# A Really Awesome MLHC Article

#### Firstname Lastname

NAME@EMAIL.EDU

Department of ML and Health Research University City, State, Country

#### Firstname Lastname

NAME@EMAIL.EDU

Department of ML and Health Research University City, State, Country

Editor: Editor's name

#### Abstract

Summary of the article. Be sure to highlight how the work contributes to our understanding of machine learning and healthcare.

### 1. Introduction

XX is an important problem in machine learning and healthcare. (Make sure that the clinicians can see the relevance! *Unclear clinical relevance is a major reason that otherwise strong-looking papers are scored low/rejected.*)

Addressing this problem is challenging because XX. (Make sure that you connect to the machine learning here.)

Others have tried, but XX remains tough. (Acknowledge related work.)

In this work, we...

As you write, keep in mind that MLHC papers are meant to be read by computer scientists and clinicians. In the later sections, you might have to use some medical terminology that a computer scientist may not be familiar with, and you might have to use some math that a clinician might not be familiar with. That's okay, as long as you've done your best to make sure that the core ideas can be understood by an informed reader in either community.

#### Generalizable Insights about Machine Learning in the Context of Healthcare

This section is *required*, must keep the above title, and should be the final part of your introduction. In about one paragraph, or 2-4 bullet points, explain what we should *learn* from reading this paper that might be relevant to other machine learning in health endeavors.

For example, a work that simply applies a bunch of existing algorithms to a new domain may be useful clinically but doesn't increase our understanding of the machine learning and healthcare; if that study also investigates why different approaches have different performance, that might get us excited! A more theoretical machine learning work may be in how it enables a new kind of clinical study. Reviewers and readers will look to evaluate (a) the

significance of your claimed insights and (b) evidence you provide later in the work of you achieving that contribution

## 2. Related Work

Make sure you also put your awesomeness in the context of related work. Who else has worked on this problem, and how did they approach it? What makes your direction interesting or distinct?

#### 3. Methods

Tell us your techniques! If your paper is develops a novel machine learning method or extension, then be sure to give the technical details—as you would for a machine learning publication—here and, as needed, in appendices. If your paper is developing new methods and/or theory, this section might be several pages.

If you are combining existing methods, feel free to cite other packages and papers and tell us how you put them together; that said, the work should stand alone for someone in that general machine learning area.

Lack of technical details, such that the soundness of the methods can be verified, is a major reason that otherwise strong-looking papers are scored low/rejected.

### 4. Cohort

This section is optional, more theoretical work may not need this section. However, if you are using health data, then you need to describe it carefully so that the clinicians can validate the soundness of your choices.

Describe the cohort. Give us the details of any inclusion/exclusion criteria, what data were extracted, how features were processed, etc. Recommended headings include:

#### 4.1. Cohort Selection

with choice of criteria and basic numbers, as well as any relevant information about the study design (such how cases and controls were identified, if appropriate),

#### 4.2. Data Extraction

with what raw information you extracted or collected, including any assumptions and imputation that may have been used, and

#### 4.3. Feature Choices

with how you might have converted the raw data into features that were used in your algorithm.

Cohort descriptions are just as important as methods details and code to replicate a study. For more clinical application papers, each of the sections above might be several paragraphs because we really want to understand the setting.

For the submission, please do *not* include the name of the institutions for any private data sources. However, in the camera-ready, you may include identifying information about the institution as well as should include any relevant IRB approval statements.

## 4.4. Results on Synthetic Experiments

Depending on the claim you make in the paper, this section may not be relevant.

Especially if you are developing a new method, you will want to demonstrate its properties on synthetic or semi-synthetic experiments. Include experiments that will help us understand the contribution of the work to machine learning and healthcare.

## 5. Results on Real Data

Depending on the claim you make in the paper, different components may be important for this section.

## 5.1. Evaluation Approach/Study Design

Before jumping into the results: what exactly are you evaluating? Tell us (or remind us) about your study design and evaluation criteria.

## 5.2. Results on Application A

Present your numbers and baselines. You should provide a summary of the results in the text, as well as in tables (such as table 1) and figures (such as figure 1). You may use subfigures/wrapfigures so that figures don't have to span the whole page or multiple figures are side by side.

Table 1: Description with the main take-away point.

Us	Score
Baseline	Score



Figure 1: Description with the main take-away point.

## 5.3. Results on Application/Follow-up Study B

## 6. Required: Discussion

This is probably the most important section of your paper! This is where you tell us how your work advances our understanding of machine learning and healthcare. Discuss both technical and clinical implications, as appropriate.

**Limitations** Explain when your approach may not apply, or things you could not check. Discussing limitations is essential. Both ACs and reviewers have been coached to be skeptical of any work that does not consider limitations.

# References Appendix A.

Some more details about those methods, so we can actually reproduce them. After the blind review period, you could link to a repository for the code also. *MLHC values both rigorous evaluation as well as reproducibity*.