

<b>Institution:</b> University of Leeds		
<b>Unit of Assessment:</b> 4		
<b>Title of case study:</b> Improving policy making via the Born in Bradford cohort		
<b>Period when the underpinning research was undertaken:</b> 2007-2020		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
Roger Parslow	Senior Lecturer (Born in Bradford Executive Member)	1996-2019
Mark Mon-Williams	Professor (Born in Bradford Executive Member)	2009-present
Amanda Waterman	Associate Professor	2007-present
Liam Hill	Lecturer	2011-present
<b>Period when the claimed impact occurred:</b> 2013-2020		
<b>Is this case study continued from a case study submitted in 2014?</b> N		
<b>1. Summary of the impact</b>		
<p>Born in Bradford tracks the lives of 30,000+ Bradfordians to determine what early life factors influence children's outcomes. The project was established because of locally high rates of infant mortality and because Bradford's non-communicable disease rates foreshadowed the epidemic across the rest of the UK. The research has influenced policies across many areas – including the commissioning of services for autism, provision for children 'doubly disadvantaged' by the timing of their premature birth, the delivery of health services in education, and the support of children with ophthalmic difficulties. The research has supported local and central government to adopt more evidence-based approaches to policy.</p>		
<b>2. Underpinning research</b>		
<p>The Born in Bradford cohort study was established in 2007 to examine how genetic, nutritional, environmental, behavioural, and social factors impact on childhood in a deprived multi-ethnic population [1]. The study was a partnership between the Universities of Leeds, Bradford, York, and the Bradford NHS Trust. Roger Parslow (UoL) is an epidemiologist and was one of the five members of the Born in Bradford executive who set up the cohort study. Thus, Parslow was integral to establishing the underpinning research and its impact.</p> <p>Between 2007 and 2011, detailed information on socio-economic characteristics, ethnicity and family trees, lifestyle factors, environmental risk factors, and physical and mental health was collected from 12,453 women with 13,776 pregnancies (recruited at circa 28 weeks) and 3,448 of their partners.</p> <p>The 13,550+ children were eligible to start school over the four academic years 2010/2011–2013/2014 and UoL researchers assessed the children's sensorimotor abilities in their first year at school. This work was overseen by Mark Mon-Williams (UoL) who subsequently replaced Parslow on the Born in Bradford executive. Mon-Williams is a psychologist and coordinated the work on the cognitive development and mental health of the children (supported by Waterman and Hill). The 'starting school' measures were combined with routine health, education, and social care data, providing a powerful database (open access).</p> <p>The success of the testing led to funding [i] for the 'growing up' phase of the project [2]. This involved detailed measures of the children and their families when the children were in Years 4 and</p>		

5 at primary school (aged 8-9 years). University of Leeds researchers were responsible for taking detailed measures of the children and their classroom peers in the school (total ~17,000 children).

The development of the cognitive measures was overseen by Amanda Waterman (UoL) and the integration of the measures with the database was supervised by Liam Hill (UoL). The measures were again integrated with linked routine datasets (including health, education and social care), creating one of the most comprehensive datasets on childhood development in the world.

The database allows the identification of key early life factors that influence outcomes for children. For example, the Department of Health and Social Care (DHSC) funded research to explore the relationship between maternal iodine status and child development [3].

The research has provided evidence for policymakers on a wide range of topics including provision for children 'doubly disadvantaged' by the timing of their premature birth [4], inequalities in autism diagnosis [5], and the commissioning of services for autism [6]. This has led to policy change and provided a resource for local and central government to explore the evidence underpinning policy. Mon-Williams, Waterman and Hill were integral to establishing the underpinning research and its subsequent impact.

For example, the research has allowed different service models to be tested across 200 schools in the North of England [ii and iii]. The project has resulted in the Wolfson Centre for Applied Health Research being established as a vehicle for ensuring maximum impact of the research (Mon-Williams, UoL Director). Cross-UK networks allow findings from the cohort to be disseminated rapidly to stakeholders. The Wolfson houses the Yorkshire and Humber Applied Research Collaboration (ARC) [iv] and is home to a UK Prevention Research Programme [v]. Born in Bradford links to other cohort studies (e.g. Avon Longitudinal Study of Parents and Children) and this allows evidence-based approaches to policy decisions around issues such as mental health [vi].

### 3. References to the research

[1] Wright J, Small N, Raynor P, Tuffnell D, Bhopal R, Cameron N, Fairley L, Lawlor DA, **Parslow R**, Petherick ES, Pickett KE, Waiblinger D, West J. (2013) Born in Bradford Scientific Collaborators Group. Cohort Profile: the Born in Bradford multi-ethnic family cohort study. *Int J Epidemiol*, 42(4), 978-91. doi: [10.1093/ije/dys112](https://doi.org/10.1093/ije/dys112)

[2] Bird PK, McEachan RRC, **Mon-Williams M**, Small N, West J, Whincup P, Wright J, Andrews E, Barber SE, Hill LJB, Lennon L, Mason D, Shire KA, Waiblinger D, **Waterman AH**, Lawlor DA, Pickett KE. (2019) Growing up in Bradford: protocol for the age 7–11 follow up of the Born in Bradford birth cohort. *BMC Public Health*, 19(1), 939. doi: [10.1186/s12889-019-7222-2](https://doi.org/10.1186/s12889-019-7222-2)

[3] Snart CJP, Threapleton DE, Keeble C, Taylor E, Waiblinger D, Reid S, Alwan NA, Mason D, Azad R, Cade JE, Simpson NAB, Meadows S, McKillion A, Santorelli G, **Waterman AH**, Zimmermann M, Stewart PM, Wright J, **Mon-Williams M**, Greenwood DG, Hardie LJ. (2020) Maternal iodine status, intrauterine growth, birth outcomes and congenital anomalies in a UK birth cohort. *BMC Medicine*, 18(132). doi: [10.1186/s12916-020-01602-0](https://doi.org/10.1186/s12916-020-01602-0)

[4] Pettinger KJ, Kelly B, Sheldon TA, **Mon-Williams M**, Wright J, **Hill LJB**. (2020) Starting school: educational development as a function of age of entry and prematurity. *Arch Dis Child*, 105(2), 160-165. doi: [10.1136/archdischild-2019-317124](https://doi.org/10.1136/archdischild-2019-317124)

[5] Kelly B, Williams S, Collins S, Mushtaq F, **Mon-Williams M**, Wright B, Mason D, Wright J. (2019) The association between socioeconomic status and autism diagnosis in the United Kingdom for children aged 5–8 years of age: Findings from the Born in Bradford cohort. *Autism*, 23(1), 131-140. doi: [10.1177/1362361317733182](https://doi.org/10.1177/1362361317733182)

[6] Wright B, **Mon-Williams M**, Kelly B, Williams S, Sims D, Mushtaq F, Sohal K, Blackwell JE,

Wright J. (2019) Investigating the association between early years foundation stage profile scores and subsequent diagnosis of an autism spectrum disorder: a retrospective study of linked healthcare and education data. *BMJ Paediatr Open*, 3(1), e000483. doi: [10.1136/bmjpo-2019-000483](https://doi.org/10.1136/bmjpo-2019-000483)

#### Key funding and grants

[i] Medical Research Council & Economic and Social Research Council. (2016) Born in Bradford: A Longitudinal Birth Cohort Study. GBP2,926,217 Mon-Williams M (CI)

[ii] Education Endowment Foundation. (2016). A randomised controlled trial to examine the impact of 'glasses in classes'. GBP410,239. Mon-Williams M (PI), Hill L, Waterman AH (CIs)

[iii] Education Endowment Foundation. (2016). A randomised controlled trial to examine the impact of motor skill intervention on educational attainment. GBP195,352. Mon-Williams M (PI), Hill L, Waterman AH (CIs)

[iv] NIHR Applied Research Collaboration (2019) GBP8,999,752 Mon-Williams, M (CI)

[v] UKPRP Consortia award ActEarly: a city collaboratory approach to early promotion of good health and wellbeing. (2019) GBP6,600,000 Mon-Williams M (CI)

[vi] Medical Research Council (March 2018) Mental Health pathfinder award. GBP1,497,192 Mon-Williams M (CI)

#### 4. Details of the impact

Born in Bradford research has directly informed policy decisions within local and central government, and enabled more effective regional service provision. The Bradford City Metropolitan District Council (BCMDC) Plan 2021-25 **[A]** states:

*"In Born in Bradford, we have unique and internationally renowned research... which helps us understand the challenges and opportunities faced by children and young people in the district... working with Born in Bradford to make sure that all our interventions are based on Bradford-specific research data."*

According to the Leader of the BCMDC **[B]**:

*"Born in Bradford (BiB) enables the Bradford District to use high-quality evidence to underpin our policies. We see BiB as the research and development department of the District and use their research to inform our policy making. Importantly, BiB allows us to evaluate the impact of our policies on children's lives, and helps us make certain that we use the best possible evidence to support our children and young people."*

For example, our research revealed the interactions between early health and education. We showed the impact of gestational and school-entry age on the level of development in children born moderate-to-late preterm [4]. These results changed school admission policy within Bradford. The Assistant Director for Performance, Commissioning and Partnerships said **[C]**:

*"The investigation into summer born pre-term babies is a fantastic example of BiB responding to a request from policymakers to shed light on an important issue. We were subsequently able to use the resulting evidence to inform our school admission policy. This is just one example of the ways in which BiB is helping us adopt policies that tackle health and education inequalities through research."*

Our research has shown how the interplay of services affects health and education outcomes for children and young people (CYP). According to the Director of Children's Services **[D]**:

*“BiB has had a profound impact on our understanding of the determinants affecting the health and wellbeing of CYP. The research has helped us to use combined routine data across multiple services (e.g. health, education, social care) to inform evidence-based policies, public health interventions, and improve services (e.g. move some hospital based service support into schools). More generally, the data generated through BiB has allowed us to take a holistic view of childhood development and tailor our policies accordingly.”*

#### Evidence-based policy making

The wealth of linked data created through our research has meant that policy makers better understood how different services intersect. According to the Chief Executive Officer of BCMDC [E]:

*“Born in Bradford’s research has allowed us to identify opportunities to tackle health issues relating, for example, to the early years of life, to educational attainment and environmental quality, and to drive innovative policies to help our practitioners address these issues. Bradford Council has recently allocated £6.5m to support the well-being of children and help to shape and implement new inter-departmental and cross-agency approaches to early help and prevention. A further allocation of £2.2m has been made to support digital inclusion among our young people in order to support their ability to make up time lost due to the Coronavirus pandemic. Each of these initiatives and targeted investments have been informed by the work of Born in Bradford, which is building a nationally and globally important body of evidence with tangible impact on policy and outcomes.”*

Our Bradford-based research is of national significance. In 2017, the Department for Education (DfE) invested over £10M in the creation of the Bradford Opportunity Area to overcome the challenges facing CYP. Born in Bradford research was central to the Opportunity Area plans for Bradford:

*“Bradford is home to... one of the world’s most important ongoing cohort studies (Born in Bradford) providing a large and live platform for testing the impact of different interventions on outcomes for young people”. The Bradford Opportunity Area plan [F].*

According to the Head of the Bradford Opportunity Area [G]:

*“We used the BiB research to ensure that we pursued policies based on the best available evidence about the factors affecting CYP. We recruited Mon-Williams to the Partnership Board where he chaired the ‘Using evidence and research to remove barriers to learning’ committee. This committee ensured that our policies were underpinned by research undertaken by Mon-Williams and others at the University of Leeds as part of the BiB study. The success of this approach led to us investing an initial £1M in 2019 to create a ‘Centre for Applied Education Research’ (CAER). Led by Mon-Williams, CAER provides data driven insights from BiB to the other 11 Opportunity Areas across the UK. The place-based work of CAER is shaping national policy around SEND (the BiB research has fed directly into the SEND review), and the national Autism Strategy. The research being carried out within CAER is improving children’s life chances in Bradford schools...leading to real change within classrooms across Bradford.”*

#### Improving patient pathways for autism

Our research has directly informed the policies of the DfE and DHSC with regard to the early identification and support of vulnerable children. For example, we showed a powerful use for educational records in improving patient pathways for autism. We demonstrated routine data provided a potent and cost-effective way of improving service delivery for children and adolescents [6]. The Minister for Children reported on the research in the House of Commons [H]:

*“There is a fantastic project going on in Bradford under the Government’s Opportunity Areas, which looks at the outcomes for each individual child of the Early Year Foundation Stage test and teacher observations, and uses those to find out if they are a marker of early Autism. It is such an impressive result that we’ve now rolled it out to the next 100 schools and are really hopeful*

*that in the future that could lead to a much earlier diagnosis.”*

#### Informing the use of data within central government

Our research is now informing the use of data across central government. According to the Department for Education’s Director of Strategy, and the Chair of the Data Improvement across Government (DAIG) group [I]:

*“Mon-Williams was co-opted into the cross-Whitehall ‘Strategic Steering Group for Data Improvement across Government’ to allow BiB’s data linkage research to shape our strategic approach to the use of connected datasets for improved service delivery. The BiB research has supported our work on the development of an ‘electronic vulnerability index’ for deployment across the UK’s Local Authorities.”*

#### Supporting policy making during the pandemic

The COVID-19 pandemic has further accelerated the role of BiB in policymaking. According to the Chief Medical Officer (CMO) for England [J]:

*“Bradford actually has shown superb leadership... in the way they’ve tackled this, if they had not done so and consistently working with the communities of Bradford we would be in a substantially worse place than we are at the moment.”*

The Bradford District response to the COVID-19 pandemic was directly informed by our BiB research. According to the Chief Executive Officer of Bradford Council [E]:

*“Your research continues to be invaluable in helping us to understand the needs of children and families through the lockdown period. The research undertaken by BiB over the last decade meant that our District had a better understanding of the factors affecting our communities and the research undertaken during the lockdown period itself helped us to secure critical insights from our communities. This helped us tailor our response to COVID-19 in a highly effective manner (as highlighted by the CMO on national television), including the deployment of significant sums in COVID-19 emergency grants - for example, to support work on domestic abuse, home learning, mental health and financial inclusion.”*

### **5. Sources to corroborate the impact**

[A] The Bradford City Metropolitan District Council (BCMDP) Plan 2021-25. Available online: <https://www.bradford.gov.uk/media/6152/councilplan2021-25.pdf>

[B] Testimonial from the Leader of the Bradford City Metropolitan District Council

[C] Testimonial from the Assistant Director for Performance, Commissioning and Partnerships, Bradford City Metropolitan District Council

[D] Testimonial from the Strategic Director of Children's Services, Bradford City Metropolitan District Council

[E] Testimonial from the Chief Executive Officer, Bradford City Metropolitan District Council

[F] Bradford Opportunity Area 2017-20 plan. Available online:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/696830/Social\\_Mobility\\_Delivery\\_Plan\\_Bradford\\_v10\\_FINAL\\_WEB.PDF.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/696830/Social_Mobility_Delivery_Plan_Bradford_v10_FINAL_WEB.PDF.pdf)

[G] Testimonial from the Head of the Bradford Opportunity Area, Department for Education

[H] Parliamentary proceedings on 9.12.20 reporting the Minister for Children. Available online:

<https://parliamentlive.tv/event/index/d61b22f2-58f2-46f5-9ce3-cef3692e05a3?in=11:25:00&out=11:30:00>; <https://hansard.parliament.uk/Commons/2020-12-09/debates/877C14E3-B320-4B00-8A2D-1F0A49C04C58/DisabledChildrenAccessibleAndInclusiveEducation>

[I] Testimonial from the Director of Strategy within the Department for Education, and the Chair of the Data Improvement across Government (DAIG) group

[J] Sky News 12<sup>th</sup> October 2020 reporting the Chief Medical Officer (CMO) for England. Available online: [https://m.facebook.com/skynews/videos/278589809859457/?refsrc=https%3A%2F%2Fm.facebook.com%2Fwatch%2F&\\_rdr](https://m.facebook.com/skynews/videos/278589809859457/?refsrc=https%3A%2F%2Fm.facebook.com%2Fwatch%2F&_rdr)