

Harnessing the Hashtag: A Standard Approach to GI Dialogue on Social Media

Austin L Chiang, MD¹, Bryan Vartabedian, MD² and Brennan Spiegel, MD, MSHS³

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Over the past several years, social media has changed how people communicate, allowing for rapid and broad transit of information so impactful as to cause political uprisings. Hashtags in social media are user-generated phrases preceded by the “#” symbol. These hashtags serve as a built-in search function on social media platforms such as Twitter. Adoption of hashtags allows social media platforms to efficiently aggregate dialogue within a specific subject domain, allowing users to contribute and view relevant content in one place. Although some hashtags have emerged as a label for certain events, other hashtags are deliberately created to collocate dialogue for specific subjects or conferences.

Twitter is now a major hub for public discussion between patients, medical practitioners, professional organizations, and industry representatives. In one day alone, an estimated 500 million posts are made on Twitter. Social media in the general public has seen a marked increase in use across all age groups over the past decade, with many individuals using social media not only for personal use but also to access health-care knowledge. However, medical professionals and physicians in particular have been slow to adopt the medium, with nearly half of all gastroenterologists reporting never using any form of social media (1).

In a survey of patients with inflammatory bowel disease or chronic viral hepatitis, 84 and 73% of patients favored some form of interaction with health-care professionals on social media, respectively (2). Direct interaction with patients on social media understandably presents a set of privacy and accountability challenges, but indirect contact such as dissemination of medical information by professionals may serve to heighten awareness and augment medical understanding. Utilizing the hashtag as a method to better curate content online may allow lay audiences to better identify quality information.

Members of the Urology (3), Radiology (4), and Oncology (5) specialties have devised “hashtag ontologies” that seek to unify all hashtags and organize discussion on specific medical topics. This approach allows patients and health-care professionals to discover relevant content easily, engage in ongoing dialogue, and develop

research collaborations. Thus far, these hashtag ontologies have been hosted by Symplur.com, a social media analytic website and creators of the “healthcare hashtag project,” whose focus is tracking health-care hashtag activity on Twitter.

Following the example of our Urology colleagues, we queried Twitter and Symplur to determine a relevant list of hashtags in use by the gastroenterology community. We then devised a list of standardized hashtags, organized by subspecialty. We requested review and endorsement of a consensus list of hashtags by key gastroenterology stakeholders, consisting of professional organizations and peer-reviewed journals. If broadly adopted, these hashtags may help drive dialogue among informed individuals and groups while filtering out “noise” posted by individuals not purposefully intending to join the scientific and clinical discussion. Ultimately, adopting a universal hashtag ontology will allow individuals to search for content or contribute to a conversation in a way that minimizes inefficiencies.

The development of a hashtag ontology is not without its challenges. For example, it is difficult to select a comprehensive yet succinct list of hashtags for each condition. Because the social intent between patient and professional participants varies the adoption of existing hashtags in our ontology has the potential to create ‘noise’ if the hashtag is too commonplace while restricting conversation if too narrow. In addition, some hashtags such as #eosinophilicesophagitis are long and impact adoption given the 140-character limit for each Twitter post. However, replacing this hashtag with its associated acronym #EOE would introduce unrelated content that shares the letters of that acronym, therefore compromising the quality of search results.

As previously noted by our Urology colleagues, another challenge in devising a list of hashtags is balancing the number of hashtags to cover the multitude of topics in gastroenterology. Given that most hashtags were organically generated and already in use, we queried Twitter to ensure that most hashtags included in the list were generally adopted by the community. An additional challenge was the presence of redundant hashtags for isolated conditions.

¹Division of Gastroenterology, Hepatology, and Endoscopy, Brigham and Women's Hospital, Boston, Massachusetts, USA; ²Baylor College of Medicine and Texas Children's Hospital, Houston, Texas, USA; ³Cedars-Sinai Medical Center, Los Angeles, California, USA. **Correspondence:** Austin L. Chiang, MD, Division of Gastroenterology, Hepatology, and Endoscopy, Brigham and Women's Hospital, 75 Francis Street, Boston, Massachusetts 02115, USA. E-mail: alchiang@partners.org

Table 1. Gastroenterology hashtag ontology list

Hashtag	Disease
<i>Cancer-related</i>	
#carcinoid	Carcinoid
#coloncancer	Colon cancer
#crcsm	Colorectal cancer
#esocsm	Esophageal cancer
#EsophagealCancer	Esophageal cancer
#HCC	Hepatocellular carcinoma
#hpbcsm	Hepatobiliary cancer
#LynchSyndrome	Lynch syndrome
#OesophagealCancer	Oesophageal cancer (UK spelling)
#PanCan	Pancreatic cancer
#pancsm	Pancreatic cancer
#PancreaticCancer	Pancreatic cancer
#rectalcancer	Rectal cancer
#stomachcancer	Stomach cancer
<i>Endoscopy</i>	
#bariatricendoscopy	Bariatric endoscopy
#colonoscopy	Colonoscopy
#endoscopy	Endoscopy
#endoscopicultrasound	Endoscopic ultrasound
<i>Functional disorders</i>	
#FGID	Functional GI disorders
#IBS	IBS
<i>Inflammatory bowel disease</i>	
#crohns	Crohn's disease
#crohnsdisease	Crohn's disease
#IBD	IBD
#ulcerativecolitis	Ulcerative colitis
<i>Liver</i>	
#cirrhosis	Cirrhosis
#fattyLiver	NAFLD
#HBV	Hepatitis B
#HCV	Hepatitis C
#HepB	Hepatitis B
#HepC	Hepatitis C
#HepatitisC	Hepatitis C
#Hepatitis	Hepatitis
#liverfibrosis	Liver fibrosis
#livertransplant	Liver transplant
#NAFLD	NAFLD
#NASH	Non-alcoholic steatohepatitis
#steatohepatitis	Steatohepatitis

Table 1. Continued

Hashtag	Disease
<i>Motility disorders</i>	
#eosinophilicesophagitis	Eosinophilic esophagitis
#gastroparesis	Gastroparesis
#GERD	Gastroesophageal reflux
#oesophagitis	Oesophagitis (UK spelling)
<i>Pancreas</i>	
#pancreatitis	Pancreatitis
<i>Pediatrics</i>	
#biliaryatresia	Extrahepatic biliary atresia
#hirschsprung	Hirschsprung disease
#shortgut	Short bowel syndrome
<i>Small bowel disease</i>	
#Celiac	Celiac disease
#CeliacDisease	Celiac disease
#Coeliac	Coeliac disease (UK spelling)
#SIBO	SIBO
<i>Other</i>	
#Cdiff	<i>Clostridium difficile</i>
#fmt	Fecal transplant
#gutmicrobiome	Gut microbiome
#Hpylori	<i>Helicobacter pylori</i>
#laparoscopy	Laparoscopy
#microbiome	Microbiome
#microbiota	Microbiota
#safechole	Critical view of safety (Lap Chole's)
GI, gastrointestinal disorder; IBD, inflammatory bowel disease; IBS, irritable bowel syndrome; NAFLD, non-alcoholic fatty liver disease; SIBO, small intestinal bacterial overgrowth.	

To illustrate this, pancreatic cancer can be represented by its full name #pancreaticcancer, #PanCan, or #PancSM. Individuals may choose to use one or more of these hashtags when referencing pancreatic cancer. Although there are no restrictions on the use of multiple hashtags for any given condition, this could be counter-productive in centralizing online discussion.

Redundancy in hashtag generation is also perpetuated by differences in American and European spelling (esophageal versus oesophageal or celiac versus coeliac). Over time, redundant hashtags can be analyzed to determine whether some are favored over others. Hashtag ontologies can then be revised accordingly to reflect and conform to common usage.

Finally, hashtags that are less intuitive in their design such as #PancSM (“SM” signifying “social media”) for pancreatic cancer are included given previous publication by other ontologies and their subsequent adoption.

Table 2. Gastroenterological social media stakeholders endorsing gastroenterology hashtag ontology project

	Hashtag
<i>Societies and organizations</i>	
American Association for the Study of Liver Diseases (AASLD)	@AASLDNews
American College of Gastroenterology (ACG)	@AmCollegeGastro
American Gastroenterological Association (AGA)	@AmerGastroAssn
American Society for Gastrointestinal Endoscopy (ASGE)	@ASGEendoscopy
Crohn's and Colitis Foundation of America (CCFA)	@CCFA
Clinical Gastroenterology & Hepatology (CGH)	NA
Digestive Disease Week (DDW)	@DDWMeeting
Society of American Gastrointestinal and Endoscopic Surgeons (SAGES)	@SAGES_Updates
United European Gastroenterology (UEG)	@my_ueg
<i>Peer-reviewed journals</i>	
American Journal of Gastroenterology	NA
Gastroenterology	NA
Gastrointestinal Endoscopy	@GIE_Journal
Gut	@Gut_BMJ
Journal of Hepatology	@JHepatology
Nature Reviews Gastroenterology & Hepatology	@NatRevGastroHep

In conclusion, social media has been used increasingly as a communication tool within health care. Similar to other medical

specialties, we in gastroenterology seek a more active role in organizing social media dialogue by devising a hashtag ontology. The ontology may serve as a scaffold for individuals and organizations to both promote and participate in relevant scientific discussion. Over time, some hashtags may fade, whereas others become commonplace; this dynamic document will be adjusted to reflect the evolving social media landscape of gastroenterology (Tables 1 and 2).

CONFLICT OF INTEREST

Guarantor of the article: Austin L. Chiang, MD.

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