

<b>Institution:</b> Bangor University, 10007857		
<b>Unit of Assessment:</b> UoA 4 - Psychology, Psychiatry and Neuroscience		
<b>Title of case study:</b> Uptake of evidence-based, early childhood, caregiver-training interventions to improve children's development in low- and middle-income countries (LMIC).		
<b>Period when the underpinning research was undertaken:</b> 2011 - 2020		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b> Professor Helen Baker-Henningham	<b>Role(s) (e.g. job title):</b> Professor in Psychology	<b>Period(s) employed by submitting HEI:</b> October 2011 - present
<b>Period when the claimed impact occurred:</b> 2015 - 31 July 2020		
<b>Is this case study continued from a case study submitted in 2014? N</b>		
<b>1. Summary of the impact</b>		
<p>Millions of children in low- and middle-income countries (LMIC) experience inadequate learning opportunities and harsh punishment by caregivers. These are important risk factors for poor child development. Research at Bangor led to two highly effective intervention programmes to improve early childhood outcomes in LMIC. The Irie Classroom Toolbox is a violence-prevention programme that is being implemented nationally in Jamaica. The Group Reach Up and Learn programme to improve parenting skills has been adapted for use in seven countries across South Asia, the Middle East and South America. Both programmes have proven benefits for caregivers' practices and children's development and have been implemented in partnership with over 5,500 teachers, over 7,000 mothers and reached over 500,000 children globally.</p>		
<b>2. Underpinning research</b>		
<b>Early Childhood Teacher Training Programme</b>		
<p>Violence against children is widespread in Jamaican classrooms with 86% of preschool teachers and 100% of grade 1 primary school teachers using violence at least once over two days of observation [3.1]. Research undertaken at Bangor University, led by Professor Baker-Henningham, resulted in the development of the <b>Irie Classroom Toolbox</b>, a school-based violence prevention programme for early childhood teachers, for use in low- and middle-income countries (LMIC) [3.2]. By increasing teachers' use of appropriate behaviour management strategies, violence against children by teachers is significantly reduced. Bangor research demonstrated that the Irie Classroom Toolbox <b>improves child outcomes across multiple developmental domains</b> including reducing children's behaviour difficulties, and promoting child social, self-regulation and early learning skills [3.1, 3.2]. The Toolbox was designed in 2015 based on previous experience implementing teacher-training programmes with early childhood teachers in Jamaica [3.3].</p>		
<p>Two Bangor-led cluster randomised trials of the Irie Classroom Toolbox were conducted between 2015 and 2019 in collaboration with the University of the West Indies: a large effectiveness trial in 76 Jamaican preschools [3.a, 3.b] and a smaller efficacy trial in 14 Jamaican primary schools. In both research trials, <b>teachers' use of violence against children significantly decreased</b> by more than 65% [3.1]. Improvements in the quality of the classroom environment, class-wide child behaviour, children's inhibitory control and school achievement and the proportion of children with</p>		

behaviour difficulties in the clinical range were also found [3.1, 3.a]. These trials reached a wide number of beneficiaries (over 6000 children). Critical benefits were therefore delivered at the research stage.

### Group Based Parenting Programme

Between 2013 and 2016 the Reach Up and Learn (RUL) group, of which Baker-Henningham is a key member, developed The **Reach Up and Learn Early Childhood parenting programme**; an intervention training package. The aim of the RUL programme is to increase capacity for implementation of early child development parenting programs for children aged 0-3 years and facilitate widespread implementation in other LMIC countries. As part of this development, the programme was **implemented in Brazil and Zimbabwe** and Bangor University co-led the process evaluations which informed future implementation of the programme. This process was included in a special series on implementation in early childhood by the Annals of the New York Academy of Sciences [3.4]. Baker-Henningham then adapted the home-visiting programme to make it suitable for use with parenting groups in Colombia, and worked in partnership with colleagues at the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), to further adapt the programme for Bangladesh [3.5].

Between 2014 and 2016, the effectiveness of these group curricula was rigorously evaluated in three cluster randomised trials with over 3,500 families [3.5, 3.6]. Baker-Henningham was a co-investigator in all three trials, with responsibility for intervention, development and implementation. Significantly, in these trials, the intervention was integrated into existing government services to ensure that it was suitable for use at scale. In Bangladesh, the intervention was integrated into the primary health care service and two trials were conducted with mothers of undernourished children. In Colombia, the intervention was integrated into the Familia, Mujer e Infancia programme which targets mothers and children in the lowest two socio-economic status quintiles.

Key findings for the research included **significant benefits to children's development and to mothers' parenting practices** in all studies as a result of the intervention [3.5, 3.6], again demonstrating key impacts at the research stage. Benefits to parents and children, realised at the research stage, included: improved child cognition (effect size (ES) = 1.3 standard deviations (SD)), motor (ES = 1.2SD) and language skills (ES = 1.1SD) and improved home stimulation (ES = 0.8SD) and a concurrent decrease in maternal depression (ES = -0.3SD) [3.5]. Between 2017 and 2019, with funding from the British Academy, Bangor-led research involved fully integrating the programme into the rural government health services in Bangladesh. In this randomised trial, 574 mother/child dyads participated in the intervention and researchers demonstrated that the programme **maintained its effectiveness** when training and supervision was provided by government health staff [3.c]. Research is underway to adapt this programme for use in Indonesia.

## 3. References to the research

### Research Outputs

3.1 **Baker-Henningham, H.**, Scott, Y., Bowers, M. and Francis T (2019) Evaluation of a violence-prevention programme with Jamaican primary school teachers: A cluster randomised trial. *International Journal of Environmental Research and Public Health*, **16**(15), 2797. [DOI](#) (Peer-reviewed journal article)

3.2 **Baker-Henningham, H.** (2018) 'The Irie Classroom Toolbox': Developing a violence-prevention, preschool teacher-training programme using theory, evidence and practice. *Annals of the New York Academy of Sciences*, **1419**, 179-200. [DOI](#) (Peer-reviewed journal article)

3.3 **Baker-Henningham, H.** and Walker, S. (2018) Effect of transporting an evidence-based violence prevention intervention to Jamaican preschools on teacher and classwide child behaviour: A cluster randomised trial. *Global Mental Health*, **5**, e7. [DOI](#) (Peer-reviewed journal article)

3.4 Smith, J. A., **Baker-Henningham, H.**, Brentani, A., Mugweni, R. and Walker, S. P. (2018) Implementation of Reach-Up early childhood parenting programme: Appropriateness, acceptability and feasibility in Brazil and Zimbabwe. *Annals of the New York Academy of Sciences*. **1419**(1), 120-140. [DOI](#) (Peer-reviewed journal article)

3.5 Hamadani, J. D., Mehrin, S. F., Tofail, F., Hasan, M. I., Huda, S. N., **Baker-Henningham, H.**, Ridout, D. and Grantham-McGregor, S., (2019) Integrating an early childhood development programme into the Bangladeshi Primary Health Care Services: A cluster randomised trial. *The Lancet Global Health*, 7(3), E366-E375. [DOI](#) (Peer-reviewed journal article) [Submitted to REF2021](#) (REF identifier UoA4\_25)

3.6 Attanasio, O., **Baker-Henningham, H.**, Bernal, R., Meghir, C., Pineda, D. and Rubio-Codina, M. (2018) Early stimulation and nutrition: The impacts of a scalable intervention. *National Bureau of Economic Research*. Working Paper 25059. [DOI](#)

#### Grants

3.a PI: **Baker-Henningham, H.** (2014 - 2019) *The "Irie Classrooms Toolbox": a cluster randomised trial of a universal violence prevention programme in Jamaican preschools*. Medical Research Council (MRC), MR/M007553/1 GBP1,354,703 (Bangor University: R25R08)

3.b PI: **Baker-Henningham, H.** (2018 - 2019) *Development and evaluation of an integrated early childhood development and violence prevention teacher-training programme in Jamaican preschools*. MRC, MR/R018421/1 GBP180,852 (Bangor University: R25R14)

3.c PI: **Baker-Henningham, H.** (2017 - 2019) *Scaling up an early childhood development intervention by integrating into health services in Bangladesh*, British Academy, EC170101, GBP350,000 (Bangor University: R25C28).

#### 4. Details of the impact

High quality, early childhood caregiving environments are critical in promoting long term benefits to educational achievement, mental and physical health, and economic prosperity of future generations in low- and middle-income countries (LMIC). Bangor's research into **evidenced-based programmes** for children's carers have now reached over 5,500 teachers, more than 7,000 mothers and ultimately benefitted over 500,000 children globally.

##### Early Childhood Teacher Training Programme

###### **Benefits to teachers and children**

The cluster randomised trials delivered training in the Irie Classroom Toolbox, a school-based violence prevention programme for early childhood teachers, to over 300 Jamaican teachers in preschools and primary schools. The roll-out of the research-based training led to immediate benefits in terms of a considerable decrease (more than 65%) in violence against children. Clear impacts were delivered during the research phase including benefits to class-wide child prosocial behaviour at post-intervention (Effect size (ES) = 0.42 standard deviations (SD)), the quality of the classroom environment (mean ES=0.58SD) and to teacher well-being at one-year follow-up (ES = 0.26SD). Benefits were found to children's inhibitory control (ES = 0.18SD) and fewer children in intervention schools were in the clinical range for behaviour difficulties (Odds Ratio: 0.46). The Toolbox training thus delivered **positive impacts to children, teachers and the classroom environment [3.3, 3.a]**.

###### **Uptake of the teacher-training programme**

*Within Jamaican Primary Schools:* In 2016, 15 technical staff from the Ministry of Education in Jamaica were trained by the Bangor-led Irie Classroom Team, to deliver a one-day teacher training workshop in appropriate behaviour management strategies and psychosocial skills from the Irie Classroom Toolbox **[5.1]**. Between 2016 and 2017, these technical staff trained **all** primary school teachers of grades 1, 2 and 3 across Jamaica (100% saturation) as an integral part of in-service teacher training at the national level. Approximately 5,100 primary school teachers were trained by 2017, with the Ministry for Education in Jamaica reporting '*teachers are now equipped to utilize these strategies in their classroom..... to impact approximately one hundred and twenty thousand (120,000) 6 to 8 year-old children each school year*' **[5.1]**. Hard copies of the Irie Classroom Toolbox teacher resources have been distributed to **all primary schools across Jamaica** to ensure teachers can fully utilise this training.

*Within Jamaican Preschools:* UNICEF Jamaica and the Early Childhood Commission in Jamaica have funded the upskilling of government staff to facilitate the national dissemination of the Irie Classroom Toolbox for early childhood practitioners [5.2, 5.3]. In July 2019, Professor Baker-Henningham and her team in the Caribbean Institute for Health Research trained 16 senior staff and 4 members of the executive from the Early Childhood Commission to deliver the programme. These staff subsequently trained over 110 teachers between 2019 and 2020 (one school year). In 2020, these staff trained 100% of the development officers and inspectors responsible for in-service teacher-training in Jamaica (over 100 persons). These training activities are designed to facilitate the **integration of the Irie Classroom Toolbox into in-service teacher-training** for all early childhood practitioners in Jamaica.

#### ***Impact on Policy and Programming***

The Bangor-developed Irie Classroom Toolbox has now been adopted by the Jamaican government's Early Childhood Commission as the **national training programme** to train all early childhood practitioners [5.4]. The Irie Classroom Toolbox is also included as an example of an effective teacher-training programme in positive discipline by the World Health Organisation [5.5]. Further impact of the development of this work is evidenced through the World's Bank's selection of Bangor's *Irie Homes Toolbox*, a complementary violence prevention programme targeting parents of children aged two to six years, for virtual delivery across Jamaica in 2021 **reaching over 3000 parents** [5.6].

#### ***Group Based Parenting Programme***

Bangor researchers demonstrated that group-based, early stimulation, parenting programmes are a cost-effective and scalable way of delivering interventions that have previously been implemented through individual home-based visits. Bangor's group-based curriculum is one of the few evidence-based curricula available and the programme has now been adopted in Bangladesh, Colombia and the Middle East.

#### ***Benefits to families and children***

Since 2015, over 420 government health workers in Colombia and Bangladesh have been trained to conduct the group-based parenting programme. **Over 4,000 mothers and children** participated in the programme during the effectiveness trials. These trials showed that the programme significantly benefited participating mothers' parenting practices and their children's cognitive, language, and behavioural development [3.5, 3.6].

#### ***Uptake of the intervention***

In Colombia, 99% of the 171 Familia, Mujer e Infancia mothers who were trained in the group-based parenting programme reported continued use of the curriculum after the end of the trial, thus benefiting over 3,000 more children and families since 2016. The group-based parenting curriculum has been adopted for use in Bangladesh for **integration into the community clinic network that consists of 13,000 clinics** that are established in all rural areas [5.7]. It has also been adopted by the Mayor of Bogota for use with vulnerable families with children under two years of age across the city and for use in Ecuador to be integrated into government services for young children and families at the national level. These initiatives are being supported by the Inter-American Development Bank [5.8].

More recently, Bangor has worked with the International Rescue Committee (IRC), a global NGO responding to the world's worst humanitarian crises, to adapt the RUL group curriculum for use with refugee families across the Middle East. In August 2019, Baker-Henningham conducted a train-the-trainer workshop with 22 IRC staff from Syria, Iraq, Jordan and Lebanon to mobilise the programme to support families affected by conflict and disaster [5.9].

## 5. Sources to corroborate the impact

5.1 **Testimonial from Deputy Chief Education Officer Ministry of Education, Jamaica** (participant in the impact process) evidencing the national dissemination of key content from the Irie Classroom Toolbox in grades 1 to 3 of primary school.

5.2 **Testimonial from Education Specialist, UNICEF Jamaica** (participant in the impact process) evidencing the national dissemination of the Irie Classroom Toolbox in Jamaica.

5.3 **News report (2019)** of implementation of Irie into Jamaican preschool network (does not mention Bangor directly, however direct link between Bangor research and Irie demonstrated in listed testimonials [5.1, 5.2, 5.4]).

<http://jamaica-gleaner.com/article/news/20190804/children-benefit-irie-classroom-toolbox-violence-prevention-programme-be>

5.4 **Testimonial from Executive Director for the Early Childhood Commission, Jamaica** (participant in the impact process) stating that the ECC have adopted the Irie Classroom Toolbox as their behaviour management programme for early childhood classrooms nationally.

5.5 **World Health Organisation (2019) School-Based Violence Prevention**. A practical handbook. Geneva, Switzerland. ISBN: 9789241515542. Irie reported as best practice in detail on p.28, 37, 38 with Baker-Henningham having 5 first-author research papers in reference list, constituting the most highly cited academic in the report.

<https://www.who.int/publications/i/item/school-based-violence-prevention-a-practical-handbook>

5.6 World Bank (WB) email-testimonial from an Economist representing the World Bank confirming the contract WB have awarded to the *Irie Homes* team led by Baker-Henningham for virtual delivery across Jamaica.

5.7 **Scale up of group parenting programme in Bangladesh (2019)** evidence the programme is being rolled out to Health staff in 12 Upazilas of Sylhet and 11 Upazilas of Chittagong Divisions including 554 Community clinics and training approximately 1600 clinical staff to deliver the Reach Up parenting programme.

<https://clinicaltrials.gov/ct2/show/NCT04093934>

5.8 **Testimonial from Senior Economist, Child Development Specialist at the Inter-American Development Bank** (participant in the impact process) evidencing adaptation of the group parenting curriculum for use in Bogota and in Ecuador.

5.9 **Testimonial from Senior Specialist, Early Childhood Development from the International Rescue Committee** (participant in the impact process) evidencing the adaptation of the group parenting curriculum for the Middle East.