

Building Resilience Against Outbreaks & Pandemics

Research to identify
sustainable solutions

The 3rd Global Research and Innovation
Forum



R&D Blueprint
Powering research
to prevent epidemics

Measuring the burden of infodemics

Key research achievements / Progress update



Key research achievements / Progress update

A research toolkit for connecting information exposure, trust, and health behaviours

- Critical gap in infodemiology is that we do not have the ability to measure the relationship between information/misinformation exposure and behaviour in the real world
 - Data-driven studies using social media data on individual platforms can't link to attitudes or behaviours (e.g. vaccination intention) at scale
 - Targeting health promotion and communications based on the incidence of keywords online could lead to a very poor allocation of resources
 - Research using 'stronger' designs that recruit participants must use artificial scenarios and then struggle to capture the context of trust and information environment in relevant populations
 - Need to find new ways to support more precise and less biased targeting and prioritisation of health promotion/communications to avoid waste, especially in low resource settings

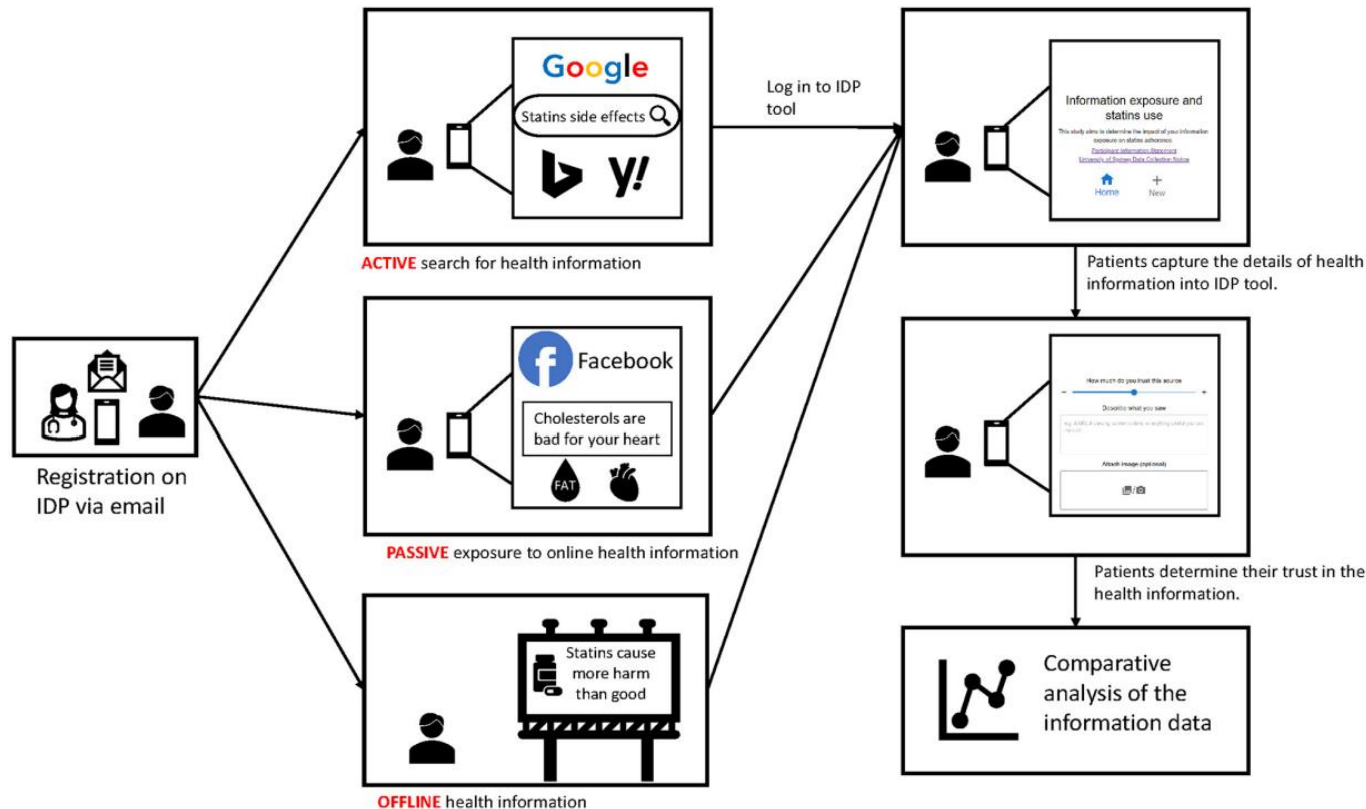
Key research achievements / Progress update

A research toolkit for connecting information exposure, trust, and health behaviours

- Around 30 previous articles on misinformation since 2015...
- AG Dunn, KD Mandl, E Coiera (2018) Social media interventions for precision public health: promises and risks, npj Digital Medicine, 1:47.
- AG Dunn, M Steffens, A Dyda, KD Mandl (2021) Knowing when to act: a call for an open misinformation library to guide actionable surveillance, Big Data & Society, January 2021.
- N Calleja and 70 authors (2021) A public health research agenda for managing infodemics: Methods and results of the first WHO infodemiology conference, JMIR Infodemiology, 1(1):e30979.
- E Wilhelm and 54 authors (2023) Towards measuring the burden of infodemics: Methods and results of the 5th WHO Infodemic Management Conference, JMIR Infodemiology, 3:e44207

Key research achievements / Progress update

A research toolkit for connecting information exposure, trust, and health behaviours



Our aim was to develop tools to identify combinations of demographics and exposures to sources and conduits of information are associated with potentially harmful behaviours (note – not measuring effects)

FIGURE 1
This storyboard illustrates the process of capturing health information using an information diary platform (IDP) from a user perspective.

Key research achievements / Progress update

A research toolkit for connecting information exposure, trust, and health behaviours

- Tool development and pilot study in Malaysia focused on statin adherence in a population of patients with high cardiovascular risk
 - H-M Lim, AG Dunn, J-R Lim, A Abdullah, CJ Ng (2022) Association between online health information-seeking and medication adherence: a systematic review and meta-analysis, Digital Health, January 2022.
 - H-M Lim, CJ Ng, A Abdullah, J Dalmazzo, W-X Lim, K-H Lee, AG Dunn (2023) Utility and usability evaluation of an information diary tool to measure health information access and exposure among patients with high cardiovascular risk, Frontiers in Public Health, 11:1132397.
 - AG Dunn*, T Purnat*, A Ishizumi, T Nguyen, S Brand (2023) Measuring the burden of infodemics with a research toolkit for connecting information exposure, trust, and health behaviours, Archives of Public Health, 81:102
 - H-M Lim, CJ Ng, AG Dunn, A Abdullah (2023) Experiences and influences of online health information-seeking about statin use in patients with high cardiovascular risk: a qualitative study, Family Practice, cmad034.
 - H-M Lim, CJ Ng, A Abdullah, AG Dunn (In Press) How do patients with high cardiovascular risk evaluate online health information? A qualitative study, BMC Primary Care, accepted 13 October 2023.
 - H-M Lim, CJ Ng, A Abdullah, M Danee, J Raubenheimer, AG Dunn (submitted) Online health information behaviour and its association with statin adherence in patients with high cardiovascular risk: a prospective cohort study

Future research priorities

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Future research priorities

Replicating studies across regional networks to build a cohesive picture

- The tool is part of a platform that should make it easier to run these kinds of studies in any language and at low cost, but there is work to do:
 - Key change was to understand the difference between actively searching for relevant information and exposure to relevant information (e.g. advertising, social media)
 - Participants liked to use the tool as a diary so they could remember the information sources and ask their doctor about the information they saw
 - Would be useful to include more 'passive' tools for monitoring information exposure that are less likely to influence the behaviour of participants and understand if these can be used as a proxy for information exposure broadly
 - Support for training, localisation, and maintenance rather than just making the tool available 'as is' for regional networks to run studies and then inform public health practice

Big research idea



Big Research Idea

Synthesis of studies to model information risk factors for harmful behaviours

- The platform has the infrastructure to store de-identified information for each participant recruited in any study, so could be used for meta-analysis across studies
- Need to agree on an attitude or behaviour of interest (e.g. influenza vaccination intention) and measure those in surveys conducted in consistent ways across languages
- Studies repeated globally and consistently could help identify the riskiest demographic-source-conduit combinations, to then show where health promotion/communications may be the most cost-effective