Dr Arran Hamlet

Senior Service Fellow

Centers for Disease Control and Prevention

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Epidemiologist and mathematical modeler skilled at understanding complex real world problems and delivering effective solutions. Highly experienced in statistical modeling, data analytics, and applying problem solving to a wide array of topics. Accomplished in working with and leading diverse teams to successful solutions in outbreak response and public health policy.

Summary

- 9 years of experience in epidemiology and data analytics, applying mathematical and statistical methods to derive real world solutions in complex situations.
- 9 years of software development and coding, with numerous packages and approaches designed and implemented for use in Academia and Government.
- Highly adept at translating advanced data analytics for non-technical audiences, and applying robust methodological approaches to atypical settings.
- Knowledgeable in advanced statistical and mathematical modeling (mechanistic compartmental modeling, time series forecasting, hierarchical models, etc) and programming (R, shiny).

Employment

Senior Service Fellow and Epidemic Intelligence Service Officer

Jul 2024-Present and Jul 2022-Jun 2024

Centers for Disease Control and Prevention — *Seattle, WA*

- Lead investigator for multiple public health initiatives, heading a multidisciplinary team from local, state and federal agencies to respond to public health threats in Washington state (WA), and abroad, across numerous subject areas. Partnered with CDC subject matter experts and local investigators to estimate and forecast burdens of disease, respond to outbreaks of public health significance, and assess surveillance strategies.
- Principle on providing technical assistance to US States and Territories with CDC forecasting and data analytical tools, as well as international engagement with public health agencies in Canada and the European Union.
- Produced case burden estimates and the potential financial impact of long COVID in WA. Results used by WA lawmakers for advocacy, and findings published in a peer reviewed journal, Preventing Chronic Diseases, where they won their "Paper of the Year" award.
- Led a multidisciplinary team of 10+ experts from Local, State, Federal settings, to investigate the rise in the detection of a rare bacterium in WA. Findings resulted in policy changes to surveillance practices.
- Investigated an outbreak of gastrointestinal illness on the Pacific Crest Trail. Successful description and response to the outbreak led to an outbreak resolution, and a change in WA policy on the use of social media in outbreak investigation. The findings were also published in a peer reviewed journal.
- Assessed the impact of enhanced service delivery and funding, on malaria control and treatment in Uganda during the COVID-19 pandemic. Results indicated that the intervention resulted in maintained, or improved, malaria control despite behavioural changes and logistical issues.

Lecturer, technical editor and course designer

Jan 2022-Present

AppliedEpi — *Virtual*

- Leading several streams of work for AppliedEpi, the non-profit behind one of the world's most utilized online free resources for R coding for epidemiologists, The Epidemiologist R Handbook
- Taught over a dozen public health agencies globally, including the US CDC, World Health Organization, Canadian Public Health Agency.
- Created the Advanced Statistics in R course, which has been attended by several hundred epidemiologists across the world.
- Lead author and editor, leading a team of epidemiologists to write chapters on data analysis, regression and outbreak investigation on a field epidemiology manual.
- Lead editor on revising the latest version of The Epidemiologist R Handbook, including the updating of text, packages and approaches to ensure the material is state of the art for best practices.

Visiting Researcher

Jul 2022

Imperial College London — *London, United Kingdom*

- Provide direction and feedback for projects involving the mathematical and statistical modeling of malaria and yellow fever. Continued engagement has resulted in numerous peer reviewed manuscripts.

Postdoctoral Research Associate

Jan 2020-Jun 2022

Imperial College London

London, United Kingdom

- Led and participated in numerous applications of statistical and mathematical models to characterize and respond to COVID-19 and malaria transmission. Utilized and designed software packages and approaches to respond to real world situations in ways that were feasible and offered realistic solutions for partners.
- Led work assessing the potential economic and disease burden impact of an invasive mosquito species in Ethiopia, coordinated with several international partners. Estimations of an increase in cases, and the millions of USD required to avert them were delivered a report and peer-reviewed publication that have been highly cited in both policy and academic contexts.
- Worked with numerous commercial partners and non-profit agencies to forecast the future burden and economic cost of malaria control across Sub-Saharan Africa. These forecasts were used to guide multi-year investment of tens of millions of USD for malaria vector-control programmes.
- Lead researcher for Imperial College in a consortium of mathematical modelers providing analytical support and technical assistance to inform the Nigerian Government's COVID-19 containment policies. Technical reports and analysis formed part of the basis for policy decisions enacted during 2020.
- Taught and organized several short courses on the use of mathematical and statistical modeling for infectious disease epidemiology, in the United Kingdom, Brazil and Colombia.

Epidemiologist

Jan 2020-Apr 2020

World Health Organization

London, United Kingdom/Geneva, Switzerland

- Seconded to the World Health Organization to provide technical assistance during the early stages of the COVID-19 pandemic. Work provided support to characterise transmission and mortality in real time to better understand the potential global impact of COVID-19 from January 2020.

PhD Candidate

Jan 2017-Jan 2020

Imperial College London

London, United Kingdom

- Fully funded, during which I was awarded several research grants, collectively worth £28,000, to organize meetings and shortcourses in Brazil and Colombia, and conduct site visits. Results informed Brazilian Ministry of Health policy, and contributed to several peer-reviewed publications and technical reports with the World Health Organization and Centers for Disease Control and Prevention.

Epidemiologist

Jan 2015-Sep 2015

World Health Organization

London, United Kingdom/Geneva, Switzerland

- Supported the response to the 2014-2015 outbreak of Yellow Fever in Angola and the Democratic Republic of the Congo in order to rapidly provide modeling and analytical insight to characterise transmission, and to optimise of the geographic placement of vaccination campaigns to stop spread.

Education

PhD in Mathematical and Statistical Epidemiology

Jan 2017-Jan 2020

Imperial College London

London, United Kingdom

MSc in Epidemiology

Oct 2014-Oct 2015

Imperial College London

London, United Kingdom

BSc in Biology with Psychology

Sep 2011-May 2014

Queen Mary University of London

London, United Kingdom

Presentations and publications

Presented results of outbreak investigations, scientific analysis and data analytical approaches at over a dozen international conferences, meetings and workshops.

Author of **8** first author peer reviewed publications, and co-author on additional **34**. Cited **19,443** times, with a h-index of **31**.