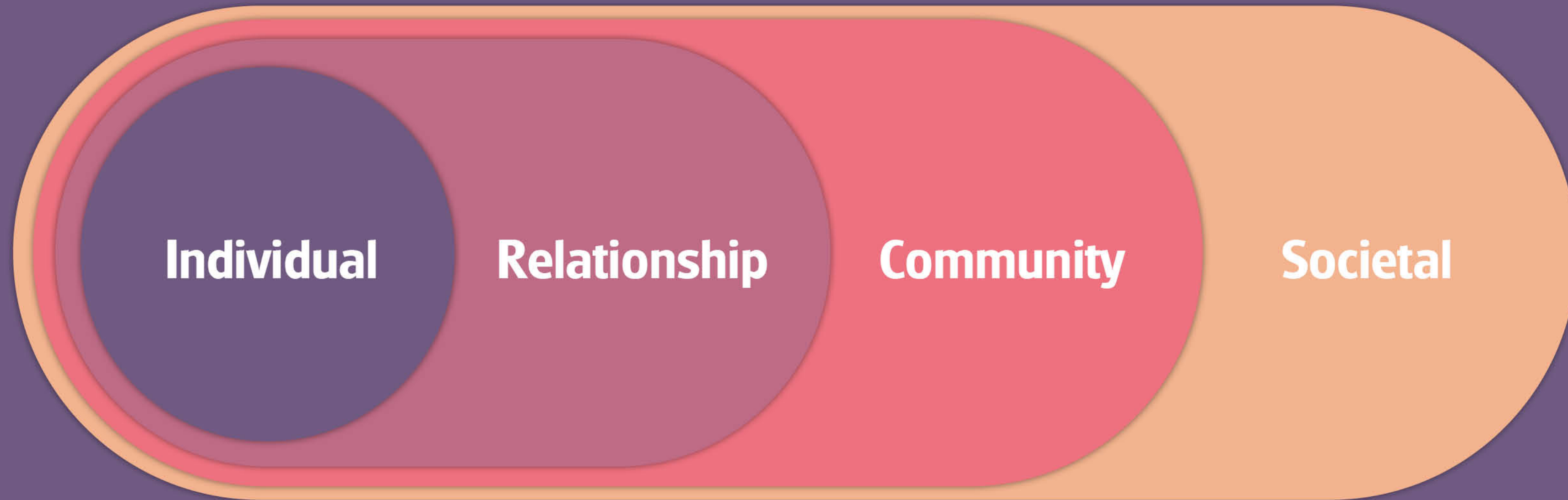


Information environment, infodemic and public health

Dr Becky White

The *information environment* is the cumulation of individual, community, organisational and systems approaches to health information production, exchange, translation, interpretation and use.





Chapter 1 Infodemic Management in the Twenty-First Century

Sylvie Briand, Sarah Hess, Tim Nguyen, and Tina D. Purnat

1.1 Definition of an Infodemic and the Evolving Information Ecosystem

An infodemic is an overabundance of information, accurate or not, in the digital and physical space, accompanying an acute health event such as an outbreak or epidemic. (World Health Organization [n.d.-b](#))

An infodemic is not limited to mis- and disinformation but includes information within the information ecosystem.¹ A person's information refers to the complex, dynamic infrastructure, social and physical environments, which information flows and reaches an individual, which is influenced by social dynamics, health behaviors, and other factors. This concept acknowledges the interconnectedness of digital and physical environments, the flow of information, and the impact of social dynamics on health outcomes.

Managing Infodemics in the 21st Century : Addressing New Public Health Challenges in the Information Ecosystem. Cham: Springer International Publishing; 2023. p. 1-16.

**“We’re not just fighting an epidemic;
we’re fighting an infodemic”**

Dr Tedros WHO DG, 15 Feb 2020

**“WHO declared COVID-19 a
pandemic”**

Dr Tedros WHO DG, 11 March 2020

Sky News Australia removes Covid misinformation clips

By Frances Mao
BBC News, Sydney

'Traitor': the Australian researchers working under the weight of pandemic misinformation

Scientists face barrage of conspiracy theories and falsehoods at [unclear] study finds

Anti-vax 'fearmongers' spreading misinformation are targeting Australia's diverse communities, leaders, experts warn

ABC News Breakfast / By Ahmed Yussuf

The cost of conspiracy in muddling public health messages

CLARE MURPHY

A Covid-19 outbreak in Victoria shows the need to counter hate speech, extremist content and misinformation online.

Australia's voice debate is being flooded with misinformation and lies. Here are some facts

HEALTH

Monkeypox disinformation is on the rise. Experts say community-led health messages are key

ABC Health & Wellbeing / By technology reporter Ariel Bogle and health reporter Olivia Willis

Why Australia needs a national strategy to tackle misinformation

Editor: Jennifer Doggett Author: Jennifer Doggett Thursday, November 17, 2022

Vaccine misinformation used to 'injure Aboriginal people intentionally' in region with lowest rates

ABC Goldfields / By Sean Tarek Goodwin
Posted Sun 5 Sep 2021 at 6:58am

Facebook community group 'seeing laugh reacts on death' as COVID misinformation spreads

ABC Gold Coast / By Dominic Cansdale

Posted Mon 22 Nov 2021 at 3:27am, updated Mon 22 Nov 2021 at 9:02am

Information moves fast

3.8b

estimated Facebook views of misinformation related to vaccines, masking and social distancing, by July 2020

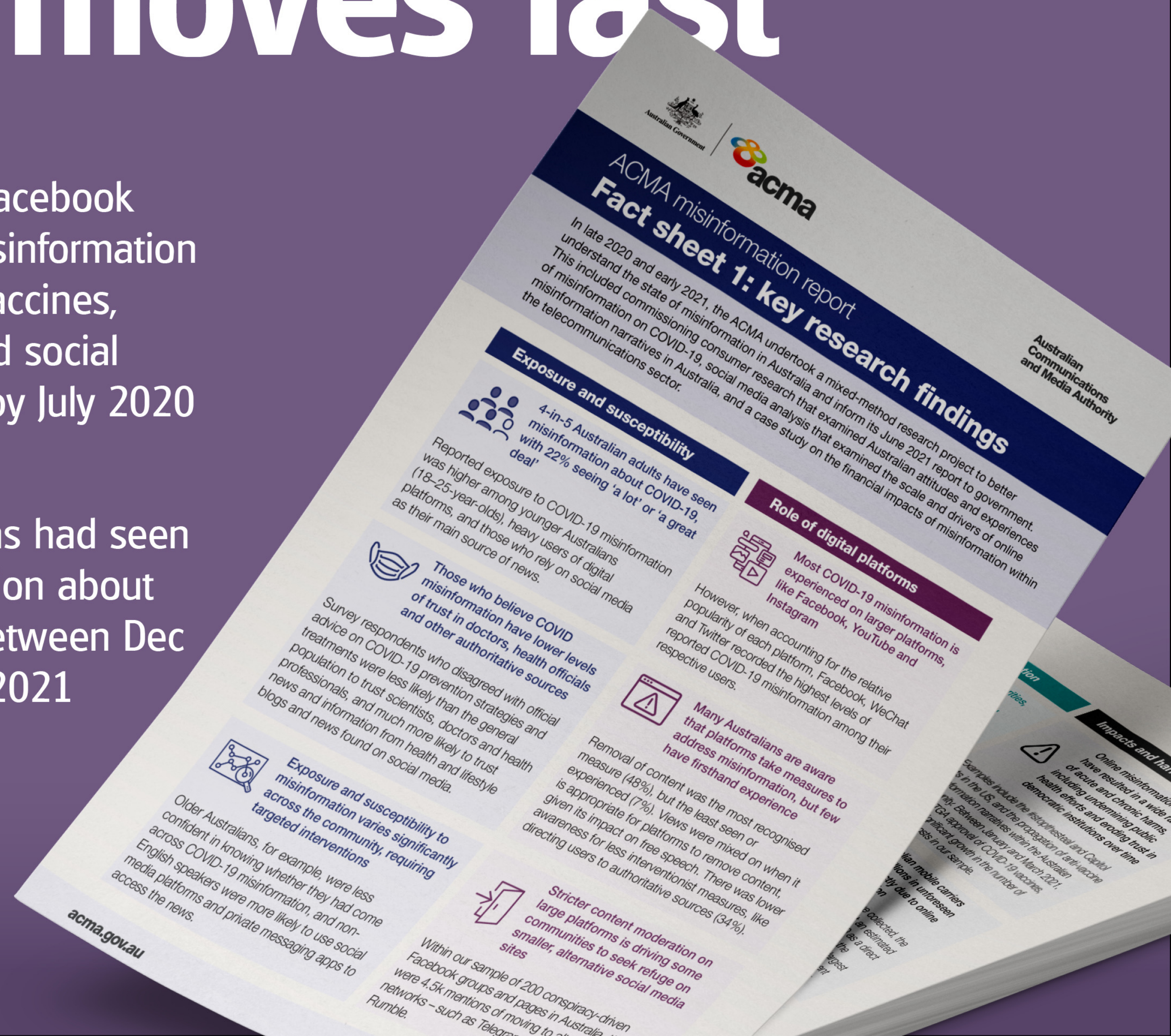
80%

of Australians had seen misinformation about COVID-19 between Dec 2020 - Jan 2021

Australian Communications and Media Authority. Australian misinformation report. ACMA 2021.

AVAAZ. Facebook's Algorithm: A Major Threat to Public Health.

AVAAZ 2020.



Direct impacts

People ingesting
dangerous substances
because they believe they
will prevent or cure an
illness

Indirect impacts

By increasing race-related
discrimination, by increasing
vaccine hesitancy, poor
adherence to preventative
measures.

Vulnerable populations

In Australia, people with lower education levels, English as a second language, lower digital and health literacy levels, and lower trust in government and authorities are more susceptible to misinformation

Misinformation can spread quickly in communities that may have low trust in government

Pickles K, Cvejic E, Nickel B, Copp T, Bonner C, Leask J, Ayre J, Batcup C, Cornell S, Dakin T, Dodd RH, Isautier JM, McCaffery KJ. COVID-19 Misinformation Trends in Australia: Prospective Longitudinal National Survey. *J Med Internet Res*. 2021;23(1)

Fredericks B, Bradfield A, McAvoy S, Ward J, Spierings S, Combo T, Toth-Peter A. The Burden of the Beast: Countering Conspiracies and Misinformation within Indigenous Communities in Australia. *M/C Journal*. 2023;25(1)

Research on COVID-19 vaccine narratives

Australian-based Facebook pages, COVID-19 vaccine and breastfeeding related narratives

30,224

Posts and comments

Received: 5 May 2022 | Revised: 25 February 2023 | Accepted: 29 March 2023
 DOI: 10.1002/hpja.729

Health Promotion Journal of Australia WILEY

SHORT RESEARCH ARTICLE

Mapping breastfeeding and COVID-19 related content and engagement on Facebook: Results from an online social listening study

Becky K. White^{1,2} | Sharyn K. Burns^{2,3} | Jennie Carson⁴ | Jane A. Scott²

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²School of Population Health, Curtin University, Perth, Western Australia, Australia
³Collaboration for Evidence, Research and Impact in Public Health, Curtin University, Perth, Western Australia, Australia
⁴Telethon Kids Institute, Perth, Western Australia, Australia

Correspondence: Becky K. White, Reach Health Promotion Innovations, School of Population Health, Curtin University, Perth, WA, Australia. Email: becky@rhp.com.au

Handling editor: Annabelle Wilson

Abstract
Issue addressed: The COVID-19 pandemic has seen evidence and advice evolve quickly. Since the start of the pandemic there has been confusion and concern about breastfeeding and COVID-19, and advice for this group has at times been contradictory. The volume of information on social media has exacerbated this. This study aimed to understand breastfeeding-related COVID-19 information sharing on social media during the global and Australian vaccine roll-out.
Methods: The CrowdTangle platform was used to source data from December 2020 to December 2021. Posts were categorised to intent and source and mapped to a timeline of pandemic-related events and announcements. Descriptive analysis was used to understand data distribution patterns and qualitative analysis for post-intent. Results: A total of 945 posts were included. Post-interactions ranged from 0 to 6500. Vaccine-related posts were the highest in number and increased over time. Non-profit organisations shared the highest number of posts (n = 241), but interactions were highest with personal and government accounts and events.
Conclusion: These results describe the breastfeeding and COVID-19 related actions mapped to key pandemic-related announcements and events shared on Facebook over 13 months, and the associated interactions. It is an important public health issue and breastfeeding women are experiencing a conflicting and confusing understanding of social media information. Better understanding of breastfeeding-related information, safety, efficacy and necessity of the COVID-19 vaccine is frequently compared to certain substances, yet were encouraged to take an 'untested vaccine'.

Cue the Facebook experts : Investigating COVID-19 vaccine and breastfeeding-related content on social-media

Dr Becky White^{1,2}, Professor Sharyn Burns^{2,3}, Jennie Carson⁴, Professor Jane Scott²

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³Collaboration for Evidence, Research and Impact in Public Health, Curtin University, 6102, Perth, Australia
⁴Telethon Kids Institute, 6009, Perth, Australia

Aim
 To understand breastfeeding-related COVID-19 narratives on social media during the Australian vaccine roll-out and explore components of the associated information environment.

Background
 • The Infodemic (the overwhelming amount of information, both accurate and otherwise) has impacted on pandemic response.
 • Breastfeeding is an important public health issue with long lasting health benefits for infants and mothers.
 • Exclusion of breastfeeding women from initial vaccine clinical trials meant evidence-based advice for this group lagged and has been contradictory and confusing.
 • Health professionals were concerned that this confusion may impact poorly on breastfeeding decision-making and outcomes.

Method
 • Crowdtangle platform was used to source data from public Facebook pages.
 • The search included all pages where administrators were based in Australia and included keywords for COVID-19, breastfeeding and vaccines.
 • 1st December 2020 to the 31st December 2021.
 • Vaccine related posts (n=957).
 • Analyse on comments (n=28,517).
 • Used topic areas identified in 'Under the surface' report.
 • The study received ethical approval from the Curtin University Human Research Ethics Committee (MRE2021-0268).

The information environment is complex

Safety, efficacy and necessity
 • There were persistent safety concerns about miscarriage and of breastfed babies dying post vaccination.
 • The safety of the COVID-19 vaccine was frequently compared to certain substances, yet were encouraged to take an 'untested vaccine'.
 • Safety concerns were a mix of genuine questions and concerns, and overly strong anti-vaccine stances.
 • Clarifying advice from professionals and guidelines contributed to confusion about safety.
 • Narratives about need changed in their intensity over the year.

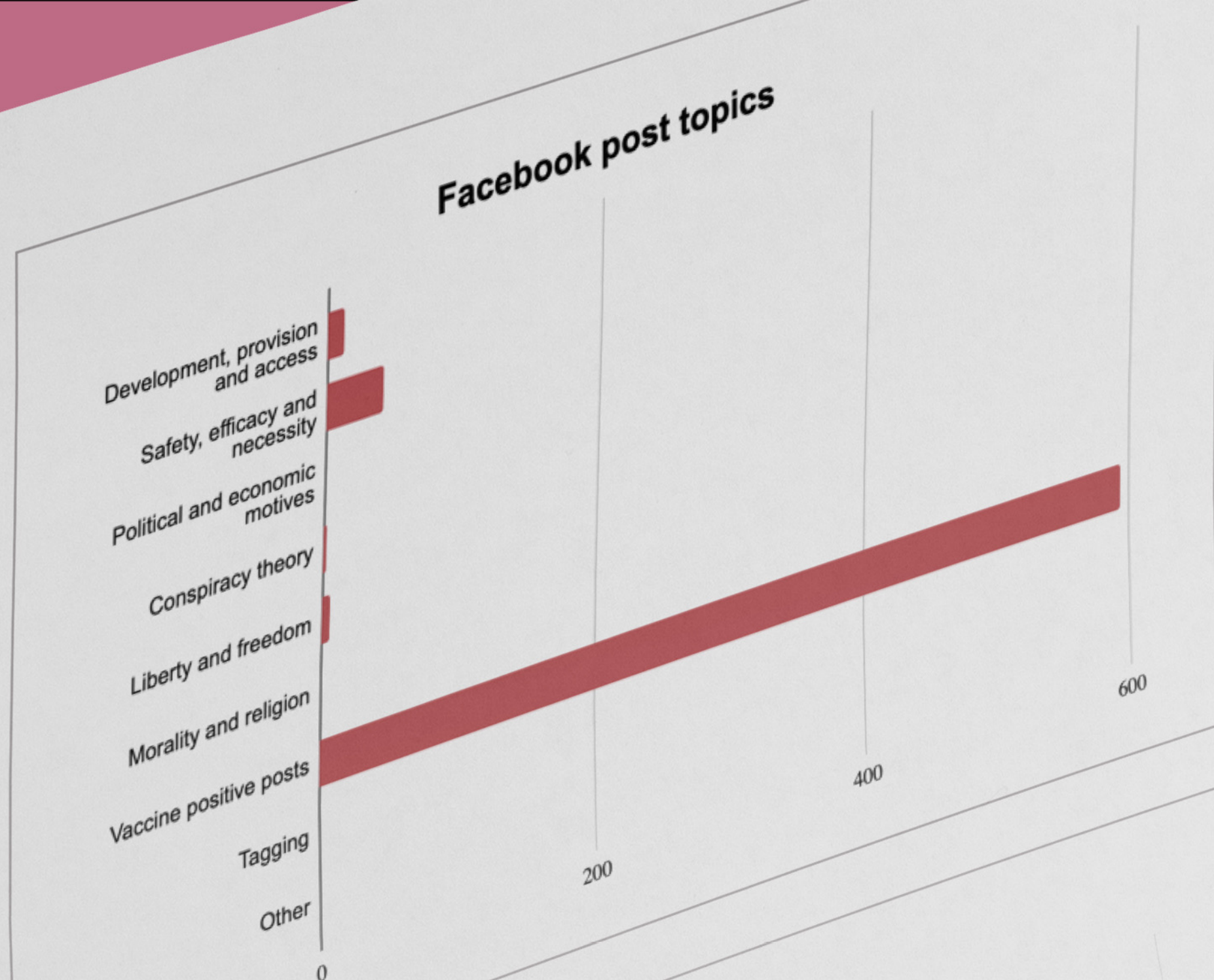
Topic areas: Posts and comments

“I was ready to get the vaccine saved me!”
 “Why do women have different advice on giving this you expect people to say they can't give in their device when children aren't reach responsive?”

“The infodemic was also used to help me and feel promoted to what happens if I'm holding back, oh and 'breastfeed'”
 “I was ready to get the vaccine saved me!”

Findings

- Comment topics were much more varied
- Information environment is complex
- Information voids were evident throughout
- Visuals were important



Broader impact

Non-communicable
diseases

Climate change

Vaccine hesitancy

Cancer

Political debates

Vaping

And more...

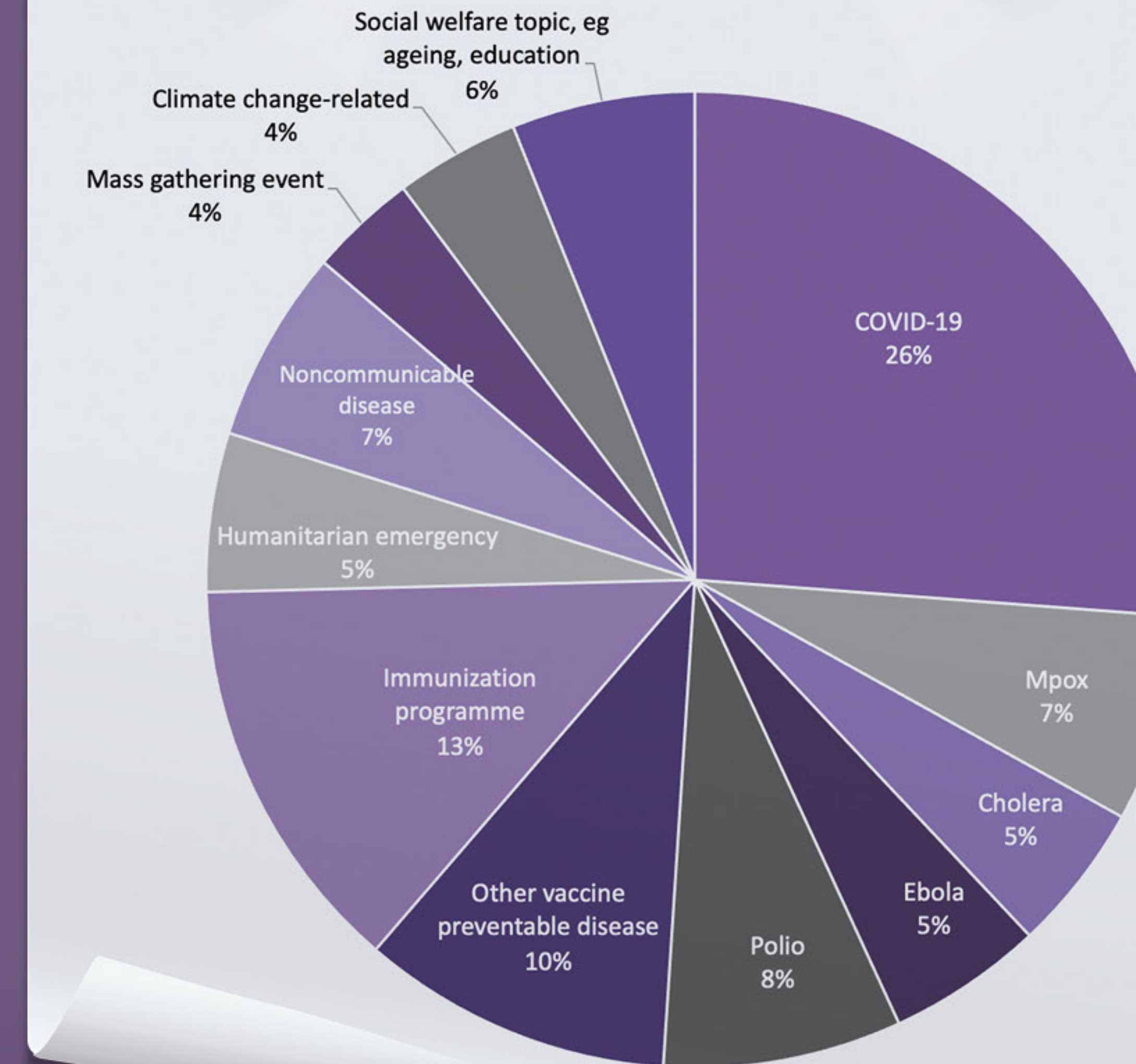
Global survey

COVID-19 was the most common health issue.

55 health issues in total including:

- HIV
- Nutrition
- Tobacco
- Family planning and STIs
- Pharmacovigilance

White BK, Wilhelm E, Ishizumi A, Abeyesekera S, Pereira A, Yau B, Ho E, Kuzmanovic A, Nguyen T, Briand S, Purnat TD, Informing social media analysis for public health: A cross-sectional survey of professionals, Archives of Public Health 2024 Vol. 82 (1)

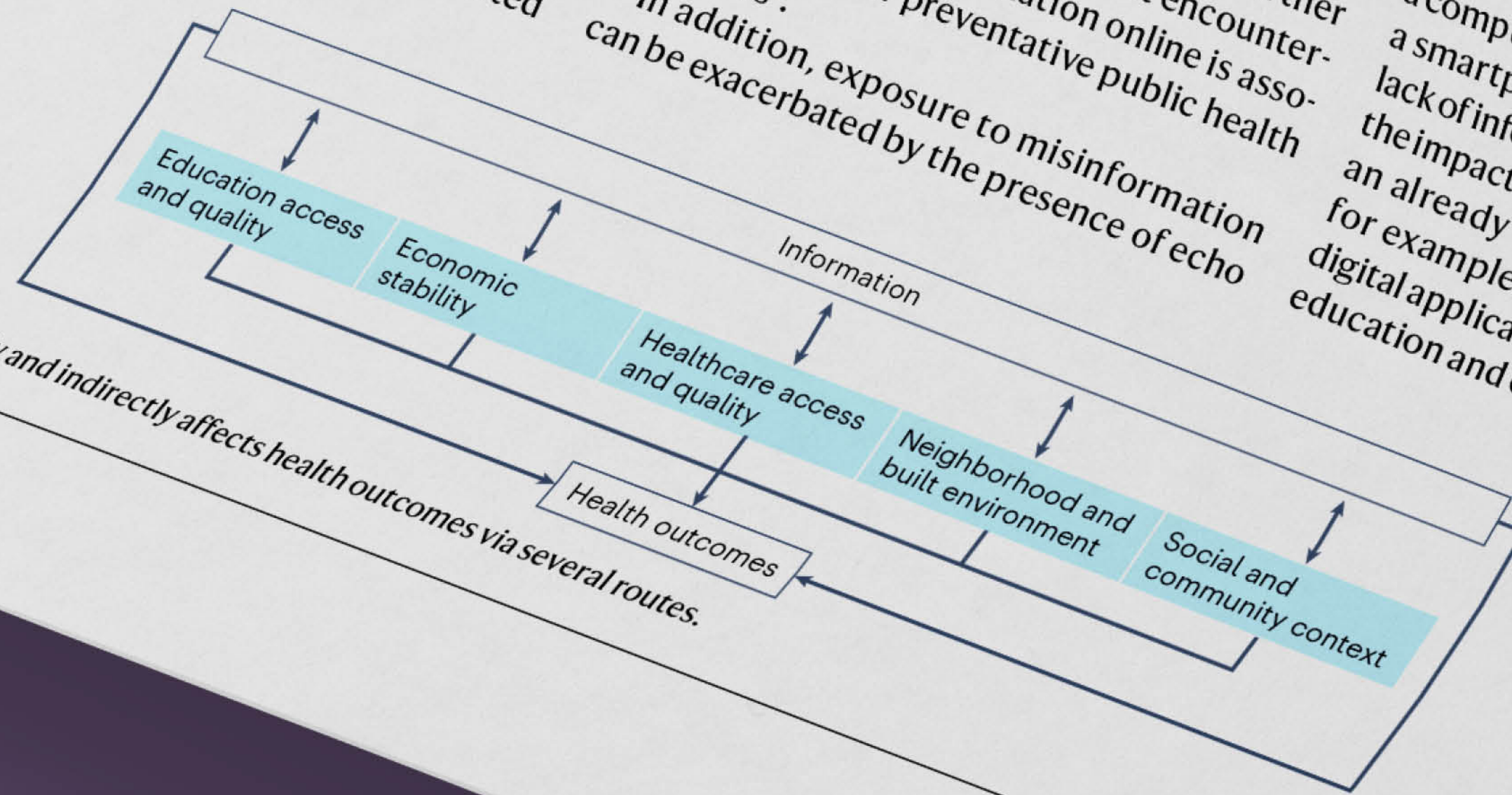


**Strengthening the information
environment and preventing
infodemics**

Information is a determinant of health

Graham, G., Goren, N., Sounderajah, V. et al. Information is a determinant of health. Nat Med (2024)

Fig. 1 | IDH. Information directly and indirectly affects health outcomes via several routes.
nature medicine





Adapted from [Internews](#) model.

Policy



**Five elements
information e**



Adapted from [Intern](#)

EXPOSURE DRAFT

2022-2023

The Parliament of the
Commonwealth of Australia

HOUSE OF REPRESENTATIVES/THE SENATE

EXPOSURE DRAFT

**Communications Legislation
Amendment (Combatting
Misinformation and Disinformation) Bill
2023**

No. , 2023

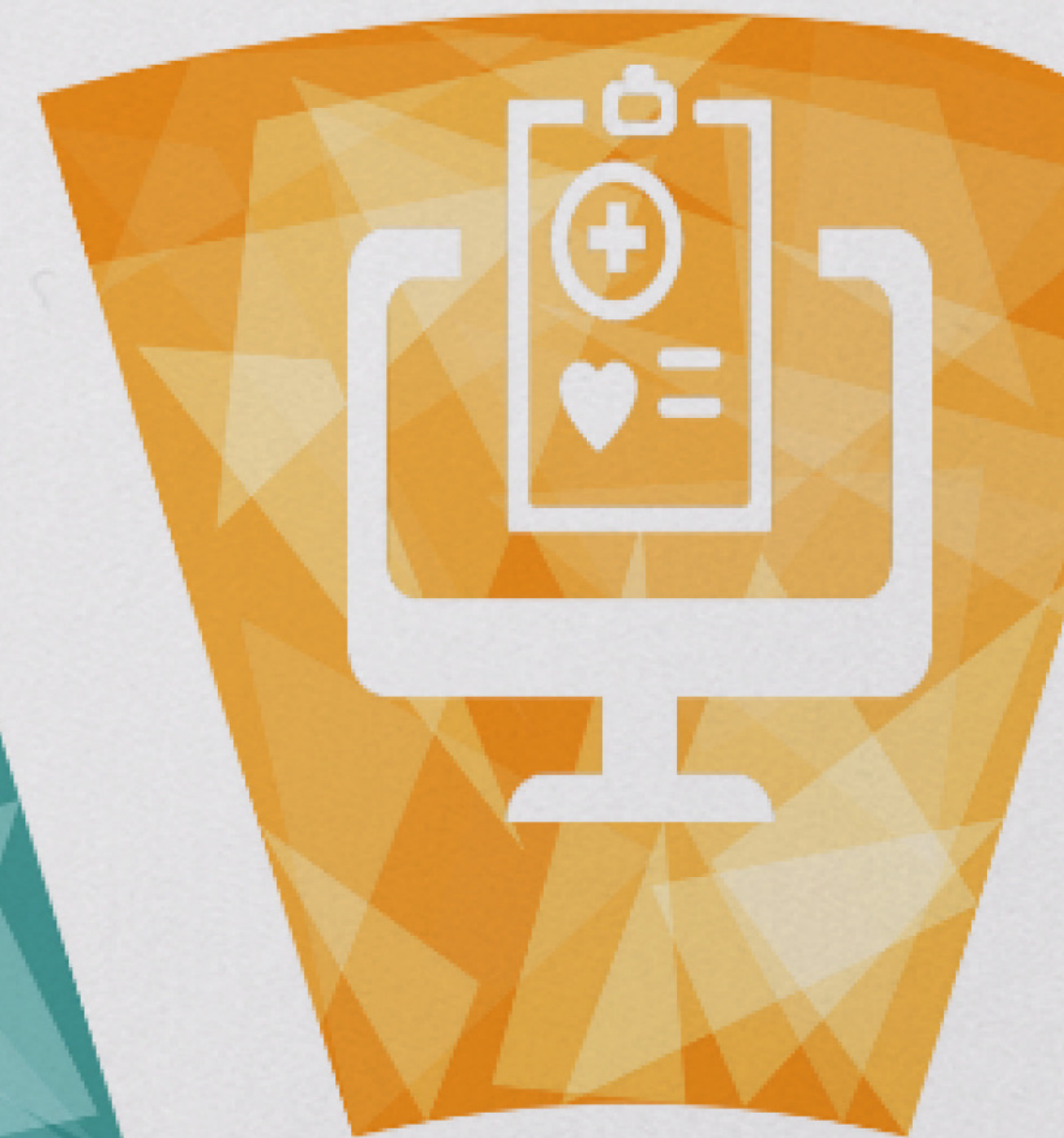
(Infrastructure, Transport, Regional Development, Communications and the Arts)

**A Bill for an Act to amend the law relating to
communications, and for related purposes**

Legislation

Credible, accurate health information

Commercial determinants of health information



Policy



Five elements of a health information environment

Facebook's botched Australia news ban hits health departments, charities and its own pages

Social media company's ban on sharing news has also affected dozens of government, not-for-profit and community pages

**al determinants
nformation**



**Credible, accurate health
information**



**Health
information equity**



**Di
in**



RMIT FactLab is a fact-checking organisation and research hub dedicated to fact checking viral misinformation and disinformation and building critical awareness of the real-world harm that they can cause.

Fact checking

Combining the best of quality journalism and academic excellence, RMIT FactLab combats the damaging impact of harmful information through:

- Fact checking of misinformation and disinformation on social media. [Read our fact checks.](#)
- CrossCheck's online verification and monitoring for media and community partners.

credible, accurate health information



Health information equity



Five elements of a healthy



Digital, media, information, science and health literacy



CONVERSATION
Trust with migrant and
communities is crucial for
health measures to work
11:37am AEST

LinkedIn



Melody Taba
PhD Candidate and Senior Research Officer at the University of Sydney
2w

Last co-design workshop of my PhD done!

We've spoken to a range of young people and stakeholders about how to improve health communication to young people on social media...can't wait to analyse and share findings from the 3 workshops soon!

[Sydney Health Literacy Lab Medicine and Health - University of Sydney](#)



**Indigenous communities in Melbourne w
hard to share coronavirus information to
cases down**

By [Margaret Paul](#)
Posted Tue 15 Sep 2020 at 4:24am

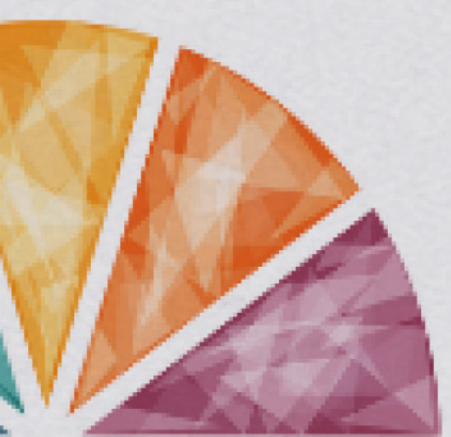


<https://theconversation.com/building-trust-with-migrant-and-refugee-communities-is-crucial-for-public-health-measures-to-work-167180>

<https://www.linkedin.com/feed/update/urn:li:activity:7174174778008731648>



nts of a healthy
n environment



**Digital, media,
information, science
and health literacy**

ernews model.

Digital Sisters AI for Good

New revolutionary AI and digital literacy program to empower women across Australia with digital skills.

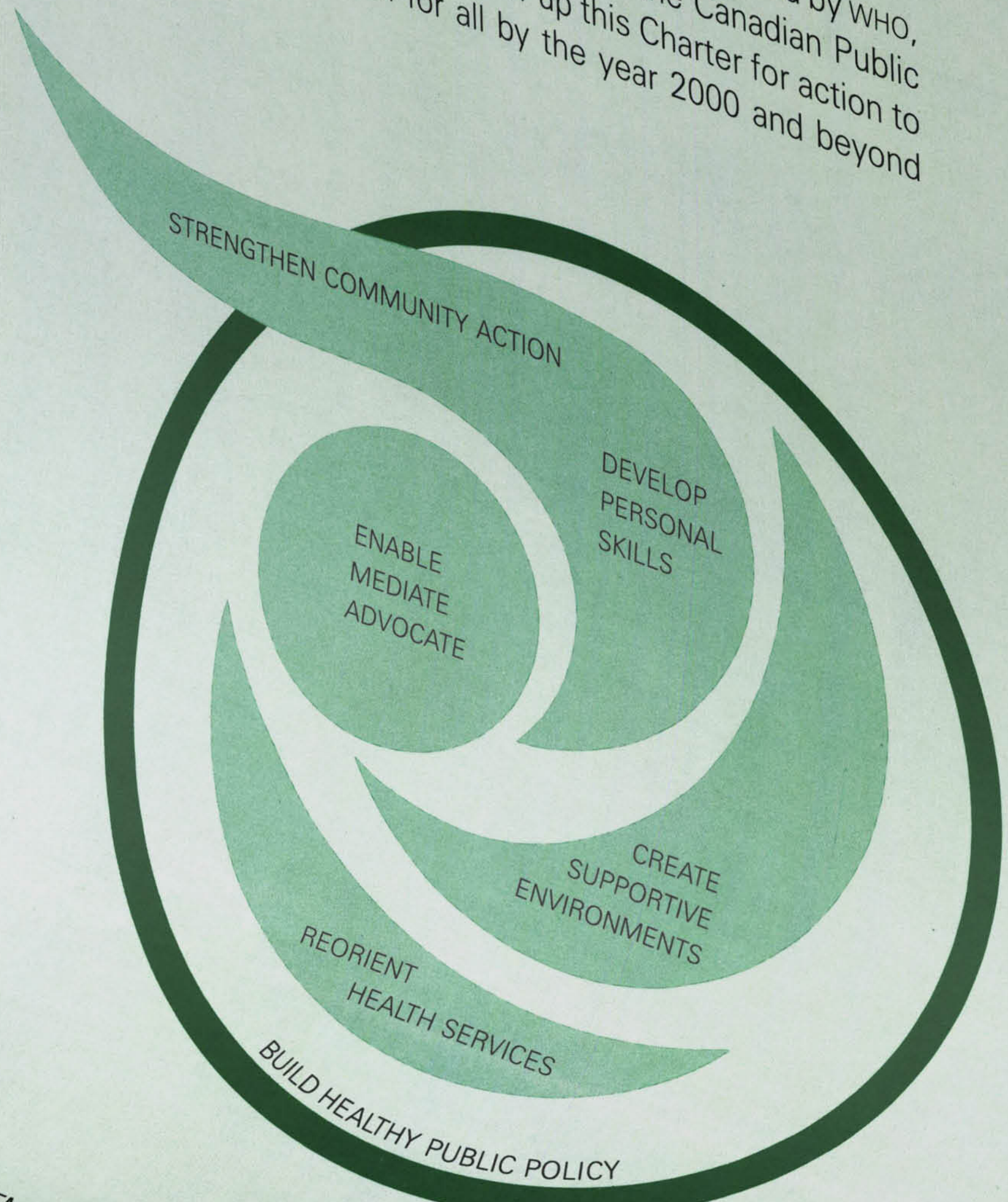
[Read more about this program](#)



We are a social change organization helping people...

OTTAWA CHARTER

An international conference, jointly organized by WHO, Health and Welfare Canada and the Canadian Public Health Association, drew up this Charter for action to achieve Health for all by the year 2000 and beyond



Future planning



Prevention
Community engagement
Advocacy
Capacity building
Integrated practice
Evidence

Thank you

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