# A Guide to Reviewing (full PDF)

Pacific Health

**Guide overview**

**What is Pacific Health?** *Pacific Health* is a peer-reviewed and open-access journal, with an interdisciplinary focus on health, communities, and the environments of the Asia Pacific Rim. This includes Aotearoa (New Zealand), the Pacific Islands, East and Southeast Asia, and Australia.

**Guide overview:** This guide is designed to give you an understanding of why and how to review for the *Pacific Health* Journal. A detailed step-by-step guide to the reviewing process is below.

The guide will first start off with a background to peer reviewing and why it is *important*, what the *benefits* of open access reviewing are, and why you should review for *Pacific Health*. The guide will then take you through a series of steps relating to different aspects of reviewing.

**Why do we peer review?**

- Peer reviewing is designed to ensure research validity, quality, and integrity before being published in a journal.

- The academic and wider community gain much from this contribution. In this way research is shared for the benefit of improving people's lives.

- On an individual basis, it contributes to your knowledge and experience in your chosen field. It also helps you to see developments in the field and informs your own publishing.

## Why peer review for Pacific Health?

- *Pacific Health* is a journal that aims to promote interdisciplinary and critical contributions to health research. This can translate to health improvements in and for the Pacific Rim. *Pacific Health* is one of several peer-reviewed journals hosted on Auckland University of Technology's Tuwhera Open Access platform https://tuwhera.aut.ac.nz/.
- By reviewing for the journal, you are contributing to the field of Pacific health, and adding to the dissemination and translation of research.
- *Pacific Health* is a fully Open Access journal (see more below about Open Access publications).
- *Pacific Health* uses the Creative Commons (CC) license CC BY-NC 4.0. This license allows users to distribute, remix, adapt, and build upon the material in any medium or format for noncommercial purposes only, if credit and recognition are given to the creator. CC licenses give people and organisations a standardized way to allow copyright and sharing permissions for both creative and academic works. CC also ensures the correct distribution of works to ensure that they can be made use of in a proper way.
- *Pacific Health* also welcomes publications from arts-based Pacific Health-related studies (examples are included further in the guide).

## What is meant by Open Access?

- Open Access, in the sense used by *Pacific Health* and other fully Open Access journals, means that there is no charge for publishing. The journal and its contents are freely available to any individual that can access them via the internet.

- Thus, *Pacific Health* journal publications are fully available to all members of society. In other words, there is no author processing cost or APC - communities, academics, policymakers, and practitioners.
- Open Access is an important equity issue as many communities, including those in the Pacific, are not able to access academic sources because of the barrier of cost.

**<u>Graduate and emerging Researchers and Pacific Health</u>**

- We particularly welcome submissions from graduates and emerging researchers.
- *Pacific Health* is a fully open-access journal that uses the CC License CC-BY-NC 4.0. This allows users to build upon the material in any medium for non-commercial use.
- We encourage emerging researchers and graduates to become involved in the reviewing process for the *Pacific Health* journal.
- *Pacific Health* hold author and reviewer workshops to assist emerging researchers on their publishing journey.

## <u>A Step-by-Step Guide to reviewing</u>

### Step 1 – Deciding to Review for Pacific Health

We appreciate that your time is valuable. Therefore, the journal provides you with a reviewing template that guides your decision.

- Check that the article and journal are relevant to your field and that you have contributions to make to the authors and the journal. <u>Will I contribute to the academic community by doing so and gain new skills myself?</u>

### <u>Step 2 – Reading the Abstract</u>

Read through the abstract as this is the most-read section, and consider the following:

- What is the aim of the study?
- What are the methods?
- What are the key results or takeaways?

**Step 3 – Reviewing the Article**

You might find it useful to utilize the IMRAD structure (see below). IMRAD is a common organisational structure in health sciences and is so popular because of its ability to provide a clear presentation of research for the journal audience.

- Introduction – explains why this research is important or necessary. Discusses the current state of research in the field and a 'gap' or problem in the field that requires further investigation.

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**1 Introduction**

It is well-known that highly communicable diseases such as measles can only be thwarted when a very large proportion of the population is immune, and vaccination is an effective way to artificially boost public immunity. In this paper, we seek to compute the *herd immunity threshold* (HIT), that is, the proportion of individuals who must be immune to ensure that reintroducing the disease in an otherwise healthy population only leads to contained, non-exponential spread.

This threshold is often confused with the *final cumulative incidence rate* (FCIR) which is the eventual proportion of recovered individuals in a naturally spreading pandemic. For simple compartmental models such as SIR, those values are in fact equal, and we have

$$\text{HIT} = \text{FCIR} = 1 - 1/R_0$$

where $R_0$ denotes the basic reproductive number of the disease. For Covid-19, current estimates (Kucharski et al., 2020; Billah & Nuruzzaman, 2020) give $R_0 \in [2.4, 3.4]$. Considering a worst-case scenario of $R_0 \approx 3.4$, government officials thus seek an immunization rate of $1 - 1/3.4 \approx 70\%$ to contain further epidemics.

Over the past year it has been widely argued that the herd immunity threshold for Covid-19 ought in fact to be significantly smaller (Gomes et al., 2021; Britton et al., 2020). We investigate this claim by developing a graph-based epidemic model. Such models provide finer-grained methods for simulating the spread of a communicable disease through a population with a heterogeneous social graph. We calibrate our model on public data specific to the 2020 Covid-19 pandemic in French Polynesia.

We then use this model to compute the effectiveness of vaccination as measured by the resulting FCIR when reintroducing the disease in a partly immune population. Our computations show that vaccination sharply increases in effectiveness when a threshold proportion of about 45% immune individuals is reached. While considerations not taken into account by our idealized model (such as variants or antibody decay) surely affect this threshold value, we argue that the overall effect stands.

- Methods – This section tells readers how the study was conducted and includes good information about population, sample, methods and equipment. This section should be so clear that the study can easily be duplicated.

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**2 Methodology**

**2.1 The SIR model**

The SIR model (Kermack & McKendrick, 1927) aims to predict the spread of an infectious disease; to this extent, it partitions the population in compartments: *susceptible individuals* (S), *infectious individuals* (I), *recovered individuals* (R). Flow patterns between compartments are generally described by ordinary differential equations such as:

$$\partial S/\partial t = \beta IS/N, \qquad \partial I/\partial t = \beta IS/N - \gamma I, \qquad \partial R/\partial t = \gamma I,$$

where N is the total population, $\beta$ is the probability of contagion per individual per unit of time, and $\gamma$ is the inverse of the duration of contagion.

This model and its many variants implicitly assume perfect and uniform interaction between the populations of each compartment, as if each individual was in contact with every other in a homogeneous way. This is equivalent to assuming the social graph to be complete. This profound assumption on spreading patterns makes such models very simple and thus easy to work with but exhibits suboptimal correlation with observed data.

**2.2 Graph-based models**

To simulate the spread of an epidemic while taking into account the complexity of social interactions, we rely on graph-based models, also known as network-based models.

A graph consists of a set of vertices V and a set of edges $E \subset V^2$. In the social graph, vertices represent individuals and edges correspond to significant social interactions. In this context we restrict the study to graphs which are non-directed, simple, and connected. Since the social graph cannot be rigorously defined or even computed, we use randomly generated graphs with specific properties: vertices are laid out on a two-dimensional lattice; for each vertex, a degree is chosen randomly according to a Poisson distribution as many vertices are then randomly chosen from neighboring lattice points and connected to it.

Figure 1 shows the first four steps of a simulation of an epidemic along the edges of a social graph. Our model computes such simulations by tracking the state of each vertex: susceptible, incubating, contagious or recovered. Initially, the entire population is assumed susceptible, and we randomly select a given number to be incubating. After a period of incubation, they become contagious and are then able to pass on the disease to their neighbors in the social graph. Those vertices eventually become recovered and thus immune.

- Results/Analysis - This section presents the findings with minimal or no explanation of the findings. Tables and figures are to be numbered and labeled correctly.

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**3 Results**

**3.1 Sample runs**

The procedures described above have been implemented in Python; the code is freely available online at:https://gaati.org/oyono/pandemic-code/

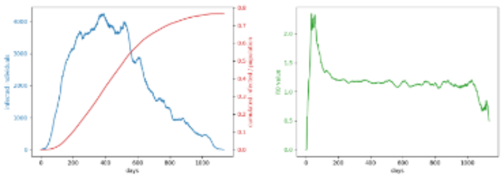

**Figure 2**: Sample run of our graph-based model.

Using that code, we compute ten thousand sample runs of our model on a healthy population and verify that the output matches the expected values. See Figure 2 for one such run which is typical of what would be expected of a naturally evolving pandemic without any protective measures such as lockdowns or vaccination.

**3.2 Simulating the impact of vaccination on FCIR**

We now consider a healthy population of which a given percentage has been vaccinated and thus considered immune. The disease is then introduced, and we compute the final cumulative incidence rate (FCIR) of the epidemic. To determine the herd immunity threshold (HIT), that is, the threshold vaccination rate which prevents the reintroduced disease from spreading exponentially, we compute, for each percentage of vaccinated individuals in 0.1% increments, a thousand sample runs of our model over randomly chosen graphs. Figure 3 shows our results.

- Discussion – Main findings are summarised and are connected to other research. Limitations are mentioned and suggestions for future research are noted.

**3.3 Discussion**

For sample runs of our model simulating a naturally evolving pandemic on a healthy population, the resulting FCIR lies in the range [75%; 85%] which is widely accepted for Covid-19 (Wangping et al., 2020; He et al., 2020). This confirms the relevance of our model.

We now turn to the simulation of an epidemic in a population of which a given percentage has been vaccinated and thus considered immune. Our computation of FCIR as a function of the vaccination rate is displayed in Figure 3. It reveals a sharp increase in vaccination effectiveness around a threshold rate of about 40%. For vaccination rates below this threshold, the level of protection as measured by FCIR varies roughly linearly with the vaccination rate, as predicted by homogeneous models such as SIR. For vaccination rates above this threshold, the level of protection quickly reaches its maximum: exponential spread of the disease is not observed at vaccination rates of 45% and above.

We stress actual threshold values may differ since our model reflects an idealized version of the 2020 Covid-19 pandemic and, as such, does not account for several factors including multiple circulating variants of the virus (Fowlkes et al., 2021) and vaccine effectiveness (Rosenberg et al., 2021).

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Nevertheless, we argue that the general behavior stands, namely that vaccination sharply increases in effectiveness around a threshold value. Said HIT value is necessarily smaller than the FCIR for a naturally evolving pandemic. Further research remains necessary to confidently assess the HIT value.

*Pacific Health* also encourages submissions using a range of other organisational structures. These might include stories, poems, photovoice and, other visual media, and styles of arts presentation. We welcome such a variety of research. It is still important that such submissions provide an introduction, explanation of methods, results, analysis, and discussion within the chosen framework.

Some examples of arts-based research are below:

ASINATE'S STORY

*"I want to have my own stall at the Suva market, so I can sell my own produce."*

Born and raised in Fiji, Asinate Lawenicagi was surrounded by land. Her family grew produce such as taro, pineapple, and green bananas. Her family farm was owned by her grandfather who maintained the farm. Now as a young adult she has continued her grandparent's legacy and is currently working at the Suva market selling fresh produce, such as pawpaw, apples and oranges.

**Asinate Lewenicagi Toosaqa**
**Suva Fiji**

As a hardworking, independent woman, Asinate's inspiration comes from her family. She is the oldest of 8 siblings and is determined to help out with family obligations as much as she can, given her circumstances, *"I'm the eldest that's why…. I'm struggling with this because they're still coming out…. I just want to help my family"*, she said. Aside from working hard at the Suva Market, she independently makes 'Vakalolo'. Vakalolo is a traditional Fijian dessert that is made with rourou (taro leaves), cassava, brown sugar, and flour. This is an innovative recipe as traditionally vakalolo does not include rourou leaves. Also, the dessert is traditionally made by men. The addition of rourou is beneficial as it brings nutritional value to the dessert.

> *I pick the ingredients myself and I hand make the vakalolo myself from 5am in the morning. It takes me about 6 hours to make and I make it here at home.*

Being part of the Bele Project has opened many doors for her. She has enjoyed the opportunity to participate in the social media workshop which developed her understanding of promoting a business through social media and how to establish networks. This led to an offer to join a shared space at the market with other young entrepreneurs to sell her products. She is also contributing to helping provide solutions to the NCD problem. She found that while this was an opportunity for her



Examples of potential major flaws include:

- Unclear or inappropriate methods used in the research.
- Lack of context for the study.
- Unclear or weak presentation of findings and implications of study.
- Data being insufficient.
- Data tables being unclear.
- Data that is contradictory to the conclusions or are not consistent.
- Data that is repetitive or confirmatory and does not build on current understanding.

If you find major flaws, it is important to note your reasoning and have clear supporting evidence in your feedback to the Editor.

Finally, ask yourself:

- Is the study relevant and does it add to the subject area compared to other published material?
- What are the gaps?
- Does it read well, and provide an interesting or novel perspective?
- Does it bring out the key points?
- If there are figures and graphs, do they add value to the submission?
- Have ethical approvals been considered?

**Step 4 – Writing your report**

Depending on the template provided, aim for a couple of paragraphs at least. Or structure your report using IMRAD.

- Comment on the overall appropriateness of the study research questions methods, results, and discussion.
- Help the editors understand the context of the research including key messages.
- Point out successful aspects of the paper in the feedback to the author.
- Comment on the contribution of the work.
- Does the data included in the research support the conclusions?
- Indicate whether the article is well written or requires further editing and proofreading. You are not required to do those tasks, but it is important to indicate whether this needs to be done.
- It is important to read the whole submission even if you feel the article needs to be rejected. This is because there might be some positive aspects of the submission that can be relayed back to the author for future submissions.

As a reviewer, it is important to give detailed comments about why a submission must be rejected. Such recommendations for the author can include:

- Giving valuable feedback to describe ways that the study or research could be improved.
- Ensure that the feedback is focused on the submission and research itself rather than on the author.

## Summary and further information

Thank you - Your contribution as a peer reviewer is very much appreciated by Pacific Health as well as offering benefits to academia and society.

For further details on how to review for *Pacific Health*, click here to access the online guide.