
BIOGRAPHICAL SKETCH

NAME: HAMBLETON, Ian Richard

POSITION TITLE: PROFESSOR of Biostatistics and Informatics

EDUCATION/TRAINING

| INSTITUTION AND LOCATION | DEGREE | Year Completed | FIELD OF STUDY |
|---|---------------------------------|----------------|----------------|
| Brunel University, Uxbridge, England (UK) | BA (1 st class Hons) | 1992 | Mathematics |
| Reading University, Reading, England (UK) | MSc (Distinction) | 1995 | Biostatistics |
| Southampton University, Southampton, England (UK) | PhD | 2003 | Biostatistics |

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

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 wide 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 150 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 funded 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 research data across the UWI community. 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 International Diabetes Federation – developing methodology for reporting global and regional diabetes prevalence, with the Pan-American Health Organization – developing guidelines for analysing mortality in the presence of small numbers, and am a statistical consultant for UNICEF – the United National Children's Fund.

B. Positions and Honors

Positions and Employment

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| 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

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| 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. |

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| 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 th out of 100 “General Medicine” journals. |
| 2009 – present | 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 – present | 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 Group for Eastern Caribbean Health Outcomes Research Network (ECHORN) |

C. Contribution to Science

- (1) **NCD-RisC initiative.** 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. I have contributed to the following published articles:
- a. 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.
 - b. 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
 - c. 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.
 - d. 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.
 - e. 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.
 - f. 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.
 - g. 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.
 - h. 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. Example references for surveillance outputs are listed below (a) for 31-May-2020 and (b) for 31-July-2020. 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 (c to e).

- a. Example surveillance output (31-May-2020). [Hambleton, Ian](#) (2020): 31-May-2020. COVID-19 Daily Surveillance for the Caribbean / CARICOM. figshare. Figure. <https://doi.org/10.6084/m9.figshare.12746147.v2>
- b. Example surveillance output (31-July-2020). [Hambleton, Ian](#) (2020): 31-July-2020. COVID-19 Daily Surveillance for the Caribbean / CARICOM. figshare. Figure. <https://doi.org/10.6084/m9.figshare.12746174.v1>
- c. 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.
- d. [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.
- e. 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>.

(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, Changalucha J, Baisley K, Mugeye K, Tanton C, Ross D, Everett D, Clayton T, Balira R, Knight L, [Hambleton J](#), 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.

A complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/ian.hambleton.1/bibliography/45581524/public/?sort=date&direction=descending>

D. Research Support

Ongoing Research Support

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| National Institutes of Health. Extending a Caribbean based cohort to promote US-Caribbean comparisons to facilitate research addressing Black health disparities Grant ID: R01MD013347 Role: Co-Investigator | C Ragin / M Tulloch-Reid (Co-PIs) | 01/07/2018 – 30/06/2022 |
| National Institutes of Health. Pediatric ECHORN Cohort Study: intergenerational factors that contribute to cardiovascular risk in the Eastern Caribbean Grant Ref: R01HL143785 Role: Co-investigator / Data Analysis Core | M Nunez-Smith (PP) | 01/07/2018 – 30/06/2022 |
| Canadian International Development Research Centre Improving Household Nutrition Security and Public Health in the CARICOM Grant ID: 108690 Role: Co-Investigator | A Samuels (PI) | 01/01/2018 – 31/12/2021 |
| UK National Institute for Health Research. Establishing a Global Diet and Activity Research Network (GDAR) via an NIHR Global Health Research Group on Diet and Activity Grant Ref: 16/137/34 Role: Co-investigator | N Wareham (PI) | 01/04/2017 – 31/12/2020 |
| Barbados Ministry of Health The Barbados National Registry for Chronic non-communicable disease (BNR). Round 4 (years 11 to 15) Role: Co-investigator / study statistician | N Sobers (PI) | 01/01/2018 – 12/31/2023 |

Recent Completed Research Support

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| National Institutes for Health / National Cancer Institute. Planning for a Sustainable and Robust Regional Center for Research Excellence (RCRE) in the Caribbean Award: P20 CA210294-01 Role: Co-investigator / statistical support | C Ragin (PI) | 01/06/2017 – 30/6/2019 |
| UK Medical Research Council. Developing theory and methods for evaluating the impact of community food initiatives on NCD risk, social and economic wellbeing and the environment. Grant Ref: MR/P025250/1 Role: Country Co-investigator / study statistician | N Unwin (PI) | 01/01/2017 – 31/12/2018 |
| UK Medical Research Council / Wellcome Trust/DfID Health Systems Research call. Development and evaluation of system dynamics methods to engage with policy makers on the prevention and control of diabetes in a middle-income region Grant Ref: MR/N005384/1 Role: Co-PI/ study statistician | N Unwin / I Hambleton (Co-PIs) | 01/01/2016 – 31/12/2017 |
| National Institute on Minority Health and Health Disparities. Research Grant Award Caribbean Health Disparities Role: Country PI / study statistician | Sullivan L (PI) U24 MD006959 | 01/01/2012 – 31/12/2016 |
| World Bank Infrastructure Grant Award Virtual Health Research Unit Role: Co-investigator / study statistician | Landis C (PI) | 01/12/2012 – 31/6/2015 |
| Barbados Diabetes Foundation Research Grant Award The Wound Healing Study Role: Co-investigator / study statistician | Landis (PI) | 06/30/2008 – 12/31/2013 |