August 8, 2018

Dear Mr Aldcroft,

I am pleased to submit our manuscript entitled, “*A machine learning approach to intensive care discharge*” for consideration as a BMJ Open research article. In this manuscript, we show that machine learning techniques can be applied to routinely collected patient data in order to classify patients that are ready to be discharged from intensive care. We evaluate the performance of a previously published set of discharge criteria on two different cohorts of patients, using this performance as a baseline to demonstrate the improvement gained by the machine learning approach.

We believe that this manuscript is appropriate for publication by BMJ Open because it uses state of the art techniques to address a significant operational challenge in clinical practice. Our study demonstrates the feasibility of using data-driven techniques in this context, and opens up several avenues for further work in the development of a clinical decision support tool. Similar techniques will have the potential to impact patient flow through the wider hospital as more data become available. We are keen to contribute to the development of these techniques in the spirit of open access and transparency, and therefore feel that BMJ Open is the right venue for publications of this work.

This manuscript has not been published and is not under consideration for publication elsewhere. We have no conflicts of interest to disclose. Thank you for taking the time to read and consider our manuscript for your journal.

Sincerely,

Christopher McWilliams, PhD

Dept. Engineering Mathematics

University of Bristol

Merchant Venturers Building

Woodland Road

Bristol

chris.mcwilliams@bristol.ac.uk