

**BIOGRAPHICAL SKETCH**

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NAME: HAMBLETON, Ian Richard

eRA COMMONS USER NAME (credential, e.g., agency login): ihambleton

POSITION TITLE: PROFESSOR of Biostatistics and Informatics

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Brunel University, Uxbridge, England (UK)	BA (1 <sup>st</sup> class Hons)	1992	Mathematics
Reading University, Reading, England (UK)	MSc (Distinction)	1995	Biostatistics
Southampton University, Southampton, England (UK)	PhD	2003	Biostatistics

**A. Personal Statement**

I am a biostatistician with a first degree in Mathematics, a Masters in Medical Statistics and a Doctorate in Statistical Epidemiology. I have worked as a statistician for 25 years in Europe, Africa, and the Caribbean, variously for the UK Medical Research Council, The London School of Hygiene and Tropical Medicine, and The University of the West Indies (UWI). I have expertise in a range of research study designs, and have a long history of leading project data handling and analytics, including the management of solutions for robust and secure online data collection. I have published over 160 peer-reviewed articles on a broad range of chronic and infectious diseases. Working with academia, I have secured over 14 million US dollars of funding for health-related research. With colleagues at the University of the West Indies and elsewhere, I am currently organizing analyses for the Barbados National Registry for chronic non-communicable diseases, for 'The Health of the Nation' - a national survey to assess Barbadian health, and for ECHORN – the Eastern Caribbean Health Outcomes Research Network. I have been a principal investigator on a recently completed NIH award to better understand health inequalities in the Caribbean, and have continued to investigate Caribbean health inequalities using a wide range of publically available datasets. Recently completed projects include an evaluation of the Barbados tax on sugar-sweetened beverages, the use of virtual environments for testing the utility of different policies for reducing the regional diabetes burden, and the development of methods for assessing the health impacts of community food production initiatives – a response to the problem of food security in small island developing nations. I have a commitment to open-access data, and am developing an infrastructure for collecting and sharing Caribbean research data. I continue my long-standing involvement with haemoglobinopathy research, working with groups around the world on sickle cell disease severity. I am a statistical editor for the Cystic Fibrosis and Genetic Disorders group of the Cochrane Collaboration - an international not-for-profit organization dedicated to improving healthcare decision-making globally. I work with the Pan-American Health Organization on various projects, including analyses using the Global Health Estimates ([who.int/data/global-health-estimates](http://who.int/data/global-health-estimates)), advising on digital transformation for health in the Americas, and developing guidelines for analysing mortality in the presence of small numbers. I am a statistical consultant for UNICEF – the United National Children's Fund, and a statistical reviewer for The National Institutes of Health in the US, and the Medical Research Council and the National Institute for Health Research in the UK.

**B. Positions, Scientific Appointments, and Honors****Positions and Employment**

1995-1996	Lecturer, Charing Cross Medical School, Department of Public Health, London (UK)
1996-1998	Senior Statistician, Sickle Cell Unit, University of the West Indies (Jamaica)
1998-2002	MRC (UK) Research fellow, Southampton University - UK and Jamaica
2003-2005	Senior Lecturer in Medical Statistics, Tropical Medicine Research Institute, University of the West Indies, Jamaica
2003-2005	Head of Statistics Group, Tropical Medicine Research Institute, University of the West Indies
2005-2006	Clinical Trial Statistician, London School of Hygiene and Tropical Medicine, Tanzania
2006-2010	Senior Lecturer in Biostatistics, Chronic Disease Research Centre, UWI, Bridgetown, Barbados

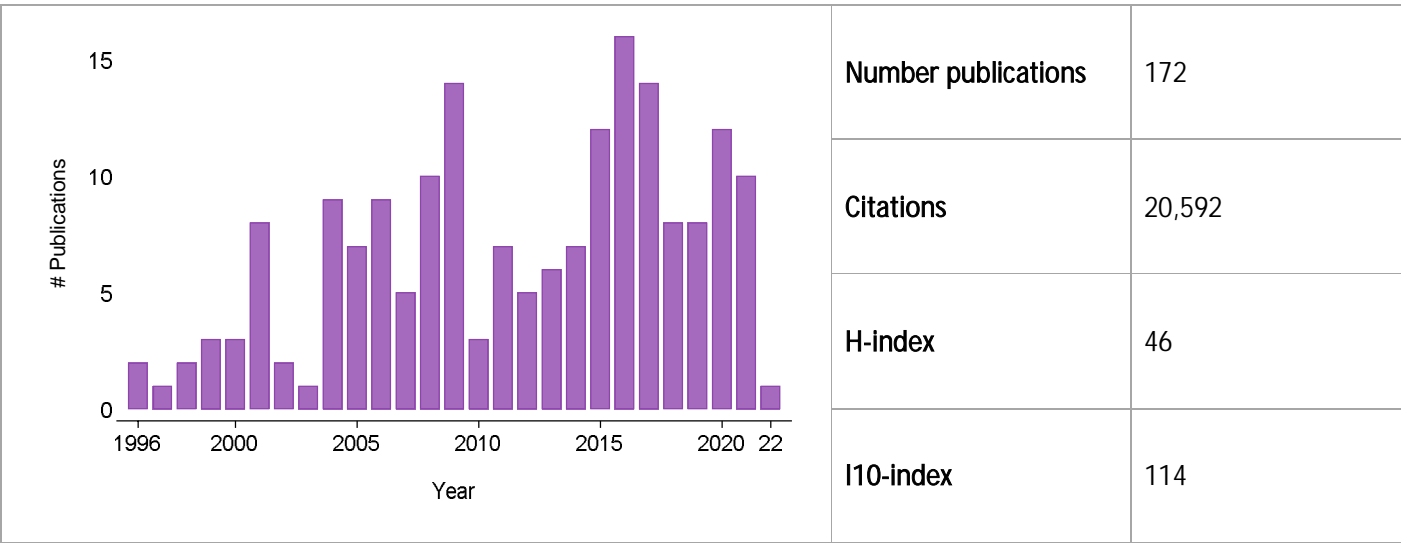
2010 - Professor of Biostatistics and Informatics, GA-CDRC, UWI, Bridgetown, Barbados

Other Experience and Professional Memberships

1998 – 2001	London School of Hygiene and Tropical Medicine. Honorary Lecturer
2003	Royal Statistical Society. Chartered statistician status (Cstat)
2005-2006	Tropical Medicine Research Institute. Honorary Senior Lecturer
2008 – present	Caribbean representative. Data management and statistical advisor. PAHO / WHO committee on development of Human Resources for Health (HRH) resources in the Caribbean.
2008 – present	Member and statistical expert. The joint ethics committee (Institutional Review Board) of the University of the West Indies and the Barbados Ministry of Health.
2008 – present	Editor, Cochrane Collaboration. Haemoglobinopathies editor and Statistical editor with the Cochrane Collaboration (Cystic Fibrosis and Genetic Disorders Group). Full editorial duties for this global network for systematic reviews of randomised clinical trials. The Cochrane Library has an impact factor of 4.65 – 14 <sup>th</sup> out of 100 “General Medicine” journals.
2009 – 2015	World Health Organization (joint IARC/PAHO) taskforce on developing sustainable cancer registration in Latin America and the Caribbean.
2011 – present	Member of Committee for the analysis & production of the annual Barbados HIV/AIDS Surveillance Report. (HIV/AIDS Programme, Ministry of Health, Government of Barbados).
2012 – 2018	International Diabetes Federation (IDF). Member of Diabetes Atlas sixth/seventh edition committee and the “Prevalence Working Group” with a remit of developing statistical methodology for the estimation of diabetes prevalence for the IDF Diabetes Atlas.
2015 – present	United Nations Children’s Fund (UNICEF). Statistical Advisor.
2016 – present	Chair, Data Sharing Working Group for Eastern Caribbean Health Outcomes Research Network (ECHORN)
2017 – present	UK Medical Research Council. Programme Grant application reviewer.
2018 – present	National Institute for Health Research (NIHR). NIHR Fellowship Programme assessor.
2020 – present	CARICOM, Council for Human and Social Development (COHSOD). Member of Technical Advisory group for COVID-19 outbreak surveillance and modelling.
2020 – present	Pan American Health Organization, PAHO. Member of Expert Committee. Digital Transformation and Data Science in the Americas
2021 – present	National Institutes for Health, National Heart Lung, and Blood Institute (NHLBI). Statistician on Data Safety Monitoring Board (DSMB) for HLB SIMPLEx. Review of late-stage implementation research strategies for proven-effective prevention and treatment interventions in people living with HIV in low- and middle-income countries (LMICs) and Small Island Developing States (SIDS).

C. Contributions to Science

A summary of peer-reviewed publications (Jan 2022)



## Key Project Contributions to science

- (1) **NCD-RisC and CC-LAC data pooling initiatives.** I have contributed to the global NCD-RisC initiative as a data provider and writing committee member. The NCD Risk Factor Collaboration (NCD-RisC) is a network of health scientists around the world that provides rigorous and timely data on major risk factors for non-communicable diseases for all of the world's countries. CC-LAC (Cohorts Consortium of Latin America and the Caribbean) is a regional data pooling initiative to examine the association between cardio-metabolic risk factors (e.g. blood pressure, glucose and lipids) and non-fatal and fatal cardiovascular outcomes. I have contributed to the following published articles:
- a. Rodrigo Martin Carrillo-Larco, Dalia Stern, Ian R Hambleton, Anselm Hennis, Mariachiara Di Cesare, Paulo Lotufo, et al Impact of common cardio-metabolic risk factors on fatal and non-fatal cardiovascular disease in Latin America and the Caribbean: an individual-level pooled analysis of 31 cohort studies, *The Lancet Regional Health - Americas*, Volume 4, 2021, 100068, ISSN 2667-193X, <https://doi.org/10.1016/j.lana.2021.100068>.
  - b. NCD Risk Factor Collaboration (NCD-RisC). Height and body-mass index trajectories of school-aged children and adolescents from 1985 to 2019 in 200 countries and territories: a pooled analysis of 2181 population-based studies with 65 million participants. *Lancet*. 2020 Nov 7;396(10261):1511-1524. doi: 10.1016/S0140-6736(20)31859-6. PMID: 33160572; PMCID: PMC7658740.
  - c. NCD Risk Factor Collaboration (NCD-RisC). Heterogeneous contributions of change in population distribution of body mass index to change in obesity and underweight. *Elife*. 2021 Mar 9;10:e60060. doi: 10.7554/eLife.60060. PMID: 33685583; PMCID: PMC7943191.
  - d. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants. *Lancet*. 2021 Sep 11;398(10304):957-980. doi: 10.1016/S0140-6736(21)01330-1. Epub 2021 Aug 24. PMID: 34450083.
  - e. NCD Risk Factor Collaboration (NCD-RisC). Repositioning of the global epicentre of non-optimal cholesterol. *Nature*. 2020 Jun;582(7810):73-77. doi: 10.1038/s41586-020-2338-1. Epub 2020 Jun 3. PMID: 32494083; PMCID: PMC7332422.
  - f. NCD Risk Factor Collaboration (NCD-RisC)—Americas Working Group. Trends in cardiometabolic risk factors in the Americas between 1980 and 2014: a pooled analysis of population-based surveys. *Lancet Glob Health*. 2020 Jan;8(1):e123-e133. doi: 10.1016/S2214-109X(19)30484-X. Erratum in: *Lancet Glob Health*. 2020 May;8(5):e648
  - g. NCD Risk Factor Collaboration (NCD-RisC). Rising rural body-mass index is the main driver of the global obesity epidemic in adults. *Nature*. 2019 May;569(7755):260-264. doi: 10.1038/s41586-019-1171-x.
  - h. NCD Risk Factor Collaboration (NCD-RisC) . Contributions of mean and shape of blood pressure distribution to worldwide trends and variations in raised blood pressure: a pooled analysis of 1018 population-based measurement studies with 88.6 million participants. *Int J Epidemiol*. 2018 Mar 19. doi: 10.1093/ije/dyy016.
  - i. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in body-mass index, underweight, overweight, and obesity from 1975 to 2016: a pooled analysis of 2416 population-based measurement studies in 128.9 million children, adolescents, and adults. *Lancet*. 2017 Dec 16;390(10113):2627-2642. doi: 10.1016/S0140-6736(17)32129-3.
  - j. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in blood pressure from 1975 to 2015: a pooled analysis of 1479 population-based measurement studies with 19.1 million participants. *Lancet*. 2017 Jan 7;389(10064):37-55. doi: 10.1016/S0140-6736(16)31919-5.
  - k. NCD Risk Factor Collaboration (NCD-RisC). A century of trends in adult human height. *Elife*. 2016 Jul 26;5. pii: e13410. doi: 10.7554/eLife.13410.
  - l. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in diabetes since 1980: a pooled analysis of 751 population-based studies with 4.4 million participants. *Lancet*. 2016 Apr 9;387(10027):1513-30. doi: 10.1016/S0140-6736(16)00618-8.
- (2) **COVID-19 regional surveillance outputs.** In March 2020, the Barbados Ministry of Health and Wellness asked The University of the West Indies for evidence to help the planning of a government response to the emerging COVID-19 outbreak. From this first

request, I have provided evidence-based support to the Barbados government, and the wider CARICOM region. This has included advice on possible national interventions and on emergency public health process planning, backed up by statistical modelling and daily outbreak surveillance. I work closely with the Caribbean Disaster Emergency Management Agency (CDEMA) to provide technical support and surveillance updates to CARICOM member states. Since April 2020, I have produced 23 reports per day – **or over 650 reports per month** – with circulation (via UWI, and regional agencies) across the Caribbean. For daily surveillance outputs, see online surveillance website: <https://ianhambleton.com/covid19>. Additionally, I have presented surveillance updates to regional government planning meetings since April 2020, and have also published peer-reviewed outputs on aspects of the COVID-19 outbreak in the US and the Caribbean.

- a. For daily surveillance outputs, see online surveillance website: <https://ianhambleton.com/covid19>
- b. Pathak EB, Salemi JL, Sobers N, Menard J, **Hambleton IR**. COVID-19 in Children in the United States: Intensive Care Admissions, Estimated Total Infected, and Projected Numbers of Severe Pediatric Cases in 2020. *J Public Health Manag Pract*. 2020 Jul/Aug;26(4):325-333. doi: 10.1097/PHH.0000000000001190.
- c. **Hambleton IR**, Jeyaseelan SM, Murphy MM. COVID-19 in the Caribbean small island developing states: lessons learnt from extreme weather events. *Lancet Glob Health*. 2020 Jul 2:S2214-109X(20)30291-6. doi: 10.1016/S2214-109X(20)30291-6.
- d. Murphy MM, Jeyaseelan SM, Howitt C, Greaves N, Harewood H, Quimby KR, Sobers N, Landis RC, Rocke KD, **Hambleton IR**. COVID-19 containment in the Caribbean: The experience of Small Island developing states. *Research in Globalization*. doi: <https://doi.org/10.1016/j.resglo.2020.100019>.
- e. Sobers NP, Howitt CH, Jeyaseelan SM, Greaves NS, Harewood H, Murphy MM, Quimby K, **Hambleton IR**. Impact of COVID-19 contact tracing on human resources for health - A Caribbean perspective. *Prev Med Rep*. 2021 Jun;22:101367. doi: 10.1016/j.pmedr.2021.101367. Epub 2021 Apr 3. PMID: 33842202; PMCID: PMC8019353.

**(3) Sickle Cell Disease in the Caribbean.** With colleagues at the Jamaican Sickle Cell Unit I have published numerous articles from the long-running Jamaican Sickle Cell Disease Cohort Study. I present several reports from this influential disease cohort. (A) This work was the culmination of two years of fieldwork, tracing over 1,000 people with sickle cell disease who had defaulted from a day care clinic. We successfully traced 99% of this defaulted sample, and this allowed us to offer the first survival estimates for homozygous sickle disease in the Caribbean. (B) Neonatal screening is standard practice in many industrialized countries, but is uncommon in developing nations. This study used the unique power of the Jamaican sickle cell cohort study to highlight how many people with sickle cell disease go undetected if neonatal screening is not available. The information has been used in several African countries as a rationale for local neonatal screening programmes. (C) B19 infection often leads to aplastic crisis in people with homozygous sickle cell disease. This short report used a new immunoassay to highlight for the first time that B19 seroconversion could occur without known haematological change, despite close monitoring – about one third of infections do not manifest typical aplasia. (D) This study reported on what is very much a philosophy at the Jamaican sickle cell unit – that the majority of people with sickle cell disease and uncomplicated painful crisis can be treated successfully as outpatients. The study was controversial, but the day-care model has now achieved wide acceptance. (E) A report of elderly survivors with sickle cell disease. The Jamaican Clinic pioneered observations of extreme clinical variation in this single mutation recessive disease.

- a. Wierenga KJ, **Hambleton IR**, Lewis NA. Survival estimates for patients with homozygous sickle-cell disease in Jamaica: a clinic-based population study. *Lancet*. 2001 Mar 3;357(9257):680-3.
- b. **Hambleton IR**, Wierenga KJJ. Identifying homozygous sickle-cell disease when neonatal screening is not available: a clinic-based observational study. *J Med Screen*. 2004; 11: 175-179.
- c. Serjeant BE, **Hambleton IR**, Kerr S, Kilty C, Serjeant GR. Haematological response to parvovirus B19 infection in homozygous sickle-cell disease. *Lancet*. 2001 Nov 24;358(9294):1779-1780.
- d. Ware MA, **Hambleton I**, Ochaya I, Serjeant GR. Day-care management of sickle cell painful crisis in Jamaica: a model applicable elsewhere? *Br J Haematol*. 1999 Jan;104(1):93-6.
- e. Serjeant GR, Higgs DR, **Hambleton IR**. Elderly survivors with homozygous sickle cell disease. *N Engl J Med*. 2007 Feb 8;356(6):642-3.

**(4) HIV in sub-Saharan Africa.** This clinical trial report was the culmination of three-years of fieldwork in rural Tanzania. The results were eagerly awaited and were ultimately disappointing, but the study highlighted many of the difficulties that will be encountered when implementing large-scale pharmaceutical interventions in resource-limited environments. Supplementary papers followed.

- a. Watson-Jones D, Weiss HA, Rusizoka M, Chagalucha J, Baisley K, Mugye K, Tanton C, Ross D, Everett D, Clayton T, Balira R, Knight L, Hambleton I, Le Goff J, Belec L, Hayes R. Effect of Herpes Simplex Suppression on Incidence of HIV among Women in Tanzania. *N Engl J Med*. 2008; 358(15):1560-71
- b. Vallely A, Hambleton IR, Kasindi S, Knight L, Francis SC, Chirwa T, Everett D et al. Microbicides Development Programme, Tanzania: Are women who work in bars, guesthouses and similar facilities a suitable study population for clinical trials of vaginal microbicide trials in Africa? *PLoS One*, 2010 5(5): e10661.

**(5) Health inequalities in the Caribbean.** In recent NIH-funded work we have performed a series of analyses that provide new insights into inequalities in health outcomes across the Caribbean and in comparisons with regional neighbors. In two recent examples we have explored inequalities in life expectancy in the Americas and inequalities in mortality rates between African descent populations in the Caribbean and the US. A picture is emerging of the Caribbean with a slowly improving health environment, but at a rate that means the Caribbean is falling behind its regional neighbors in North, Central, and South America. This work has been presented to the annual meeting of CARICOM Chief Medical Officers, and to the annual meeting at PAHO in September of the CARICOM Ministers of Health. The work has received much regional attention in the Caribbean and North America, and has led to country-level collaborations with Ministries of Health in several Caribbean countries. The ultimate goal of such work is to identify vulnerable populations that can benefit from public health intervention, and planning for these interventions is underway.

- a. Hambleton IR, Howitt C, Jeyaseelan S, Murphy MM, Hennis AJ, Wilks R, Harris EN, MacLeish M, Sullivan L; U.S. Caribbean Alliance for Health Disparities Research Group (USCAHDR). Trends in Longevity in the Americas: Disparities in Life Expectancy in Women and Men, 1965-2010. *PLoS One*. 2015 Jun 19;10(6):e0129778. doi: 10.1371/journal.pone.0129778.
- b. Hambleton IR, Jeyaseelan S, Howitt C, Sobers-Grannum N, Hennis AJ, Wilks RJ, Harris EN, MacLeish M, Sullivan LW; US Caribbean Alliance for Health Disparities Research Group. Cause-of-death disparities in the African diaspora: exploring differences among shared-heritage populations. *Am J Public Health*. 2015 Jul;105 Suppl 3:S491-8. doi: 10.2105/AJPH.2015.302676.

**(6) Lower-limb amputations in Barbados.** This study of lower-extremity amputation among people with diabetes is a good example of local epidemiology that can guide a future research agenda. The alarming amputation rates and poor subsequent survival highlighted by this study is guiding planning for future interventions.

- a. Hambleton IR, Jonnalagadda R, Davis CR, Fraser HS, Chaturvedi N, Hennis AJ. All-cause mortality after diabetes-related amputation in Barbados: a prospective case-control study. *Diabetes Care*. 2009 Feb;32(2):306-7.

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PubMed Online Publication Listing:	<a href="https://www.ncbi.nlm.nih.gov/myncbi/ian.hambleton.1/bibliography/public/">https://www.ncbi.nlm.nih.gov/myncbi/ian.hambleton.1/bibliography/public/</a>
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