Social Media Best Practices: The European Association of Urology Position Statement

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1.   INTRODUCTION

1.1.   Aim and scope

This European Association of Urology (EAU) position paper aims to provide a comprehensive overview of, and recommendations for, social media (SoMe) best practices in urology. In recent years, SoMe has become widely used among patients and healthcare professionals. Yet, inappropriate use of, and misinformation in, SoMe are very common. This document summarises the current knowledge regarding the use of SoMe in urology and elaborates the general principles in using SoMe. This document is designed to offer guidance to urologists and healthcare professionals on how to use SoMe responsibly in a professional context.

2.   METHODS

2.1.   Data identification

For this document, relevant evidence was identified through a structured and comprehensive literature search, using Medline, EMBASE and the Cochrane Libraries, and covering a time frame between 2011 and 2021. The inclusion and exclusion criteria for each topic was defined by consensus among the panel members before the scope search. Detailed search strategy is available in the supplementary file.

2.2.   Peer review

This document has undergone independent peer review by an expert in the field of SoMe prior to publication.

3.   OVERVIEW OF SoMe

3.1.   Definition of SoMe

SoMe is broadly defined as a category of Internet-based resources integrating user-generated content and user participation.

SoMe was created to offer multifunctional networking tools that tend to offer an increasingly wider variety of services [1]. In practice, it refers to a computer technology that facilitates the exchange of ideas, thoughts and information through virtual networks and communities, and provides users with rapid electronic communication of content, such as personal information, documents, videos and photos. SoMe is changing the way people live, communicate and interact globally [2]. As of April 2022, more than 4.65 billion people are using SoMe, equating to 58.7 percent of the total global population [3]. People use SoMe to communicate, connect and interact with other users, sharing and spreading information expeditiously [4]. Users engage with SoMe through a computer, tablet or smartphone using web-based programs or applications. A growing number (21%) of internet users are accessing the internet exclusively via a smartphone. Rates of internet access via mobile platforms are higher among those aged 25-34 [5].

The typical SoMe user visits or uses an average of 7.4 different SoMe platforms each month and spends an average of about two and a half hours a day using SoMe. Based on an average sleep schedule of between 7 and 8 hours a day, this means that people spend approximately 15 percent of their waking lives using SoMe. In total, the world spends more than 10 billion hours a day using SoMe platforms, which is the equivalent of nearly 1.2 million years of human existence [3].

3.2. Types of SoMe platforms

The top SoMe platforms used globally include Facebook, YouTube, WhatsApp, Instagram, TikTok and X, formerly known as Twitter. The following table (Table 1) identifies nine types of SoMe according to purpose and functionality [6, 7].

Type	Description	Examples
Online social networking	Web-based services that enable individuals and communities to connect with real-world friends and acquaintances online. Users interact with each other through status updates, comments, media sharing and messages.	Facebook, LinkedIn, Myspace, WhatsApp, Discord [a], Telegram [b]
Journal-like blogging	Websites for users to contribute textual and multimedia content, arranged in reverse chronological order.	Huffington Post, Business Insider, Engadget, WordPress, Medium
Microblogging	Same as blogs, but with limited content	X, Tumblr, Plurk [c]
Wikis	Collaborative editing environment that allows multiple users to develop web pages.	Wikipedia, Wikitravel, wikiHow
Social news	Sharing and selection of news and articles by communities of users.	Reddit, Digg [d], Slashdot [e]
Social bookmarking	Enables users to bookmark web content for storage, organisation and sharing.	Digg, Mix
Media sharing	Sharing of media including video, audio and photos.	Instagram, TikTok, YouTube, Snapchat, Substack [f]
Opinion, reviews, and rating	Collects and publishes user-submitted content in the form of subjective commentary.	TripAdvisor, Yelp, CNET, Zomato, Epinions [g]
Answers	Platforms for users seeking advice, guidance, or knowledge to ask questions.	Answers, Quora
Table 1. Types and characteristics of currently available SoMe platforms		

[a] *instant-messaging plus voice-over-internet platform used primarily by gamers*
[b] *cloud-based, encrypted instant messaging service*
[c] *social networking and microblogging, enables users to send short messages or links up to 360 characters in length*

d news aggregator that collects news articles especially for the internet audience, such as science, trending political issues and viral internet issues

e features news stories on science, technology and politics that are submitted and evaluated by site users and editors, with an option to comment on all articles

f enables writers to send newsletters directly to subscribers

g paid product reviews

Facebook remains the world's most widely used SoMe platform worldwide, with more than 2.9 billion monthly active users – a number that is growing by approximately 500,000 new users every day. Yet, despite its popularity, Facebook is not the most visited website in the world. Surprisingly, its 25.5 billion monthly visits are nevertheless outnumbered by YouTube's 34.6 billion and by Google's 92.5 billion [8].

YouTube's potential advertising reach is 2.56 billion. YouTube is also part of a small number of SoMe platforms that reach very young age groups. Despite its popularity among younger audiences, YouTube also has some notable statistics for reaching the adult demographic. Nearly three quarters (74%) of all adults use YouTube [9].

With at least 2 billion monthly active users, WhatsApp is one of three social networking platforms with a user base of more than 2 billion – a milestone they reached in 2020. The app's recent rate of growth has been very high, with the last billion users joining in just four years.

Instagram is the world's most popular photo-sharing SoMe channel, with a potential advertising reach is 1.452 billion. Demographically, Instagram appeals primarily to users under the age of 35, with 71% of the app's user base falling into this category. It is also a popular platform for marketing.

TikTok has 1 billion monthly active users. The video-sharing platform premiered in 2017 and quickly became one of the leading international social networks.

Social network X's potential advertising reach is roughly 465 million. X is particularly popular in the United States where, as of January 2022, it had an audience reach of 76.9 million users. Japan and India were ranked second and third in numbers of X users with more than 58 and 23.6 million users, respectively [10].

The social platforms that the world's connected population uses varies from month to month, which leads to considerable overlaps between the user bases and advertising audiences of each of these platforms.

3.3.   Target audiences on the various SoMe platforms

The 'Adults Media Use and Attitudes Report 2022' [5] from the Office of Communication (Ofcom), the government-approved regulatory and competition authority for the broadcasting, internet, telecommunications and postal industries in the United Kingdom, indicated that the largest users of online communication platforms were younger, and in particular 16-24 year olds. Sites or apps that were particularly skewed towards younger audiences included Instagram (used by 90% of internet users aged 16-24 compared to 54% of all internet users), Snapchat (83% vs 32%) and TikTok (74% vs 34%). When SoMe users were asked what their 'main' site or app was, the top three sites chosen by 16- to 24-year-olds were Instagram (30%), Snapchat (24%) and TikTok (21%). A study revealed that younger people were more likely to name Instagram as their "favourite" SoMe platform (at least in most Western markets) [11]. The study also revealed that TikTok was more popular among younger users. Nearly 9% of female internet users aged 16 to 24 say TikTok was their favourite social platform, compared to just 1.5% of users aged 55 to 64.

While the use of social networking has grown dramatically in recent years across all age groups, users aged 50 and over have nearly doubled from 22% to 42%. Between April 2009 and May 2010, internet users aged 50 to 64 who said they use a social networking site such as MySpace, Facebook or LinkedIn

grew 88%, and those aged 65 and older grew 100% in their adoption of the sites, compared with a growth rate of 13% for those aged 18-29 [12]. Facebook remains the most popular overall choice among men aged 25-44, although it is a distant third among men aged 16 to 24. WhatsApp, meanwhile, is the most popular choice among older users, with 1 in 5 internet users aged 55 to 64 identifying it as their favourite social platform [3].

3.4. Current utility of SoMe platforms in urology

Over the past decade, SoMe platforms have grown increasingly popular for personal and professional use. The SoMe revolution has quickly spread to healthcare, and urology is no exception, with professionals in the field of urology taking advantage of its opportunities for global education and knowledge sharing [13].

A 2014 survey conducted by the American Urological Association (AUA) found that 71% of respondents had SoMe accounts [1], and by three years later, this number had risen to 74% according to the updated survey in 2017 [14]. Facebook and YouTube were the platforms most commonly used [14]. However, the use of Instagram, LinkedIn, X and Pinterest increased significantly with time [14].

In a 2018 European survey, 99% of young urologists reported using SoMe in a personal or professional context [15]. YouTube and LinkedIn are the most commonly used platforms for professional use [15]. Urology residents are optimistic about the potential of SoMe for education, participation in conferences and the exchange of ideas [16, 17].

Position statements
SoMe refers to a computer technology that facilitates the exchange of ideas, thoughts and information through virtual networks and communities that can be accessed by computer, tablet or smartphone via web-based programs or applications.
Nine different types of SoMe platforms are available, categorised by purpose and functionality. Be sure to use these appropriately according to the aim of SoMe use.
SoMe platforms should be embraced for education and knowledge sharing, but an understanding of the various platforms is necessary to understand the content to be posted and the target audience for each platform.

4. General principles in using SoMe

When using SoMe platforms, urologists should comply with a number of general principles, as shown in Figure 1.

General Principles

- Understand the different types and rules of social media platforms

- Establish and maintain a professional digital identity

- Avoid breaching patients' privacy or confidentiality

- Avoid providing medical advice through publicly accessible social media platforms

- Assume that social media posts are permanently available and publicly accessible

- Exercise high standards of professionalism

- Beware of social media policies endorsed by employers and regulatory authorities

- Avoid misleading advertisement, self-promotion, and superiority claims over peers

- Use disease-specific hashtags for content filtering and structured online communication

- Treat negative comments in a constructive manner

Figure 1: General principles when using SoMe

4.1. Understand the various types of SoMe platforms

SoMe platforms vary by their style of content presentation, mode of user interactions and audience composition [18]. The optimal SoMe platform depends on the objectives of SoMe usage, the target audience, the nature of content being delivered and the planned key performance indicators [18]. Understanding the various SoMe platforms is important to help you decide which is the best platform with which to engage. In terms of practicality, tweets or posts are useful because they can be scheduled to be released at certain times. Users can also analyse SoMe metrics to decide on the best time and day of the week to release the SoMe content. You can also boost visibility via the SoMe platforms to maximise reach and engagement. This, however, carries additional costs and should be done in a strategic manner.

4.2. Establish and maintain a professional digital identity

Establishing one's digital identity in a professional manner is important [19, 20]. When setting up a professional account, physicians should state clearly who they are, what their field is and the capacity in which they are interacting via the SoMe platforms. In general, physicians are encouraged to use their own names rather than pseudonyms. When using pseudonyms, their names and professions should

still be clearly stated and accessible by the public. Although some users may wish to create anonymous accounts for various purposes, anonymous accounts are not acceptable if these accounts report medical opinions or medical expertise or seek to influence the medical opinions and views of others. Your digital profile and online behaviour must also align with the standards of the profession [21]. Physicians should also remain constantly vigilant of their publicly accessible digital profiles by periodically checking for mentions of their names in the online research results [22, 23].

4.3.   Do not breach patients' privacy or confidentiality

Users of SoMe must not disclose any patient's sensitive information on SoMe and, if deemed necessary, a patient's informed consent must be sought before posting their information [19, 20]. It is fundamental practice for physicians not to identify patients, show images that could lead to their identification, or discuss treatment or pathology in a manner that could lead to a patient being identified. While sharing patients' data, physicians must bear in mind that even vague clinical details can result in patient identification and may violate professional ethical standards and health care privacy laws [24].

According to the Health Insurance Portability and Accountability Act (HIPAA) – a U.S. law that established standards to protect sensitive health information and safeguard patient privacy – protected health information (PHI) under HIPAA is individually identifiable health information that is collected or maintained by an organisation that qualifies as a HIPAA-covered entity of business associate [25]. Any information that identifies, or could be used in combination with other information to identify the subject of the health information is also considered PHI under HIPAA [25]. Examples of PHI include but are not limited to name, dates, telephone number, fax number, geographic data, email address, social security number, medical record number, health plan beneficiary number, account number, certificate or license number, vehicle identifiers, device identifiers, web URL, internal protocol address, Internet Protocol (IP) address, full fact photos and comparable images, biometric identifiers (e.g. retinal scan, fingerprint, etc), or any unique identifying number or code [25].

4.4.   Avoid providing medical advice through publicly accessible SoMe platforms

SoMe users should always be aware that conversations on SoMe platforms can be misinterpreted as patient-physician relationships. Personal opinions can be misconstrued as formal medical advice, and any opinions given to an individual may be inadvertently generalised [26]. While generic discussions of medical conditions and their management are acceptable, physicians are recommended not to provide any patient-specific medical advice via the SoMe platforms. When in doubt, physicians should include disclaimers clearly stating that any posted material does not represent medical advice and is not a substitute for a formal medical consultation [27]. When contacted by a patient or family member, physicians should recommend scheduling a formal appointment or refer the interested party to legitimate sources that provide accurate medical information.

4.5.   Assume that SoMe posts are permanent

Any material posted on SoMe platforms should be considered permanently available and publicly accessible [19-21]. Users should adopt a 'pause before you post' rule to remember the permanence of all SoMe interactions and consider the possible consequences for several reasons. First, the physician may regret posting on impulse or whenever judgment may be clouded. Second, any quotes, photos and commentary can be taken out of context and reposted elsewhere, despite privacy settings. Third, SoMe platforms may apply a policy of "free use", implying that the use of existing materials from their platforms may not require further permissions [28]. This is often based on an assumption that users who upload material accept public accessibility and consent to its redistribution, and this may result in a copyright breach [28].

4.6.   Exercise professionalism

Medical professionals are asked to maintain high standards of professionalism outside of work, and the use of SoMe is no exception [19-21]. Physicians should always ensure their comments and behaviour on SoMe platforms are within the context of appropriate professional opinions, views and standards. When interacting on the SoMe platforms, maintaining a respectful and collegial tone while disagreeing with colleagues is recommended. Physicians must avoid defamatory and personal comments that violate professional norms. While not compulsory, reaching out to and reminding colleagues whose SoMe conduct is inappropriate can be considered. While posting, even for communications that are meant to be private, physicians should bear in mind the potentially wide distribution of their personal messages/posts and the fact that replication outside the original context is possible. A review performed in 2016 showed that 43% of urologists had posted unprofessional content on Facebook and other SoMe platforms [29]. This highlights the importance of proper training and education to enhance online professionalism [30].

4.7.   Be aware of SoMe policies utilised by employers and regularity authorities

Some institutions have established policies that may set limits on sharing medically related posts publicly on SoMe platforms. It is the physician's duty to review any SoMe policies created by his/her institution to stay compliant with these policies [19, 21]. Some employers require their employees to state explicitly that their views expressed on SoMe platforms do not represent those of their institution. Users can consider including a disclaimer in their profiles stating that any posted content represents their own opinion. Sample statements include ''views expressed are my own'' and ''retweets do not imply endorsement'' [19].

4.8.   Avoid misleading advertisement and self-promotion

Health care professionals have the obligation to offer sound opinions and report factually correct data. Physicians should not make claims that cannot be substantiated or verified and should not advertise their services or results beyond medically verifiable data. They also should not claim superiority over other physicians, as this is often without solid basis and may result in medicolegal consequences. Online discussions or posts which could be associated with financial conflicts of interest must be transparent [19]. Users should be aware of the variations of regulations across different regions; it is the physician's duty to ensure their online behaviour is compliant with their local regulations.

4.9.   Use disease-specific hashtags for structured online communication

On SoMe platforms, content is organised using topic indicators known as "hashtags" [31]. By searching the hashtag on SoMe platforms (symbolised using the hash sign: #), only posts that contain that hashtag will be sorted out for viewing [31]. This can facilitate the relevant information that is of interest to the user. In fact, urology has been one of the first specialties to standardise the hashtags in a systematic way by means of the "Urology Tag Ontology Project" initiated back in 2016 [32-34]. As of 2021, more than 4.2 million tweets contained the proposed hashtags [31]. The list of hashtags is updated regularly and can be readily accessed online (https://www.symplur.com/healthcare-hashtags/ontology/urology/)). Physicians are encouraged to use these proposed hashtags when posting content on SoMe platforms to facilitate sorting and filtering of content according to the needs of the end user [32-34].

4.10   Treat negative comments on SoMe in a constructive manner

Negative comments are common on SoMe platforms [35], and it is important for users to actively monitor their SoMe platforms and moderate responses. Users should attempt to understand the overall incident and the underlying reasons leading to such negative comments. If the negative comments are judged valid, users should respond to the comments promptly and consider apologising if deemed necessary. Rather than arguing and fuelling potential conflicts, users should try to

appreciate the negative comments and be open-minded, inquiring as to how they can help to rectify the situation and address any concerns. Deleting negative comments is generally not recommended, unless these comments become offensive and abusive. Similarly, blocking users is generally not recommended, unless these users have posted offensive and abusive comments repeatedly.

Position statements
Understand the various types of SoMe platforms and the general principles in using SoMe
Establish and maintain a professional digital identity when using SoMe platforms.
Do not breach patients' privacy or confidentiality, as this would violate professional ethical standards and health care privacy laws.
Avoid providing medical advice through publicly accessible SoMe platforms.
Assume that any material posted on SoMe platforms will be permanently available and publicly accessible.
Exercise high standards of professionalism and ensure that your comments and behaviour on SoMe platforms are within the context of appropriate professional opinions, views and standards.
Be aware of any SoMe policies implemented by your institution and regulatory authorities and remain compliant with such polices.
Avoid advertisement and self-promotion and do not claim superiority over other physicians on SoMe platforms.
Use disease-specific hashtags to facilitate sorting and filtering of content, and to enable more-structured online communications.
Treat negative comments on SoMe in a constructive manner and be open-minded to rectify and address any concerns when appropriate.

5.   Goals and benefits of using SoMe in urology

5.1.   Increasing public awareness

Health campaigns on SoMe platforms can help disseminate information about health issues and promote support for action. SoMe platforms can serve as powerful communication vehicles that can be used to expand visibility and increase knowledge among the public from a local to a global community [36]. "The Ice Bucket Challenge", a campaign that went viral in 2014, raised an estimated USD $220 million worldwide for amyotrophic lateral sclerosis. This campaign consisted of sharing videos and photos on SoMe of a bucket of ice water being poured over a participant's head, either by another person or the participants themselves, and encouraging donations to an ALS foundation, while nominating other people to repeat these actions [37]. On the other hand, SoMe engagement with health campaigns may not always progress in the direction one may want. Taking the example of Movember – an annual event involving men growing moustaches during the month of November to raise awareness of men's health issues – it was observed that a large amount of SoMe posts focussed on non-health-related topics such as moustaches and grooming [36, 38-42]. Another example is the concept of 'Cancer Awareness Month', which has been popularised over the past several decades. A study evaluating internet traffic during a ten-year period (2010-2020) revealed that public interest for a number of cancers was significantly higher during their designated awareness month compared to the rest of the year [43]. One unique characteristic of SoMe is that information can be targeted towards a specific group or audience. A Facebook SoMe campaign in Australia, for example, increased recruitment of unvaccinated women for a study into HPV vaccine effectiveness from 19.3 to 50.4% when targeted advertisements directed at non-vaccinated females were used instead of generic women's health advertisements [44]. Similar strategies have been used to increase attendance at informative sessions on various urological topics and campaigns have been used to call for living donors or to improve cancer screening engagement [45-52].

5.2. Public education

In recent years, SoMe has been one of the fastest growing means of interpersonal communication. The use of SoMe for educational purposes is not reserved just for medical professionals but is also used by the public to share and obtain urological information in an easily accessible and understandable format. SoMe has become an integral part of medical education for patients [19, 53-55]. The role of SoMe in urologic medical education has been amplified by the COVID-19 pandemic. Its utilisation has been expanding, making it very valuable for patient education [54]. In this context, when clinical rotations were paused, SoMe became an important means to continue resident and student education [56]. Multiple lecture platforms are available across a wide range of media that facilitate both general urology education and discussion of more specialised topics [57-59]. Patients who are better educated about their medical condition are expected to have better compliance with treatment and therefore better outcomes [60-62]. In this way, SoMe can therefore facilitate this doctor-patient relationship [63].

In the field of urology, an analysis of online discussion forums on erectile dysfunction found that only 28% of people who participate in anonymous forums end up seeking professional medical advice; and young men often begin their search for answers to medical questions in online chat rooms [64]. Previous studies demonstrated that the use of SoMe and the availability of adequate and truthful information to patients can make a difference in patients' engagement with medical care [65, 66].

In summary, although the use of SoMe in education entails risks, the opportunities it offers to the field of medicine are incredibly valuable and have already been demonstrated in the field of urology. Future research should focus on ways to maximise these medical education efforts, minimise risks and increase guideline awareness among users.

5.3. Telemedicine

Telemedicine is defined as the use of medical information exchanged from one site to another via electronic communication to improve a patient's clinical health status [67]. Telehealth, in comparison, refers to any health care activity performed via telecommunication and is a combination of both telemedicine and remote nonclinical services such as provider training, meetings and medical education [53, 68]. Prior to the COVID-19 pandemic, the main motivation for telemedicine was to increase access to health care for certain groups of patients (e.g. military personnel and people in rural areas) [69]. The COVID-19 pandemic has triggered the use of telemedicine with the aim of offering health care services without the need to expose patients and physicians to the unnecessary risk of infection [70, 71]. A German study of 400 patients showed that approximately 95% of the patients were at increased risk of a severe COVID-19 outcome and that 85% of them favoured telemedicine consultation during the pandemic [72]. The availability of social networking platforms and the broad use of electronic devices has made telemedicine feasible for most patients. Telemedicine has been successfully applied to the management of various urological conditions [73-82]. The practice of telehealth has now expanded to include a wide range of activities, such as live videoconferencing, asynchronous transmission of recorded data, remote patient monitoring and mobile health [70].

The European Association of Urology has provided recommendations for professional use of telemedicine [53]. Physicians should learn how to manage telemedicine platforms and tools that allow communication with patients, communication with other team members, and safe data sharing. Patients should be provided with convenient methods for scheduling visits and easy access to urgent consultations. A quiet and private environment should be ensured during video consultations, and physicians must maintain professionalism throughout the consultation. Even when video consultations are not available, simple phone calls may be considered during a pandemic emergency. Hospital phones should be used for formal phone consultations. Triage of patients should be performed according to the patient's clinical conditions. Constant communication must be ensured with the team

during a televisit. Physicians should also check local regulations prior to adopting telemedicine. Regulations on privacy and billing issues should be complied in accordance with local regulations. Self-discipline is important when working from home, and an undistracted environment should be ensured to allow good working efficiency. Beyond the COVID-19 pandemic, the use of telemedicine is likely to continue, and physicians have the obligation to ensure delivery of high-quality and proper healthcare services through telemedicine platforms.

5.4. Virtual and hybrid conferences

Congresses have been and continue to be crucial to education in urology, and SoMe has created an effective medium for active and live participation in conference-related discussions. Urologists use this convenient tool to participate in, and share information related to, the congress with people who are or are not in attendance. Using the congress hashtags on X, all discussions related to a congress can be saved, which enables data collection and further analysis [14, 83, 84].

Online platforms have also opened the door to virtual conferences. During the COVID-19 pandemic, many in-person conferences suspended and were conducted entirely virtually [54]. For this reason, it was crucial to continue learning and sharing knowledge through virtual platforms [85], including social networks such as X, Facebook and Instagram, as well as urological webinars organised by the various associations [2, 15, 20]. After the COVID-19 pandemic, a hybrid conference (i.e. combining physical and virtual aspects) can be considered to maximise international networking and improve conference access globally. Additional costs, however, must be considered when adopting such an approach.

For large meetings, a formal organisation through professional companies is encouraged. For smaller-scale meetings, multiple platforms are available for creating webinars and conferences. These include GoToMeeting, GoToWebinar and GoToTraining, which enable users to organise webinars, meetings and virtual conferences in a relatively simple way. However, live broadcasting can also be done through other simple online applications and platforms such as Facebook, Instagram or Zoom, which are also potential options for broadcasting a video conference.

5.5. International networking and enhancing collaborative research

SoMe offers tremendous potential for information dissemination and professional exchange among urology stakeholders [86]. Wilkinson *et al.* reported that 4,663 tweets were sent during the peri-conference period of the annual American Urological Association conference, totalling more than 8.6 million impressions [87]. The past few years has also seen a significant increase in the use of X at these gatherings, with a tenfold increase in usage at the European Association of Urology conference from 2012 to 2014 [87]. X is a very powerful tool for amplifying the content of scientific meetings, and its use has been widely embraced by the urological community, enabling "augmented" experiences for attendees and remote participation for those unable to physically attend a particular meeting [87].

SoMe platforms can also facilitate collaborative research work globally. The British Urology Researchers in Surgical Training Research Collaborative (BURST) is an excellent example of using the SoMe platforms to improve global visibility, recruit new potential collaborative study sites, improve site engagement, and disseminate research findings [88]. Within an enrolment period of 13 months [89, 90], the investigators were able to recruit more 10,000 patients from 110 hospitals across 26 countries. Recognition, regular feedback, as well as raising the profile of individuals / institutions contributing to such projects are ways to incentivise further collaboration [89, 90].

The use of surveys specifically has also increased during the COVID-19 pandemic [91, 92]. While surveys were conventionally disseminated via email, SoMe platforms are increasingly used for this purpose. The major advantages of SoMe-based surveys are convenience, flexibility of survey design, relatively low cost, anonymity of responders, and the ability to reach a broader population of

responders across geographical borders [91, 92]. Special precautions must be taken, however, to avoid potential problems such as consent incompliance, data disruption and response duplication [91, 92].

The use of SoMe platforms may also offer reputational improvement at a departmental level. A study showed that *U.S. News and World Report* (USNWR) reputation scores for urology departments significantly correlated with increased X impact and activity. With the main objective of enhancing exposure and reputation within the urologic community, many tweets related to conferences, publications and other academic activities [93].

5.6. Dissemination of research findings

SoMe offers a very convenient and user-friendly way to share and to follow the latest research findings, tailored to your own particular interests [94]. SoMe platforms gathers all relevant parties in one place, such as healthcare professionals from various disciplines, scientists, patients and public stakeholders [95]. The use of SoMe enables more rapid dissemination of data, increases visibility and positively affects the impact of research findings.

With the advent of SoMe, the historical methods of disseminating research findings through journals or congresses has undergone a drastic change. In the past, one had to physically attend a conference or read the literature in detail to stay up to date. Nowadays, novel use of SoMe platforms allows dissemination of key research findings in a snapshot. The same trend is seen in academic urology journals as well, where X is used to share the latest publications or updates about the journal itself [96]. Visual abstracts on X appear to generate more attention than non-visual abstracts, as was reported by Koo *et al.,* [97]. They found that, prior to the introduction of visual abstracts, tweets about research articles averaged 1,672 impressions, 25 engagements and 13 website visits to the full article, while after the advent of visual abstracts, tweets reached 2,197 impressions (a 31% increase), 63 engagements (a 152% increase) and 21 full article visits (a 62% increase). Previous studies investigated the influence of SoMe usage on subsequent publication and citation status. Koo *et al.* found that content with greater SoMe activity resulted in publication in journals with a higher impact factor and more citations [95, 98-101]. Darling *et al.,* investigated the scientific publication cycle, highlighting the benefits of early-stage professional networking and rapid dissemination through SoMe. The results of their study showed that researchers active on SoMe were followed on X by an average of seven times more people than the number of members of their academic departments. Articles that are widely tweeted in the first several days after publication have been shown to be 11 times more likely to be traditionally cited up to two years after publication [102]. SoMe platforms have also changed the way researchers discussed and critically appraised research papers. Online journal clubs using X have increasingly been utilised to overcome the limitations of traditional journal clubs in the urological field. Examples include '#urojc' and '#prostatejc' on X [95, 103]. These journal clubs select recently published relevant papers and organise a 48-hour online debate on the subject to allow global participation by various parties related to the topic. In this way, the limitations in space and time of a classic journal club are overcome and a more inclusive debate on the most recent research findings can take place.

A systematic review investigated the impact of SoMe on clinical practice guideline dissemination and implementation [104]. The study found a significant improvement in knowledge, awareness, compliance and positive behaviour towards clinical practice guideline with the use of SoMe dissemination compared with traditional methods [104]. A pragmatic approach to a successful SoMe campaign include four main steps: 1) formation of a SoMe panel or recruitment of professional marketing consultancy, 2) pre-intervention planning to set key objectives and identify target population, 3) multi-level and phased SoMe campaigns, and 4) post-intervention feedback and assessment [104]. Such an approach would guide physicians to disseminate clinical practice guideline in a more effective manner.

5.7.   Professional training and career advancement

SoMe represents a convenient, accessible, low cost and immediate tool for surgical training, teaching and knowledge dissemination. SoMe allows connection in real time with colleagues, residents and fellows, with the aim of sharing knowledge and improving patient outcomes. As surgical practice is changing rapidly and facing new challenges, SoMe is a valuable tool to create opportunities for training and career advancement [105].

A virtual, web-based approach is an option for continued medical education (CME) and even for the education of urology trainees, where virtual urology training programmes have been set up to cope with the reduced exposure users may experience in times of pandemics (less face-to-face contact with patients, less surgery, the need to rotate on disciplines beside urology due to understaffing, etc) [106, 107]. A study conducted by the European Society of Residents in Urology (ESRU) [15] analysed all SoMe platforms used by urology residents for educational purposes with a 20-item online survey. The study, conducted in 23 European countries with 316 respondents, showed that SoMe was the third most important educational source (after academic journals and websites) for urology residents, with YouTube being the preferred tool for surgical technique videos. Prior to the development of the internet, acquisition of new surgical skills was often based on lectures or live surgeries with a "master-apprentice" model [15]. Nowadays, surgical videos are widely available on SoMe platforms and are readily accessible by urologists in training. It is important to investigate the educational value of surgical videos on the YouTube platform. A previous study showed that YouTube videos on laparoscopic and robotic/robot-assisted radical prostatectomy can be of high quality [108]. Crisostomo-Wynne *et al.* [109] compare the quality of robotic prostatectomy surgical videos on YouTube with more curated, professional sources using the Global Evaluative Assessment of Robotic Skills (GEARS) criteria. According to the results of the study, the authors found no significant difference between overall GEARS scores between the YouTube videos (mean 24.8, SDEV 1.85) and the AUA Surgical Video Library (mean 24.3, SDEV 6.18) (P= 0.78) [109]. However, quality of surgical videos on YouTube varies, and we must be aware of the potential pitfalls. The study by Haslam e*t al.* [110] characterised the available paediatric robotic pyeloplasty videos on YouTube and assessed for conformity to LAParoscopic surgery Video Educational Guidelines (LAP-VEGaS). According to the results, the most viewed videos were not associated with higher conformity to LAP-VEGaS. Although young surgeons prefer YouTube videos as educational tools, very few high-quality educational movies are available currently on YouTube, because videos are frequently missing crucial procedural domains and show little adherence to LAP-VEGaS standards [110]. Similar concerns were raised concerning other surgical videos on Thulium Laser Enucleation of the Prostate (ThuLEP) [111], Tension-free Vaginal Tape Obturator (TVT-O) and Trans-Obturator Vaginal Tape insertion (TOT) [112]. YouTube videos may be deficient in the explanation of critical steps, the key points of patients' perioperative management and the application of auxiliary teaching tools [112].

COVID-19 had a huge impact on urology residency programs, and the recruitment of new urology residents suffered from pandemic restrictions. Clinical rotations were cancelled, interaction among medical students and urology trainees or faculty was affected, and little to no opportunities were available to demonstrate interest in the field or in a certain urology training programme [113-115]. Subsequently, we noted an increasing utility of SoMe in urology training programmes [113, 114] and among urology applicants [113], again reflecting the value of novel technology and SoMe. This was nicely illustrated by Ho *et al.*, who carried out a survey study on the use of SoMe among applicants for their urology training programme and compared the pre-pandemic results to the results during the COVID-19 pandemic [113]. They results of the survey study showed that the use of SoMe for professional purposes increased significantly in the pandemic cohort compared with the pre-pandemic cohort (80% and 44% respectively, p < 0.001) and that half of the pre-pandemic applicants did not have an X account, whereas in 2021, 45% reported using X at least once a day [113]. Additionally, online connections with residents more than doubled in 2021 compared to 2018/2019 (respectively 69% and 34%, p < 0.001), while connections with faculty members increased by more than fourfold (respectively

65% and 15%, p < 0.001) and connections with program coordinators increased by more than ninefold (respectively 37% and 4%, p < 0.001) [113]. Of the 80 survey respondents in 2021 who reported using SoMe, 74% reported that application changes due to the COVID-19 pandemic directly caused them to increase their SoMe use [113]. On the other end, the median percentage of programmes reporting having SoMe resources available increased from 26-50% in 2018/2019 to 51-75% in 2021 (p < 0.001) [113]. The proportion of applicants who found SoMe to be useful when deciding whether to apply to, whether to interview at and how to rank a particular programme were also significantly higher in 2021 than in the pre-pandemic cohort [113].

Regarding surgeon's reputation among the public, it was well noted that health care consumers are able to identify surgeons by watching videos of their operative technique [116]. Urologists are also able to increase the exposure of their professional practices using SoMe platforms [117]. Houman *et al.*, [117] showed that the number of prostatectomy procedures is linked to urologists' usage of SoMe, particularly YouTube. Patients might be more likely to recommend and select subspecialist urologists who publish videos of their surgical procedure, even though the majority of urologists are not currently active on SoMe.

5.8. Providing a common platform to address urological topics

SoMe is a multidirectional communication tool on which users from various backgrounds can instantly engage in conversations and raise concerns about a topic of interest and that has changed the health communication paradigm. The introduction of hashtags, a short word of phrase preceded by a hash (#) symbol, has been very useful for categorising and filtering posts related to a specific subject. Hashtags have been used by both health professionals and patients to find a communal place in which to interact [45]. In December 2018, the hashtag #UroSoMe was inaugurated, and people were encouraged to use it when posting urology-related content. The hashtag was well received by the urological community, with more than 1,000 original mentions and 17,000 retweets within the first month of its implementation [118, 119].

The online fora hold on SoMe facilitate interaction at numerous levels. An analysis by Grabbert *et al.* of six functional-urology hashtags on X (#Incontinence, #InterstitialCystitis, #OAB, #FPMRS, #BPH, and #UroBPH) found that the hashtags were used mainly by health professionals (44.6%) and health care organisations (36.5%) to debate and share experiences about these conditions [120]. SoMe is also a useful platform where both health professionals and patients can meet to exchange views, identify needs and provide quality information. In 2018, the journal *Kidney International Reports*, in observance of World Kidney Day, organised and moderated an event on X consisting of a one-hour online discussion in which physicians, patients, editors and medical societies discussed kidney disease and related conditions in women [121]. The hashtag #Bedwetting is officially used to discuss this condition, its diagnosis and treatment on X. Balasubramanian *et al.* conducted X analytics for this hashtag and found that 35% of stakeholders were advocacy health organisations utilising SoMe to build quality awareness about bedwetting, and 93% of posts were linked to internet websites providing further information [122]. Gonzalez *et al.* provided a new point of view by analysis patient's SoMe posts about overactive bladder to identify patient knowledge and potential barriers to patient-centred care that might be helpful to improve patient outreach [123]. SoMe can be a meeting point for patients and companions to share experiences and create an online support network. Online platforms such a as Facebook group pages or Reddit communities are used by patients and carers as a place to share their experiences and concerns or offer advice about a certain health condition [65, 124, 125]. A survey involving 1,615 patients with bladder cancer from 39 different countries revealed that the most popular forms of support for coping with bladder cancer for both patients and carers were friends and family (69.7 %), followed by online support groups (58.3%) [126]. Interestingly, Huber *et al.* compared outcomes from 955 patients joining a face-to-face support group versus 686 patients using an online support group. In the face-to-face groups, patient ratings were better for information exchange, gaining recognition and caring for others. However, both modalities of peer support received very

positive ratings from their users and have significant impact on treatment decision-making [127]. Certainly, SoMe can serve as an excellent platform for SoMe interventions for patients and the public [128].

5.9. Combatting professional inequities

Historically, women and black men have been under-represented in medicine and have faced harassment, as well as discrimination in recruitment, pay and career advancement opportunities [129, 130]. According to the 2018 American Urological Association census, 90.8% of practicing urologists are male and 84% are Caucasian [55]. The lack of diversity among medical leaders is not only problematic for the medical profession but can have adverse effects on the health and well-being of patients [131, 132]. To raise awareness on this issue in academia and in health care in general, medical organisations have developed diversity and inclusion policies and initiatives that focus on improving opportunities for women and other minority physicians [133-135].

The use of hashtags has been shown to increase participation in SoMe discussions, as has the use of images and links [136]. #womeninmedicine, for example, is a weekly X chat room created in 2010 where problems facing women in medicine are discussed [135]. The hashtag #ILookLikeASurgeon was created in 2013 by women surgeons concerned with equity and equality for women in the field of surgery [137]. In 2017, this hashtag had 11,582 tweets from 2,181 contributors [138]. SoMe has also been used to promote racial diversity in medicine, including hashtags such as #Black-MenInMedicine, which was first used in 2013 but did not gain traction until a presentation on the number of AfricanAmerican men in medical school in 2017. This hashtag addresses the racial diversity of black men [135]. Regarding urology, the hashtag #ILookLikeAUrologist was launched in August 2015 to promote gender representation in urology and has been widely used by a large global audience in urology over the past years [139]. The use of this hashtag relative to the total number of tweets was higher than many other urological hashtags that started around the same time in 2015 [34].

With all these measures and the creation of a virtual community, through SoMe, the social isolation of urologists from underrepresented gender and/or racial groups can be diminished, and a more diverse community of practice can be provided.

Position statement
Optimise the utilisation of social media in urology by understanding its diverse applications. These include raising public awareness and education about urological diseases, practising telemedicine, organising virtual and hybrid conferences, facilitating international networking, and enhancing collaborative research.

6. Measuring impact in SoMe

6.1. SoMe analytics

SoMe analytics is the practice of gathering and analysing data from SoMe platforms (Figure 2) [140]. These analytics provide data on how effective information is being disseminated to our target audience. These data are often quantitative and allow us to measure and monitor the impact of SoMe activities. This chapter discusses SoMe metrics and social network analysis.
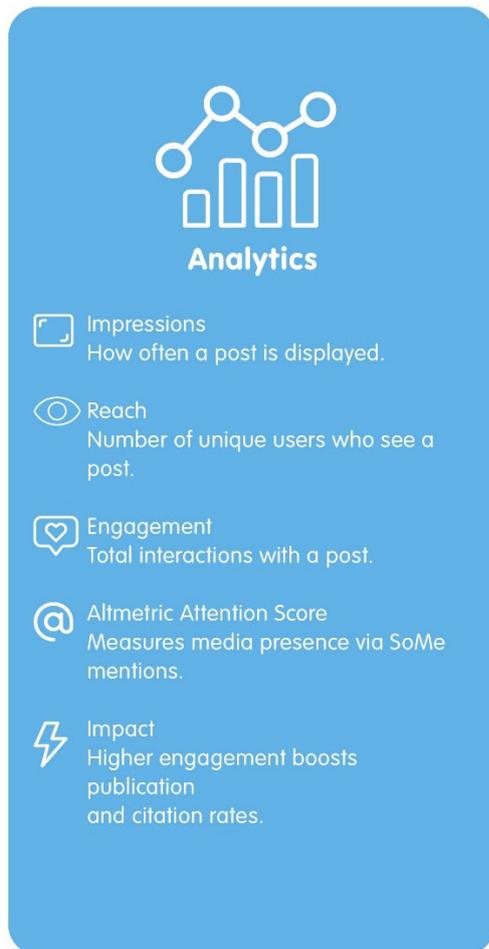
Figure 2: Types and implications of SoMe metrics

6.1.1.   SoMe metrics

SoMe metrics are quantitative measures used to assess and monitor the performance and progress of SoMe activities [140]. These metrics are often predefined for each SoMe platform, and the exact definitions may differ across different SoMe platforms [140]. The general principles, however, are similar.

'Impressions' are the number of times a post is on screen for the first time. A post's 'reach' is measured as the number of people who see a post at least once; reach does not change when the same post is view by the same person multiple times. 'Engagement' is the total number of interactions that people had with a post; the same person can therefore have multiple engagements with the same post. Engagement activity includes (but is not restricted to) liking, sharing and commenting on a post, viewing a photo or video, or clicking on a link.

Each of the SoMe metrics serves a different purpose and its value depends on what the user wishes to achieve. 'Impressions' are important when the user wishes to increase awareness of a particular subject especially to new users [140]. 'Reach' is important when the user wishes to deliver new information to as many people as possible within an existing audience [140]. 'Engagement' is important when the user wants an interested audience to take some form of action after reading a post [140]. Although no single metric has absolute superiority over the others, 'engagement' is generally regarded as the most important metric as it indicates the actual receipt of information and translation into action.

Newer metrics include the Altmetric Attention Score, which uses an algorithm to weigh mentions of an article across various SoMe platforms and news media [141-143]. The Altmetric Attention Score is derived from three main factors: volume, sources and authors [143]. Volume refers to how often the article is being mentioned. Sources refers to the media platforms on which the article is being shared. Authors refers to how often the author of each mention talks about scholarly articles, whether there is any bias towards a particular journal or publisher, and who the audience is. The Altmetric Attention Score is commonly used as a composite indicator of the media/SoMe presence of a particular article [141-143].

6.1.2. Social network analysis

On SoMe platforms, there are often key opinion leaders who wield significant influence in their fields. The 'importance' of a particular person can be determined based on their structural relationships and influence on other people within a social network. Such relationships and influence can be quantified using numerous centrality measures. The most common centrality measures include eigenvector centrality, betweenness centrality and closeness centrality [140].

Eigenvector centrality measures how connected an individual is to other very connected people [140]. This individual may have greater opportunities to trigger responses from key opinion leaders within the field. Betweenness centrality quantifies the number of times an individual acts as a bridge along the shortest path between two other people [140]. This individual serves as a middleman connecting different people within a social network. Closeness centrality measures the shortest distances between an individual with other people [140]. It reflects how close an individual is with other people within a social network. These centrality measures are important to identify key opinion leaders within a community. In order to disseminate urological information in a more effective manner, it is important to engage people with high centrality in a more proactive manner.

6.2. Implications of SoMe analytics

Over the past decade, SoMe is increasingly being recognised as an important aspect to be addressed in urological conferences [14, 87, 144, 145]. Conference-specific hashtags, consisting of the name and the year of the conference (e.g. #EAU23, which stands for the 2023 EAU Annual Congress), are often used. An individual can post any conference-related content alongside the conference-specific hashtags to facilitate viewing of relevant information and engagement among the various users. These hashtags also enable conference organisers to track online audience engagement across different years of conferences [14, 87, 144, 145]. Nolte *et al.* examined posts associated with new scientific studies presented at a national urology conference and demonstrated that research with more likes/retweets was more likely to be subsequently published (p=0.001); among published studies, a modest positive correlation was found between the number of likes/retweets and publication journal impact factor (r2=0.36) [146].

Many urology journals have utilised SoMe platforms to disseminate information about their publications [96]. The importance of SoMe engagement has been demonstrated in numerous ways. One study investigated the effect of SoMe platforms on the impact factor of paediatric urology journals. The study found that the presence of a X feed was statistically significant for a rise in impact factor over four years (p = 0.017) [147]. Another study that examined 230 papers from seven urology journals found that the number of citations was positively associated with the number of mentions on X [100]. Articles mentioned on X have two-fold more Scopus citations (p < 0.01), and 2.3-fold more Google Scholar Citations (p < 0.01) compared to articles with no X mentions [100]. Altmetric score was found to have significant correlations with citation counts and journal impact factors, although the correlations were only weakly positive [148]. Sathianathen *et al.* developed the #UroSoMe_Score using a stepwise regression model comprising various sources of online attention, and it was found to predict two-year citation counts for urological publications. The #UroSoMe_Score was also found to have a higher predictive ability than Altmetric score [99]. The Twitter Impact Factor, which is calculated based

on the number of retweets per original relevant tweet, was found to have a positive but insignificant association with the journal impact factor (r = 0.64, p= 0.12) [101]. A strongly positive correlation was, however, identified between Twitter Impact Factor and Klout score (r = 0.84, p= 0.009) [101].

SoMe presence is also important for academic urologists and institutions. A study showed a steady increase in X engagement amongst urology programmes and academic physicians in North America [149]. Another study examined the association of academic rank and productivity with metrics of X utilisation among kidney cancer specialists [150]. It was found that associate professors had a higher number of followers than assistant professors and full professors. The most predictive variables for the number of followers were the number of tweets, H-index and percentage of medical tweets [150]. Ciprut *et al.* examined the X accounts of urology departments in the United States and identified a positive correlation between X metrics (number of followers, number of followings and number of tweets) and *U.S. News and World Report* reputation scores [93].

Position statements
Consider utilising SoMe analytics and the various ways to measure impact in SoMe to harness its maximum potential.
Assess and monitor the performance and progress of your SoMe activities using SoMe metrics that are reliable quantitative measures.
Consider utilising social network analysis to identify users who have important influences in their fields and determine the various centrality measures to identify how connected an individual is to disseminate urological information in a more effective manner.

7.   SoMe and misinformation in urology

Misinformation in SoMe is common in the field of urology. In this chapter, we will discuss the main strategies in combating misinformation on SoMe (Figure 3).

Combating Misinformation

Accurate Information
Disseminate through trusted channels like EAU and Urology Care Foundation.

Quality Assessment Tools
Use DISCERN and Patient Education Materials Assessment Tool.

Fact Checking
Platforms (e.g., Facebook, X) and AI tools (e.g., Google Fact Check, Hoaxy) combat misinformation.

Public Education
Teach critical evaluation of online information to identify reliable sources.

Figure 3: Main strategies to combat misinformation on SoMe

7.1. Assessing quality of information in SoMe

With SoMe influencing all spheres of medicine for both healthcare providers and receivers alike, it is essential to curtail misinformation, avoid misleading fake news and identify red herrings that could be harmful to online seekers of information and in general for medical practice. Online opinion can mislead the consumer especially when they are not confident and well informed, can sway their decisions and can potentially have a negative impact on their treatment [151]. While information is readily disseminated on SoMe platforms, it is unregulated. There are concerns regarding the quality of health-related information as online sources may not follow scientific guidelines for publication. This is the core issue that defines the problem of misinformation, which leads to the spread of falsified and unverified opinions on SoMe.

Independent assessment by expert health professionals related to the field is the most accurate way to point out the deficiencies and misinformation provided [152]. A frequently used method to assess patient education information is by grading the quality of content, and the two commonly tools include the DISCERN scoring system [152, 153] and the Patient Education Materials Assessment tool (PEMAT) [154]. The DISCERN instrument consists of fifteen questions plus an overall quality rating, which allows users to judge the quality of written consumer health information [152, 153]. The PEMAT allows the user to assess the understandability and actionability of printable and audiovisual patient education materials [154]. Utility of such tools has been shown to demonstrate strong internal consistency, reliability and evidence of construct validity and is a proven methodology that can be implemented as a means of ascertaining the quality of information that is disseminated by relevant authorities.

7.2. Current status of misinformation in urology

A study by Alsyouf *et al*. evaluated the deleterious effects of propagation of "fake news' in urology [155]. The authors reviewed a total of 50 articles and compared the information provided in the articles to available scientific research and consensus data. They noted that the prevalence of inaccurate or misleading articles was high: prostate cancer, 7/10 articles; kidney, 3/10 articles; bladder, 2/10 articles; testis, 2/10 articles; and PSA testing, 1/10 articles. The average number of shares was significantly higher for inaccurate (54,000 shares; P < 0.01) and misleading articles (7,040 shares; P < 0.01) than for accurate articles (1,900 shares). Inaccurate articles were 28 times more likely to be shared than factual articles [155].

Tanwar *et al.* [156] assessed the quality of information available to patients and medical professionals on YouTube with regards to benign prostatic hyperplasia (BPH), a common urological condition. They reported that 63% of the videos were irrelevant to the search, projected wrong facts or provided very basic information about the prostate and the disease. A negative correlation was observed between the quality of videos and their ranking on the search.

Serinken *et al.* [157] analysed 600 videos on YouTube, of which 32.8% were created by academicians and physicians. The videos contained minimal amounts of misinformation when they were made according to EAU guidelines. Conversely, such videos were often prepared unprofessionally, mostly containing images of live surgery or interventions and generally medical jargon not comprehensible by the lay person. Therefore, these videos have limited usefulness with less viewership. Despite being highly scientific, if viewership is limited, the purpose of dissemination of reliable information will be restricted.

A quality review of 100 videos on the surgical treatment of urinary stones available on YouTube was performed using the DISCERN questionnaire [158]. The study revealed that only 26 videos (26%) were rated to contain no misinformation and only nine disclosed potential conflicts of interest. Videos uploaded by healthcare professionals and medical societies/organisations offered significantly higher levels of quality. The videos provided by the European Association of Urology achieved the highest

rating with a median score of 3.0. This highlights the importance of active recommendation that professional bodies should only release evidence-based patient education materials.

In a study by Xu *et al.* [158], 65 videos with the hashtag #prostatecancer on TikTok were reviewed. The study showed that the median expert-rated quality of videos on prostate cancer was only 2/5 on DISCERN and the median scores on PEMAT were 75% for understandability and 0% for actionability. Only 15% were informational videos about screening, treatment and/or side effects.

Cañon *et al.* [159] proposed a semi-automatic moderation web service that may be useful in controlling the quality of videos published on their online Health Service Network (HSN) sites. A preliminary pilot evaluation in a simple use case demonstrated the relevance of videos retrieved using the moderation service, "The HealthTrust metric" [160], which calculates reputation in an online health community based on link analysis. Implementing the service to support the assessment of trustworthiness of videos in an online HSN which can be integrated into open-source Virtual Social Network Platforms improved both public trust in these types of HSNs and the relevance of the videos retrieved was higher compared to using the YouTube search engine alone.

7.3.   Promoting reliable patient information in urology

It is important to understand the current dissemination of reliable information by urological societies and professional bodies. Ji *et al.* [162] assessed the quality of overactive bladder patient education material on YouTube using the Agency for Healthcare Research and Quality's Patient Education Materials Assessment Tool (PEMAT) for video content created by scientific bodies. They concluded that the quality of patient education materials on YouTube varies significantly. Although the Urology Care Foundation videos were of high quality, they did not appear within the top 25 search results for overactive bladder. The researchers therefore urged dedicated organisations and authorities to focus resources on how they can increase their outreach to patients on platforms like YouTube. In a study by Selvi *et al*. [163], the authors investigated whether YouTube videos can be considered a reliable additional information source for urological recommendations during the COVID-19 period. Of the 136 videos assessed, the level of inter-rater agreement in terms of the usefulness assessment of videos was positive (kappa coefficient = 0.903), and 85.3% of all videos contained useful information on what should be done for urological disease during the COVID-19 period. This rate was especially higher in informative easy-to-understand videos uploaded by "universities/professional organisations/non-profit physicians/physician groups."

The only way to counter misinformation is to achieve a trifecta of high-quality rating, standardisation and dissemination of evidence-based information by reliable authorities [18, 164]. The EAU has established the EAU Patient Information portal (https://patients.uroweb.org) for patients to access reliable information on various urological conditions. The Urology Care Foundation (https://www.urologyhealth.org), the Official Foundation of the American Urological Association (AUA), has also produced numerous patient-education materials based on the AUA Clinical Guidelines. By actively disseminating this to the public and patients in need of urological care, we can mitigate the detrimental effects of misinformation in urology.

Another key factor is identifying the correct platform for the dissemination of correct advice for maximum impact on the target audience. SoMe platforms differ by their users' demographics and their styles of communication and interaction. The choice of SoMe platforms greatly depends on our target audience and the purpose of our SoMe activities. For example, Instagram may be an effective platform for raising awareness of testicular cancer in young men, whereas X may be a better platform for sharing experiences and exchanging medical knowledge among urologists [18]. Similarly, SoMe analytics can help us understand how we can reach our audience more effectively [165].

Mere scientific evaluation of content, putting effort into effectively disseminating information and quality control may be futile if its actual impact falls short of the desired end result, which is utilisation

by the online patient. In fact, end users can reap several benefits from health seeking on SoMe, which include obtaining health information and gaining social and emotional support from peer-to-peer interactions [166]. These interactions and social and emotional support influence patients' decision-making in positive and negative ways, and it is therefore essential that we mitigate the spread of misinformation. Perhaps the initial starting point could be the caregiver, who may actively recommend and point to the correct direction to seek internet content from evidence-based patient education materials [167]. As stated by Taylor *et al.* [168], as SoMe use increases in urology, maintaining a professional online identity and interacting appropriately with one's network are vital to engage positively and protect patient health information, and hence it is time to have guidelines on how to prevent the spread of misinformation on SoMe platforms.

Position statements
Beware of inaccurate and misleading posts that can typically yield a higher degree of engagement. It is important to recognise misinformation that is common across the field of urology.
Utilise the various instruments available to assess quality of information on SoMe to ensure the quality of SoMe posts is upheld.
Produce high-quality patient information in urology and identify accurate SoMe platforms and channels for dissemination of correct and reliable information to combat misinformation on SoMe.

8. Conflict of interest

All authors have provided disclosure statements of all relationships that they have that might be perceived as a potential source of a conflict of interest. This information is publicly accessible at www.uroweb.org.

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