

# Investigating Drug Addiction Discourse on YouTube

Katherine G. McKim

kmckim@clarku.edu

Clark University

Worcester, Massachusetts, USA

Danielle Hess

dhess@clarku.edu

Clark University

Worcester, Massachusetts, USA

Cat Mai

Cmai@clarku.edu

Clark University

Worcester, Massachusetts, USA

Shuo Niu

shniu@clarku.edu

Clark University

Worcester, Massachusetts, USA

## ABSTRACT

Drug addiction has become one of the most severe social problems in the United States. Recent research has turned attention to the possibility of using social media to detect opioid usages and offer interventions. However, most prior studies focus on textual and networking-based social media such as Twitter and Facebook. There is limited understanding of how video-based platforms, such as YouTube, allow creators to share drug addiction-related videos and discourse addiction problems. This work is an initial step to fill this knowledge gap by analyzing 166 YouTube videos. We found that YouTubers leverage videos to disclose personal addiction experiences, provide professional recommendations, and express addiction-related opinions and lifestyles. Therefore YouTube videos discuss more of the risks, blames, and solutions of drug addiction.

\*Trigger warning: this paper contains substance abuse, addiction, and mental illness.

## KEYWORDS

Social Computing; YouTube; Social Media; Substance Abuse; Substance Use Disorder; Addiction; Content Sharing; Disclosure

### ACM Reference Format:

Katherine G. McKim, Cat Mai, Danielle Hess, and Shuo Niu. 2021. Investigating Drug Addiction Discourse on YouTube. In *Companion Publication of the 2021 Conference on Computer Supported Cooperative Work and Social Computing (CSCW '21 Companion)*, October 23–27, 2021, Virtual Event, USA. ACM, New York, NY, USA, 5 pages. <https://doi.org/10.1145/3462204.3481762>

## 1 INTRODUCTION

There is an urgent need for solutions and resources to combat the increase in addictions and overdoses. After the U.S. Department of Health and Human Services declared a nationwide emergency in 2017, 70,630 people died from a drug overdose, and 10.1 million people misused prescription opioids in 2019<sup>1</sup>. Many researchers

<sup>1</sup><https://www.hhs.gov/opioids/about-the-epidemic/index.html>

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CSCW '21 Companion, October 23–27, 2021, Virtual Event, USA

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ACM ISBN 978-1-4503-8479-7/21/10...\$15.00  
<https://doi.org/10.1145/3462204.3481762>

have paid attention to social media such as Twitter and Facebook as new venues to study drug addiction issues and spread resources and solutions [4–6, 8]. YouTube, as the largest video-sharing platform, has been used to study and support mental health issues and formed a community of peer support [9, 11]. However, there is limited understanding of how YouTubers discourse the sensitive topic of addiction and how the addiction-related video content is framed to discuss the health crisis. This study seeks to provide an initial understanding of drug addiction discourse on YouTube. We crawled addiction videos from YouTube and applied grounding theory analysis with the guidance of the health emergence framing [6]. We annotated 166 videos to examine the addiction discourse styles and understand how YouTube content presents the risk, blame, urgency, praise, and solution frames. We found risks, blames, and solutions were the most used frames in YouTube addiction-related videos. Addiction videos on YouTube were for personal disclosure of addiction and professional recommendations for recovery.

## 2 METHOD

The videos were crawled using YouTube Data API. Each search contains one of the substance names from the National Institute on Drug Abuse website<sup>2</sup> and a wild card "addict\*" (e.g., "cocaine addict\*"). These videos were crawled between Jan 19, 2021, to Jan 23, 2021, with video dates spanning from Jan 1, 2020, to Oct 30, 2020. Only English videos from the US were included due to the complexities of analyzing non-English videos and the cultural differences around drugs in other countries. We randomly sampled 175 videos from the resulted 3313 videos for grounded analysis and data annotation. Nine were removed because they were deleted, private, or age-restricted (YouTube blackscreens private and age-restricted videos, and not everyone has access).

The authors performed grounded theory-based analysis [14] to summarize the video themes and the addiction discourse under the health emergence frames developed by Midberry [6]. The framing includes *risks*, *blames*, *urgency*, *praises*, and *solutions* as five key frames of addiction-related content on social media. *Risk* frame was identified as a situation that involves exposure to the dangers of addiction. The risks include discussions of consequences to society or to individual people, such as risks of becoming addicted, selling drugs, distributing drugs, and secondary dangers to individuals. *Blame* is any mention of someone or something they attribute their

<sup>2</sup><https://www.drugabuse.gov/publications/media-guide/other-commonly-used-addictive-substances>

problems and addiction to. These would be accusations, assignment of legal or other responsibility, convictions, or liabilities of addiction. *Urgency* is any mention of an immediate threat or problem that needs to be brought to the attention of the video's audience. *Urgency* in videos can include rising numbers of deaths and overdoses or mentions of issues that need to be solved in society. *Praise* is any mention of expression of gratitude towards a person or thing in the video. It could be explicit mentions of praise or mentioning someone's heroic efforts. *Solution* is how someone might get over their drug addiction or help others get over their addiction. This could include resources, medical cures, protocol changes, containment strategies, and criminal justice solutions.

Four authors distributed and watched all sample videos and took notes about each frame. We also categorize videos into main content styles. Affinity diagramming approach was used to summarize emerging video styles and subframes. Six video themes were identified: *personal experience*, *education*, *lifestyle & opinion*, *news*, *advertisement & promotional*, and *media art & performance*. See Table 1 for definitions. After the affinity diagramming, the authors identified categories for each of the frames, as described in the codebook in Table 2. The authors then used the codebook to annotate all the 166 videos. This study presents our preliminary understanding of the sample videos; the inter-rater agreement is not calculated at this initial stage but will be performed before annotating the larger video dataset.

**Table 1: The themes of addiction videos**

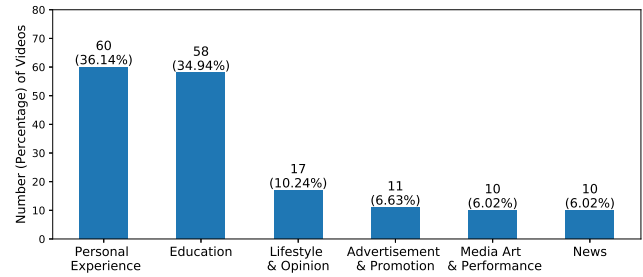
Theme	Description
Personal experience	The person in the video discloses their own experiences with drug addiction
Education	The video seeks to educate the viewers or explain knowledge related to addiction
Lifestyle & opinion	Video creators talk about their opinions on addiction or their encounters with addiction-related issues
News	Videos from traditional news media about addiction
Advertisement & promotional	Videos which are promoting a specific treatment or program for addiction recovery
Media & performance	Videos involving any sort of art

### 3 FINDINGS & DISCUSSION

Figure 1 shows the distribution of themes and Figure 2 presents the distribution of subframes. This section discusses YouTube as a platform for personal disclosure, addiction education, and addiction-inspired activities and arts. All user account names are aliases for privacy protection.

#### 3.1 Video Themes and YouTubers' Identities

The theme categorization suggests the most common ways for addiction discourse were sharing the personal addiction experiences



**Figure 1: Distribution of videos in six video themes**

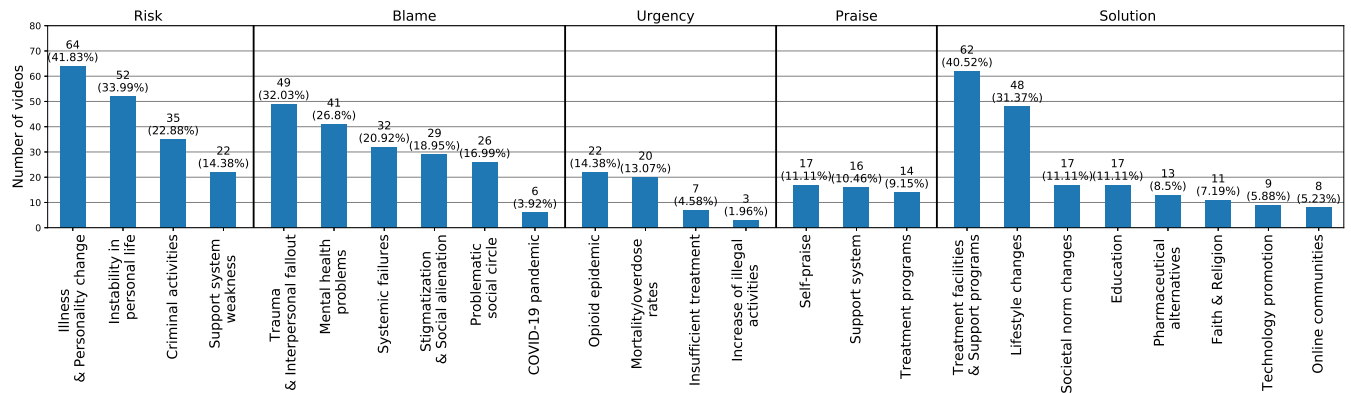
(36.14%), offering educational content (34.94%), and expressing personal opinions and lifestyles related to addiction (10.24%). We also found that videos talked about risks, blames, and solutions more often than urgency and praise. 40.52% of videos included a treatment facility or support program solution, and 41.83% of the videos expressed risk of illness or personality change. 32.03% of videos blamed their addiction on trauma or personal fallout. By contrast, only 14.38% of videos discussed the opioid epidemic, and 11.11% expressed self-praise. This distribution is different from social media feeds from traditional news media where the majority of stories had urgency or praise [6]. It also contrasts addiction posts on Twitter where users talked about the need, shoots, and love of substances [4]. Addiction discourse on YouTube focused on reflecting personal addiction experiences or seeking to share resources for overcoming addiction. The style distribution suggests two research directions. First, researchers need to examine addiction discourse and understand how self-disclosure affects creator-fan communication and collaboration. These videos may serve as lessons for preventive education and clinical training. Second, mental health professionals use YouTube to educate people with facts from their own clinical experiences. This use makes YouTube an alternative place to seek addiction knowledge. It is promising to design new platforms and services where content creators can obtain more financial support for sustainable video creation and connect to broader audience.

#### 3.2 YouTube as a Place for Addiction Disclosure

We found that addicts and victims use YouTube as a place to disclose their personal experiences. More than 40% of the videos talk about the consequences of addiction and the risks from their personal experience. More than 32% of videos mentioned what to blame for their addiction experiences. For example, SD (a former addict and now a YouTuber, Figure 3-a) talks about the risk of criminal activities like stealing to get drugs. While on vacation, he was impulsed to use drugs instead of enjoying himself. SD also shared, in his story, that the trauma in his childhood caused him to start using drugs in the first place. Another form of disclosure is through interviews. In another video (Figure 3-b), the interviewer asks the addict questions about her life and lets her disclose that she started using drugs when she was 12 because she was lonely and had no one to talk to. Creators on YouTube present themselves with a social identity [12] around addiction to an impressionable audience. Both self-disclosure and interview videos tell painful risks,

**Table 2: The concepts and definitions of subframes in health emergency framing**

	Concept	Description
Risk	<i>Illness and personality change</i>	Video includes risks to the user's life including: contracting diseases, struggling with mental health issues that result from being addicted, and general personality changes.
	<i>Criminal Activities</i>	The video highlights the risk of succumbing to temptations of committing criminal activities.
	<i>Support System Weakness</i>	This video mentions a risk of lack of control in familial and supportive relationships due to addiction.
	<i>Instability in Personal Life</i>	The user specified in the video has instability in their career, life comforts, and finances due to addiction.
Blame	<i>Systemic Failure</i>	The video blames the societal systems including: medical system, criminal justice system, recovery programs that don't manage addiction effectively, and general lack of knowledge on addiction.
	<i>Problematic Social Circle</i>	The video puts blame of addiction on the people the addict associates with.
	<i>Stigmatization and Social Alienation</i>	The video put blames the social stigma of being addicted, pressure from different facets of life, and need for a sense of belonging.
	<i>COVID-19 Pandemic</i>	Video puts blame on outcomes of the COVID-19 pandemic and exacerbating staying addicted.
	<i>Mental Health and Well-Being</i>	The video blames untreated mental health conditions, predisposition, and unrelenting daily stressors.
	<i>Trauma and Interpersonal Fallout</i>	The video blames turbulence with support systems or traumatic events.
	<i>Opioid Epidemic</i>	The video mentions statistics about the epidemic and the growing number of drugs in the country.
Urgency	<i>Mortality and Overdose Rates</i>	The video mentions the sheer number of lives lost due to battle over addiction.
	<i>Insufficient Treatment</i>	The video mentions urgent need for treatment facilities and programs to be more supportive.
	<i>Increase of Illegal Activities</i>	The video mentions the urgent increase of legal cases relating to drug addiction.
	<i>Treatment Programs</i>	The video mentions praise for the treatment that they or someone they know might have gone through or suggested is mentioned in these videos.
Praise	<i>Self-Praise</i>	In these videos, individuals are praising themselves for getting through personal struggles, their own personality, or overcoming their circumstances.
	<i>Support System Praise</i>	In these videos, individuals share praise for people who have supported them in their addiction journey.
Solutions	<i>Pharmaceutical Alternatives</i>	The video suggests using alternative medications and/or substances as a solution to discomforts associated with addiction is suggested by these videos.
	<i>Treatment Facilities and Support Programs</i>	The video suggests the utilization of various professional and medical groups and institutions to treat addiction is emphasized in these videos.
	<i>Societal Norm Changes</i>	The video suggests systemic changes for safer physical and mental spaces from the local and authoritative levels in order to lessen harm of addiction.
	<i>Promotion of Technology</i>	The video promotes using technology such as apps and websites to assist the user in managing their process of recovering.
	<i>Online Communities</i>	The video suggests joining online communities such as social medias and forums to aid in recovery from addiction by providing community.
	<i>Lifestyle changes</i>	The video suggests making positive changes in lifestyle and communication with the self and others external to the addict.
	<i>Faith and Religion</i>	The video has suggestions pertaining to faith or religious ideals to assist in recovery are brought up in these videos.
	<i>Education</i>	The video emphasize the importance of increased preventative information and health education.

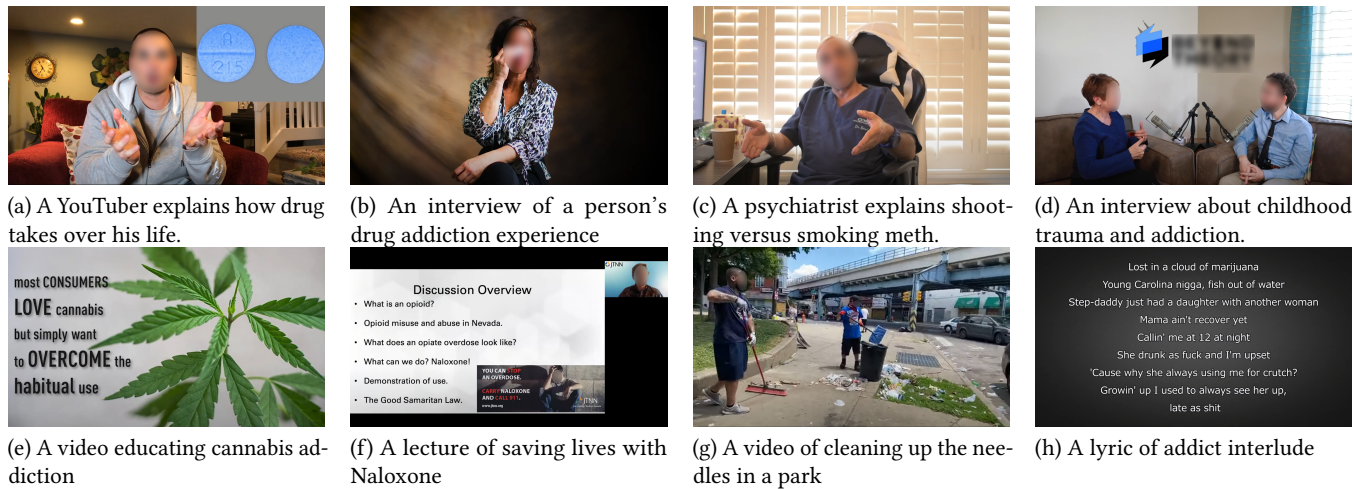
**Figure 2: Distribution of 166 videos in the subframes of health emergency framing**

blames, and struggles for others to learn from their personal, intimate level mistakes. Disclosing their addiction can be an outlet for people's struggles as well as help influencing behavioral change for themselves and their audiences [10]. However, addiction is difficult to disclose on a public platform, and its effects on viewers are unknown. There are also privacy issues resulted from posting addiction history online. Creators might want to educate the viewers through their own experiences meanwhile forgoing opportunities in their future like sponsorships and jobs because of addiction history. Platform designers need to examine designs to support safe self-disclosure, such as disconnecting creators' online identities

from their offline lives. Researchers also need to estimate the effects of personal addiction stories on educating viewers and changing current addicts' behaviors.

### 3.3 YouTube as a Place for Addiction Education

Another group of people that use YouTube for addiction discourse is experts giving information about addiction and mental health. Three main types of videos contain educational content. The first type includes videos where the professional is talking at the camera, giving tips or information. For example, in the video of Figure 3-c,



**Figure 3: Example videos of personal disclosure, education, lifestyle, and art & performance**

the creator answers a question that a viewer sent to him about the differences between shooting and smoking meth. The second type is an interview with a professional. An example is an interview where the host speaks to an expert and asks about the effects of trauma on drug addiction (Figure 3-d). The third type is info-graphic or slides presentations. For example, there is an info-graphics explaining facts about cannabis addiction (Figure 3-e) and a lecture about a topic related to addiction like the chemical compounds of drugs (Figure 3-f). This diverse repository of solution framing can be valuable. Prior studies found people turn to YouTube to seek and learn health knowledge [1, 13]. Experts and professional counselors shared their experiences and solutions on YouTube to advise addicts' behavior change. These videos form a valuable repository of addiction knowledge which are explained in series of videos [9]. This resource can serve as a place for people looking for help but maybe hesitant about or unable to afford a formal treatment [16]. It is beneficial for CSCW practitioners to design, evaluate, apply collaborative tools [7, 15] to support ad-hoc learning from YouTube and support the video-based collaboration between addicts and health professionals. It is also valuable for social computing researchers to examine which videos are more popular and effective so that recommendation systems can better support information seeking.

### 3.4 YouTube as a Place for Addiction-Inspired Activities and Arts

The lifestyle and artistic videos suggest YouTubers leverage the platform to discourse addiction problems as a strategy to promote drug addiction awareness and encourage behavioral change. For example, in one video (Figure 3-g), the creators live-streamed while going around a park giving water and asking addicts if they need anything. They also show groups of people working to clean up trash, making the living environment for homeless drug addicts more sustainable. While they do this, they answer viewers' questions about what others can do to help themselves or the people around them struggling with addiction. In addition, YouTube artists

use music or movie clips to discuss addictions. For example, in another video, a popular music creator uses rap to tell his trauma and addiction stories. YouTube videos are characterized by vernacular creativity that emerges from non-elite, everyday contexts [2, 3]. These creators use vernacular creativity to produce artistic videos to show their experiences with addiction. Livestreamers may use income from YouTube to support their charitable activities. People with addiction problems may create addiction-inspired content as a pathway to express emotions and obtain support. Future research on video-sharing platforms should examine communication and collaboration through new video forms, such as livestreaming or user-created music, to understand the roles of video-sharing in promoting healthy lifestyles and addiction recovery.

## 4 FUTURE WORK

Future work will analyze extensive video data with the codebook captured in this study. We will investigate the associations between video styles and addiction framings and examine how different video themes and frames affect video popularity. The video view and comment analysis will reveal how addiction videos promote the communication between creators and viewers. We will consult with psychology experts and interview content creators to discern the benefits and detriments of using videos as a pathway to promote collaboration and counter addiction. Future work will contribute a deeper understanding of video-sharing in behavioral change and the opioid epidemic.

## REFERENCES

- [1] Laima Augustaitis, Leland A Merrill, Kristi E Gamarel, and Oliver L Haimson. 2021. Online Transgender Health Information Seeking: Facilitators, Barriers, and Future Directions. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, New York, NY, USA. <https://doi.org/10.1145/3411764.3445091>
- [2] Jean Burgess and Joshua Green. 2018. *YouTube: Online video and participatory culture*. John Wiley & Sons, Cambridge, UK.
- [3] Jean Elizabeth Burgess. 2007. *Vernacular creativity and new media*. Ph.D. Dissertation.
- [4] Yujie Fan, Yiming Zhang, Yanfang Ye, Xin Li, and Wanhong Zheng. 2017. Social Media for Opioid Addiction Epidemiology: Automatic Detection of Opioid Addicts

- from Twitter and Case Studies. In *Proceedings of the 2017 ACM on Conference on Information and Knowledge Management (CIKM '17)*. Association for Computing Machinery, New York, NY, USA, 1259–1267. <https://doi.org/10.1145/3132847.3132857>
- [5] Brian C Keegan, Patricia Cavazos-Rehg, Anh Ngoc Nguyen, Saiph Savage, Jofish Kaye, Munmun De Choudhury, and Michael J Paul. 2017. CHI-Nnabis: Implications of Marijuana Legalization for and from Human-Computer Interaction. In *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '17)*. Association for Computing Machinery, New York, NY, USA, 1312–1317. <https://doi.org/10.1145/3027063.3051139>
- [6] Danielle K Kilgo and Jennifer Midberry. 2020. Social Media News Production, Emotional Facebook Reactions, and the Politicization of Drug Addiction. *Health Communication* (11 2020), 1–9. <https://doi.org/10.1080/10410236.2020.1846265>
- [7] Juho Kim. 2013. Toolscape: Enhancing the Learning Experience of How-to Videos. In *CHI '13 Extended Abstracts on Human Factors in Computing Systems (CHI EA '13)*. Association for Computing Machinery, New York, NY, USA, 2707–2712. <https://doi.org/10.1145/2468356.2479497>
- [8] Sunny Jung Kim, Lisa A Marsch, Jeffrey T Hancock, and Amarendra K Das. 2017. Scaling up research on drug abuse and addiction through social media big data. *Journal of medical Internet research* 19, 10 (2017), e353.
- [9] Paul Manning. 2013. YouTube, 'drug videos' and drugs education. *Drugs: Education, Prevention and Policy* 20, 2 (4 2013), 120–130. <https://doi.org/10.3109/09687637.2012.704435>
- [10] Sabina Misoch. 2014. Card Stories on YouTube: A New Frame for Online Self-Disclosure. *Media and Communication; Vol 2, No 1 (2014) (2014)*. <https://doi.org/10.17645/mac.v2i1.16>
- [11] John A Naslund, Stuart W Grande, Kelly A Aschbrenner, and Glyn Elwyn. 2014. Naturally Occurring Peer Support through Social Media: The Experiences of Individuals with Severe Mental Illness Using YouTube. *PLOS ONE* 9, 10 (10 2014), e110171. <https://doi.org/10.1371/journal.pone.0110171>
- [12] Joseph Seering, Felicia Ng, Zheng Yao, and Geoff Kaufman. 2018. Applications of Social Identity Theory to Research and Design in Computer-Supported Cooperative Work. *Proc. ACM Hum.-Comput. Interact.* 2, CSCW (11 2018). <https://doi.org/10.1145/3274771>
- [13] Chareen Snelson. 2008. YouTube and Beyond: Integrating Web-Based Video into Online Education. In *Proceedings of Society for Information Technology & Teacher Education International Conference 2008*, Karen McFerrin, Roberta Weber, Roger Carlsen, and Dee Anna Willis (Eds.). Association for the Advancement of Computing in Education (AACE), Las Vegas, Nevada, USA, 732–737. <https://www.learnlib.org/p/27254>
- [14] Anselm Strauss and Juliet M Corbin. 1997. *Grounded theory in practice*. Sage.
- [15] Chien-Lin Tang, Jingxian Liao, Hao-Chuan Wang, Ching-Ying Sung, Yu-Rong Cao, and Wen-Chieh Lin. 2020. Supporting Online Video Learning with Concept Map-Based Recommendation of Learning Path. In *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20)*. Association for Computing Machinery, New York, NY, USA, 1–8. <https://doi.org/10.1145/3334480.3382943>
- [16] Tiffany C Veinot, Hannah Mitchell, and Jessica S Ancker. 2018. Good intentions are not enough: how informatics interventions can worsen inequality. *Journal of the American Medical Informatics Association* 25, 8 (8 2018), 1080–1088. <https://doi.org/10.1093/jamia/ocy052>