

TIGER C19

Timely Integration of User Generated Responses about C19

Introduction and Approach

WHAT: TIGER C19 is an ongoing collaboration between the University of Melbourne and Burnet Institute that combines big data analytics of social media postings with qualitative research methods.

WHY: TIGER C19 can inform public health and health information responses by examining local COVID-19-related issues of current interest as both a supplement and complement to other research (notably the longitudinal Optimise study). The focus is on Melbourne and Victoria, though the emerging themes have broader resonance and application to other jurisdictions in Australia and overseas.

HOW: Using a sophisticated data analytics tool, TIGER C19 extracts posts containing selected key words and themes from two social media platforms – Reddit and Twitter – that are then subjected to thematic analyses.

Summary of results

Table 1 below summarises findings for the key words, focusing on the top 20 URLs and the most popular upvoted (Reddit) or retweeted (Twitter) posts using the following key words from **17,938** hits: **vaccine, hesitancy/hesitant, clots, AstraZeneca, Johnson and Johnson.**

Table 1: Summary of Reddit and Twitter ‘captures’ by key words

Hits	Trends	Top 20 URLs	Key Themes
Key Word: Vaccine			
Reddit: 5,400 hits	Peaks on 9 and 12 April	Official Sources: Healthy WA, Department of Health, RACGP Media Sources: ABC, New York Times, The Guardian, Daily Mail UK, news.com, The Daily Beast	Optimism vaccine will curb COVID-19 transmission/deaths. Concern negative media response damaging to vaccine rollout.
Twitter: 4,075 hits		Unofficial Sources: COVID Medical Network, The High Wire, Americas Frontline Doctors	Australian vaccine rollout has been mismanaged. Vaccine hubs in Victoria and NSW.

Hits	Trends	Top 20 URLs	Key Themes
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Key Word: Hesitancy/Hesitant

Reddit: 116 hits	Peaks on 7 - 10 April	<p>Media Sources: The Age, LA Times, CNN, NY Post, New York Times, ABC, The Guardian, New York Magazine, Bloomberg, Sky News, NPR, The Straits Times</p> <p>Academic Sources: Burnet Institute</p> <p>Academic Journals: The New England Journal of Medicine, BMJ, Pubmed, The Lancet, Annals of Internal Medicines, Ebio Medicine</p> <p>NGOs: End COVID for all, Doctors Without Borders, ACFID</p>	<p>Concern over safety of the vaccine/not enough data.</p>
Twitter: 258 hits		<p>Vaccine hesitancy in PNG due to discontinuation of AstraZeneca in Australia.</p> <p>Vaccine hesitancy in Australia/ hesitancy increasing.</p>	

Key Word: Clots

Reddit: 441 hits	Peaks on 2 – 3 and 8 – 9 April	<p>Official Sources: Government websites Australia, New Zealand, UK, European Medicines Agency</p> <p>Media Sources: ABC, BBC, CNBC, The Guardian, express.uk, 7 News, 9 News, RT News, New York Times, Canberra Times, Brussels Time</p> <p>Unofficial Sources: Wikipedia</p>	<p>Nil applicable Reddit.</p>
Twitter: 3,033 hits		<p>Risk of blood clots with AstraZeneca vaccine and/or Johnson & Johnson vaccine.</p> <p>Wants access to AstraZeneca despite blood clotting risk.</p> <p>Comparing AstraZeneca blood clot risk to the oral contraceptive pill.</p>	

Hits	Trends	Top 20 URLs	Key Themes
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Key Word: AstraZeneca

Reddit: 552 hits	Peaks on 7 – 9 April	Official Sources: Government websites Australia, UK, AstraZeneca website, CSL website Media Sources: ABC, SMH, 9 News, Apple News, Forbes, BBC, CNBC, The Conversation, Chemical and Engineering News Academic Sources: University of Melbourne Social Media: Twitter, YouTube, Reddit Unofficial Sources: Americas Frontline Doctors	Confidence in AstraZeneca effectiveness. AstraZeneca less effective than Pfizer.
Twitter: 3,151 hits		Vaccine rollout in Australia mismanaged. Vaccine appointments cancelled without warning/ denied vaccine. Australians deserve Pfizer/ need more Pfizer vaccines.	

Key Word: Johnson & Johnson

Reddit: 31 hits	Peak on 13 April	Official Sources: RACGP Media Sources: The Age, The Guardian, Forbes, NY Times, Standard, Chemical and Engineering News, RTE News, SMH, ABC, SBS, Hindu Times, RNZ, Brisbane Times Social Media: YouTube Academic Sources: PlosMed, London School of Hygiene and Tropical Medicine	Optimism vaccine will reduce COVID-19 transmission/deaths.
Twitter: 881 hits		Australian government not purchasing Johnson & Johnson. Australia needs a no-fault vaccine compensation scheme.	

For **Table 2** we analysed the most popular posts (and repost trails) to determine emerging key themes (with annotated links to the respective trails).

Table 2: Emerging Themes

Key Word	Emerging Theme	Link to Thread
Reddit		
Vaccine	Optimism vaccine will curb COVID-19 transmission/deaths	3, 10, 13, 17, 19
	Concern negative media response damaging to vaccine rollout	9, 18
	Concern travellers will introduce COVID-19 variants to Australia	2
	Confidence in the Australian Government's response to COVID-19	14
	Frustration over border controls	15
	Concern over vaccine overdose	12
	Conflicting information about the vaccine	6, 7
	Disaffection with COVID-19 restrictions	1, 5, 20
Johnson & Johnson	Optimism vaccine will reduce COVID-19 transmission/deaths	2, 4
	Questioning accuracy of information provided	3
	Mismanagement of the COVID-19 response in the UK	6
	Concern over the risks of Johnson & Johnson vaccine	5
Hesitant / Hesitancy	Concern over safety of the vaccine/not enough data	3, 11, 7, 10
	Hopeful that vaccine uptake will be high	1
	Quarantine measures not worth the consequences	6
	Wanting to get tested but not wanting to self-quarantine until result	8
	Distinction between antivaxxers and vaccine hesitancy	9
	Australian vaccine roll out is too slow	12
	Elimination vs Suppression strategy	14
	Politicians should get the vaccine to reduce public hesitancy	2

Key Word	Emerging Theme	Link to Thread
AstraZeneca	EU delaying Australia's vaccine order	1, 4
	Confidence in AstraZeneca effectiveness	2, 3, 11, 5, 12
	Conflicting information about AstraZeneca	9, 13
	AstraZeneca less effective than Pfizer	11, 15, 16, 18

Twitter

Vaccine	Wearing masks is important during winter	1
	Australian vaccine rollout has been mismanaged	2, 7, 8, 12, 16, 17, 18
	Quarantine hotel workers refusing vaccine	3
	Melbourne aged care/disability sector still waiting for vaccine	4
	Vaccine hubs in Victoria and NSW	9, 10, 16
	Advocacy for AstraZeneca vaccine uptake in PNG	11
	Australia should have a mRNA vaccine production facility	13
	Melbourne COVID-19 response a success	14
	Risk of AZ blood clots	15, 19
Johnson & Johnson	Australian government not purchasing Johnson & Johnson	1, 3, 8, 9, 13, 17, 19
	Australia needs a no-fault vaccine compensation scheme	4, 5
	AZ vaccine safe	6
	Australian government corrupt	11
	Reduction in transmission due to lockdown not the vaccine	12
	Anticipating Pfizer deliveries in Australia	14
	Blood clot risk with Johnson & Johnson vaccine	15

Clots	Risk of blood clots with AstraZeneca and or/ Johnson & Johnson vaccine	1, 3, 8, 9, 13, 20
	Vaccine shortage not the government's fault	4
	Wants access to AstraZeneca despite blood clotting risk	5, 10
	Conflicting information about safety of vaccines	6, 7
	Comparing AstraZeneca blood clot risk to the oral contraceptive pill	11, 12
	Hotel quarantine staff working across sites	18
AstraZeneca	Had AstraZeneca with no side effects	5
	Vaccine rollout in Australia mismanaged	3, 5, 8, 13
	Vaccine appointments cancelled without warning/ denied vaccine	7, 11, 13, 16
	Australians deserve Pfizer/ need more Pfizer vaccines	8, 9, 14, 17
	Australia to send vaccines to PNG	10
	Fear over risk of blood clots	15, 19
Hesitant / Hesitancy (b)	Tracking Australia's vaccine supply	1
	Vaccine hesitancy in PNG due to discontinuation of AstraZeneca in Australia	3, 4, 5, 10, 11, 15, 16, 17, 19, 11b
	Vaccine hesitancy in Australia increasing	6, 9, 1b, 3b, 5b, 6b, 9b, 10b, 15b, 20b
	Advocacy for COVID-19 vaccine uptake	7
	No need to rush vaccinations	13
	Loss of public confidence in vaccine	5b, 8b, 13b
	Australian government vaccine advice untrustworthy	7b, 8b, 14b, 16b
Vaccine hesitancy has economic cost	12b	