proposed topic are the structural elements at the basis of the development of the clickbait technique.¹⁴

What is meant by “clickbait” is that an article has a bait title – a title capable of triggering a level of curiosity in the reader that leads to clicking on a link to open its contents.^{15,16} The clickbait, far from being a widespread technique in a certain type of journalism and online marketing, is also a model applied to the intra and trans-epistemic communication of scientific contents. The construction of “titles” of scientific articles capable of igniting the curiosity of colleagues on the one hand, and that of newspapers and social networks on the other, has become a strongly prevalent trend. It seems that the communication industry is increasingly improving the way it offers its product to the public, precisely to make it increasingly recognisable. Producing a specific title represents an almost additional skill to that needed to produce a scientific communication. A suggestive title is the best advert for the “product”, and its importance cannot be overlooked. The preparation of a title thus becomes a real work of communicative engineering. The need to produce scientific titles and articles in compliance with a certain format is the reactive response to the demands of the postmodern communication system.¹⁷

In recent decades, universities have also undergone a progressive process of corporatisation for socio-political-economic reasons.¹⁸ Academic management, although with

significant differences between countries, is now centred on production and development mechanisms of a corporate type. Funding for studies often depends on the studies themselves, on their ability to produce profitable results.¹⁹ Inserted in this context, the issue of clickbait is not marginal at all. In fact, the power to produce curiosity through titles is only one of the many faces of the culture of “spectacularisation”.²⁰ Sometimes the content to which the title refers can only be alluded to, as the title ideally refers to an object to which collective attention is directed, thus taking advantage of its popularity while never dealing with the real question of relevance. The title of this article is an example.

That said, you cannot remain shy about the risks associated with the various issues addressed here. On the one hand, studies that have poorly established data but that are capable of attracting the general attention of social media, newspapers, and therefore easily “saleable”,²¹⁻²³ are quickly published and disseminated.²⁴ On the other hand, longer and more difficult communications and with an important amount of supporting data, but lacking in the ability to attract public curiosity, as they are not “saleable”, are aborted.²⁵ Another potentially dangerous phenomenon is the capability of public opinion to drive scientific research through media pressure on a particular topic,²⁶⁻²⁸ which can lead to the initiation of new clinical trials without robust basic evidence. An example is the clinical trial of the drug favipiravir (Avigan), which started recently in Italy due to the diffusion of some videos on the supposed efficacy of the drug circulating on the internet.²⁹

Furthermore, given the now inveterate cultural prejudice in the face of a proven thesis, there has to be an antithesis capable of denying it, even without supporting evidence. Some works are artfully produced as “faithful negatives” of a truth. It is clear how this other pattern of denied truths is able to attract general curiosity on certain issues. Once curiosity is turned on, diffusion, sale, and a form of profit are guaranteed.³⁰ This is another of the levers of the “fake news” phenomenon.^{31,32} In any case, if the general tendency is to consider between two opposing theses a third halfway between the two, capable of denying and affirming the other two, it will result in a shift from the centre of any scientific truth. We must increase awareness of this so that we can try to study appropriate countermeasures.

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Gained in Translation

Exploring the classical roots of medical terminology

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Introduction

Teaching and learning medical terminology is considered a problem, both for teachers, who are supposed to convey scientific concepts hidden in ambiguous lexemes, and for students, frightened by long and unfamiliar words that they do not know how to pronounce, spell, or understand. As most medical terms derive from Latin and a Latinised form of Greek, usually seen as strange foreign languages, the journey for the student pursuing a career in the medical sector seems impossible.

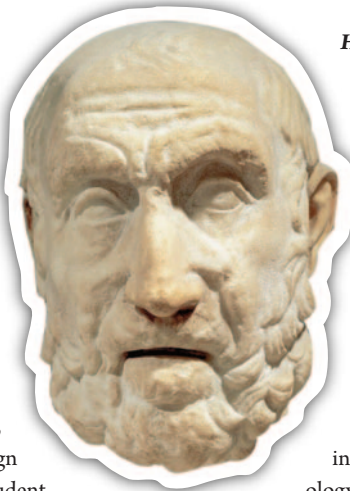
This is indeed a daunting task and most students wonder whether it is worth it. And yet, a basic knowledge of classical terminology would allow them to break down medical terms into component parts, continuously repeated in several combinations, and understand how they describe body parts, functions, conditions, and symptoms (see Table 1).

Perhaps, having a look at why it is that classical terms flooded into English to such an extent might be of benefit to contextualise the question within the right framework.

History

The oldest written sources of Western medicine are the Hippocratic writings, dating back to the period between the end of the 5th and the beginning of the 4th century BC. They are a collection of about 60 medical works credited to the Greek physician Hippocrates. The works cover all aspects of medicine as it was available then and contain clear and exact medical terms that replaced the old jargon of magic and necromancy, a testimony of the importance given by the Greeks to a precise scientific terminology.

When a plague broke out in Rome in 293 BC, the Romans, who had no medical tradition, called the doctors from Greece¹ and medicine began to spread and develop within the Roman



Hippocrates

Empire. As most of the doctors practising in the Roman territories, like Galen of Pergamum and Soranus of Ephesus, were Greek or had studied in Greece, Greek became the language of medicine until the fall of the Roman Empire, when it gradually lost its influence over medical terminology.

The Romans began to take over medical knowledge starting from the 1st century AD, when they began to translate and rewrite Greek medical books. Of great interest in this regard is the work of the Roman medical writer Aulus Cornelius Celsus, known as the *Cicero medicorum* (the Cicero of doctors) because of his elegant Latin and of his *De Medicina*, an encyclopaedic overview of the medical knowledge available at that time. As most of the Greek medical terms had no equivalent in Latin, he solved this problem by importing directly into Latin a few Greek terms, Latinising some Greek words with Latin alphabet and Latin ends and preserving the vivid imagery of Greek anatomical terms with a literal translation, like *dentes canini* from the Greek *kynodontes*, which means dog teeth. This resulted in the development of a bilingual

Galen of Pergamum



Graeco-Latin terminology, with the grammar and structure of Latin and with Greek elements, which still survives today and for which Celsus was given the epithet of founder of the Latin medical terminology.

During the Middle Ages, between the 9th and 15th century, Arabic gained importance and a few Arabic terms were assimilated by Western medicine. But the situation changed by the Renaissance, as both Greek and Arabic works began to be translated into Latin, and almost all the important medical works were published in this language. International medical communications began to be conducted in Latin, and the era of medical Latin had started. The role of Latin in medical terminology is especially evident in the current anatomy, with an anatomical nomenclature that was founded in 1543 by the Flemish anatomist Andreas Vesalius with his work *De humani corporis fabrica libri septem* (“on the fabric of the human body in seven books”) and whose international version fully remains in Latin.² And here lies the historical irony of Latin: it had to vanish first as a living language at the end

of the Roman Empire before becoming the international language of medical communications during the Middle Ages and up until the 18th century.

By the beginning of the 18th century, the use of Latin in medicine began to wither, until it was finally replaced by national languages, with a flow of concepts and words moving from one to another. The national medical languages had much in common, since most of their medical terms were derived from Greek and Latin, and scientists not only limited themselves to importing



Aulus Cornelius Celsus

medical terms from classical languages, but also created new ones for the new scientific concepts being developed. As those scientists were classically schooled, most of the new words had classical origins, especially from Greek, which lends itself more easily than Latin to the creation of composite words. Thus developed that huge neoclassical word stock with Greek roots, in words such as *nephrectomy* or *erythrocyte*, which is still currently in use.

In the current times of globalisation, English has become the language of choice for the most influential medical journals, at international conferences, and for international communications. However, English vocabulary, spelling, grammar, and sentence structure is considerably influenced by French, brought to England by the Normans in 1066 and officially used up until 1558, when Elizabeth I became queen. For more than three centuries, three completely different language groups coexisted: the Norman ruling class that spoke Old French, the native common people that spoke Old English, and the academic and ecclesiastic community that spoke Latin. However, Old French ended up having far less influence over medical

terminology, and its real philological function was that of a medium for the penetration of Latin words into English and English medical terminology.

When English subsequently began to emerge towards the end of the 16th century, it turned out to be saturated with French words, and through this a large number of Graeco-Latin words were introduced in English medical terminology. The undeniable and profound influence of classical languages in the development of the English medical terminology is well-grounded,³⁻⁵ as approximately 95% of the currently used English terms are borrowed or created from Latin or Latinised Greek.⁶

Final message

This brief historical summary outlines a centuries-old history of medical development, where Latin and the Latinised form of Greek are deeply rooted in medical terminology and remain extremely productive for the creation of new terms. This is an extraordinary tradition established over a period of more than two millennia, which undoubtedly proves that the presence of Greek and Latin is simply a natural matter of course.

Therefore, it is possible to conclude that English medical terminology cannot be reasonably mastered without a basic knowledge of classical languages, especially Latin.² This situation involves all the areas of theoretical and



Andreas Vesalius

practical medicine, together with nomenclature corpora, as the development of medicine and science was done in universities speaking Latin, just as indicated by the Latin locution “*non est via in medicina sine lingua Latina*” (there is no going into medicine without the language of Latin).

The teaching of classical terminology by medical faculties is not only necessary but even legitimate,⁷ as students would benefit a lot from a basic knowledge of the classical languages.⁸ They would learn how to correctly spell and use classical terms to avoid mistakes, not just in terms of incorrect spelling⁹⁻¹³ but also in terms of meaning.^{2,14} Their academic performance would be improved by the awareness of Latin and Greek etymologies,^{15,16} the training process and memorisation would be enhanced and reinforced by the understanding of the Latin anatomical etymology, and finally the development of core skills would be strongly promoted by the knowledge of medical terminology.^{17,18}

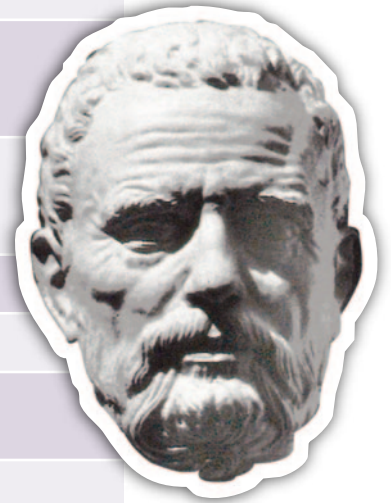
Conclusions

The picture given so far highlights a state of natural symbiosis between the Graeco-Latin element and English in modern medical terminology, which confirms the important and relevant position of Latin and Greek in the modern world. This position is made stronger by the advantages connected with it:

1. **Functional terminology.** The Latin medical terminology provides an elegant system based on prefixes, suffixes, and roots continuously repeated in several combinations, which allows you to easily describe body parts, organic functions, pathological conditions, and symptoms.
2. **Terminological continuity and constancy.**³ As Western medicine is deeply rooted in history¹⁹ classical languages represent a rich and well-established stock of words which can be easily used by modern researchers without the need of renaming terms already defined in the past.
3. **Terminological universality.** The continuity and constancy of Latin is also reflected in special terms, as it presents itself as a globally neutral vehicle for medical communication that respects other languages and cultures.
4. **Lack of ambiguity.** The use of Latin appears unambiguous, succinct, and concise, because as a dead language it undergoes no spatial and temporal variations.
5. **Correct spelling and understanding.** The knowledge of Greek and Latin etymologies also promotes a correct spelling and understanding of English medical terms, directly derived from the first.

Table 1. Examples of Latin and Greek origins of medical terms

Term	Meaning – example
1. Trauma (Greek term)	Severe injury to the body or severe emotional or mental distress
2. Abdomen (Latin term)	Region between the thorax and the pelvis
3. Bakterion – bacterium (Latinised Greek)	Single-cell organisms without nucleus
4. Mandibula – mandible (Anglicised Latin)	Lower jawbone
5. Anti – against, opposed to, opposite of (Greek prefix)	Anti-done = against a certain thing Anti-acid = against an acid
6. -ia a pathological state or condition (Greek suffix)	Hyster-ia = chronic neurosis believed to be of uterine origin (hystera = womb)
7. Anthropo-genesis (compound word of Greek origin)	Anthropos = man Genesis = origin The origin of man
8. Bio-logy (compound word of Greek origin)	Bios = life Logos = study The study of life
9. Extra- (outside of, outer side) (Latin prefix)	Extra-cellular = outside the cell
10. Intra- (within, inside of) (Latin prefix)	Intra-cellular = within the cell
11. -al (pertaining to) (Latin suffix)	Abdomin-al Relating to the abdomen
12. -ation (process) (Latin suffix)	Civilis-ation Civilis = relating to a citizen or public life Ation = process The process that brings human societies out of barbarism
13. Mal-aria (compound word of Latin origin)	Mal = bad Aria = air Bad air
14. Postero-lateral (compound word of Latin origin)	Postero = behind Latero = side Behind and to one side
15. de-hydr-ation (hybrid term of Greek and Latin origin)	De- = down, downward; sometimes a privative (Latin) hydr- = hydor, hydr-water (Greek) ation-, -atio = action or process (Latin) Loss of water
16. Appendic-itis (hybrid term of Greek and Latin origin)	Appendic- = appendix (Latin) Itis = adjectival ending -itis used with nosos-disease (Greek) (used to indicate a type of inflammation) Inflammation of the appendix



Soranus of Ephesus

6. The study of Latin helps students learn and understand English medical terminology.

As Latin is incorporated in most European languages, English included, its study becomes a key to comprehend medical terminology and learn any other Western language.²⁰

This state of symbiosis seems to have helped the spread of both Latin and English, as elegantly put by Marecková et al. in 2002:²

One can well speculate that, on the one hand, it is a lucky solution for Latin in medicine to have its “continuation” in the English medical terminology because it so maintains its unique standing and, on the other hand, for the English medical terminology its Latin origin is an advantage because in that way its spread is accelerated and facilitated. (p. 586)

This leads us to wonder what the precise status of Latin in modern medicine is. Contradictory views exist in this regard, which go from that of H. Lippert,²¹ according to whom English has taken over the role of Latin, to that of H. Schipperges,²² who stated that Latin and Greek have masterfully outlived the influence of Arabic in the Middle Ages and English in current times and inferred that in the future English pressure will only be seen as a momentary historical interlude. Regardless of the answer that can be given to this question, it seems clear that removing the study of classical terminology from academic curricula has really been a bad decision.

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This is called the **hash, pound, or number character**. A hashtag is a keyword or set of keywords that is preceded by the # character. It is used in social media to create a thread of conversations around a specific theme or topic conveyed in short texts or microblogs. It is commonly used in Twitter, Instagram, YouTube, Pinterest, etc.

A dictionary of most common hashtags can be found at <https://www.hashtags.org/definition/~h/>. For your info, EMWA is compiling a list of standardised hashtags for our social media use.



This is called the **“at” sign or symbol**. The @ sign is part of email addresses and social media user names (“handles”).

Our EMWA handles are as follows: **@Official_EMWA** (Twitter), **@EMWA** (LinkedIn), and **@europeanmedicalwritersassociation** (Facebook)

The two most important keys on your keyboard

Good Writing Practice

Grammatical misagreement in tense

I – Present, present perfect

Introduction

Each of the sections of a journal article contains anticipated conceptual components, which can be expressed by a specific verb tense for the perspective of time and the degree of certainty. In this regular feature, distractions of the present and present perfect tense are exemplified, revised, and analysed. The examples are organised first according to anticipated conceptual component, second to tense (present, present perfect), and third to time or certainty in the context of the anticipated conceptual component.

As stated in books on linguistics, there are only two tenses: present and past. All the others are considered as *aspect* requiring the auxiliary *will* (future), *have* (present perfect), *had* (past perfect), *to be* (progressive). However, for simplicity, the more common expression *tense* is used.

Experimental sections

Part 1 – Materials and Methods section: Method

Example: Present tense – misagreement in time

The reactive protocols are decomposed into mechanistic steps to gain insight into the performance variations across mobility protocols.

Revision

The reactive protocols **were** decomposed into mechanistic steps to gain insight into the performance variations across mobility protocols.

Notes

The usage of the past tense to denote completed methodologic action is the least controversial of all the uses of tense in the journal article, probably because it usually pertains to a physical not cognitive effort.

Similarly, the source of materials is expressed in the past: The data **were** (not are) from the 1992 Fertility Survey in China, which was accomplished by a stratified, two-stage, systematic, and cluster sampling in 1992 (Ref.).

Furthermore, most of the conceptual components in a journal article are expressed in the past tense, except for the following present

tense usage: INTRODUCTION section (known research problem pertinent background, the actual hypothesis); DISCUSSION section (recommended future research, research consequence).

Part 2 – Results section: result statement/observation

Example: Present tense – misagreement in certainty

There are significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Fig. 1).

Revision

There **were** significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Fig. 1).

Notes

Result statements (comparisons, observations, trends) are cognitive efforts expressing pastness and thereby connoting understatement; that is, *something was* rather than the truism that *something is*.

Part 3 – Materials and Methods section: experimental approach

Example: Present perfect tense – misagreement in time

To investigate the function of syndecan-1 in dental mesenchyme condensation, syndecan-1 expression has been measured in *Msx1* knockout mouse tooth germs.

Revision

To investigate the function of syndecan-1 in dental mesenchyme condensation, syndecan-1 expression **was measured** in *Msx1* knockout mouse tooth germs.

Notes

The present perfect tense is surprisingly common in research writing. Its meaning is *up to the present time* as in the research problem *the causes have been unresolved*. However, the present perfect is grammatically distracting for expressing retro-

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spectively past completed experimentation by the current authors.

Contextual sections

Part 1 – Introduction section: hypothesis

Example: Present tense – misagreement in time and certainty

We hypothesise that the enhancement of the free radical level in the tissue increases the AB neurotoxicity.

Revision 1

We **hypothesised** that the enhancement of the free radical level in the tissue increases the AB neurotoxicity.

Notes

Why express the hypothesis statement in the present tense? Just as no one would write the present tense for a statement of a physical action in the Methods section, the same applies to a cognitive past effort, such as stating the hypothesis. In contrast, the actual hypothesis – not the act of stating – is meant to be a timeless truth, expressed in the present tense (*increases* not *increased*). Thus, the statement of a hypothesis consists of verbs of a mixed tense.

Additionally, should not the act of stating an objective in an Introduction – just like the act of stating a hypothesis – be in the past tense? The statement was at the time preceding the experimentation, justifying the use of the past perfect (*had been hypothesised*), but the past perfect seems stilted compared to use of the simple past (*was hypothesised*).

Part 2 – Discussion section: conclusion

Example: Present tense – misagreement in certainty

In conclusion, the enhanced free radical level in



the tissue increases the AB neurotoxicity.

Revision

In conclusion, the enhanced free radical level in the tissue **increased** the AB neurotoxicity.

Notes

In the Discussion section, another example of past tense usage instead of the present is the Conclusion. An understated modest conclusion is viewed as an author's respect for the scientific method and peers. Why not relinquish a more certain conclusion to other authors who may convey in the Introduction of their paper the information as accepted (present tense) by the discipline: *the enhanced free radical level in the tissue increases the AB neurotoxicity.*

Part 3 – Introduction section: research problem pertinent background

Example: Present perfect tense – disagreement in time

Welles has reported that administration of the synthetic glucocorticoid dexamethasone beginning at the defined commitment stage inhibited differentiation and mineral deposition in MC3T3-E1 cells (Ref.).

Revision 1

Welles **reported** that administration of the synthetic glucocorticoid dexamethasone beginning at the defined commitment stage inhibited differentiation and mineral deposition in MC3T3-E1 cells (Ref.).

Revision 2

Administration of the synthetic glucocorticoid dexamethasone beginning at the defined commitment stage inhibited differentiation and mineral deposition in MC3T3-E1 cells (Ref.).

Notes

The past tense (in Revision 1) is more appropriate for conveying the past action of reporting. In Revision 2, even better may be to avoid the non-

thematic focus on the investigator in the subject position.

Part 4 – Introduction section: research problem pertinent background

Example: Present perfect tense – disagreement in certainty

Smith has shown there were significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Ref.).

Revision 1

There **are** significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Smith, date).

Notes

The present perfect (*has shown*) is frequently used for conveying the results of other investigators, which is inexplicitly intermediate between unaccepted certainty (expressed in the past tense)



and certainty (expressed in the present tense). Perhaps, the present perfect, expressing up to and including the present, renders more presentness and, thus, credibility to the statement. This usage of the present perfect seems justifiable for the verb *shows* in contrast to usage of the verb *reported*, which is clearly limited to a past time. However, if the intent is to convey current acceptance by the author and the discipline, the present tense is explicit compared with the present perfect as in: *Sialyl Lewis antigens*

*expressed on carcinomas **bind** (not have been shown to bind) selectin ligands on endothelial cells (Ref).*

Summary

Rhetorical consequence: Most misagreement distractions with regard to time are dissonance, but those involving the present tense conveying certainty are nonprofessional in tone.

Revision option: Transformation into the past tense is more common except for those few conceptual components for which the present

tense (or present perfect) is appropriate.

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Schematised misagreement in tense - distractions and preferred revisions

Present tense misagreement

Materials and Methods

The reactive protocols are decomposed into mechanistic steps to gain insight into the performance variations across mobility protocols.

→ The reactive protocols **were** decomposed into mechanistic steps to gain insight into the performance variations across mobility protocols.

Results

There are significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Fig. 1).

→ There **were** significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Fig. 1).

Introduction

We hypothesise that the enhancement of the free radical level in the tissue increases the AB neurotoxicity.

→ We **hypothesised** that the enhancement of the free radical level in the tissue increases the AB neurotoxicity.

Discussion

In conclusion, the enhanced free radical level in the tissue increases the AB neurotoxicity.

→ In conclusion, the enhanced free radical level in the tissue **increased** the AB neurotoxicity.

Present perfect tense misagreement

Materials and Methods

To investigate the function of syndecan-1 in dental mesenchyme condensation, syndecan-1 expression has been measured in *Msx1* knockout mouse tooth germs.

→ To investigate the function of syndecan-1 in dental mesenchyme condensation, syndecan-1 expression **was measured** in *Msx1* knockout mouse tooth germs.

Introduction

Welles (Ref.) has reported that administration of the synthetic glucocorticoid dexamethasone beginning at the defined commitment stage inhibited differentiation and mineral deposition in MC3T3-E1 cells.

→ Administration of the synthetic glucocorticoid dexamethasone beginning at the defined commitment stage **inhibited** differentiation and mineral deposition in MC3T3-E1 cells (Ref.).

Introduction

Smith has shown that there were significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Ref.).

→ There **are** significantly more ridge deficiencies in the coronal halves of the ridges than in the apical halves (Ref.).





Save the date:

EMWA Conference in

Portugal

CASCAIS

November 4–6, 2021

The 52nd EMWA conference

**will be held November 4–6, 2021
at the Hotel Cascais Miragem**

The EMWA spring and autumn conferences provide a medium for networking, active discussions, and extensive cost-effective professional training. The conferences also provide an opportunity to benefit from the experiences of other medical writers.

The venues, facilities, and training programmes are chosen to offer the best possible learning environment. In addition to the formal training sessions, a relaxed, friendly conference atmosphere provides for ideal networking opportunities and enables all those attending to meet medical writers and communicators at all stages in their careers.

<https://www.emwa.org/conferences/future-conferences/>

The Crofter: Sustainable Communications

Welcome to The Crofter!

This is a regular section maintained by the EMWA Sustainability Special Interest Group (SUS-SIG), with Kimi Uegaki as the Section Editor.

SECTION EDITORS



**The EMWA Sustainability Special
Interest Group**



Kimi Uegaki
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Crofting is a sustainable way of living

It is cold and grey, and the wind is strong this morning, carrying a dash of rain. The crofter wakes up early. There is a sick sheep in need of care. A cow should give birth at any moment. There is a storm coming... are the fruit trees well protected?

Crofters run traditional small-scale farms that provide food and shelter for the family.

The croft, a traditional Scottish food production system, is a sustainable living practice, sometimes handed over from one generation to the next. The croft is the crofter's home, job, and hobby. The croft is his or her life.

Our world is our croft

Our world is one big croft where we, humans, are the crofters. We live, feed ourselves and our families, and satisfy our needs with everything we get from our planet's resources.

But our modern way of life has an impact on our world that we can no longer ignore. We are damaging our own croft, our only source of subsistence and shelter with unsustainable practices.

Unprecedented exploitation of our croft's resources

Our planet has faced unprecedented exploitation in the last 100 to 200 years: exponential use of water and energy, loss of tropical forest, ocean acidification, carbon dioxide emission, use of fertilisers, to name a few. Massive extinction of species is happening before our eyes. Polluted water, air, and soil is an increasing problem, especially in developing countries. We find plastic in our food chain and our oceans. Science shows

that 2020 marked the year when anthropogenic ("man-made") mass exceeded the living biomass in this planet.¹

Our well-being is connected to our croft

The existence of every human being depends on the natural system we live in. And for us, this is ultimately planet Earth. Like the crofter depending on his/her croft, the survival of humans is linked

to the planet, and damaging the planet damages human health.

Our professional life is part of the croft

Sustainability is not just about the environment, just as crofting goes beyond just food production. Sustainability also covers education, equity, peace, collaboration, and yes – health.

For medical writers and communicators, the healthcare industry and our profession are part



of the croft. Look at our daily professional activities, the documents we write, and the health products we produce. Each of these has their ecological footprint that has an impact – positive as well as negative – on the croft.

We are all crofters

The Sustainability Special Interest Group (SUS-SIG) of EMWA created this space here in *Medical Writing* to discuss sustainability issues that affect us all, personally and professionally. And because crofting is about a sustainable future, we called this space The Crofter: Sustainable Communications.

We will be sharing regular articles that will help you understand what sustainability is and how we can practice sustainability in our daily work and our daily life.

Share with us your questions, answers, worries, and requests, and we will add them to our SIG agenda. This space is for all of us, a small step towards a more sustainable world. Remember, we only have one planet, and we are all crofters.

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Mariana Rickmann

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Our daily professional activities, the documents we write, and the health products we produce, each of these have their ecological footprint that has an impact – positive as well as negative – on the croft.

Sustainability is not just a lifestyle choice – it is a professional responsibility

The term “sustainability” means different things to different people. What often comes to mind are lifestyle activities like green living, organic farming, vegetarian diet, recycling, among others. Hence this begs the question: What does sustainability have to do with medical writing and communications?

We firmly believe that sustainability goes beyond lifestyle choices – it is the responsibility of each and everyone. And the profession of medical writing and communications should be in the frontline in supporting the United Nations (UN) Sustainability Development Goals (SDGs).

The EMWA Sustainability Special Interest

Group (SUS-SIG; #EMWA-SUS-SIG) was launched in May 2020¹ in order to inform and support medical writers and communicators on the respectful use of human, natural, and planetary resources. As actors in the healthcare industry, a sector quite known for its considerable carbon footprint,^{2,3} clinical researchers and medical communicators have the responsibility to support and steer the industry towards sustainability through our personal and professional activities.

To pursue these objectives, the EMWA SUS-SIG has formed five groups that will work on the following topics:

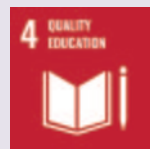
Group 1: EMWA as UN Sustainability Partner Organisation

We aim to register EMWA as a UN Sustainability Partner Organisation. Therefore, we have analysed the UN SDGs (<https://sdgs.un.org/goals>) and propose that EMWA fits well to support the following goals:

In collaboration with the EMWA Executive Committee (EMWA EC), the SUS-SIG seeks to develop an implementation plan for the identified UN SDGs.



- **Goal 3** – Good health and well-being



- **Goal 4** – Quality education



- **Goal 12** – Responsible consumption and production

As actors in the healthcare industry, a sector known for its considerable carbon footprint, we have the responsibility to support and steer the industry towards sustainability through our personal and professional activities.

Group 2: EMWA's ecological footprint

With focus on the environment, this work group aims to collect data on EMWA's carbon emission and provide suggestions on how to reduce the ecological footprint of EMWA. The long-term goal is for EMWA to become a carbon neutral, not-for-profit organisation.

Therefore, the following steps are planned:

- Organise webinars to increase awareness about environmental topics amongst EMWA members. For further information, please see our recent webinar from Achim

Schneider on sustainability in the healthcare industry: <https://player.vimeo.com/video/471075316>.

- Collect carbon data from EMWA's activities (eg, conferences, journal publication) to calculate EMWA's current carbon footprint. Based on this data-driven approach, we aim to provide goals and an action plan to the EMWA EC. We aim to communicate our results to the EMWA community through the *Medical Writing (MEW)* journal and an EMWA seminar.



Group 3: The healthcare industry and sustainability

We continuously investigate how the healthcare industry implements the UN SDGs. We plan to provide topical information on recent advances in the industry to the EMWA community.

Hence, we have launched this dedicated journal section. Additionally, a full issue on Sustainable Communications is planned for 2022.

Group 4: Medical writing and sustainability

We may not be fully aware of it, but our professional activities have an impact on achieving the UN SDGs. Below are just two examples how medical writing intersects with sustainability.

Environmental impact of health products

There are regulations and guidelines that look at the environmental impact and life cycle management of healthcare products. Corollary to these, certain documents that medical writers develop for regulatory submissions cover on these topics, including the Risk Management Plan (RMP), the Investigational Medicinal Product Dossier (IMPD), and the Environment Risk Assessment (ERA) report. The ERA may not be familiar to many of us, but it is actually required in the EU for all new marketing authorisation applications (MAA) for a medicinal product, regardless of its legal basis.⁴

Avoidance of research waste through responsible reporting and data sharing

Through good reporting practices, data transparency and open science, duplication of efforts, unnecessary mistakes, and waste of research resources are avoided.^{5,6} Medical writers and communicators are at the forefront of sharing and communicating clinical and scientific data in a responsible and fair manner.

The SUS-SIG aims to develop educational activities (e.g., webinars, workshops, etc.) on these topics with the support of the EMWA Education Committee.

Examples of topics we can cover are:

- Environmental risk assessment of medicinal products for human use⁴
- Reducing research waste through good reporting and publication practices⁵⁻⁷
- Healthcare waste management (EU-HCWM project) / circular economy⁸

Group 5: SUS-SIG resource centre on the EMWA website

On the topic of sustainability in the healthcare industry, we aim to provide an up-to-date collection of online resources on the EMWA webpage (<https://www.emwa.org/sigs/>

<https://www.emwa.org/sigs/>). Additionally, we will make use of all EMWA communication channels (#EMWA-SUS-SIG) to provide access to these topics.

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If you are interested in joining the EMWA SUS-SIG, please contact us!

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EMWA 2021

Virtual Spring Conference

Visit emwa.org for information about EMWA's second virtual conference!

Due to the ongoing COVID-19 pandemic, EMWA's Executive Committee has decided to shift the Spring conference, its 51st, to a virtual format.

The virtual Spring conference will be held May 4-8 2021.

EMWA's Executive Committee, Professional Development Committee, and Head Office are currently working to deliver a live and interactive conference experience that you can attend from the safety of your own home or office.



EUROPEAN
MEDICAL
WRITERS
ASSOCIATION

- Workshops
- Symposium
- Opening session
- Freelance Business Forum

Getting Your Foot in the Door

Editorial

Welcome to our first issue for 2021. The first EMWA virtual conference is done and dusted, but the impressions remain. In this issue, Daniela Nakagawa, a newbie, tells us how she unknowingly did medical writing in the past but only realised this when she “zoomed” into EMWA last November. Bless her and her generation for seeing the silver

lining and embracing virtual learning and networking.

Another inspiring newbie tale is that of Emmaline Tregembo who, through persistence, was able to land an apprenticeship and find a company willing to mentor her. She then moved on from being an apprentice to a medical writer! Kudos to Bilal Bham,

SECTION EDITOR



Raquel Billiones

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managing director of Bham Pharma Ltd, and his team for investing in future generations of medical writers!

Raquel Billiones

No setback comes without a blessing

Like many things in the professional world, I got to know more about medical writing and see it as the next step in my professional life, thanks to a connection. A friend of a friend was a native Spanish speaker living in Munich, Germany, with a PhD in Biomedicine, just like me. But while I was still looking for opportunities outside academia, he was already working in a pharmaceutical company as a medical writer. He told me about EMWA and how he landed his first job as a medical writer after attending his first EMWA conference. When he described what medical writing was, I strongly felt that this was a path for me too, because the writing was what I most enjoyed during my PhD. After talking to him, I decided to become an EMWA member and attend the spring conference in Prague in 2020 with my husband and my one-year-old son. Then COVID-19 came, and life paused for all: both the spring and autumn conferences were cancelled, my son stopped going to daycare, and I put on hold all my professional plans. But an EMWA e-mail in October, announcing the first online EMWA conference, rekindled both my earlier interest in medical writing and my hopes for starting a new professional chapter the following year.

Like many things in life, no setback comes without a blessing. The in-person conferences might have been cancelled, but the online version made it easier – not to say more comfortable and affordable – to attend. An online conference simplifies things that might be harder in person, like reaching dozens of people simultaneously via chat. Thanks to the chat room in Zoom, I immediately found other

native Spanish speakers living in Germany or abroad, all working as medical writers in English. Moreover, some of these colleagues live in Munich, and we already have agreed to meet in person, bringing the networking out of the “cold” virtual world and back into the essential part of life that is getting together with others. Finding “my people” in an in-person conference would have been a more serendipitous event. However, it took me less than a minute in an online conference to know who they were, add them to my network on LinkedIn, and even get advice from them on how to tailor my CV for the German market.

Though this was my first EMWA conference, and thus I cannot compare it to the in-person event, I feel that I got from it the same I would have extracted from the latter:

The in-person conferences might have been cancelled, but the online version made it easier – not to say more comfortable and affordable – to attend.

I gained clarity of what medical writing entails, the types of it, its challenges, and its rewards. In the session, “Getting into Medical Writing”, I discovered that I already had experience in medical writing after having worked for a pharmaceutical start-up some years ago. Until the conference, I would label my experience as



Daniela Nakagawa

consulting, but now I can say that I was actually a medical writer. The conference, in particular the workshops, taught me to identify the skills I have and the ones I lack. This inspired me to keep investing in my education through online courses recommended during the workshops and by attending future editions of the EMWA conference, to which I look forward either online or in-person. I am convinced that both ways represent a win-win situation for EMWA members and aspiring medical writers

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Ask and you shall receive: Job searching during a worldwide pandemic

Emmaline Tregembo recently did a three-month internship as a medical writer with Bham Pharma Ltd, an internship that turned into a fulltime position as a junior writer. Here are some thoughts from Emmaline on how she got that internship, and some from Managing Director Bilal Bham on why he hired her.

Emmaline: Since my first job at 13, I have never had one that was advertised, and so it seems only fitting that I continued this pattern in my job search as a Bachelor of Science graduate. During the summer of 2020, whilst the Covid-19 pandemic was in its first wave, and after receiving rejection after rejection from job applications, I decided to take matters into my own hands. I had spent every spare hour applying for roles which, on paper, I had the qualifications for but had become increasingly frustrated that every application ended with that same dreaded email: “Thank you for taking the time to apply, but unfortunately, at this time, we cannot progress your application any further.”

I began to read between the lines and realised that I may not have the same experience level as others who were applying. At this point, I had a choice to make, either continue my education to gain a full master’s degree and potentially a PhD, or gain some relevant experience. As the former was not that enticing to me, I decided on the latter and reached out to Bilal Bham, the managing director of Bham Pharma Ltd, applying for an internship. After a short email exchange and a brief phone conversation, Bilal offered me a 3-month internship. To say I was thrilled is an understatement. I felt like I had found the Holy Grail in a profession I so wanted to be a part of. I would gain the experience and skills I needed, and now was my time to prove that I could do it.

Diamond in the rough

Bilal: When Emmaline wrote to me asking for an internship, she was not the first graduate to inquire, but her communication with me and her desire to be given an opportunity, coupled with a well-written CV, stood out. After our phone call, which was a general conversation rather than a formal

interview (I don’t do formal interviews), it became quickly apparent that she had the personality and character to fit in with my growing team.

For someone so young (23!) to have such desire and confidence to do what she wants, reminded me of my endeavours of arranging my placement year at the European Molecular Biology Laboratories in Heidelberg, Germany, my MSc project at the Paterson Institute for Cancer Research in Manchester, UK, and then applying with vigour to every medical writing job I could find after being introduced to it by a friend. I believe courage, confidence, and tenacity are key in life and business. Emmaline had those in abundance, and since we were entering into a busy period, I decided to give her a 3-month internship.

One of the endearing virtues of youth is the assumption that one knows everything. Emmaline came in without that. However, she is fearless, has a healthy appetite for learning, and the ability to take critical feedback on the chin professionally. Red lines are a staple of our industry – even senior and principal medical writers receive them – and one must develop a thick skin to cope with the ups and downs of our profession.

My first ever project as a trainee medical writer was a Phase III clinical study report, and I do believe that a combination of treading softly and a baptism by fire are needed with newbies to assess if they have the character and raw talent to handle what the professional world will throw at them. Therefore, I decided to throw Emmaline into the deep end. For someone

One of the endearing virtues of youth is the assumption that one knows everything. Emmaline came in without that.



**Emmaline
Tregembo**

with no medical writing experience, she surpassed expectations, impressing our whole team. I have worked with many medical writers, and she was delivering at a level one or two years above her experience, which meant that we could feel confident letting her work on live projects with a senior writer shadowing her work.

A 3-month whirlwind of lessons

Emmaline: It was not that daunting for me to begin working for Bham Pharma Ltd, a fully work-from-home company, even before working from home was cool and became the new norm. I had successfully adapted to working from home during my final semester of university, and I found that it suited my working style nicely. In fact, it was not the first time I had to be self-motivated to study, as my parents took me out of school for a year at age 13 to travel. This built my confidence and independence and meant that the lack of a physical office at Bham Pharma Ltd did not faze me.

Within my first month, I learned more about the industry than I expected to learn in the entire 3 months, and I realised why I was unsuccessful

in so many interviews. It was not just my glaring lack of experience; it was also the fact that I did not know what the job entailed. Selling yourself for a job that you know nothing about is actually really hard, and so I embraced the opportunity I had been given and learned as much as I could about the industry.

Those 3 months were a steep learning curve. Quickly, I learned that medical writing is not just about having the ability to write. It is also about having an impeccable eye for detail and the ability to jump between projects seamlessly. Although I always felt that I had a natural ability for writing (I only took English language as an A-level because I knew I wouldn't need to study for it), I suddenly became aware of how challenging I found the whole writing process. I found myself in awe of my colleagues, who seemed able to produce a document effortlessly.

Rapidly, I learned the importance of managing time effectively and the skill it took to assess a brief to give an accurate estimation of the time required. On my first estimate, I thought carefully and decided on a time frame I felt was generous, only to be a day-and-a-half off in the wrong direction and found myself asking for an extension. Although I thought I had erred on the side of caution, it reminded me that I was still a newbie, and I obviously would take longer finishing tasks compared to more experienced writers.

Managing these personal expectations has been important, and by not putting too much pressure on myself to be perfect the first time, I have been able to fully embrace the feedback I was given. I was lucky that I stumbled across Bham Pharma Ltd because they are an exceptionally supportive team that continues to provide me with constructive feedback, and helps me to improve and progress. Had I begun in a larger writing team, I could easily have felt like a fish out of water, not knowing what to do or who to turn to for advice. But by being part of this small but supportive team, I have the confidence to ask questions, no matter how trivial they seem.

Although criticism and corrections are all part and parcel of the profession, at times, it does require a thick skin. I remember some of my early pieces of work being returned and feeling as if not a single sentence was useful, having received what felt like a never-ending list of comments and tracked changes. But those early mistakes were

how I learned, and I appreciated the time it must have taken my team to go through my work with a fine-toothed comb and following up with calls to discuss the reasoning behind the changes. If it were not for my team investing time into my learning and development, I would not have progressed so rapidly. Having a structured mentoring, training, working, and feedback approach has really helped me.

My advice to anyone considering a career in medical writing would be to reach out to companies for an internship as I did and gain an insight into what the industry really involves. You may just be surprised which avenues you enjoy. I was convinced from my research that medical communications would be where my interests lay. However, although I enjoyed the communication

projects I have worked on so far, and especially loved the variety they bring, I was surprised to find that I also thoroughly enjoyed working on regulatory documents. It just highlights that you only truly understand what a job involves once you begin.

Normally, it takes approximately 3 years to become a proficient medical writer, so I know that I still have a long way to go. But every day, I am learning something new, which brings me one step closer to that goal. I am excited about what the future will bring. I would highly recommend to anyone considering entering the medical writing profession to jump in headfirst and see where it takes them.

Make your CV flawless

Bilal: I would echo that advice. If you are a new graduate looking for an opportunity in medical writing, follow Emmaline's example of reaching out to businesses for an internship to gain some actual industry experience. Personally, I do not believe a PhD makes for a better writer; I got up to an MSc and quit my PhD a couple of months in because I realised it wasn't for me, and after over

14 years in the industry, I haven't done badly! My first boss at what was then Accovion, now Clinipace, in Eschborn, Frankfurt am Main, Germany, took a chance on me as a brash 24-year-old, so it was natural that I would do the same for someone of a similar age, raw talent, and character.

Emmaline's CV was excellently written compared to those of senior medical writers that I was hiring for, and it's what sparked my interest in giving her an opportunity. I reject CVs regularly because they are poorly written, too long, and error-strewn. If you are applying to any positions, ensure your CV is 2 pages long (excluding the references page), consistent with punctuation, looks neat and tidy, reads well, is brief but informative, and highlights your character as well as your experience. You never know, you might just jump ahead of more experienced writers, as Emmaline did, and get the job full time! Good luck, and may the odds of medical writing be ever in your favour!

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Laura A. Kehoe

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Out on Our Own

Editorial

Welcome readers,

I've lost count how many times people ask me, what is a medical writer? And it isn't just my mum and aunt who ask me such a question; medical doctors, PhD students, and academic professors are often surprised that medical writers exist and do what we do. In the current times, medical writers are needed now more than ever to help disseminate accurately and concisely, especially in layperson terms, what is happening in the scientific world. Sara Ferrão, this issue's author on that topic, tells

us how she discovered the profession and gives a useful summary of the pros and cons of being a freelance medical writer, and the difficulties faced during the pandemic. As she states, perhaps for most freelancers our working environment and situation hasn't been dramatically affected by the pandemic; we're used to working from home, dealing with clients remotely, juggling schedules. But it's not all plain sailing. As a freelancer, there are many challenges one must face, as well. We usually discuss these types of dilemmas in our Freelance Business Forum at the EMWA Congress; in fact, Sara was the discussion

moderator for this topic at the virtual congress in November. If you're reading this tossing with the idea of being a freelancer, then check out her pros and cons list and head to the freelancer resource page for more tips.

We've entered 2021 and we're all praying for a better year than the previous one. I hope this issue reaches you well and soon we'll be chatting together at an EMWA Congress; fingers crossed for Cascais.

Until then, stay safe.

Laura A. Kehoe

Medical writing as a career

The beginning of my journey as a medical writer started a while back, on LinkedIn. I saw a post of an opening role for a medical writer, which caught my attention. It was from a former teacher of mine, and now scientific director of an agency in the UK, so I decided to reach out and ask about what exactly was a medical writer. Talking to her and discovering that I could make a living from writing and editing, something that I had been doing mostly as a hobby, was a revelation. Back then, I was working at a pharmacy, but I was also involved in small writing projects that started when I was on my first maternity leave. Of course, I didn't apply for the role, but I started researching about this exciting profession which, naturally, led me to EMWA.

The resources available on EMWA's website were extensive and useful, and I quickly became a member. It was definitely the first step into the beginning of my business; only I didn't know that then. The second one was attending my first



conference in Vienna, in which I was pleasantly surprised. I instantly connected with so many talented professionals and had a chance to learn and update knowledge from experienced medical writers. Looking back to those days, I would have never guessed that by now I'd be a full-time freelance medical writer and loving it!

experience. A medical writer's freelancing life can get isolating, and it comes with a certain amount of pressure, as it is a small business that requires an investment of time and money to succeed.

Being an introvert, I enjoy spending hours working in solitude, but I do sometimes miss talking to colleagues, exchanging thoughts and

Freelancing as a medical writer

Life as a freelancer has numerous perks, and it can be gratifying. It allows flexible hours, which gives me the freedom to be in charge of my schedule. It also allows me to work on multiple projects, learn about different topics, and gain experience in different kinds of materials. So, for me, it never gets boring.

Nevertheless, it also has downsides. Before I leapt into being a full-time freelancer, I obviously researched about this particular working style, and I soon realised that some freelance dilemmas are, in fact, common to all freelancers, regardless of their amount of

ideas. And so, lately, I find myself willing to invest more time building working relationships and networking. I learnt that this is not only a great way to develop professional contacts, but also a way to interact socially with other like-minded professionals and that it often gives rise to new friendships.

In my experience, LinkedIn is a great way to make contact with other professionals and to keep updated in our field. EMWA has also been an excellent means of networking and, as I mentioned earlier, it provides excellent resources to medical writers, including freelancers. It was through EMWA that I met my fellow Portuguese medical writers. With these pandemic times, the plan to create a wider local medical writers' group has been postponed, but hopefully, this is a project for the future.

Freelancing and COVID-19

Currently, in these pandemic times, networking can happen through a variety of different ways, like being part of social media groups or participating in online meetings and social events (see my article in the December 2020 issue of *Medical Writing: Social media: a tool that can benefit public health?*). While it is a different challenge that we all are getting used to, it can bring some advantages, especially to those too occupied and with little time to socialise outside the "office".

The COVID-19 pandemic has had an impact on every freelancer medical writer's business. While some saw their projects dropped, others were overwhelmed by new assignments. Due to the nature of this pandemic, it not only brought us new project opportunities but also the need to adjust to new issues related to health and medical communications. Alternatively, the growing need to fight health illiteracy has indeed been exposed

Pros and cons of being a freelancer

Pros:

- Flexible hours (child-friendly schedule)
- Flexible work location
- Working environment is adjusted to you and your needs
- Select the projects and clients that are exciting to you
- Unlimited earning potential
- Running every business aspect (sales and marketing, invoicing, signing contracts, troubleshooting technology, keeping track of tax-deductible business expenses, making estimated tax payments, etc.)
- Ownership: you call the shots

Cons:

- It can be difficult to find clients
- Adjusting to solitude
- Lack of interaction with colleagues about daily work-related issues
- No paid time off, maternity/paternity leave or company-sponsored health benefits
- Adjusting to feast and famine periods – inconsistent work and cash flow
- No one to back you up if you become sick or injured
- Overworking – learn to switch off
- Running every business aspect (see above!)



during these times, and misinformation is as dangerous as the disease itself.

One of our many abilities as medical writers is that we are used to interpreting and making medical information understandable; therefore, we are more than qualified to help in the process of fighting misinformation and improving health literacy. This action is useful to mitigate negative effects on COVID-19 management and can also bring broader benefits, especially concerning the growing focus towards lay audiences' involvement in healthcare decisions.

Working as a freelance medical writer is a

challenge during a pandemic. But, as freelancers, we are used to adjusting our schedule and mindset to a variety of projects simultaneously and, in most cases, working remotely is not an issue. So, undoubtedly, these are characteristics that will help us to quickly adapt to the changes that are happening worldwide and allow our business environment to thrive.

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Upcoming issues of **Medical Writing**



June 2021:

Mentorship

No one is born a medical writer. This issue will explore the important role that mentorship plays in the professional development of medical writers.

Guest Editor: Clare Chang

The issue is now closed to new submissions.



September 2021:

Medical decision making and health technology assessment

This issue will focus on medical decision-making and will address issues at both the population level (e.g., health policy, resource allocation) and the individual level (e.g., individualised patient treatment decisions, involvement of caregivers). It will give medical writers a broad perspective over current issues and trends in medical decision-making and provide information and practical hints for how to describe decision-making processes and report data for health technology assessment.

Guest Editors: Claire Gudex and Maria Kołtowska-Häggström

The deadline for submitting feature articles is June 1, 2021.



December 2021:

Medical journalism

We are living at a time when the general public is increasingly interested in scientific and medical advances. Hence, for medical writers understanding our audiences and how to efficiently reach them is key. This issue will cover those insights.

Guest Editors: Evguenia Alechine and Phil Leventhal

The deadline for submitting feature articles is September 1, 2021.

CONTACT US



If you have ideas for themes or would like to discuss any other issues, please write to mew@emwa.org



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