A Practical Guide to Designing and Implementing a Social Media Program to Improve Antimicrobial Stewardship Awareness Among Patients and the General Public

AMR&S WORKING GROUP

Why is it important to implement an AMS social media program?

Antimicrobial resistance (AMR) education can take many forms[1] and has traditionally been print-based or has used TV and radio,[2,3] but now interest is turning to more modern means such as social media and other web-based content.[4–7] Dissemination of information via social media is faster and cheaper than traditional methods and can be amplified to reach substantially larger audiences in a short period of time.[6–8] Even in low- and middle-income countries (LMICs), more than half the population (52%) use mobile internet (according to 2023 statistics) and therefore potentially have access to social media as a means of communication.[9] Importantly, patients are no longer relying solely on the clinical opinions of healthcare providers.[4,10,11] They are independently looking online for greater information regarding diseases, diagnoses, and treatments as well as sharing stories of their own experiences (eg, the impact of AMR or antimicrobial-associated adverse events).[4,10–12] As of April 2024, there were 5 billion social media users worldwide,[13] which equals over 60% of the world's population.[14] Clearly this creates an opportunity to raise awareness via online media about the rational use of antimicrobials and AMR.[8]

This document is intended to provide a practical step-by-step guide for healthcare professionals, hospitals and medical societies to design and implement a social media program to raise antimicrobial stewardship (AMS) awareness among patients and the public. The goal is for users to learn strategies for creating engaging, evidence-based content for rapid and effective dissemination of information on AMR, AMS advocacy and other critical issues on the use of antibiotics, education of patients and the public, as well as how to assess and monitor the success and sustainability of those strategies.

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Key steps to building and implementing a social media plan

Decide leadership

Deciding who will take on leadership and responsibilities in social media AMS awareness activities is a crucial first step.[1,15] It is important to know what the social media guidelines are for your organization.[4] If possible, appoint a specific administrative person at an operational level to support a physician leader to manage/oversee organizational accounts and guide individual users within the bounds of guidelines.

> **Example from China:**[17]
> Researchers from the Chinese Center for Disease Control and Prevention used **Weibo** and **WeChat** to assess public knowledge about AMR through an online survey. Although 95% of those surveyed had heard of 'antibiotic resistance,' 42% stated they stopped taking antibiotics as soon as they started feeling better. Many respondents also wrongly indicated that antibiotics could be used to treat viral infections (eg, measles) or colds/flu.

Set objectives

Setting and aligning social media objectives within your organization will help determine what audiences to engage, what channels to leverage and therefore what content to create. Educators should have a primary audience and goal in mind so they can choose a tone/style that is appropriate and a specific topic/s they want to focus on.[7,16]

Initial objectives may simply involve creating polls to find out what your audience already knows and what are the existing misconceptions. Baseline levels of public awareness should be measured in order to assess subsequent communication effectiveness.[15]

The public is often well-educated about other health threats, such as heart disease and cancer, but they under-estimate the threat of AMR and believe it has more to do with the actions of others rather than themselves.[18,19] Establishing baseline knowledge and understanding can help determine what the key messages should be going forward (**Table 1**).

Table 1

Examples of key objective concepts to use for education campaigns which have been included in previous AMS initiatives

Broad themes as described by the WHO[1]	Specific, targeted messages[20-23]

• How do antibiotics work?
• What types of diseases and conditions can antimicrobials treat?
• How does antibiotic resistance develop?
• When should I take antibiotics?
• Why is it important to follow instructions on the duration and dosage of antibiotic therapy?
• What should I do with leftover antibiotics?
	• "Antibiotics won't work in the case of cold or flu" – ECDC
	• "Taking antibiotics when you don't need them puts you and your family at risk" – NHS
	• "Keeping antibiotics effective is everybody's responsibility" – ECDC
	• "Become an antibiotic guardian" – NHS
	• "Take antibiotics responsibly" – ECDC
	  - "Do not keep leftover antibiotic treatments"
	  - "Wrong or incorrect use of antibiotics may cause the bacteria to become resistant against future treatments"
	• "Do antibiotics have side effects?" – US CDC

ECDC, European Centre for Disease Prevention and Control; NHS, National Health Service (England); US CDC, United States Centers for Disease Control and Prevention; WHO, World Health Organization

Know who and how to engage

Identify your intended public or patient-specific audience.[7,15,16] Such target groups could include:

- The general public
- Those most likely to use antibiotics (eg, likely caregivers such as mothers or guardians)[24–27]
- Specific patient groups where antibiotics may be used unnecessarily (ie, people with colds, diarrhea, simple wounds)[15,28–30]

Decide how best to engage your audience. Engagement will be dependent on resources/time availability and your level of familiarity/existing engagement with the social media platform of your choice (**Figure 1**).

It involves more than just disseminating information – decisions will need to be made about whether to create new content, consume, promote and/or curate existing content, or simply join discussions to raise awareness.[7]

Targeting those most likely to use antibiotics

Public Health England

Public Health England targeted mothers of children aged 0-16 or people aged >50[24,25]

A long-running US campaign has targeted mothers: "Supermoms against superbugs"[26-27]

Figure 1

Types of social media engagement

Types of social media engagement

Consume
- View content
- "Like" posts
- Follow key content creators
- Bookmark, save and curate content of interest
- Follow hashtags

Create
- Create a blog, podcast or video
- Post a clinical pearl
- Design an infographic
- Create a multiple-choice-style question poll
- Create hashtags
- Post links to additional learning materials

Distribute
- Share content of interest
- Direct people to resources to support AMR awareness-related activities
- Promote/collaborate with other users and their content where appropriate

Discuss
- Join chats and journal clubs
- Post a comment about a topic
- Ask questions to the community
- Tag content experts to invite them to join the discussion
- Participate in social media activities during national conferences

Adapted from: Nematollahi S, et al. 2022.

Table 2

Examples of interactive, internet-based AMS tools from credible sources

Type of interactive tool	Credible source	Details
Games	Public Health England	Bacteria Combat (https://www.gamedrlimited.com/bacteriacombatgame).
	Public Health England	e-Bug (https://www.e-bug.eu).[35]
	Game endorsed by the WHO	Superbugs (https://amr.longitudeprize.org/superbugs-game/).[1]
	National Centre for Infectious Diseases, Singapore	"SteWARdS Antibiotic Defence"(to be trialed in Singapore).[36]
Calculator	Mahidol Oxford Tropical Medicine Research Unit, Mahidol University, Bangkok, Thailand (+ others)	Antibiotic footprint calculator in both Thai and English (https://www.antibioticfootprint.net/calculator/).[37]
Travel tool	Division of Infectious Diseases, University of Verona, Italy (+ others)	AMR travel tool (https://epi-net.eu/travel-tool/overview/).[38]

Choosing channels

Each social media platform offers unique functionality to foster engagement and community building.[5,7] It is not necessary to join all forms of social media to engage patients and/or the public. ***Start*** by joining one or two platforms that seem best suited to your objectives.[5] It is best practice to create a separate professional account from any personal one on the same social media platform.[5]

Content planning and development

Once you know your objective and your intended audience, plan your content accordingly.[4]

Keep the following in mind:

- **Keep your content short and to the point** – one message at a time that is clear and unambiguous.[15] For example, use content to highlight a single soundbite or a key number (see image below left).
- **Use catch-phrases** (eg, 'Keep Antibiotics Working') **or mnemonics** (eg, AWaRe = Access, Watch, Reserve antibiotics), if appropriate, to make things memorable.[5]
- **Use eye-catching visuals/animations** as much as possible.[6,39] Create or find freely available infographics, graphs or tables to simplify complex topics, but be careful of quality and copyright issues (see **Appendix 1**).[7,31]
- **Use humorous memes or eye-catching gifs.**[6,32] There are 'how to' videos and free meme generators online, and some AMR sites provide gifs/memes free for download and reuse (eg, 'Go purple' gifs on the CDC Antibiotic Awareness Week website).[32]
- **Make interactive posts.**[6] One way to do this is to create simple, multi-choice polls or quizzes.[6,7]
- **Search and find longer-format content** from credible sources that you can promote via the posting of links. For example, games, apps, blogs, podcasts, videos, etc.[7,16,25,33,34] There are often unexpected and novel interactive tools to find (**Table 2**).

- **Leverage collaterals** from credible societies or government agencies, or get ideas to adapt for local-language programs. Convert them into social media-friendly content. Translating English materials into other languages can be a simple but effective communication tool.[39]

Example from Saudi Arabia:[39]
Educators launched an online Arabic-language pilot **campaign on X** (formerly Twitter) focusing on superbugs using a hashtag. They delivered short Arabic tweets and links to various articles and videos related to superbugs as well as *translating multiple non-Arabic research articles and news* for their followers.

More advanced levels of content creation may involve creating simple infographic videos and/or animations/comics. The life of a video is much longer than a social media post and may continue to draw attention months after launch.[39]

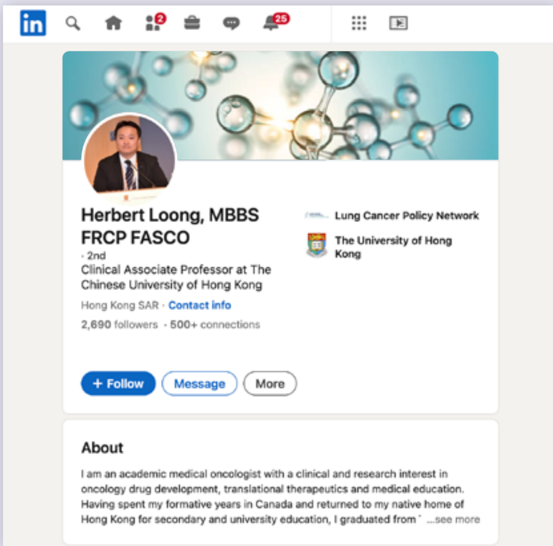
Content distribution/engagement

How to gain visibility and increase engagement on social media:

- Optimize your profile appearance to give reasons for people to follow your profile.[5] If possible, hire designers or use AI to make eye-catching and attractive interfaces and avatars.
- Use emojis and hashtags.[5]
- Spark interactions by eliciting participation and joining conversations. For example:
  - Try to identify and engage champions, community leaders and social media influencers to amplify your message, if possible.[15,40]
  - Start a Facebook support group (eg, for parents with children using antibiotics).[41]
  - Start a pledge group. This has been most famously used by the UK 'become an antibiotic guardian' campaign.[1,16,42]
  - Promote timely AMS-related campaigns to your followers (eg, World Hand Washing Day, World AMR Awareness Week) and/or adapt for local use in other countries where appropriate.

Profile image

Upload a header image that adds value to your society and reflects a professional appearance and says something e.g. using members in action in a lab or attending a congress



Bio

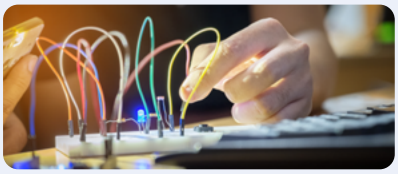
Write a professional bio to give people reasons to follow you. Include not only who you are, but also what you stand for, your mission and purposes etc.

Measuring success

An important part of the process is to formally evaluate the level of engagement you are achieving and sustaining. Most social media companies have reaction metrics (eg, ratings and likes, etc.) that can be used to assess this.[5,7] Third party companies provide options too, but will likely require some sort of payment to use.[5] The top free analytics tools are:

- Google analytics (https://marketingplatform.google.com/about/analytics/)
- Meta (parent company for Facebook) business suite insights (https://business.facebook.com/business/loginpage/)
- Instagram analytics (use 'Instagram Insights' on your mobile for basic results)
- X (formerly Twitter) analytics (access via your account or https://analytics.twitter.com)
- LinkedIn page analytics (https://www.linkedin.com/help/linkedin/answer/a547077/linkedin-page-analytics-overview?lang=en)

To Conclude: Quick Start Guide

1. Start Small 	• Start with using any existing collaterals and resources. • Don't feel the pressure to go big if you are constrained by resources or time.
2. Mobile First 	• Your audience may read your content on the go. Ensure your content is easy to read on small screens. • Try to go for fewer words, attention-grabbing visuals or animations and one message at a time.
3. Make conversation 	• Social media works better with more people joining conversations. • Ask members and peers to follow and share your content. • Start or join conversations with peers on social media by tagging, interacting and sharing each other's content.
4. Experiment with what works for you 	• Social media success takes time, and there is no one-size-fits-all solution. • Experiment with different content topics and styles, and see which works better for you and your institution.
5. Level up 	• Develop a social media plan that could run for a set period of time (eg, a month).[43] • Make use of existing collaterals and aim to post a certain number of posts each week. • Invite participation and join conversations. • Test, measure, optimize.

Appendix 1

Links to credible AMS/AMR sources and information about dealing with copyright issues:

Table of useful links to reusable AMR awareness collaterals for public consumption from credible sources as well as information about avoiding copyright issues	
Australia	***World AMR awareness week (Australian Government)*** Link contains resources graphics, quizzes and fact sheets: https://www.safetyandquality.gov.au/our-work/antimicrobial-stewardship/world-amr-awareness-week/resources-world-amr-awareness-week
Asia	***World Organisation for Animal Health*** Links mostly contain AMR communication materials aimed at animal health issues, but some aimed at other human groups and content has been produced in various Asian languages: **Print materials:** https://rr-asia.woah.org/en/projects/antimicrobial-resistance/communication-materials/ **Videos:** https://rr-asia.woah.org/en/projects/antimicrobial-resistance/awareness-videos-to-combat-amr/
Canada	***Go Blue for AMR (AMR Awareness Canada)*** Link contains images for download, suggested AMR messages and links to other resources: https://antibioticawareness.ca ***Antibiotic wise (BC CDC)*** Link contains resources, quizzes, videos and AMR information in Chinese and Thai language: https://antibioticwise.ca
Europe	***European antibiotic awareness day (ECDC)*** Link contains access to AMS key messages, factsheets, infographics, patient stories, posters and videos: https://antibiotic.ecdc.europa.eu/en/get-informed
Thailand	***Thailand world antibiotic awareness week*** Website in Thai: https://atb-aware.thaidrugwatch.org
UK	***Become an antibiotic guardian: Keep antibiotics working (UK Health Security Agency)*** Link contains access to dancing pills video, posters and leaflets: https://antibioticguardian.com/keep-antibiotics-working/ ***e-Bug AMR training for school students (UK Health Security Agency)*** Link contains a short, simple video explaining how AMR arises: https://e-bug.eu/ks4-antimicrobial-resistance
US	***US antibiotic awareness week (US CDC)*** Link contains various resources including social media images and gifs: https://www.cdc.gov/antimicrobial-resistance/communication-resources/usaaw.html
Worldwide	***World AMR awareness week (WHO)*** Search for the current year's 'Campaign Guide' to find social media resources. https://www.who.int/campaigns/world-amr-awareness-week/2024
Freely available articles about copyright and social media	• Get privacy trending: Best practices for the social media educator. Dong SW, et al. Open Forum Infect Dis. 2021;8:ofab084. Available from: https://academic.oup.com/ofid/article/8/3/ofab084/6144607?login=false • Medical images, social media and consent. Segal JP, Hansen R. Nat Rev Gastroenterol Hepatol. 2021;18:517-518. Available from: https://www.nature.com/articles/s41575-021-00453-1 • Pause Before Posting: Avoiding Copyright Litigation and Content Takedowns. Forsander S, Rheintgen K. Mo Med. 2022;119:416-420. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9616453/

BC, British Colombia; CDC, Centers for disease control; ECDC, European Centre for Disease Prevention and Control; US, United States; WHO, World Health Organization

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