NIHR | National Institute for Health and Care Research

Applied Research Collaboration North West Coast

ARC NWC Doctoral Research Programme

Doctoral Research Project Directory: Round 1

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INTRODUCTION: How to use the directory:

This directory provides an overview of the ARC NWC Doctoral Research Projects available in this funding call.

Section 1: For each ARC NWC Research Theme, there is a summary table listing the projects aligned to theme priorities, including the:

- project title,
- primary supervisor,
- contact details, and
- host university.

Section 2: To explore a project in more detail, click on the relevant **'ARC REF Number'** in the first column of the summary table. The reference number links directly to the project's dedicated page, where you can find the:

- lay summary,
- supervisory team,
- contact information.

You can also use the contents page to navigate quickly to a specific theme or project section within the directory.

Next steps for applicants:

After identifying a project that aligns with your interests, skills, and career goals, please contact the listed primary supervisor, or a member of the supervisory team, to discuss your application before submission.

Applications without prior contact with the supervisor(s) will not be considered.

Once you have spoken with a member of the supervisory team, follow the application instructions outlined in the funding call, ensuring all required documentation is completed and submitted by the advertised deadline.

For answers to common questions regarding eligibility, funding, the application process, or project selection, please refer to the accompanying FAQs on our website.

We look forward to receiving your application and supporting you through the next stage of the process.

1. Doctoral Research Projects: Theme Summaries

ARC NWC Theme: Analogue 2 Digital

Number of Doctoral Research Projects Available: 2

Navigate to further details about each project by clicking the 'ARC Ref' in the first column

ARC REF	Doctoral Research Project Title	Primary Supervisor	Primary Supervisor Email	ARC NWC Partner Host University
017	Seeing the Whole System: a browser based serious game linking individual, household and service level simulation for multiple long-term conditions in the North West Coast	Professor Yonghuai Lou	liuyo@edgehill.ac.uk	Edge Hill University
018	Developing Equitable Voice-Based Conversational AI to Improve Childhood Vaccination Uptake and Reduce Health Inequalities	Professor Iain Buchan	Buchan@liverpool.ac.uk	University of Liverpool

ARC NWC Theme: Evidence 4 Impact

Number of Doctoral Research Projects Available: 1

Navigate to further details about each project by clicking the 'ARC Ref' in the first column

ARC REF	Doctoral Research Project Title	Primary Supervisor	Primary Supervisor Email	ARC NWC Partner Host University
026	Inequalities in 24-hour movement behaviours, circadian rhythmicity, and associated obesity risk in northwest children and adolescents	Professor Stuart Fairclough	faircls@edgehill.ac.uk	Edge Hill University

ARC NWC Theme: Long Term Conditions

Number of Doctoral Research Projects Available: 20

Navigate to further details about each project by clicking the 'ARC Ref' in the first column

ARC REF	Doctoral Research Project Title	Primary Supervisor	Primary Supervisor Email	ARC NWC Partner Host University
028	Impact of integrating Mental Health Practitioners into Primary Care Network settings	Dr Scott Lamont	slamont@lancashire.ac.uk	University of Lancashire
029	Enabling people with long-term conditions managed in primary care to become more physically active	Professor Nefyn Williams	Nefyn.williams@liverpool.ac.uk	University of Liverpool
030	Improving equitable access to social prescribing and personalised non-pharmacological support for people living with long-term pain in primary care	Professor Nefyn Williams	Nefyn.williams@liverpool.ac.uk	University of Liverpool
031	Management of hypertension in ADHD	Dr Alena Shantsila	s.shantsila@liverpool.ac.uk	University of Liverpool
032	A patient portal single point of access model incorporating patient-reported outcome measures (PROMs) to improve the equity and efficiency of outpatient epilepsy care in Cheshire and Merseyside.	Dr James Mitchell	James.Mitchell@Liverpool.ac.uk	University of Liverpool
033	HEART–MIND AF: Co-designing an equitable screening and support pathway for anxiety and depression in people with atrial fibrillation	Dr Ben Buckley	b.j.buckley@ljmu.ac.uk	Liverpool John Moores University
034	Early Identification of Mental Health Vulnerability in Children and Young People with Long-Term Conditions: Developing an Inequalities-Informed Approach to Targeted Psychological Support and Community-Based Care.	Professor Greg Irving	Irvingg@edgehill.ac.uk	Edge Hill University

035	Improving screening and diagnosis of polyendocrine metabolic ovarian syndrome (PMOS) in primary care	Dr Eduard Shantsila	eduard.shantsila@liverpool.ac.uk	**University of Liverpool**
036	An Equitable Community Service for the Cardiovascular Disease Risk Prevention	Dr Eduard Shantsila	eduard.shantsila@liverpool.ac.uk	**University of Liverpool**
037	A randomised controlled trial of folic acid vs placebo for hypertension control in UK adults with folate deficiency	Dr Eduard Shantsila	eduard.shantsila@liverpool.ac.uk	**University of Liverpool**
038	Prospective Real-Time Evaluation and Development of an AI-based Tool for Prediction of Atrial Fibrillation After Cardiac Surgery (PREDICT-AF)	Professor Gregory Lip	lipgy@liverpool.ac.uk	**University of Liverpool**
039	REALISE-CGM: Real-time continuous glucose monitoring (RT-CGM) for behaviour-only glycaemic improvement in adults with dysglycaemia: a mixed methods pilot randomised controlled trial	Dr Uazman Alam	Uazman.alam@liverpool.ac.uk	**University of Liverpool**
040	RESIST Hypertension: A Randomised Evaluation of Sustained Isometric Resistance Strength Training in Individuals with Resistant Hypertension	Dr Ellen Dawson	e.dawson@ljmu.ac.uk	**Liverpool John Moores University**
041	Revealing inequalities in care of people dying in hospitals and where inequality exists, understanding the structural factors that drive inequalities.	Professor John Ellershaw	j.e.ellershaw@liverpool.ac.uk	**University of Liverpool**
042	Point-of-care respiratory physiology for COPD identification in lung cancer screening: a feasibility study of embedded N-Tidal assessment in deprived communities	Dr Freddy Frost	ffrost@liverpool.ac.uk	**University of Liverpool**
043	TargetOptimise: Multi-modal feasibility study of prehabilitation to optimise lung cancer outcomes	Dr Serena Chee	Serena.chee@liverpool.ac.uk	**University of Liverpool**
044	Understanding post-stroke glycaemic variability using continuous glucose	Professor Kausik Chatterjee	KChatterjee@lancashire.ac.uk	**University of Lancashire**

	monitoring: a doctoral study of feasibility, prognostic value and equity			
045	Co-design, implementation and evaluation of a Clinical Exercise Physiologist-led physical activity service for people with long-term conditions in UK primary care.	Dr Gemma Miller	g.d.miller@ljmu.ac.uk	**Liverpool John Moores University**
046	A Nurse-Led Transitional Pain Service for the Prevention of Persistent Postsurgical Pain and Opioid Harm in High-Risk Surgical Patients: A Mixed Methods Co-Production and Implementation Study	Professor Michelle Briggs	Michelle.briggs@liverpool.ac.uk	**University of Liverpool**
047	Bowel dysfunction after stroke: a systematic review and meta-analysis of the prevalence, risk factors and impact of faecal incontinence and constipation in stroke survivors.	Dr Clare Gordon	Cgordon8@lancashire.ac.uk	**University of Lancashire**

ARC NWC Theme: Public Health & Prevention

Number of Doctoral Research Projects Available: 16

Navigate to further details about each project by clicking the 'ARC Ref' in the first column

ARC REF	Doctoral Research Project Title	Primary Supervisor	Primary Supervisor Email	ARC NWC Partner Host University
027	Creative Mental Health support for children and young people with long-term mental health conditions through the e-Arts-for-the-Blues digital platform: An implementation study.	Professor Vicky Karkou	Karkouv@edgehill.ac.uk	Edge Hill University
048	Developing a Co-Produced, Equity-Informed Movement at Work Framework for Contact Centres: From Prevention-Focused Behavioural Understanding to Practical Implementation	Dr Lee Graves	l.e.graves@ljmu.ac.uk	Liverpool John Moores University
063	REACH: Referral Engagement and Community Health: Addressing health inequalities and strengthening exercise referral pathways to improve wellbeing in Blackpool.	Dr Michael Owen	Michael.Owen@edgehill.ac.uk	Edge Hill University
064	Active Living at Home: Understanding the Impact of Housing Inequalities on Physical Activity and Health Outcomes	Dr Samira Awwal	s.awwal@ljmu.ac.uk	Liverpool John Moores University
065	From NEET to Opportunity: Informing Policy to Support Young People into Education, Employment and Training	Dr Michelle Black	Michelle.black@liverpool.ac.uk	University of Liverpool
066	Understanding and preventing persistent physical inactivity: Co-designing equitable movement opportunities and supporting physical literacy for Blackpool's most at-risk children	Dr Richard Tyler	TylerR@edgehill.ac.uk	Edge Hill University
067	Understanding the health effects of fraud across the population: neighbourhood impacts, inequalities and system responses	Dr William Whittaker	william.whittaker@liverpool.ac.uk	University of Liverpool

068	Supporting Tailored Responses to Inequalities through Digital Engagement for Physical Activity (STRIDE): A place-based approach to national digital physical activity initiatives for health equity and disease prevention.	Dr Nicola Relph	Nicola.Relph@Edgehill.ac.uk	**Edge Hill University**
069	Nature-Based Neighbourhood Health for People and Planet: Exploring How Integrated Community and NHS Systems Reduce Inequalities, Support Children and Young People's Mental Health and Wellbeing, and Build Resilience to Climate Anxiety	Professor Michelle Haworth	Michelle.howarth@edgehill.ac.uk	**Edge Hill University**
070	Cultivating health: green space as a preventative and health-promoting asset within healthcare sites in North West England	Dr Rebecca Geary	r.geary@liverpool.ac.uk	**University of Liverpool**
071	Clearing the Air: Co-Producing Healthier Places for Young People Through Equitable Vaping Prevention in Blackburn with Darwen Borough	Dr Andrew Levy	levya@edgehill.ac.uk	**Edge Hill University**
072	How do social conditions, demographics and perinatal outcomes effect respiratory health in childhood? Identifying children most at risk	Dr Philip McHale	hlpmchal@liverpool.ac.uk	**University of Liverpool**
073	SEC-GROW: Supporting and Enabling Community Growing for Resilient Outcomes and Wellbeing	Professor Charlotte Hardman	charlotte.hardman@liverpool.ac.uk	**University of Liverpool**
074	Understanding how social security and local welfare systems influence family mental health and child wellbeing: a systems approach to informing prevention, reducing inequalities and improving local decision-making.	Dr Sophie Wickham	slw@liverpool.ac.uk	**University of Liverpool**
075	Reducing inequalities in cancer early diagnosis and research engagement through community-led co-design.	Dr Lorna Young	Lorna.young@liverpool.ac.uk	**University of Liverpool**
076	Reducing Inequalities in Vaccine Uptake and Impact Across the Life Course: Evidence for Policy and Practice	Dr Daniel Hungerford	danhungi@liverpool.ac.uk	**University of Liverpool**

ARC NWC Theme: Social Care

Number of Doctoral Research Projects Available: 7

Navigate to further details about each project by clicking the 'ARC Ref' in the first column

ARC REF	Doctoral Research Project Title	Primary Supervisor	Primary Supervisor Email	ARC NWC Partner Host University
019	Addressing job satisfaction and finding solutions to reduce staff turnover in the adult social care workforce to create a healthier and better supported workforce	Dr Clarissa Giebel	Clarissa.giebel@liverpool.ac.uk	**University of Liverpool**
020	The impacts of unpaid caring on education, employment and well-being in young adult carers	Dr Clarissa Giebel	Clarissa.giebel@liverpool.ac.uk	**University of Liverpool**
021	Comparing the effects of social care vs. health care based Schwartz Rounds across the UK: Impacts on well-being, empathy, and compassion	Dr Clarissa Giebel	Clarissa.giebel@liverpool.ac.uk	**University of Liverpool**
022	Identifying training needs in the health and social care workforce on rarer dementias and pilot testing a new training intervention to improve knowledge about rarer dementias	Dr Clarissa Giebel	Clarissa.giebel@liverpool.ac.uk	**University of Liverpool**
023	Connecting Compassionate Communities and Hospitals: Understanding How Volunteers and Community Assets Support Patients, Families and Carers at the End of Life.	Dr Stephen Mason	stephen.mason@liverpool.ac.uk	**University of Liverpool**
024	Supporting People with Advanced Illness to Live Well at Home: An Implementation Science Evaluation of Integrated Palliative Care and Support Services within the Integrated Mersey Palliative Care Team (IMPaCT)	Dr Stephen Mason	stephen.mason@liverpool.ac.uk	**University of Liverpool**

025	The Impact of Managing Breathlessness on Informal Caregivers of Patients diagnosed with Advanced Heart Failure: A Mixed Methods Study.	Dr Karen Higginbotham	k.higginbotham@ljmu.ac.uk	**Liverpool John Moores University**

ARC NWC Theme: Women's Health

Number of Doctoral Research Projects Available: 27

Navigate to further details about each project by clicking the 'ARC Ref' in the first column

ARC REF	Doctoral Research Project Title	Primary Supervisor	Primary Supervisor Email	ARC NWC Partner Host University
001	Cycles of Change: Neurodivergence, Reproductive Transitions and Alcohol-Related Harm	Professor Abi Rose	A.K.Rose@ljmu.ac.uk	Liverpool John Moores University
002	Individual variation in the biomechanics of childbirth-related positions during the third trimester: foundations for personalised maternity care	Dr Anastasia Topalidou	atopalidou@lancashire.ac.uk	University of Lancashire
003	Diagnosing endometriosis earlier, the role of primary care.	Professor Nefyn Williams	Nefyn.williams@liverpool.ac.uk	University of Liverpool
004	Co-producing Perinatal Maternal Mental wellbeing programme (CoPeMaM): A positive strengths-based approach to promoting perinatal mental wellbeing.	Dr Catrin Eames	c.e.eames@ljmu.ac.uk	Liverpool John Moores University
005	Understanding the health inequalities and psychosocial mechanisms of functional neurological disorder: gender and adverse childhood experiences in the context of disadvantage.	Professor Rhiannon Corcoran	rhiannon.corcoran@liverpool.ac.uk	University of Liverpool
006	HEaR-ME: Heart, Exercise and Reproductive Transition – Menopause & Exercise. Developing equitable cardiovascular prevention and exercise guidance for women through menopause and beyond.	Professor David Oxborough	d.l.oxborough@ljmu.ac.uk	Liverpool John Moores University
007	Guiding every step to move beyond the myths: Improving education, training and practice of health care professionals in physical activity and movement behaviour advice, during and after pregnancy.	Dr Mhairi MacDonald	Mhairi.MacDonald@edgehill.ac.uk	Edge Hill University

008	Understanding systems barriers and co-producing systems solutions to physical activity, exercise and sport for women and girls across the Liverpool City Region	Dr Tori Sprung	V.S.Sprung@ljmu.ac.uk	**Liverpool John Moores University**
013	Beyond Heavy Periods: Understanding the Hidden Burden of Menstrual Disorders, Iron Deficiency and Anaemia.	Professor Dharani Hapangama	dharani@liv.ac.uk	**University of Liverpool**
014	The role of NoLo alcohol products during pregnancy, understanding risk perception, current guidance and future policy	Dr Sam Burton	s.p.burton@ljmu.ac.uk	**Liverpool John Moores University**
015	What Outcomes Matter in the Evaluation of Perinatal Biodynamic Interventions? Co-developing a Core Outcome and Experience Set	Dr Kirsty Coxon	kcoxon@lancashire.ac.uk	**University of Lancashire**
016	Understanding heterogeneity in endometriosis-associated pain: linking experimental sensory responses with biopsychosocial and life-course factors	Dr Andrew Marshall	andrew.marshall@liverpool.ac.uk	**University of Liverpool**
049	Developing and Evaluating Behaviour Change Interventions to Improve Recognition and Diagnosis of Premenstrual Dysphoric Disorder (PMDD) Across the Diagnostic Pathway	Professor Pooja Saini	P.Saini@ljmu.ac.uk	**Liverpool John Moores University**
050	Re-imagining the Future of Women's Health Devices: Engaging women and end users for Novel Innovation in the UK	Dr Teesta Dey	Teesta.dey@liverpool.ac.uk	**University of Liverpool**
051	Menstrual pain in autistic people	Dr David Moore	d.j.moore@ljmu.ac.uk	**Liverpool John Moores University**
052	Exploring the Intersection Between Female Athletes' Reproductive Journeys and Anti-Doping Regulations	Dr Kelly Massey	k.l.massey@ljmu.ac.uk	**Liverpool John Moores University**
053	Improving implantation at first embryo transfer; Lysosomal–Redox Control of Endometrial Decidualisation.	Dr Nicola Tempest	Ntempest@liverpool.ac.uk	**University of Liverpool**

054	Information, Misinformation, Disinformation and Maternity Care: Improving how evidence and practice is communicated via social media	Dr Abi Merriel	Abi.merriel@liverpool.ac.uk	**University of Liverpool**
055	Reconfiguring maternity care: Exploring the sociotechnical realities of a telehealth enabled shift from hospital to community	Dr Abi Merriel	Abi.merriel@liverpool.ac.uk	**University of Liverpool**
056	Decision-making about induction of labour: developing a clinically useful prediction model for personalised discussions	Dr Abi Merriel	Abi.merriel@liverpool.ac.uk	**University of Liverpool**
057	Migrant Women's Healthcare Access for Early Pregnancy Care in the UK	Dr Sergio Silverio	S.A.Silverio@liverpool.ac.uk	**University of Liverpool**
058	Ethnic susceptibility, and other clinical influences, on the development of Gestational Diabetes Mellitus (GDM) and associated long-term health outcomes in UK women: analysis of CPRD and UK Biobank data.	Professor Daniel Cuthbertson	Dan.cuthbertson@liverpool.ac.uk	**University of Liverpool**
059	Fairness-audited machine learning on linked NHS records to deliver graded miscarriage care across the Northwest Coast.	Dr Nicola Tempest	Ntempest@liverpool.ac.uk	**University of Liverpool**
060	Workforce equity and staff experience in obstetrics and gynaecology: understanding inequalities and evaluating approaches to change	Professor John Allotey	john.allotey@liverpool.ac.uk	**University of Liverpool**
061	Modelling outcomes of strengths-based approaches in long-term equitable outcomes for mothers and babies	Dr Oluwaseun Esan	oluwaseun.esan@liverpool.ac.uk	**University of Liverpool**
062	Medicines in Pregnancy: Using Linked Health Data to Understand Patterns of Use, Safety and Inequalities	Dr Caroline Dale	caroline.dale@liverpool.ac.uk	**University of Liverpool**

ARC NWC Theme: Workforce & Systems Resilience

Number of Doctoral Research Projects Available: 4

Navigate to further details about each project by clicking the 'ARC Ref' in the first column

ARC REF	Doctoral Research Project Title	Primary Supervisor	Primary Supervisor Email	ARC NWC Partner Host University
009	A digital platform to support the dementia workflow: reducing clinician burden through co-designed technologies.	Dr Davide Bruno	d.bruno@ljmu.ac.uk	Liverpool John Moores University
010	Building Inclusive Training Pathways into Health and Social Care.	Professor John Sandars	John.sandars@edgehill.ac.uk	Edge Hill University
011	The de-implementation of routine gastric residual volume measurement to guide enteral feeding in critically ill adults: a behaviour-change workforce intervention.	Professor Lyvonne Tume	l.n.tume@ljmu.ac.uk	Liverpool John Moores University
012	Decision-Making Capacity Assessment: Professional Preparedness, Practice and Support.	Dr Scott Lamont	slamont@lancashire.ac.uk	University of Lancashire

2. Doctoral Research Projects: Further details

ARC Doctoral Project Reference: 001

Title: Cycles of Change: Neurodivergence, Reproductive Transitions and Alcohol-Related Harm.

Supervisory Team: Professor Abi Rose, Dr Sam Burton, Dr Patsy Irizar

Contact: A.K.Rose@ljmu.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: Liverpool John Moores University

Lay Summary: Menstrual and reproductive changes during young adulthood and perimenopause can affect women's wellbeing, mood, and sleep. Autistic women and women with ADHD can also experience sensory overload, stress, social pressure, poor mental health, and difficulties getting suitable healthcare. Some women may use alcohol to cope with these experiences, but little research has examined how neurodivergence, reproductive and hormonal changes, and alcohol use are connected.

This PhD will work with neurodivergent women aged 18–26 and 40–60 to understand alcohol use in young adulthood and midlife. Using intergenerational discussion groups, individual interviews, and an accessible six-month online diary, it will explore why women drink or choose not to drink, what changes over time, and what helps or makes it harder to get appropriate support.

A Public Advisory Group of autistic women and women with ADHD will shape recruitment, study materials, interpretation and communication of findings. Participants can contribute online or in person, verbally or in writing, with optional creative approaches.

Findings will be used to co-produce practical recommendations and accessible information for women, healthcare professionals, community organisations and policymakers. Overall, this research aims to support earlier prevention of alcohol-related harms by informing more inclusive women's health and alcohol services.

ARC Doctoral Project Reference: 002

Title: Individual variation in the biomechanics of childbirth-related positions during the third trimester: foundations for personalised maternity care.

Supervisory Team: Dr Anastasia Topalidou, Dr Lauren Howarth, Dr Kirstie Coxon

Contact: atopalidou@lancashire.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: University of Lancashire

Lay Summary: Childbirth is a process in which a woman's position and movement can influence how her pelvis, spine and hips align and how the baby engages, rotates and descends. However, there have been no biomechanical studies during labour. Existing pregnancy research is based on small, poorly representative samples; none were conducted in the UK and ethnicity was rarely reported. Consequently, maternity professionals cannot answer the question: "which position may work for which woman, when and why?"

This PhD will recruit a diverse group of women from 28 weeks of pregnancy and use three-dimensional motion capture to investigate how they adopt and adapt a range of childbirth-related upright positions. The student will examine whether differences in women's anatomy, body size, mobility, ethnicity, pregnancy history and clinical characteristics are associated with different movement and posture patterns. They will explore whether combinations of these characteristics can help predict how a woman adopts each position.

The project builds on our published foundational studies and directly addresses a priority identified by public contributors and maternity stakeholders through an NIHR ARC NWC-funded project. It will provide urgently needed UK evidence, strengthen maternity education and establish foundations for more personalised, inclusive positioning support and future research during labour.

ARC Doctoral Project Reference: 003

Title: Diagnosing endometriosis earlier, the role of primary care.

Supervisory Team: Professor Nefyn William, Dr Babu Karavadra, Dr Philip McHale

Contact: Nefyn.williams@liverpool.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: University of Liverpool

Lay Summary: Endometriosis affects 1 in 10 women in the UK, but diagnosis takes over nine years on average and even longer for women from ethnically diverse communities. Many women see their GP repeatedly, or attend A&E, before being believed and diagnosed. In 2026, NICE published guidance supporting the use of two new, non-invasive tests to help diagnose endometriosis: a saliva test ('spit test') and a gut-sensor test, both intended for use in general practice. But we don't yet know how well these tests will work in the real world, or how women and healthcare professionals will experience using them.
This PhD will build the evidence needed to introduce these new tests fairly across the NHS and look at the existing tests that help diagnose endometriosis (ultrasound scan for example). Through reviewing anonymised GP health records, and interviews with women, GPs, and gynaecologists, the project will look at the current diagnostic delays and explore real experiences of the different tests. A Public Advisory Group of people with lived experience of long-term pain, recruited through ARC Northwest, will help shape every stage of the research, ensuring the voices of women, including younger women and those from ethnically diverse and underserved communities are heard.

ARC Doctoral Project Reference: 004

Title: Co-producing Perinatal Maternal Mental wellbeing programme (CoPeMaM): A positive strengths-based approach to promoting perinatal mental wellbeing.

Supervisory Team: Dr Catrin Eames, Professor Gill Thomson, Dr Sam Burton

Contact: c.e.eames@ljmu.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: Liverpool John Moores University

Lay Summary: Pregnancy and up to a year after birth (known as the perinatal period) can be both a time to thrive and a time of challenge and difficulty. One in four women will experience poorer mental health during this time, but many more do not share the difficulties they face, and do not access support. There is growing recognition that women need better access to programmes to support mental health and wellbeing in the perinatal period. We propose that these programmes should include a focus on the strengths of birthing people in their ability to cope and feel well. This PhD aims to develop a strength-based perinatal mental health programme that is designed for women, by women. To do this, we will: review the evidence for any existing strengths-based interventions; explore the opinions of those with professional experience and those with lived experiences, targeting those from underserved populations, of what helps improve maternal wellbeing; and then work together to co-develop a programme that builds on women's existing strengths and resources to support their wellbeing during the perinatal period. Finally, we will ask women for their views on the programme we have developed, ready for further testing and evaluation.

ARC Doctoral Project Reference: 005

Title: Understanding the health inequalities and psychosocial mechanisms of functional neurological disorder: gender and adverse childhood experiences in the context of disadvantage.

Supervisory Team: Professor Rhiannon Corcoran, Dr Peter Fisher

Contact: rhiannon.corcoran@liverpool.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: University of Liverpool

Lay Summary: Functional Neurological Disorder (FND) is a common condition causing significant distress to sufferers, families and friends while being associated with substantial care costs. Its prioritisation for treatment is variable and dependent on available resources.

It is a highly stigmatised condition which is, in part, a legacy of its historic association with hysteria, leading some to regard it as sex-based, entirely psychological or as malingering.

FND has a well-recognised association with trauma but, trauma is neither a necessary nor a sufficient condition for FND to present or be diagnosed. FND is most prevalent in females, as is trauma and, both have been found to be more common in the context of disadvantage, indicating significant health inequalities.

Using mixed methods this research will aim to understand why and how some individuals develop FND following traumatic experiences while others do not. The main objective is to understand the complex interaction of factors at social, psychological, developmental, environmental and health system levels that lead to FND following trauma and to identify protective factors. This objective will be tackled paying attention to sex, gender and socio-economic disadvantage. It will also explore how service users and health professionals understand it in relation to preceding trauma.

ARC Doctoral Project Reference: 006

Title: HEaR-ME: Heart, Exercise and Reproductive Transition – Menopause & Exercise. Developing equitable cardiovascular prevention and exercise guidance for women through menopause and beyond.

Supervisory Team: Professor David Oxborough, Dr Kirsty Roberts, Dr Ellen Dawson

Contact: d.l.oxborough@ljmu.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: Liverpool John Moores University

Lay Summary: Women's risk of cardiovascular disease increases during mid and later life, particularly during and after menopause. However, much of the evidence used to guide exercise advice and understand changes in the heart comes from studies in men. We therefore know less about how menopause, hormone replacement therapy (HRT) and exercise interact to influence women's heart health. Women's opportunities to be physically active and access menopause and preventive healthcare may also differ according to their social and economic circumstances.

The HEaR-ME project will investigate heart health in women aged 45–70 across different stages of menopause. It will compare women who have undertaken endurance exercise over many years with women who are not regular exercisers, helping us understand how lifelong exercise influences the female heart. The project will also examine how previously inactive women respond to a flexible 16-week aerobic exercise programme and whether HRT influences these changes. We will explore factors that may make it easier or harder for women to participate.

Working with women, healthcare professionals and community partners, the findings will be used to develop accessible, evidence-based recommendations. HEaR-ME aims to support safe, personalised and equitable exercise guidance and improve cardiovascular prevention for women during menopause and beyond.

ARC Doctoral Project Reference: 007

Title: Guiding every step to move beyond the myths: Improving education, training and practice of health care professionals in physical activity and movement behaviour advice, during and after pregnancy.

Supervisory Team: Dr Mhairi MacDonald, Professor Julie Abayomi, Dr Asa Aula

Contact: Mhairi.MacDonald@edgehill.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: Edge Hill University

Lay Summary: Being active during pregnancy and after having a baby is good for both mothers and babies. Regular physical activity can help mothers feel healthier, improve their mood, support healthy weight, and reduce the risk of some health problems.

Health professionals recommend that pregnant women and new mothers do at least 150 minutes of moderate physical activity each week alongside activities that strengthen muscles. Examples include brisk walking, swimming, dancing, yoga, housework, and carrying shopping.

Despite these recommendations, many women struggle to stay active during pregnancy and after birth. Barriers such as limited access to information, a lack of support from family and friends, and fewer opportunities to be active can make participation difficult. In addition, research suggests that advice from healthcare professionals is not always clear or consistent, leaving some women unsure about what activities are safe and appropriate.

This research will explore how physical activity advice and support can be improved for pregnant women and new mothers, by identifying ways to provide clearer, more consistent, accessible, and personalised guidance. The study aims to support healthcare professionals in delivering individualised care to help women make informed choices about being active for their health during this important stage of life.

ARC Doctoral Project Reference: 008

Title: Understanding systems barriers and co-producing systems solutions to physical activity, exercise and sport for women and girls across the Liverpool City Region.

Supervisory Team: Dr Tori Sprung, Dr Hannah Timpson, Professor Lawrence Foweather

Contact: V.S.Sprung@ljmu.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: Liverpool John Moores University

Lay Summary: Women and girls are consistently less active than men, despite the many benefits of physical activity, exercise and sport for physical and mental health. These differences begin in childhood, increase during adolescence, and continue throughout adulthood. Pregnancy and early motherhood are particularly important periods when physical activity often declines, contributing to poorer health outcomes for mothers and their children. While research often focuses on individual reasons why women are less active, wider factors also play a role, including healthcare, transport, childcare, community services, policies, culture and local facilities.

This research project will explore how these different influences shape participation in physical activity, exercise and sport among women and girls across the Liverpool City Region. Working closely with regional partners, the research will first map the wider system influencing participation before focusing on the experiences of pregnant and postnatal women. Finally, the project will work with women, families, communities, healthcare professionals and decision makers to co-develop practical recommendations and resources to improve opportunities for physical activity and reduce health inequalities.

The findings will directly inform regional policy and practice, helping to create healthier places and improve health outcomes for current and future generations of women and girls.

ARC Doctoral Project Reference: 009

Title: A digital platform to support the dementia workflow: reducing clinician burden through co-designed technologies.

Supervisory Team: Dr Davide Bruno, Dr Lisa Knight, Dr Rhys Davies

Contact: d.bruno@ljmu.ac.uk

Theme: Workforce & systems resilience

ARC NWC Partner Host University: Liverpool John Moores University

Lay Summary: Dementia services face increasing demand while many healthcare organisations struggle with workforce shortages and growing administrative workloads. Clinicians often need to gather information from multiple sources before making decisions about assessment and care. This project will work with clinicians, patients and carers to design and evaluate a digital system that brings important information together in one place. The research will examine whether this approach can reduce time spent on administration, improve staff wellbeing and enable clinicians to spend more time supporting patients. Findings will help healthcare organisations understand how digital tools can support a sustainable workforce while improving dementia care.

ARC Doctoral Project Reference: 010

Title: Building Inclusive Training Pathways into Health and Social Care.

Supervisory Team: Professor John Sandars, Dr Joanne Smith, Professor Jacqueline Leigh

Contact: John.sandars@edgehill.ac.uk

Theme: Workforce & systems resilience

ARC NWC Partner Host University: Edge Hill University

Lay Summary: This project aims to help more people from disadvantaged backgrounds stay and succeed in health and social care education and training. It supports NHS plans to build a stronger and more inclusive workforce that reflects local communities.

Many people face challenges when trying to complete training, especially from groups that include informal carers, ethnic minority groups and people living with disabilities. The project focuses on two key areas: taking part in education and training and staying on the course through to completion.

The project will work with students, communities and all involved in education and training to understand what helps people progress and what makes training difficult. Instead of only looking at exam results, the project explores what people need to feel able to succeed and thrive, including feeling welcome, having fair chances to progress, managing study alongside life responsibilities and building a meaningful career. The project will also look at practical issues such as money, flexible learning routes, accessible placements and supportive supervision.

Through workshops and surveys, the project will identify the biggest barriers and design practical solutions, producing an action plan and tool that all involved in education and training can use to improve support and reduce inequalities.

ARC Doctoral Project Reference: 011

Title: The de-implementation of routine gastric residual volume measurement to guide enteral feeding in critically ill adults: a behaviour-change workforce intervention.

Supervisory Team: Professor Lyvonne Tume, Professor Lisa Newson, Dr Emma Kinley

Contact: l.n.tume@ljmu.ac.uk

Theme: Workforce & systems resilience

ARC NWC Partner Host University: Liverpool John Moores University

Lay Summary: Patients on the intensive care unit are routinely fed with liquid food through a tube into their stomach. In the UK, nurses regularly (4-6 hourly) check how much liquid food is in the stomach (called the gastric residual volume or GRV) by sucking it out with a plastic syringe before returning it. Staff say they do this to ensure that the stomach is not too full of fluid, which might increase the risk of vomiting. France and many other countries stopped this practice years ago, after a large study showed it made no difference. There are important downsides to this practice. First, it may be unpleasant for patients. Second, it may lead to the unnecessary stopping of the patient's food, reducing the amount of protein and calories they receive. Third, it is a time-consuming activity that may prevent nursing staff undertaking other patient care activities. Fourth, each time it is done, plastic syringes are used which has important environmental implications. This PhD will develop and test how we can reduce the practice of routinely measuring the stomach contents of patients in the intensive care unit. There is robust evidence that this practice is unnecessary, wastes resources and may affect adequate nutrition.

ARC Doctoral Project Reference: 012

Title: Decision-Making Capacity Assessment: Professional Preparedness, Practice and Support.

Supervisory Team: Dr Scott Lamont, Dr Kathryn Berzins

Contact: slamont@lancashire.ac.uk

Theme: Workforce & systems resilience

ARC NWC Partner Host University: University of Lancashire

Lay Summary: Being able to make your own decisions is an important part of healthcare. Decision-making capacity means whether a person is able to make a particular decision at the time it needs to be made. Health and social care professionals may need to assess this when there is concern that a person cannot make a decision for themselves. However, previous research shows variation in how well different professionals are prepared for this role, how assessments are carried out and recorded, and what training or support is available.

This PhD will examine how professionals are prepared and supported to undertake decision-making capacity assessments in practice. It will review existing research and look at how capacity assessment is covered in professional education, workplace training, guidance, and assessment resources. The student will then study practice across relevant professional groups and settings. This may include exploring practitioners' knowledge, confidence and experiences, and examining how assessments are undertaken and documented. The findings will be used to develop a practical educational or decision-support resource. This will be tested to see whether it is useful and workable in practice. The exact professional groups, settings and methods will be refined with the successful PhD student.

ARC Doctoral Project Reference: 013

Title: Beyond Heavy Periods: Understanding the Hidden Burden of Menstrual Disorders, Iron Deficiency and Anaemia.

Supervisory Team: Professor Dharani Hapangama, Professor Deirdre Lane, Professor Gregory Lip

Contact: dharani@liv.ac.uk

Theme: Women's Health

ARC NWC Partner Host University: University of Liverpool

Lay Summary: Heavy menstrual bleeding (HMB) affects many women and can lead to iron deficiency and anaemia. Anaemia can cause severe tiredness and may worsen the impact of common gynaecological conditions such as fibroids, endometriosis and adenomyosis. Despite this, the extent of the problem, how women experience it and how well current treatments meet their needs are not fully understood.

This research will investigate these gaps through three linked studies. First, a national online survey will explore how common HMB, iron deficiency and anaemia are among women with common gynaecological conditions, and how these symptoms affect their daily lives, wellbeing and experiences of healthcare.

Second, a local study will combine questionnaires, interviews and clinical information, including blood tests, scans and validated methods of assessing menstrual blood loss. This will help examine how symptoms and anaemia relate to treatment outcomes and identify why recommended treatments may not always be acceptable or effective for individual women.

Finally, laboratory research will investigate how iron deficiency may affect cells from the lining of the womb. This will provide insight into whether iron deficiency may contribute to changes associated with abnormal bleeding.

By combining women's experiences, clinical data and laboratory science, this research aims to provide a more complete understanding of the burden of HMB and iron deficiency. The findings could help improve recognition, treatment and personalised care, ultimately supporting better quality of life for women affected by these common conditions.

ARC Doctoral Project Reference: 014

Title: The role of NoLo alcohol products during pregnancy, understanding risk perception, current guidance and future policy

Supervisory Team: Dr Sam Burton, Dr Abi Rose, Dr Patsy Irizar

Contact: s.p.burton@ljmu.ac.uk

Theme: Woman's Health

ARC NWC Partner Host University: University of Liverpool

Lay Summary: Drinking alcohol during pregnancy can harm the developing baby, so UK guidance recommends avoiding alcohol completely when pregnant or trying to conceive. However, alcohol use during pregnancy still occurs. At the same time, no- and low-alcohol (NoLo) drinks are becoming increasingly popular and are often promoted as less harmful alternatives to standard alcoholic drinks.

NoLo products can be confusing because they include a wide range of drinks, from 0.0% alcohol to products containing up to 1.2% alcohol. Our previous research found that some women use NoLo drinks during pregnancy to feel included in social situations and to help them avoid standard-strength alcohol. However, many women were unsure about which products were safe, how labels should be interpreted, and whether "alcohol-free" and "low-alcohol" meant the same thing. Women also reported receiving inconsistent advice and wanted clearer information from trusted healthcare professionals such as midwives and GPs.

This PhD will investigate what current UK guidance says about NoLo drinks in pregnancy, how women understand and use these products, and how healthcare professionals advise patients. The findings will then be used to develop recommendations for clearer, more consistent guidance, labelling and policy to support informed decision-making during pregnancy.

ARC Doctoral Project Reference: 015

Title: What Outcomes Matter in the Evaluation of Perinatal Biodynamic Interventions?

Co-developing a Core Outcome and Experience Set

Supervisory Team: Dr Kirstie Coxon, Professor Soo Downe, Dr Anastasia Topalidou

Contact: kcoxon@lancashire.ac.uk

ARC NWC Partner Host University: University of Lancashire

Theme: Woman's Health

Lay Summary: Some people believe certain movements and positions are helpful during pregnancy and birth. They believe these movements can help ease pain, support labour to progress, and safely reduce the need for things like forceps and C-sections.

These movements seem to be safe, but there isn't enough research to know how well they work or what other effects they might have. NHS staff already use these movements, so research is needed to guide good care.

We want to know what future research about these movements should focus on. Then we can make sure there's a way to measure these things.

To find this out, we'll start by speaking to mothers and birthing people who have experience of these movements, then we'll speak to NHS staff and specialists. We'll ask them all how they think the techniques could affect birth experiences and outcomes. We'll then look at what earlier research has measured.

Bringing these findings together, we'll ask parents, NHS staff and specialists to agree on which outcomes are most important. We'll check whether existing questionnaires can measure these outcomes. Where there are gaps, we'll write and test new questions with parents to make sure they're clear and relevant.

ARC Doctoral Project Reference: 016

Title: Understanding heterogeneity in endometriosis-associated pain: linking experimental sensory responses with biopsychosocial and life-course factors

Supervisory Team: Dr Andrew Marshall, Dr Selina Johnson

Contact: andrew.marshall@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: Endometriosis pain can affect many parts of a person's life. However, the amount of endometriosis in the body does not always match the amount of pain someone experiences, and pain can continue after treatment. We still do not understand why pain differs between people.

This PhD will investigate these differences by looking at how people respond to a temporary inflammatory challenge. The challenge causes a mild reaction in an area of the body that is not normally painful. We will measure how painful the response is and how long it lasts. This will help us understand how the body's pain system responds to inflammation and recovers afterwards.

We will explore whether these responses are linked to people's pain, emotional wellbeing, social circumstances and experiences earlier in life, including adversity. We will also interview participants to understand how their experiences may have shaped their pain.

Some groups face more barriers to accessing endometriosis care and taking part in research. We will examine who is represented, who may be missing, and work with patients and community groups to make participation more inclusive.

By understanding why pain differs between people, we hope to support personalised and equitable approaches to managing endometriosis pain.

ARC Doctoral Project Reference: 017

Title: Seeing the Whole System: a browser based serious game linking individual, household and service level simulation for multiple long-term conditions in the North West Coast

Supervisory Team: Professor Yonghuai Liu, Professor Lucy Bray, Dr Paul Bakaki

Contact: liuyo@edgehill.ac.uk

ARC NWC Partner Host University: Edge Hill University

Theme: Analogue 2 Digital

Lay Summary: This PhD research study is about helping adults who live with more than one long-term condition, especially combinations of low mood, pain, tiredness and musculoskeletal problems. It will also involve household members, carers, public contributors and services that support them.

The PhD student will design and test a simple serious game that runs in a phone browser. The game will not tell people what medical choice to make. Instead, it will let people practise common situations safely, such as deciding which service to contact, what information to prepare, what to do after being signposted elsewhere, or how a care plan affects home life, work, money and caring responsibilities (essentially support service-navigation).

Service staff and commissioners will use related scenarios to see how a service change might affect waiting, access and fairness. This means people and services can discuss the same situation using the ‘same picture’, rather than working from separate assumptions.

The project is suitable for a Computer Science candidate interested in serious games, human-computer interaction, accessible design, digital health and evaluation. Prior health research experience would be valuable, but the supervisory team and partners will immensely support the health and social care context.

ARC Doctoral Project Reference: 018

Title: Developing Equitable Voice-Based Conversational AI to Improve Childhood Vaccination Uptake and Reduce Health Inequalities

Supervisory Team: Professor Iain Buchan, Professor Axel Kaehne, Dr Andrew McArdle

Contact: Buchan@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Analogue 2 Digital

Lay Summary: Routine childhood vaccinations protect children from serious diseases and help prevent outbreaks within communities. However, an increasing number of children miss vaccinations because families may be uncertain about vaccination, exposed to misleading information, or unable to access information that addresses their concerns. This project will explore whether voice-based artificial intelligence (AI) can help parents and carers access trustworthy information and make informed decisions. Patients, parents, healthcare professionals and community organisations will help design and evaluate the technology. Findings will provide guidance on how AI can be used responsibly and equitably within vaccination programmes and wider preventive healthcare services.

ARC Doctoral Project Reference: 019

Title: Addressing job satisfaction and finding solutions to reduce staff turnover in the adult social care workforce to create a healthier and better supported workforce

Supervisory Team: Dr Clarissa Giebel, Dr Lisa Knight

Contact: Clarissa.Giebel@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Social Care

Lay Summary: Paid carers, so those working in domiciliary, day, or residential care for example, have high staff turnover rates. There is often a lack of adequate training, support and pay. The aim of this mixed-methods PhD is to explore the factors contributing to job satisfaction and health and well-being in the adult social care workforce in the UK, identifying solutions to reduce staff turnover and create a more supported paid care workforce. This PhD will comprise of (1) a systematic review of the evidence; (2) a qualitative semi-structured interview study with social care practitioners working in different care settings and types of organisations from diverse backgrounds, as well as managers, about factors contributing to job satisfaction and well-being in the work environment; (3) a national survey with social care practitioners and managers exploring factors linked to job satisfaction, staff sickness, and turnover. Findings will then be triangulated and presented across workshops to social care practitioners and managers to discuss how these findings could be translated into solutions to improve well-being and satisfaction in the social care paid workforce. This PhD will involve two public contributors, and findings will be disseminated regularly across the ARC and the Social Care Theme, as well as at conferences.

ARC Doctoral Project Reference: 020

Title: The impacts of unpaid caring on education, employment and well-being in young adult carers

Supervisory Team: Dr Clarissa Giebel, Professor Mark Gabbay

Contact: Clarissa.Giebel@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Social Care

Lay Summary: Most research on unpaid carers focuses on middle-aged and older adults, caring for ageing parents or spouses. Less research has been done on young adult carers (aged 16-25), a critical time when someone has to make key decisions about their career, education, and work. The aim of this PhD is to identify the impacts of providing unpaid care on education, employment and well-being in young adult carers (aged 16-25) and how this relationship may differ between unpaid carers from different socio-economic, gender, and ethnic backgrounds, and develop supportive pathways for young adult carers to join and remain in the workforce whilst providing unpaid care. This PhD will include a review, semi-structured interviews, and survey design. It will involve two young adult carers as public advisors to support the development of study documents, interpretation of findings, and dissemination. The student will be part of the University of Liverpool Dementia Health and Social Care Inequalities Research Group, and form part of the NIHR ARC Social Care Theme. There will be various opportunities for presenting the research throughout the PhD, and findings will be written up for publication throughout.

ARC Doctoral Project Reference: 021

Title: Comparing the effects of social care vs. health care based Schwartz Rounds across the UK: Impacts on well-being, empathy, and compassion

Supervisory Team: Dr Clarissa Giebel, Professor Mark Gabbay

Contact: Clarissa.Giebel@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Social Care

Lay Summary: The care workforce is often burned out and lacks adequate ways to discuss experiences of providing care and how this may emotionally affect them. Schwartz Rounds are run in many NHS Trusts across the country, providing a reflective group practice to discuss the emotional aspects of the care work. Unfortunately, they are not yet adequately adapted or implemented across the social care sector, leaving the social care workforce often emotionally unsupported. This PhD links in with an existing funded project by the Point of Care Foundation and aims to compare the impacts of health and social care Schwartz Rounds in terms of care workforce well-being, empathy, compassion, and attitudes to care delivery. The student will conduct a systematic review on Schwartz Rounds; will conduct an ethnography study comparing the impacts and experiences of Schwartz Rounds delivered in health vs. social care settings; and will qualitatively explore how Schwartz Rounds can be effectively delivered across all social care settings for carers working with any population. The student will be supported to write up findings and submit for publication throughout the PhD, and present at national and international opportunities. This PhD is part of the ARC NWC Social Care Theme.

ARC Doctoral Project Reference: 022

Title: Identifying training needs in the health and social care workforce on rarer dementias and pilot testing a new training intervention to improve knowledge about rarer dementias

Supervisory Team: Dr Clarissa Giebel, Dr Eduard Shantsila

Contact: Clarissa.Giebel@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Social Care

Lay Summary: People with rarer subtypes of dementia, such as Lewy Body, Parkinson's semantic, or fronto-temporal dementias, struggle receiving a timely and correct diagnosis, and adequate post-diagnostic care. This is likely to be due to a lack of workforce knowledge of the symptoms and how to best support someone with a rarer dementia subtype. The aim of this PhD is to explore the level of knowledge and gaps on rarer dementia subtypes in the health and social care workforce across different care settings in the UK, and co-produce and pilot test a training intervention for the care workforce to improve knowledge about rarer dementias and thus diagnosis rates and care delivery. This will be achieved by conducting a systematic review, a mixed-methods study with the health and social care workforce, to inform the co-production and then pilot testing of a training intervention for the care workforce. The PhD student will be working with two public contributors to support different aspects of the research and dissemination. The PhD student will be based at the Dementia Health and Social Care Inequalities Research Group in the Department of Primary Care and Mental Health at the University of Liverpool, and will be part of the ARC Social Care theme. There will be opportunities throughout the PhD to present ongoing findings and connect with national and international dementia researchers.

ARC Doctoral Project Reference: 023

Title: Connecting Compassionate Communities and Hospitals: Understanding How Volunteers and Community Assets Support Patients, Families and Carers at the End of Life.

Supervisory Team: Dr Stephen Mason, Dr Tamsin McGlinchey, Professor John Ellershaw

Contact: stephen.mason@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Social Care

Lay Summary: Many people approaching the end of life spend time in hospital. During this period, patients and families often need emotional support, companionship and reassurance in addition to medical care. At Liverpool University Hospitals, trained volunteers provide support for dying patients and their families, act as an important bridge between the hospital and local communities, and are highly valued by patients, relatives, and staff. They have received national recognition through the Queen's Award for Voluntary Service.

This PhD will explore the role that communities can play in supporting people at the end of life and how volunteers contribute to the care and support of patients, unpaid carers and families. It will explore how communities, volunteers and local organisations can work alongside hospital services to support patients, carers and families at the end of life, and how these contributions can be strengthened and sustained over time. Through evidence reviews, interviews, service evaluation, and community engagement activities, the research will investigate what helps or hinders the success of volunteering programmes, how opportunities can become more accessible to underrepresented communities, and how effective approaches can be sustained and adopted more widely.

The findings will help hospitals, communities and voluntary organisations work more effectively together, strengthen support for patients and carers, and develop more inclusive community based approaches to end-of-life care across the North West Coast and the wider UK.

ARC Doctoral Project Reference: 024

Title: Supporting People with Advanced Illness to Live Well at Home: An Implementation Science Evaluation of Integrated Palliative Care and Support Services within the Integrated Mersey Palliative Care Team (IMPaCT)

Supervisory team: Dr Stephen Mason, Dr Clare Greenbaum, Professor John Ellershaw

Contact: stephen.mason@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Social Care

Lay Summary: Most people with advanced illness would prefer to remain in their own homes for as long as possible. Achieving this often requires coordinated support from healthcare professionals, social care services, hospices, community organisations and family carers. Unfortunately, services can become fragmented, resulting in avoidable crises, hospital admissions and distress for patients and families.

The Integrated Mersey Palliative Care Team (IMPaCT) has been developed to provide coordinated support across health, social care, hospice and community services. The service delivers thousands of patient and professional contacts annually and aims to help people remain safely supported in their usual place of residence. During 2025-26, 95% of patients supported by Hospice at Home died in their usual place of residence.

This PhD will investigate how the IMPaCT model works in practice, how patients and carers experience it, and what factors support successful implementation. The study will combine reviews of existing evidence, analysis of service data and interviews with patients, carers and professionals. The findings will help improve services across Merseyside, the North West Coast and nationally, enabling more people with advanced illness to live well at home and receive coordinated support closer to home.

ARC Doctoral Project Reference: 025

Title: The Impact of Managing Breathlessness on Informal Caregivers of Patients diagnosed with Advanced Heart Failure: A Mixed Methods Study.

Supervisory Team: Dr Karen Higginbotham, Dr Amy Gadoud, Professor Mari Lloyd Williams

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Social Care

Lay Summary: For many people living with heart failure (HF), remaining well and independent at home depends heavily on the support of informal carers. Informal carers are unpaid individuals who provide care and support to a person with illness, disability, or frailty because of an existing personal relationship (Buck et al 2025). This care is most provided by partners, family members, friends, or neighbours (Malik et al., 2013). Informal carers play a critical role in supporting symptom management, treatment adherence, and self-care behaviours. However, the demands associated with caring for a person with HF can be considerable, particularly for carers without a healthcare background and those living in socioeconomically disadvantaged circumstances (Kang et al ,2011).

Breathlessness is one of the most prevalent and distressing symptoms experienced by people with HF (Scholten et al 2022). Episodes of breathlessness can be particularly challenging for informal carers, who are often required to manage symptoms, provide reassurance, and make decisions about seeking medical assistance. Witnessing a loved one struggle to breathe can result in significant emotional distress, anxiety, and uncertainty. Evidence suggests that caregiving inequalities are evident among carers of people with HF, with disparities in caregiving burden, physical and psychological health, and access to support disproportionately affecting women, individuals from lower socioeconomic backgrounds, and those from minority ethnic groups (Suksatan et al 2022). These inequalities may compromise carers' ability to provide ongoing support and can negatively impact patient outcomes, including quality of life, hospital admission rates, and mortality (Durante et al 2023).

ARC Doctoral Project Reference: 026

Title: Inequalities in 24-hour movement behaviours, circadian rhythmicity, and associated obesity risk in northwest children and adolescents

Supervisory Team: Professor Stuart Fairclough, Professor Lynne Boddy, Dr Emily Lovett

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ARC NWC Partner Host University: Edgehill University

Theme: Evidence4Impact

Lay Summary: Children who live in poorer areas are more than twice as likely to live with obesity than children in wealthier areas, and this gap is getting wider. How active children are, how much they sit down, and how well they sleep all affect their risk of obesity. But these three behaviours are usually studied separately, even though more time on one means less time for another. When things happen across the day may matter too, not just how much. This project will use an existing dataset of around 3000 children and adolescents from northwest England, whose movement was measured using wearable devices, alongside information about their weight and health. We will examine whether children from more deprived backgrounds have different 24-hour movement patterns, and whether this helps explain differences in obesity risk. We will then share these findings with children and adolescents themselves, asking what matters to them and why these patterns might exist. Combining these data with young people's views and, where relevant, input from organisations well placed to act on the findings will help identify practical, realistic next steps for preventing childhood obesity, which will lay the groundwork for a future study to test them.

ARC Doctoral Project Reference: 027

Title: Creative Mental Health support for children and young people with long-term mental health conditions through the e-Arts-for-the-Blues digital platform: An implementation study.

Supervisory Team: Professor Vicky Karkou, Dr Shaun Liverpool, Dr Victoria Gray

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ARC NWC Partner Host University: Edgehill University

Theme: Public Health & Prevention

Lay Summary: Although many children and young people struggle with their mental health, they often wait a long time before seeing a therapist, sometimes up to two years. Many must travel long distances, which is tiring, expensive and time consuming, exposing them to physical and emotional risks. This is particularly problematic for those with long-term conditions, raising serious health inequality issues. Remote therapy can help address these problems, but attractive and appropriate resources for children are scarce.

In this PhD study, a digital version of an evidence-based creative group psychotherapy will be scaled up. e-Arts-for-the-Blues is an online resource for therapists co-developed with young people and therapists and tested with children and young people with chronic conditions needing psychological support. It offers a 3D online environment with creative digital activities to support mental health. For example, children use digital objects to introduce themselves, create group drawings that support relationships, share songs expressing their struggles, and identify strengths and solutions with the help of digital superheroes. Scaling up this unique product will enable therapists to offer timely, engaging group therapy to larger numbers of young people.

ARC Doctoral Project Reference: 028

Title: Impact of integrating Mental Health Practitioners into Primary Care Network settings

Supervisory Team: Dr Scott Lamont, Dr Kathryn Berzins

Contact: slamont@lancashire.ac.uk

ARC NWC Partner Host University: University of Lancashire

Theme: Long Term Conditions

Lay Summary: People with Serious Mental Illness (SMI) experience worse health outcomes and can struggle to get the right support. This research looks at how Mental Health Practitioners (MHPs) working in GP practices could help. Primary Care Networks bring GP practices and local services together to provide care, but challenges exist. Services may not communicate well, staff may not be clear about each other's roles, and people with SMI may not get the care they need. MHPs offer specialist support and work alongside GPs to improve care. However, these roles are new, with little research on how they are being used or what helps them work well. The research will start by reviewing what is known about mental health support for people with SMI in these settings. It will then look at how MHP roles are organised and delivered within Primary Care Networks, and gather views from MHPs, GPs, and people with SMI. The study will identify what helps or gets in the way of MHPs working effectively, and how their involvement may affect access, waiting times, coordination, quality of care and health outcomes. The findings will be used to develop and evaluate a practical guide to support MHP roles within PCNs.

ARC Doctoral Project Reference: 029

Title: Enabling people with long-term conditions managed in primary care to become more physically active

Supervisory Team: Professor Nefyn Williams, Dr Babu Karavadra, Professor Helen Jones

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Background - As people age and develop long-term conditions, their physical function can decline, leading to disability and loss of independence. How can general practices promote physical activity and reduce this decline? In a previous project we developed a theory about how to do this. We also developed a prototype intervention which needs to be refined, taking account of local resources.

Aim - The aim is to improve physical activity and physical function of people with long-term conditions managed in primary care.

Research plan - We will map the physical activity schemes available for people to use in Cheshire and Merseyside. We will develop an intervention that links GP practices with these local schemes and opportunities. We will test how feasible it is to deliver this intervention. We will assess the number and type of people who use it; effects on physical activity, quality of life and use of the NHS; its adoption and acceptability, whether it is delivered as intended with the identification of barriers and facilitators and whether benefits persist over time.

Working with diverse people and communities with lived experience - The intervention will be developed in partnership with people with lived experience of long-term conditions, especially hard to reach groups such as women, ethnic minorities and areas of socio-economic deprivation.

ARC Doctoral Project Reference: 030

Title: Improving equitable access to social prescribing and personalised non-pharmacological support for people living with long-term pain in primary care

Supervisory Team: Professor Nefyn Williams, Dr Babu Karavadra, Dr Ffion Curtis

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Background - Long-term pain affects almost half of the UK population, with 10-14% reporting moderate to severe disability. Recent guidance from the National Institute for Health and Care Excellence (NICE) tells us that the care of people with long-term pain could be improved by using fewer painkillers like morphine, and more physical exercise and social interaction. Social prescribing is increasingly used alongside conventional healthcare for people with long-term conditions to meet their practical, social and emotional needs. We plan to develop a decision aid to help people make informed choices about accessing social prescribing.

Aim - The aim is to develop a shared decision-making intervention for people living with long-term pain that improves their access to relevant social prescribing opportunities.

Research plan - We will search the literature for good examples of making shared decisions between patients with long-term pain and the clinical staff in the GP practice. We will also search the literature for how people with long-term pain access social prescribing, we will then use this knowledge to design a better way of making these shared decisions. We will hold three workshops and invite people with long-term pain, clinical staff, researchers and people who commission health services.

ARC Doctoral Project Reference: 031

Title: Management of hypertension in ADHD

Supervisory Team: Dr Alena Shantsila, Dr Jennifer Downing, Dr Eduard Shantsila

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Attention deficit hyperactivity disorder (ADHD) is a condition that affects how the brain works and can cause difficulty focusing, hyperactive behaviour and is marked by health inequalities. ADHD affects 2.5 million people in England, leading to 7 years of life expectancy loss in men and 9 years in women. Medications can be prescribed to help control the symptoms of ADHD, but unfortunately these can increase blood pressure, putting patients at greater risk of heart disease and stroke (cardiovascular risk). There is currently no guidance on how to manage high blood pressure in people receiving ADHD treatment, while stopping treatment is unwelcome by patients as it helps their mental wellbeing.

This project will:

1. Identify evidence on how different ADHD treatments change blood pressure and heart risk in adults and children treated for ADHD and the effectiveness of different interventions to reduce the risk.
2. Establish existing practices handling increases in blood pressure changes in the community related to ADHD medications and views of patients and their parents on preferable ways to reduce the risk of increased blood pressure and its complications, which may include both use of ADHD medications and blood pressure-lowering medications.
3. Establish views and experiences of healthcare professionals managing patients with ADHD in primary care and secondary care settings.
4. Co-create, with patients, NHS and industry partners, a framework of monitoring and managing blood pressure to inform priorities on the choice of ADHD treatments and antihypertensives

The co-produced framework will be made available to clinicians and patients to support clinical decisions.

This PhD project will reduce health inequalities in people with ADHD and will be done under supervision of experience researchers.

ARC Doctoral Project Reference: 032

Title: A patient portal single point of access model incorporating patient-reported outcome measures (PROMs) to improve the equity and efficiency of outpatient epilepsy care in Cheshire and Merseyside.

Supervisory Team: Dr James Mitchell, Professor Tony Marson, Dr Adam Noble

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: People with epilepsy often need ongoing hospital appointments to ensure optimum management of seizures, side effects and comorbidities. But appointments are in short supply, and it can be hard to know when you need to be seen more urgently, or how to ask for help between visits. The Walton Centre is testing a new online patient portal that lets people record how their epilepsy is affecting them, including reporting if seizures are getting worse, to get support at the right time, rather than waiting for a routine visit.

This PhD project will find out whether this kind of portal, and the short questionnaires within it (called patient-reported outcome measures), work well for everyone. It will look to see if including people who find technology difficult to use, people with a learning disability, and people who find it hard to read or fill in forms might have unintended consequences.

The student will talk to patients, carers and clinical teams, look at how using the portal changes hospital appointments, and test whether it helps identify people who need to be seen sooner. The aim is to make care fairer, more responsive, and better suited to what matters most to people with epilepsy.

ARC Doctoral Project Reference: 033

Title: HEART–MIND AF: Co-designing an equitable screening and support pathway for anxiety and depression in people with atrial fibrillation

Supervisory Team: Dr Ben Buckley, Professor Dierdre Lane, Professor Ian Jones

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Long Term Conditions

Lay Summary: Atrial fibrillation (AF) is an irregular heart rhythm that increases the risk of stroke and heart failure. AF can be frightening and disruptive to live with, including unpredictable symptoms and worry future health. This psychological distress (especially anxiety or depression) may make it harder to stay active, manage risk factors, and engage with AF care.

However, psychological distress and access to support may not be equal. Financial pressures, age, sex, other health conditions, caring responsibilities, limited education and digital exclusion may create barriers. Current AF services do not routinely look for and manage accessible support for psychological distress.

This PhD will work with people living with AF, public contributors and healthcare professionals. It will examine how common psychological distress is, who is most affected, and how it relates to quality of life, physical activity, medicines, cardiovascular risk management and access to, and use of, health services.

Together, participants and researchers will co-design a psychological distress care pathway to identify and connect people with appropriate support. The pathway will then be tested to determine whether it is acceptable, workable, and reaches people from different backgrounds, reducing inequalities and improving clinical practice.

ARC Doctoral Project Reference: 034

Title: Early Identification of Mental Health Vulnerability in Children and Young People with Long-Term Conditions: Developing an Inequalities-Informed Approach to Targeted Psychological Support and Community-Based Care.

Supervisory Team: Professor Greg Irving, Dr Victoria Gray, Professor Dan Hawcutt

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ARC NWC Partner Host University: Edge Hill University

Theme: Long Term Conditions

Lay Summary: Children and young people (CYP) living with long-term conditions (LTCs), such as asthma, diabetes, and epilepsy, often experience emotional challenges (including anxiety and depression) alongside managing their physical health. This can affect many aspects of daily life, including education, social participation, and family relationships. The mental health outcomes of these young people are not just linked to their health conditions but also wider social factors, including ethnicity, where they live, and the availability of community support. These factors can significantly influence wellbeing and resilience.

Despite growing recognition of these challenges, there remains lots of variation in how mental health difficulties are identified and addressed within healthcare services. This means that opportunities for early intervention and preventative support may be missed.

This project will investigate how information on clinical and social factors and community resources can be combined to identify CYP with LTCs who are at greatest risk of poor mental health outcomes. We will examine patterns of mental health need over time, explore the impact of inequalities and identify protective factors that promote resilience. We will develop approaches that support earlier identification and more personalised care, helping to improve wellbeing, reduce inequalities and enhance quality of life.

ARC Doctoral Project Reference: 035

Title: Improving screening and diagnosis of polyendocrine metabolic ovarian syndrome (PMOS) in primary care

Supervisory Team: Dr Eduard Shantsila, Professor Dharani Hapangama, Dr Babu Karavadra

Contact: eduard.shantsila@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Polyendocrine metabolic ovarian syndrome (PMOS) is a common condition that affects 1 in 8 women and causes serious harmful changes in metabolism and heart function starting from early life. PMOS is a cause of many health conditions, such as diabetes, heart disease, stroke and also makes pregnancy difficult, all leading to poor quality of life, psychological stress and disabilities. The lack of screening and late diagnosis leaves women with PMOS with disabilities that can be avoided.

The project will develop a new and better approach for early diagnosis of PMOS in primary care suitable for women of all backgrounds. The PhD student working with experienced supervisors will:

1. Collect evidence of best methods for screening and diagnosis of PMOS suitable for primary care and published experience of their implementation into practice.
2. Describe the current methods and rates of PMOS diagnosis in primary care electronic health records and identify missed opportunity points.
3. Co-produce an equitable screening and diagnostic framework for PMOS with consideration for PMOS screening within the established contraception services.
4. Pilot implementation of the new screening and diagnosis for PMOS in primary care.

The project will reduce health inequalities in women and improve clinical practice in the UK

ARC Doctoral Project Reference: 036

Title: An Equitable Community Service for the Cardiovascular Disease Risk Prevention

Supervisory Team: Dr Eduard Shantsila, Dr Reecha Sofat, Dr Jennifer Downing

Contact: eduard.shantsila@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Heart and blood vessel disease (cardiovascular disease, or CVD) is a leading cause of death in England, but the risk is not shared equally. People living in poorer areas, from ethnic minority backgrounds, or facing other disadvantages are more likely to develop CVD, yet less likely to get help to prevent it. This is especially true in the North West of England, where CVD rates are among the highest in the country.

Current prevention services, often based in GP surgeries, don't always work well for everyone — some people find them hard to access, or don't feel they are designed with them in mind. This project will develop a new, community-based service to help prevent CVD, working closely with local communities and health professionals to make sure it truly meets people's needs.

The project has four stages: understanding what services already exist and where the gaps are; talking to communities and healthcare staff about what stops people getting help and what would work better; designing a new service together with communities; and testing whether this new service works well in practice. The ultimate goal is a prevention service that reaches everyone who needs it, not just those already well served.

ARC Doctoral Project Reference: 037

Title: A randomised controlled trial of folic acid vs placebo for hypertension control in UK adults with folate deficiency

Supervisory Team: Dr Eduard Shantsila, Dr Jennifer Downing, Dr Alena Shantsila

Contact: eduard.shantsila@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: A vitamin called folic acid is important for producing blood, but more recently, low levels have been found to cause high blood pressure. High blood pressure is responsible for half of heart attacks and strokes and many deaths, more than any other risk that can be controlled by lifestyle or treatments. Low folic acid levels are common due to poor diet, and they are more common in poorer people. Taking folic acid supplements improves blood pressure and reduces the risk of heart attacks and strokes, but testing its levels and taking sufficient doses of folic acid is not part of the current practice of managing high blood pressure, a condition called hypertension. The project aims to establish how low levels of folic acid related to socio-economic inequalities in the North West region contribute to the risk of hypertension and its complications and how this compares to other UK regions, and to co-produce a clinical programme to improve hypertension management through equitable folic acid testing and better diet and supplements.

This study will:

- Establish folate levels in patients newly diagnosed with hypertension, and those undergoing hypertension follow-up, and their impact on hypertension occurrences and its complications in patients of diverse socio-economic backgrounds;
- Co-create, with patients, NHS and industry partners, a system of assessment and management of low folic acid levels to prevent and better manage hypertension to reduce health inequalities.
- Assess the feasibility of the new system for clinical implementation in the North West of England.

ARC Doctoral Project Reference: 038

Title: Prospective Real-Time Evaluation and Development of an AI-based Tool for Prediction of Atrial Fibrillation After Cardiac Surgery (PREDICT-AF)

Supervisory Team: Professor Gregory Lip, Professor Yalin Zheng, Mr Balil Kirmani

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Atrial fibrillation (AF) is an abnormal heart rhythm that often happens after heart surgery. It can make patients feel unwell, keep them in hospital for longer and increase their risk of other problems, such as stroke. At the moment, it is difficult to know which patients will develop AF and when it will happen. Patients having heart surgery are closely monitored in intensive care. We continuously record their heartbeat, blood pressure and other information about how their body is working. We also regularly measure things such as blood tests, medicines, breathing support and fluid balance. This means that we already collect a large amount of information about each patient. My research will look at whether this information contains early warning signs that AF is about to happen. I will develop a computer model called PREDICT-AF. It will first look at information available before surgery to estimate a patient's starting risk of AF. After surgery, it will use the information collected in intensive care to regularly update this risk. The aim is to find changes in the heartbeat, blood pressure or other parts of the body that happen before AF starts. I will also look at which changes are most important and whether there are different types of AF after heart surgery. These different types may respond better to different treatments. The long-term aim is to give doctors an early warning that a patient is becoming more likely to develop AF. This could allow treatment to be started at the right time and, in the future, help doctors choose the treatment that is most suitable for each patient.

ARC Doctoral Project Reference: 039

Title: REALISE-CGM: Real-time continuous glucose monitoring (RT-CGM) for behaviour-only glycaemic improvement in adults with dysglycaemia: a mixed methods pilot randomised controlled trial

Supervisory Team: Dr Uazman Alam, Professor Deidre Lane, Professor Dharani Hapangama

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Prediabetes means that blood sugar levels are higher than normal but not yet high enough to be called diabetes. Many people with prediabetes will go on to develop type 2 diabetes, which can lead to serious health problems such as heart disease, kidney disease and sight loss. Finding simple ways to help people make healthy lifestyle changes to prevent development of type 2 diabetes is therefore very important.

This study will test a small wearable sensor that measures blood sugar levels throughout the day and night. The sensor allows people to see how their blood sugar changes after meals, exercise and other daily activities. We want to find out whether seeing this information helps people make healthier choices and improve their blood sugar levels.

Adults with prediabetes will be invited to take part. Some participants will use the sensor for 12 weeks, while others will receive standard care. We will collect information about blood sugar levels, diet, physical activity and other health measures.

A key part of this study is understanding people's experiences. We are interested not only in whether the sensor works, but also how and why it may help people change their behaviour. Participants using the sensor will be invited to complete questionnaires and take part in interviews about their experiences. These interviews will explore how people use the information provided by the sensor, what motivates behaviour change, what makes healthy choices easier or harder, and whether any changes last over time. An educational-behavioural package (co-produced) to support the RT-CGM and the future RCT will be developed.

The findings will help us design a larger future study and could support new ways to prevent type 2 diabetes and with the ultimate aim to reduce diabetes-related morbidity and death.

ARC Doctoral Project Reference: 040

Title: RESIST Hypertension: A Randomised Evaluation of Sustained Isometric Resistance Strength Training in Individuals with Resistant Hypertension

Supervisory Team: Dr Ellen Dawson, Dr Robyn Lotto, Dr Alena Shantsila

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Long Term Conditions

Lay Summary: High blood pressure is a major cause of heart disease and stroke. In some people, blood pressure remains too high despite taking several medicines. This is called resistant hypertension and is linked to a higher risk of heart attacks and strokes.

Exercise can help lower blood pressure, but research in people with resistant hypertension is limited and has focused on aerobic exercise (e.g. walking/cycling). Isometric resistance training is a simple form of exercise where muscles contract without moving the joints, such as squeezing a handgrip or holding a wall squat. It requires little equipment, takes only a short time and can potentially be performed at home.

Research in people with high blood pressure suggests that this type of exercise can lower blood pressure, but it is not known whether it is effective in people with resistant hypertension or whether it improves blood pressure throughout the day.

This project will work with patients and clinicians to develop a safe, acceptable and practical exercise programme. We will then determine whether it improves blood pressure and markers of cardiovascular health. This could provide a simple, accessible treatment that can be incorporated into routine care and help reduce inequalities in cardiovascular health.

ARC Doctoral Project Reference: 041

Title: Revealing inequalities in care of people dying in hospitals and where inequality exists, understanding the structural factors that drive inequalities.

Supervisory Team: Professor John Ellershaw, Dr Stephen Mason, Dr Mary Miller

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: The national audit of care at the end of life (NACEL) measures the quality of care delivered to people dying in hospital in England, Wales and Jersey. The annual report describes national trends and identifies differences in care; this leads to projects at a local and national level that improve care for dying people and the support given to their families.

This research project will look at people's experience in more detail. The research project will look at gender, age, place of death (acute hospital or community hospital, north west England, England and Wales) ethnicity and primary spoken language. The research project will ask whether these characteristics had any influence on the quality of care delivered to the people who died in hospital.

If people of a certain age, ethnicity or place of residence had a different experience of care when dying, the research project will lay out those results and will try to understand what factors interact.

Learning will be shared so that hospitals and governments can improve care that is delivered to all the people dying in hospital.

ARC Doctoral Project Reference: 042

Title: Point-of-care respiratory physiology for COPD identification in lung cancer screening: a feasibility study of embedded N-Tidal assessment in deprived communities

Supervisory Team: Dr Freddy Frost, Dr Serena Chee, Dr Thomas Fitzmaurice

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Understanding COPD and why this study matters:

COPD is a serious lung disease affecting millions of people in the UK. COPD is often caused by smoking, and many people have COPD without knowing it, particularly those living in poorer areas who have less access to diagnostic tests. Catching COPD early can help people manage their health better and reduce complications. COPD can be difficult to diagnose as it requires a specialist breathing test that can only be done by specially trained people.

Lung cancer screening programmes already test thousands of people per year for lung cancer, and many of these people will be at risk of COPD. This study will test whether we can use a new, simple device called N-Tidal at screening appointments to detect COPD. N-Tidal is quick, required no training, takes 75 seconds and simply requires breathing gently into a tube.

What will the study do?

We will invite people taking part in lung cancer screening to use the N-Tidal device during their regular screening visit. We will record how many people have COPD signs, ask about their experiences, and speak with patients and healthcare staff about whether this approach works well in practice. We will compare people identified via this new method with those diagnosed in other ways.

Why is this important?

If successful, this approach could become a routine part of lung cancer screening, helping thousands of people discover and treat COPD earlier. This is particularly important in deprived areas where people often face barriers to diagnosis

ARC Doctoral Project Reference: 043

Title: TargetOptimise: Multi-modal feasibility study of prehabilitation to optimise lung cancer outcomes

Supervisory Team: Dr Serena Chee, Professor Christian Ottensmeier, Dr Thomas FitzMaurice

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Lung cancer is the most common cancer worldwide. People with lung cancer often have other health conditions that affect how well they respond to treatment.

The immune system plays an important role in the body's response to cancer. Drugs that help the body's immune system ('immunotherapy') have shown good results treating lung cancer. In recent years treatment with chemotherapy and immunotherapy (chemoimmunotherapy) before surgery has been introduced to improve outcomes.

Improving health before surgery with exercise, nutrition and psychological support ('prehabilitation') can increase the immune system's response to lung cancer. How this happens is not fully understood.

The aim of this study is to understand in patients having chemo-immunotherapy followed by surgery for lung cancer: - patient experience of prehabilitation using accessible online prehabilitation tools - effect of prehabilitation compared with prehabilitation plus immune system supplementation on immune health and cancer outcomes

Factors studied will include: - physical fitness before and after chemo-immunotherapy - linked analysis of patient samples, clinical information, pathology and radiology results using AI tools - participants experience of the study and prehabilitation

It is hoped that the results from this study will help design larger studies to try and improve outcomes for people with lung cancer.

ARC Doctoral Project Reference: 044

Title: Understanding post-stroke glycaemic variability using continuous glucose monitoring: a doctoral study of feasibility, prognostic value and equity

Supervisory Team: Professor Kausik Chatterjee, Dr Auzman Alam, Professor Caroline Watkins

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ARC NWC Partner Host University: University of Lancashire

Theme: Long Term Conditions

Lay Summary: After a stroke, blood sugar can rise and fall markedly, even in people without diagnosed diabetes. Standard finger-prick tests only provide snapshots, whereas a continuous glucose monitor (CGM) can show how glucose changes throughout the day. Early studies suggest that larger fluctuations may be linked with poorer recovery, but the evidence is uncertain.

This PhD will give the successful student scope to shape a focused study of CGM after ischaemic stroke. Working with patients, carers and NHS teams, the student will refine the protocol, recruit a feasible cohort, analyse detailed glucose patterns and explore whether these patterns may be related to recovery or later vascular events. The project will also examine how acceptable CGM is after stroke and whether people from different social and ethnic backgrounds can take part equitably.

The emphasis is on developing robust doctoral research skills and producing careful preliminary evidence, not on delivering a definitive clinical trial or service change. The student will gain experience in clinical epidemiology, analysis of CGM data, patient and public involvement, health inequalities and research dissemination. The findings will help determine the questions, methods and sample size needed for a future larger study.

ARC Doctoral Project Reference: 045

Title: Co-design, implementation and evaluation of a Clinical Exercise Physiologist-led physical activity service for people with long-term conditions in UK primary care.

Supervisory Team: Dr Gemma Miller, Dr David Lewis, Professor Helen Jones

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Long Term Conditions

Lay Summary: Many people live with long-term health conditions such as heart disease, diabetes and lung disease. Physical activity and exercise can help people manage these conditions, improve their health and quality of life, and reduce their need for healthcare. However, many do not receive specialist support to exercise safely and confidently, particularly within primary care.

Clinical Exercise Physiologists (CEPs) are healthcare professionals trained to assess people with health conditions and provide personalised exercise and rehabilitation programmes. Although CEPs work within hospitals, they are not yet routinely employed in UK primary care.

This PhD will work with patients, primary care staff and community partners to develop and evaluate a CEP-led service within Central Liverpool Primary Care Network. The researcher will examine who accesses and remains involved with the service, whether patients and staff find it acceptable, how it affects physical activity and health, and what helps or hinders delivery. The project will also explore how service data and digital support could improve personalised care without widening inequalities.

The research will produce a practical service model and guidance that other primary care organisations can adapt. Ultimately, it aims to improve access to specialist exercise support and inform decisions about wider NHS implementation.

ARC Doctoral Project Reference: 046

Title: A Nurse-Led Transitional Pain Service for the Prevention of Persistent Postsurgical Pain and Opioid Harm in High-Risk Surgical Patients: A Mixed Methods Co-Production and Implementation Study

Supervisory Team: Professor Michelle Briggs, Professor Reecha Sofat, Dr Neetu Bansal

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ARC NWC Partner Host University: University of Liverpool

Theme: Long Term Conditions

Lay Summary: Many people recover well after surgery, but some experience pain for months or years. This is known as chronic post-surgical pain (CPSP). This long-term condition can affect daily activities, sleep, and quality of life. It can also lead to ongoing use of opioids and increased use of healthcare services. Some people are at greater risk than others, e.g. those with chronic pain, multiple health conditions; mental health difficulties, or social disadvantage. Identifying people early may help prevent CPSP and support safer use of opioids. This study aims to develop and test a nurse-led Transitional Pain Service for patients at risk of CPSP following surgery. The research will use NHS data to identify people most at risk and will explore the experiences of patients, family carers and healthcare professionals during recovery after surgery.

Patients and healthcare professionals will work together to design the service. It may include early risk assessment, personalised pain management plans, education about recovery, virtual nurse-led follow-up clinics, support for reducing opioid medicines and improved communication between hospital and community care teams.

The goal is to improve recovery, reduce long-term pain and opioid use, reduce health inequalities and support better outcomes for surgical patients across the NHS.

ARC Doctoral Project Reference: 047

Title: Bowel dysfunction after stroke: a systematic review and meta-analysis of the prevalence, risk factors and impact of faecal incontinence and constipation in stroke survivors.

Supervisory Team: Dr Clare Gordon, Dr Sandeep Buddha

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ARC NWC Partner Host University: University of Lancashire

Theme: Long Term Conditions

Lay Summary: After a stroke, many people find their bowels stop working the way they used to. Some lose control and have accidents; this is called faecal incontinence. Others become severely constipated. Studies suggest these problems affect around one in three people after a stroke, yet they are rarely talked about openly. People often feel too embarrassed to raise them, even though they can be more distressing than the difficulties with walking or speaking that receive far more attention from clinicians, researchers and stroke charities.

This project will bring together everything currently known from research studies worldwide about how common these bowel problems are after stroke, why some people are more affected than others, and what effect they have on people's independence, dignity and quality of life. We will also look at what has been tried to help, from nursing assessment and lifestyle changes through to medication, and how well each has worked. We will identify the best clinical tools available to accurately capture patients with bowel problems.

By pulling this scattered evidence into one clear picture, we hope to give stroke survivors, carers, and the staff who look after them a stronger basis for recognising bowel problems early, discussing them without embarrassment, and choosing care that genuinely helps.

ARC Doctoral Project Reference: 048

Title: Developing a Co-Produced, Equity-Informed Movement at Work Framework for Contact Centres: From Prevention-Focused Behavioural Understanding to Practical Implementation

Supervisory Team: Dr Lee Graves, Dr Abigail Morris, Dr Gemma Dale

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Public Health and Prevention

Lay Summary: Contact centre employees spend much of their working day sitting and have few opportunities to move. Many also live in deprived areas and may face financial pressures. Together, these factors can affect health. More people also split their work between home and the office, but we know very little about how this affects sitting, movement and health.

The proposed research will explore how different aspects of work and everyday life influence how much contact centre employees sit, stand and move during the working day. It will compare behaviour in home and office settings and examine how workload, management practices, home working arrangements and equipment affect opportunities to move. The research will combine movement-tracking technology with discussions involving employees, managers and others interested in workplace health. Public contributors will also shape the research.

We will use the findings to create a practical toolkit and guidance for UK contact centres (Movement at Work Framework). The Framework will help organisations create healthier workplaces by reducing sitting time and increasing opportunities to move. Ultimately, the project aims to improve employee health, wellbeing and work performance, support people to stay in work for longer, and help reduce unfair differences in health between workers.

ARC Doctoral Project Reference: 049

Title: Developing and Evaluating Behaviour Change Interventions to Improve Recognition and Diagnosis of Premenstrual Dysphoric Disorder (PMDD) Across the Diagnostic Pathway

Supervisory Team: Professor Pooja Saini, Dr David Moore, Dr Hannah Doherty

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Women's Health

Lay Summary: Premenstrual Dysphoric Disorder (PMDD) is a serious condition linked to the menstrual cycle that affects 1 in 30 women and girls. Symptoms can include severe depression, anxiety, anger, mood changes, suicidal thoughts, and difficulties with daily life, work, education, and relationships. Despite this, many women wait years before receiving a diagnosis, delaying access to treatment and support.

Many women do not recognise PMDD because symptoms are seen as mental health issues or normal life stresses. Women report not being listened to or believed when they seek help from healthcare professionals. These challenges can lead to long delays in diagnosis and unnecessary suffering.

This project aims to help people recognise PMDD sooner and improve diagnosis by developing practical solutions with women affected by PMDD, healthcare professionals, and those close to them. The research will explore barriers and support needs, from recognising symptoms to seeking help and receiving a diagnosis. Using a behaviour change approach, the project will develop interventions to improve menstrual health awareness, encourage symptom tracking, strengthen communication with healthcare professionals, and support earlier diagnosis. Ultimately, the project aims to reduce delays in diagnosis, improve access to treatment and support, and improve the wellbeing of women affected by PMDD

ARC Doctoral Project Reference: 050

Title: Re-imagining the Future of Women's Health Devices: Engaging women and end users for Novel Innovation in the UK

Supervisory Team: Dr Teesta Dey, Professor Andrew Weeks

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ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: This PhD project aims to identify the UK's highest priorities for women's health device innovation, focusing on health conditions unique to women, so that the experiences of women, carers and clinicians shape future innovation.

The project has three parts. First, working with WIN and the Civic Health Innovation Lab (CHIL), the student will build the first real-time UK tracker of women's health device innovations from the past decade, mapping features, trends and unmet needs, complemented by qualitative focus groups capturing women's and end-users' views on the current landscape and what makes innovation good.

Second, the student will examine how women and end-users can be engaged in, and could lead, device innovation. Using the GRIPP2 checklist and NIHR UK Standards for Public Involvement, they will assess current PPIE levels in innovations identified, and run qualitative focus groups on barriers and opportunities for participation and innovation development leadership.

Third, the student will establish a national Consumer Advisory Group, prioritising women from deprived and under-served communities and those caring for them, and use the NIHR James Lind Alliance approach to agree national priorities: the health areas needing innovation most, the features that matter most, and the role women and end-users should play in developing it.

ARC Doctoral Project Reference: 051

Title: Menstrual pain in autistic people

Supervisory Team: Dr David Moore, Dr Claire Hanlon, Professor Abbie Jordan

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Women's Health

Lay Summary: S1: Survey to see how often, intense and distressing autistic peoples (n=200) experience menstrual pain is. We will also measure potential predictors of this pain, for example fear of pain and sensory sensitivities.

S2: Semi structured interviews (n=15-20) about menstrual pain experience and the associated challenges. We will consider the impact of menstrual pain and factors which might make this better or worse.

S3: Autistic people who menstruate (n=80) will complete a 7 day menstrual, mood and behaviour diary during two parts of their menstrual cycle; one during menstruation and one between their periods. Participants will complete this for 6 consecutive periods. We want to explore variation in menstrual experience, how daily pain is predicted by current and past pain, mood and behaviour and what might be useful to help manage pain.

S4: Using our learning throughout the project we will work with a range of clinical and lived experience stakeholders to develop educational materials about menstrual pain and how to discuss this with autistic young people as well as the impact that such pain might have on functioning. Partners will include autistic people, parents, educators and GPs. These recommendations will be published as an outcome of this PhD.

ARC Doctoral Project Reference: 052

Title: Exploring the Intersection Between Female Athletes' Reproductive Journeys and Anti-Doping Regulations

Supervisory Team: Dr Kelly Massey, Dr Nicola Tempest

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ARC NWC Partner Host University: Liverpool John Moores University

Theme: Women's Health

Lay Summary: Reproductive health involves complex medical, hormonal, and supplementation needs. Yet, strict supplement and medication rules are enforced on athletes by organisations such as the World Anti-Doping Agency (WADA). Therefore, female athletes' reproductive journeys including fertility treatment, miscarriage, pregnancy termination, and egg freezing, akin to the general population, face unique hurdles, from navigating anti-doping paperwork for fertility drugs and uncertified pregnancy supplements, to privacy limitations and ongoing administrative oversight. Little research explores how these infringements impact athletes' reproductive journeys and guide their outlook on reproduction. This PhD proposal aims to investigate how anti-doping regulations interact with the unique reproductive experiences of female athletes. This proposal presents three overarching aims:

1. Review Study: Examine how the intersection of anti-doping rules and female reproductive journeys is currently represented in academic and grey literature.

2. Qualitative Study: Explore the specific barriers and anti-doping hurdles female athletes encounter during their reproductive journey.

3. Co-creation Project: Create practical, evidence-based guidelines for athletes, support personnel, medical professionals, and anti-doping organisations to better support clean sport.

Ultimately, this research aims to bridge a critical gap in sports science, ensuring that regulatory systems protect both the integrity of clean sport and the health and reproductive rights of female athletes.

ARC Doctoral Project Reference: 053

Title: Improving implantation at first embryo transfer; Lysosomal–Redox Control of Endometrial Decidualisation.

Supervisory Team: Dr Nicola Tempest, Dr Robert Heaton

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ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: Infertility affects around 1 in 6 people worldwide and can have profound emotional, physical and financial consequences. For many women, IVF may offer their best chance of having a child, yet the live-birth rate after each embryo transfer is only around 28%. Access is also unequal: NHS-funded IVF varies by postcode, while repeated private treatment is unaffordable for many. A failed embryo transfer is therefore not simply a negative test; it can mean another cycle of medication, procedures, uncertainty and expense, or the end of treatment altogether.

Successful implantation depends on the lining of the womb, the endometrium, changing to support an embryo. In recurrent implantation failure (RIF), this process may not work normally, but we still do not fully understand why.

This PhD will investigate whether the cell's recycling and stress-response system contributes to this failure. We will compare endometrial cells from women with RIF and fertile controls and test whether identified defects can be corrected. By uncovering a treatable biological cause of failed implantation, this research could lay the foundations for better tests and targeted treatments, helping more women achieve a successful pregnancy earlier in their fertility journey and reducing the need for repeated unsuccessful IVF cycles.

ARC Doctoral Project Reference: 054

Title: Information, Misinformation, Disinformation and Maternity Care: Improving how evidence and practice is communicated via social media

Supervisory Team: Dr Abi Merriel, Dr Carol Kingdon, Dr Maria Sudell

Contact: Abi.merriel@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: Social media is now a common place for women to find information about pregnancy and birth. It can be helpful because women can hear from others, find support and get answers quickly. However, some information is based on good evidence, while other posts may be incomplete, confusing or wrong. This can make it hard to know what to trust.

This PhD will first look at research about pregnancy and birth information on social media. We will also look at how public organisations, such as health services, have used social media to share health information and what has worked well.

We will then study current social media posts to understand what information is widely available, who is sharing it and how accurate it is. We will consider whether some women face greater barriers to finding, understanding or trusting good information.

Women from different backgrounds will help us understand what makes information trustworthy, useful and easy to understand. Together, we will develop ideas for sharing information fairly and effectively.

Finally, we will test a small number of ways of presenting evidence-based information. We will bring all the findings together to create a roadmap for better, more accessible maternity information on social media.

ARC Doctoral Project Reference: 055

Title: Reconfiguring maternity care: Exploring the sociotechnical realities of a telehealth enabled shift from hospital to community

Supervisory Team: Dr Abi Merriel, Professor Soo Downe, Dr Carol Kingdon

Contact: Abi.merriel@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: Pregnant women have many appointments with health services. Some need to happen in hospital, but some could take place closer to home. This might include appointments in local health centres, care at home, video appointments or checking things such as blood pressure at home.

Moving care closer to home could make pregnancy care easier for women. It may reduce travel, time away from work and time spent waiting in hospital. However, these changes may not work well for everyone. Some women may not have good internet access, suitable devices, enough space at home, or feel confident using digital services. We need to make sure new ways of providing care do not make existing inequalities worse.

This PhD will find out what types of community and home-based maternity care are already being used and what women and staff think about them. It will review research to understand which approaches are safe, useful and acceptable.

Women, maternity staff and health-service partners will then work together to develop ideas for better ways of providing maternity care closer to home. The findings will be used to create a practical roadmap for future maternity services that are safe, useful and fair for all women.

ARC Doctoral Project Reference: 056

Title: Decision-making about induction of labour: developing a clinically useful prediction model for personalised discussions

Supervisory Team: Dr Abi Merriel, Professor John Allotey, Dr Laura Bonntet

Contact: Abi.merriel@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: About one in three labours in England starts with induction of labour. This means around 180,000 women each year. Induction may be offered because pregnancy has gone past the due date, because the mother or baby has a health problem, or because the woman asks for it.

Although induction is common, women do not always feel they get enough information about what may happen. Some are worried that induction could lead to more medical procedures. However, research shows that induction does not increase caesarean birth compared with waiting for labour to start, and may slightly reduce it.

This PhD will look for existing tools that predict what is likely to happen after induction. The best tools will be tested using information from around 36,000 first pregnancies in Bristol. If they do not work well enough, we will improve one or build a new tool using information from more than 22,000 first pregnancies in Liverpool, then test it in Bristol.

Women and maternity staff will help us decide how this information should be shown. We will then develop and test a simple tool to support clear, personalised discussions about induction.

ARC Doctoral Project Reference: 057

Title: Migrant Women's Healthcare Access for Early Pregnancy Care in the UK

Supervisory Team: Dr Sergio Silverio, Dr Hannah Rayment-Jones, Professor Anja Wittkowski

Contact: S.A.Silverio@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: The candidate will join a team of cross-disciplinary supervisors with engagement from PPIE and key stakeholder groups (Obj-v) to undertake the following work:

Systematic reviews (Obj-i):

Two reviews identifying:

- Factors affecting migrant women's access to early pregnancy care, including barriers, facilitators, and experiences of care.
- Migrant women's experiences of early pregnancy complications and loss, including how cultural beliefs influence experiences, understanding, and care-seeking decisions.

Policy Mapping (Obj-ii):

A national policy mapping exercise to review and visualise how early pregnancy care policies for migrant women differ across UK nations and NHS trusts. This will examine differences in services available (interpreters and clear guidance), referral pathways (impact of immigration status); and how the NHS records immigration status and applies healthcare charges.

Qualitative research (Obj-iii)

Semi-structured interviews and observation will explore migrant women's experiences of early pregnancy complications and pregnancy loss. This will include access to services, barriers and facilitators to care, experiences of care, what works well and where improvements are needed.

Policy Lab (Obj-iv):

A policy lab bringing together findings from all aspects of the project. Relevant stakeholders will identify practical recommendations and develop a policy-brief highlighting the changes needed to improve early pregnancy care for migrant women.

ARC Doctoral Project Reference: 058

Title: Ethnic susceptibility, and other clinical influences, on the development of Gestational Diabetes Mellitus (GDM) and associated long-term health outcomes in UK women: analysis of CPRD and UK Biobank data.

Supervisory Team: Professor Daniel Cuthbertson, Dr Uazman Alam, Professor Dharani Hapangama

Contact: Dan.cuthbertson@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: Gestational diabetes mellitus (GDM) is a type of diabetes that first appears during pregnancy, affecting about 1 in 7 pregnancies. The rate of GDM is rising worldwide, as obesity becomes more common and with women becoming pregnant at an older age. GDM doesn't just affect women during pregnancy, it can also have serious long-term effects on their health, such as a higher risk of diabetes, heart disease, and certain cancers years/decades later. Women of South Asian, Black, and other ethnic minority groups are at even greater risk of GDM and serious complications.

We will use large-scale databases (CPRD and UK Biobank) to better understand this puzzle. We will look at disease patterns, how things like your postcode and heritage (e.g. South Asian or African) affects risk of GDM, disease causes, how genetic, lifestyle, blood test-based or body scan-based information helps explain how GDM may develop and disease consequences, how GDM affects women's long-term health. It will also tell us how much different/higher the risks are in women of colour.

Our findings will guide doctors and nurses about how, and by how much, a woman's background, across different parts of our society, may affect the chances of developing GDM and health later-life problems. This will hopefully help prevent or recognise these problems earlier and to provide more targeted treatment to those of greatest need.

ARC Doctoral Project Reference: 059

Title: Fairness-audited machine learning on linked NHS records to deliver graded miscarriage care across the Northwest Coast.

Supervisory Team: Dr Nicola Tempest, Dr Wahbi El-Bouri

Contact: Ntempest@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: One in five pregnancies ends in miscarriage - about 250,000 a year in the UK. Most women are sent home after a first or second loss with no tests, support or plan, because the NHS usually investigates only after three in a row. Yet some causes, such as thyroid problems and anaemia, are treatable and lifestyle factors can be modifiable. Women in the poorest neighbourhoods and from Black and minoritised backgrounds lose more pregnancies and get less help.

This PhD will build artificial intelligence models that read a woman's whole health record over time - and, for some, images of the womb lining - to work out who is most likely to miscarry. Crucially, it will test whether they work as well for women from every background, using recent methods designed to stop AI performing worst for those already served worst.

Working with women who have experienced miscarriage, charities and NHS early pregnancy teams, the student will then estimate what would happen if the NHS used it: who is offered tests sooner, and whether that narrows or widens the gap.

The project suits someone in machine learning, health data science or statistics who wants their methods to change a care pathway. Clinical training provided.

ARC Doctoral Project Reference: 060

Title: Workforce equity and staff experience in obstetrics and gynaecology: understanding inequalities and evaluating approaches to change

Supervisory Team: Professor John Allotey, Professor Shakila Thangaratinam

Contact: john.allotey@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: Doctors, nurses and midwives in women's health services often experience or witness racism at work, which can affect their wellbeing, careers, and potentially patient care. A recent national review of maternity care found racism and discrimination to be common and called for this to be treated as a safety issue.

This project will study how workforce inequality, including racism, is experienced and measured in obstetrics and gynaecology services. The student will review existing research, then study how staff experiences vary across hospitals and staff groups, using national data and interviews with staff.

The student will also help evaluate a training programme, developed by the Royal College of Obstetricians and Gynaecologists, designed to tackle racism in the workplace, testing how well it works in practice and how staff feel about it.

This research will help build the evidence needed to design and test larger programmes in future, to make workplaces fairer and improve care for women.

ARC Doctoral Project Reference: 061

Title: Modelling outcomes of strengths-based approaches in long-term equitable outcomes for mothers and babies

Supervisory Team: Dr Oluwaseun Esan, Dr Kirstie Coxon, Dr Phil McHale

Contact: oluwaseun.esan@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: In the UK, mothers from ethnic backgrounds like Black African, Black Caribbean, Pakistani, Bangladeshi, and Indian, as well as those from poorer areas, face more health problems during pregnancy compared to White women and those from well-to-do areas. Their babies are also more likely to be born early or not survive their first year. These health problems can have a long-lasting impact on both mothers and children. We know that when these women have the same midwife or group of midwives throughout their pregnancy journey (continuity of care), they tend to have better outcomes at birth, but it is not clear if the better outcomes continue in the long term. Moreover, due to an often perceived lack of trust and difficulties in accessing some health services, community-led organisations often help them with their problems. Through working with mothers and community organisations, this project will use national data to explore how continuity of care can improve mental health and the health of children as they grow older. It will also involve understanding how community-led provision can be become part of NHS 10-Year Plan as care shifts mainly hospital care to care in the community.

ARC Doctoral Project Reference: 062

Title: Medicines in Pregnancy: Using Linked Health Data to Understand Patterns of Use, Safety and Inequalities

Supervisory Team: Dr Caroline Dale, Professor Reecha Sofat, Professor Shakila Thangaratinam

Contact: caroline.dale@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Women's Health

Lay Summary: Many women need medicines before and during pregnancy, for conditions ranging from epilepsy and mental health problems to asthma and high blood pressure. However, pregnant women are rarely included in clinical trials, meaning that we often have limited evidence about how medicines are used in pregnancy and their benefits and risks for mothers and children.

This PhD will use large, routinely collected NHS datasets that link information about pregnancies, medicines and health outcomes. First, we will build a comprehensive picture of medicine use before, during and after pregnancy. We will examine which medicines women use, when treatments are started, stopped or switched, which medicines are used together, and whether these patterns differ according to factors such as age, ethnicity, deprivation and existing health conditions.

We will then investigate selected medicines where important uncertainties remain, comparing alternative treatment choices and examining outcomes for both mothers and children. The research will use modern methods designed to obtain reliable evidence about treatment effects from routinely collected health data.

Working with patients and the UK Teratology Information Service (UKTIS), and through established collaborations with NICE and the MHRA, we will ensure findings address important clinical questions and can inform advice for women, prescribing decisions, national guidelines and medicines safety policy.

ARC Doctoral Project Reference: 063

Title: REACH: Referral Engagement and Community Health: Addressing health inequalities and strengthening exercise referral pathways to improve wellbeing in Blackpool.

Supervisory Team: Dr Michael Owen, Dr Nicola Relph, Dr Emilia Trapasso

Contact: Michael.Owen@edgehill.ac.uk

ARC NWC Partner Host University: Edge Hill University

Theme: Public Health and Prevention

Lay Summary: Being active and doing exercise is good for our bodies and minds. Exercise can help people feel happier, reduce stress and anxiety, build confidence, and improve wellbeing. In Blackpool, there are programmes called Exercise Referral Schemes (ERS), they help people become more active by connecting them with activity groups through their doctor, nurse, or local community organisations.

This project aims to understand how well ERS are working in Blackpool. We will find out who uses these programmes and whether some people are less likely to take part or benefit than others. We also want to understand how ERS may improve mental health and wellbeing, for example by helping people feel better, make friends, build confidence, and develop healthier habits and routines.

To do this, we will speak to people who live in Blackpool, as well as healthcare professionals and community organisations. They will help us understand what supports people to join and stay involved in ERS, and what makes participation difficult.

Finally, we will work with local communities to design and test a new approach to increasing awareness of ERS and encouraging referrals. The findings will help improve services in Blackpool and could benefit communities across the UK.

ARC Doctoral Project Reference: 064

Title: Active Living at Home: Understanding the Impact of Housing Inequalities on Physical Activity and Health Outcomes

Supervisory Team: Dr Samira Awwal, Professor Thomas O'Brien, Dr Emma Mulliner

Contact: s.awwal@ljmu.ac.uk

ARC NWC Partner Host University: Liverpool John Moores University

Theme: Public Health and Prevention

Lay Summary: Regular exercise is important for good health and wellbeing, but many people do not have the same opportunities to be active. People living in poor-quality, overcrowded housing often have limited space for exercise. They also lack access to safe walking routes, or private backyard in their homes. These challenges can have a negative impact on physical and mental health.

To better understand, we will explore how housing indoor and outdoor conditions, cultural backgrounds, and religious beliefs influence people's participation in physical activity. People from different communities have different lifestyles, family responsibilities, cultural expectations, and religious practices that affect when, where, and how they exercise. For instance, some people may prefer gender-specific exercise spaces within home, while others may face barriers related to time, privacy, clothing requirements, caring responsibilities, or the availability of culturally appropriate spatial arrangements.

We will examine the experiences of people from diverse backgrounds to better understand the factors that encourage or prevent physical activity. By identifying these barriers and opportunities, the research aims to provide recommendations for housing providers, planners, architects, and policymakers to create more inclusive homes and neighbourhoods that support healthy and active lifestyles for everyone, regardless of their housing circumstances, cultural background, or religious beliefs.

ARC Doctoral Project Reference: 065

Title: From NEET to Opportunity: Informing Policy to Support Young People into Education, Employment and Training

Supervisory Team: Dr Michelle Black, Professor David Taylor-Robinson, Dr Nicholas Adjei

Contact: Michelle.black@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Young people who are not in education, employment or training (NEET) are an increasing policy concern due to their increased risk of poor long-term health, social, and economic outcomes.

We know that the risk of becoming NEET starts early in life and poverty, early development schooling and health are all important factors. Yet Government policies often deal with children's health, education, poverty and employment separately, even though these issues are closely connected. For example, poor mental health and becoming NEET can have some of the same underlying causes, such as poverty, disadvantage and difficult family or social circumstances. The proposed work will contribute evidence relevant to national policy priorities including prevention and early intervention, child poverty reduction, educational attainment, health inequalities, and wider government missions relating to opportunity, crime, and community safety.

The research aims to understand the wider causes of young people becoming NEET to inform how to intervene to improve opportunities for young people.

Objectives:

- It will examine whether mental health problems, special educational needs (SEND), and difficulties at school, at different stages of a young person's life, increase the risk of becoming NEET, using many different datasets.
- It will look at inequalities between young people who become NEET, including differences in their health, education and use of social care as they grow from teenagers into young adults.
- It will describe typical journeys into and out of NEET.

- It will explore the impact of potential policies to reduce risk factors for NEET.
- Researchers will work with policymakers and young people to turn the findings into practical recommendations that could be used in practice.

ARC Doctoral Project Reference: 066

Title: Understanding and preventing persistent physical inactivity: Co-designing equitable movement opportunities and supporting physical literacy for Blackpool's most at-risk children

Supervisory Team: Dr Richard Tyler, Professor Lawrence Foweather, Professor Lucy Bray

Contact: TylerR@edgehill.ac.uk

ARC NWC Partner Host University: Edge Hill University

Theme: Public Health and Prevention

Lay Summary: In Blackpool, around 29-31% of children are physically inactive. While many schools deliver physical activity programmes, these approaches do not always reach or meet the needs of the children who need them most. Children living in disadvantaged circumstances often face barriers, such as limited access to safe spaces, reduced confidence, or fewer opportunities to be active, increasing their risk of sustained physical inactivity and poorer health/wellbeing.

Working with Active Schools Blackpool (Learn. Move. Thrive. – Creating an Active School) and Move Together Blackpool, this co-produced project will aim to:

1. Identify which children face the greatest challenges in being active based on movement behaviours, movement competence, physical literacy, and physical, mental, and social wellbeing.

2. Listen to children facing the biggest difficulties in being active to understand the factors shaping their movement experiences.

3. Design solutions by bringing children, parents, teachers, community and sport organisations, and public health partners together to develop solutions that better support children at greatest risk of physical inactivity.

By giving children facing the greatest barriers to being active a voice, this project will help schools, local authorities, and community organisations develop more equitable approaches to movement, health, and wellbeing, ensuring that no child is left behind.

ARC Doctoral Project Reference: 067

Title: Understanding the health effects of fraud across the population: neighbourhood impacts, inequalities and system responses

Supervisory Team: Dr William Whittaker, Professor Paul Kingston, Dr Paul Taylor

Contact: william.whittaker@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Fraud is now the most common crime in the OK, and older adults often experience serious health effects. Fraud can cause anxiety, shame, sleep problems, loss of confidence and social withdrawal. These harms can make existing health conditions worse and lead to greater use of GP, mental health, safeguarding and social care services.

Most research focuses on stopping fraud, not on helping people recover, so many people are left to cope with the emotional and practical effects on their own.

Fraud does not affect everyone equally. People living in areas with higher levels of poverty and poor digital access often experience greater harm. Some fraud comes through everyday systems like banking, online shopping and social media, where weak protections can leave people more exposed. Fraud can take away things households need to stay healthy, such as money, access to online services, confidence and emotional stability.

This study will show how support can be improved across the places people live and the services they rely on. It will help organisations understand what people need after fraud and how to reduce harm in the future, especially for older adults who often experience the greatest health impacts and need strong neighbourhood based support.

ARC Doctoral Project Reference: 068

Title: Supporting Tailored Responses to Inequalities through Digital Engagement for Physical Activity (STRIDE): A place-based approach to national digital physical activity initiatives for health equity and disease prevention.

Supervisory Team: Dr Nicola Relph, Dr Laura Johnson, Dr Sarah Taylor

Contact: Nicola.Relph@Edgehill.ac.uk

ARC NWC Partner Host University: Edge Hill University

Theme: Public Health and Prevention

Lay Summary: Being active is one of the best things we can do for our health, but not everyone has the same chance to be active. People living in areas with fewer resources are less likely to be active and more likely to develop conditions that are bad for health. The NHS offers free (m-health) apps to help people get moving but these apps are designed the same for everyone, wherever they live, so are these apps helping everyone they could?

We want to find out who in Merseyside uses NHS physical activity apps and who is missing out, and why. We want to work alongside local communities to improve these apps to fit their neighbourhood, the places, people and everyday realities of where they live, while building in information on exercising safely and staying motivated. Finally, we want to test whether a local version is helpful and then make a guide so health apps can be adapted for local communities across the country, helping reduce unfair differences in health.

ARC Doctoral Project Reference: 069

Title: Nature-Based Neighbourhood Health for People and Planet: Exploring How Integrated Community and NHS Systems Reduce Inequalities, Support Children and Young People's Mental Health and Wellbeing, and Build Resilience to Climate Anxiety

Supervisory Team: Professor Michelle Haworth, Professor Vicky Karkou, Dr Victoria Gray

Contact: Michelle.howarth@edgehill.ac.uk

ARC NWC Partner Host University: Edge Hill University

Theme: Public Health and Prevention

Lay Summary: More children and young people are struggling with their mental health, particularly those living in disadvantaged communities. Where people live, learn and spend their time can have a major impact on their wellbeing. Climate change is affecting young people, with many experiencing worries about the future and the environment. Spending time in nature, such as parks, woodlands, rivers and other green spaces, can improve mental health and help people feel more connected to their communities. However, access to these spaces is not equal. Many children and young people, especially those living in poorer areas, have fewer opportunities to benefit from nature. The NHS and local communities are Page 9 of 13 increasingly focusing on prevention and supporting health closer to home through neighbourhood-based approaches. Nature has the potential to play an important role in these efforts, helping improve wellbeing while also supporting wider sustainability goals. This study will explore how children and young people access and experience nature in their local areas, what barriers may prevent engagement, and how neighbourhood services, community organisations and the NHS can work together to improve access. It will examine whether spending time in nature can help improve mental health, reduce inequalities and build resilience to climate-related concerns.

ARC Doctoral Project Reference: 070

Title: Cultivating health: green space as a preventative and health-promoting asset within healthcare sites in North West England

Supervisory Team: Dr Rebecca Geary, Professor Michelle Howarth, Professor Sarah Rodgers

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ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Hospitals and other healthcare sites are usually thought of in terms of clinical care, equipment and buildings, and current NHS guidance mostly treats green spaces within these sites as an environmental issue, linked to climate change, not something that can directly promote and protect health. But some hospitals in the North West, including in Blackpool, Manchester and Liverpool, have started using gardens, planting, and green spaces to support patients' recovery and improve the wellbeing of staff, and other hospitals are interested in learning how to adopt similar approaches.

This PhD will explore how patients, visitors, and staff experience and value green spaces at key case study healthcare sites, and what difference these spaces make to how people feel and recover. It will also look at whether everyone benefits equally from these spaces, regardless of their background or circumstances.

By working closely with patients, staff, and community members, the research will produce practical lessons for how the NHS in the North West, and beyond, could use green space more deliberately as a tool for preventing illness and promoting health.

ARC Doctoral Project Reference: 071

Title: Clearing the Air: Co-Producing Healthier Places for Young People Through Equitable Vaping Prevention in Blackburn with Darwen Borough

Supervisory Team: Dr Andrew Levy, Dr Alison Moore, Professor Rebecca Monk

Contact: levya@edgehill.ac.uk

ARC NWC Partner Host University: Edge Hill University

Theme: Public Health and Prevention

Lay Summary: Youth vaping is an increasing public health concern shaped by individual, commercial, physical and social environments. Blackburn with Darwen is a priority setting, experiencing high deprivation and health inequalities, higher-than-average smoking prevalence and growing concerns about youth vaping. Local evidence suggests vaping products are highly visible and accessible through shops, peers and informal sources, highlighting the importance of understanding how place influences vaping. Place-responsive prevention is therefore essential to creating healthier environments and reducing inequalities.

Our pilot work demonstrated the value of involving young people in vaping prevention. Working with Year 6 pupils, we identified primary schools as an important setting for early intervention before transition to secondary education, when exposure to vaping and peer influences may increase. The project also highlighted the potential for young people to act as health champions, supporting conversations about vaping across families, schools and communities.

This PhD will investigate how and why this co-produced, place-based intervention supports vaping prevention in Blackburn with Darwen. It will examine how individual beliefs interact with peers, families, schools, neighbourhoods and wider commercial and physical environments to shape vaping decisions. Findings will inform equitable, place-based prevention and future implementation across schools, communities and local public health systems.

ARC Doctoral Project Reference: 072

Title: How do social conditions, demographics and perinatal outcomes effect respiratory health in childhood? Identifying children most at risk

Supervisory Team: Dr Philip McHale, Dr Andrew Sharp, Dr Ian Sinha

Contact: hlpmchal@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Existing evidence suggests that negative perinatal events such as preterm birth and small for gestational age birth are associated with negative respiratory outcomes, as well as other things such as cognitive outcomes and mental health in later life. Evidence further suggests that this effect is modified by socioeconomic and demographic factors, meaning some children may be at much greater risk than others depending on the circumstances they are born into. This PhD aims to determine the extent of this association and whether effect modification occurs, using large-scale national health data alongside local information from Liverpool hospitals.

As well as quantifying the association, we aim to identify a risk profiling tool which can be used to identify who is most at risk of negative respiratory outcomes. Combining the quantification with the risk profiling tool we will work with stakeholders to identify how best to respond to this challenge and reduce the burden of ill health and inequalities in this group.

ARC Doctoral Project Reference: 073

Title: SEC-GROW: Supporting and Enabling Community Growing for Resilient Outcomes and Wellbeing

Supervisory Team: Professor Charlotte Hardman, Dr Bethan Mead

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ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Consuming a nutritious diet rich in fruits and vegetables is essential for good health and longevity. However, many Liverpool City Region residents experience food insecurity and live in places where there is poor access to affordable nutritious foods. Community food growing spaces, where fruits and vegetables are grown by and for local residents, could address this critical challenge whilst also having benefits for health, wellbeing, and social connectedness. There is therefore great potential for community food growing to meaningfully address non-communicable diseases and health inequalities, but little empirical evidence exists on this topic at present.

This collaborative research will bring together the many different people and organisations involved with community food growing in the Liverpool City Region to capitalise on rising public interest in locally-produced food and address timely and important evidence gaps. Its overall aim is to evidence the multiple benefits of community food growing, particularly for people experiencing hardship and socio-economic disadvantage. It will also determine how to best support and enable community food growing so that more people can benefit. Ultimately the project will produce new evidence on how we can support communities to grow food in a scalable way that can be deployed in other areas.

ARC Doctoral Project Reference: 074

Title: Understanding how social security and local welfare systems influence family mental health and child wellbeing: a systems approach to informing prevention, reducing inequalities and improving local decision-making.

Supervisory Team: Dr Sophie Wickham, Dr Davara Bennett, Professor Ben Barr

Contact: slw@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Many families in the UK are facing increasing financial pressure from poverty and rising living costs. Around one in three children live in poverty, and this can affect both parents' mental health and children's wellbeing.

This PhD will explore how government policies, local welfare support services, and wider public messages about poverty influence family mental health and child wellbeing. It will combine different research methods to understand both the impacts of policies and the experiences of families.

The project will analyse national datasets to investigate how welfare policies affect parents and children over time. It will also work with families using creative approaches, such as digital storytelling, to give families a voice to better understand their experiences of accessing support and living with financial hardship. The research will also examine how poverty and welfare are represented in media and policy debates, and whether these narratives influence engagement with support services.

Working with local authorities, NHS organisations, voluntary sector partners and families across the North West, the project will identify practical opportunities for prevention and early intervention. Findings will provide evidence to support better local decision-making, improve family and child outcomes, inform policy and practice across communities regionally and nationally.

ARC Doctoral Project Reference: 075

Title: Reducing inequalities in cancer early diagnosis and research engagement through community-led co-design.

Supervisory Team: Dr Lorna Young, Dr Ffion Curtis, Ben McGrae

Contact: Lorna.young@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Cancer does not affect everyone equally. Some communities are more likely to experience barriers to cancer prevention, screening and recognising possible symptoms or seeking help early. These inequalities can contribute to cancers being diagnosed later, when treatment can be more difficult. This PhD will work with communities experiencing these inequalities to understand why some people are less likely to engage with cancer prevention, screening and early help seeking. Rather than developing solutions for communities without their involvement, the researcher will work with community members, patients, healthcare professionals and voluntary and community organisations to identify what would make cancer information and services more accessible, acceptable and relevant.

The project will then co-design a potential approach with communities and assess whether it is feasible, acceptable and accessible in practice. It will also explore whether digital tools, including emerging AI technologies, could help improve reach and accessibility, while ensuring that technology does not create new inequalities.

The research will provide practical evidence to inform future approaches to cancer prevention and early diagnosis across the Liverpool City Region, with the potential to support larger studies and implementation in other communities experiencing health inequalities.

ARC Doctoral Project Reference: 076

Title: Reducing Inequalities in Vaccine Uptake and Impact Across the Life Course: Evidence for Policy and Practice

Supervisory Team: Dr Daniel Hungerford, Professor David Taylor-Robinson

Contact: danhungi@liverpool.ac.uk

ARC NWC Partner Host University: University of Liverpool

Theme: Public Health and Prevention

Lay Summary: Vaccination is one of the best ways to protect children from infectious diseases, but fewer children are being vaccinated across England. The biggest falls in uptake are in the most disadvantaged communities, increasing health inequalities. In Liverpool, recent measles outbreaks have shown the serious consequences of lower vaccine coverage. We have found that increasing child poverty may be an important reason for the recent fall in childhood vaccination. However, we still need to understand how financial pressures, changes to vaccination services, and family and community factors affect vaccine access.

This project aims to understand why vaccine inequalities are growing and identify ways to improve uptake. It could include:

- Exploring how the cost-of-living crisis, child poverty, and changes to vaccination services affect vaccine uptake in different communities.
- Examining vaccination patterns within families and neighbourhoods to help develop approaches that make it easier for people to get vaccinated.
- Working closely with local authorities and the NHS to assess whether local programmes to increase vaccination work.
- Using statistical modelling to estimate the health benefits of increasing vaccination rates in underserved populations.

Using health and administrative datasets, the project will generate evidence to help improve vaccination services, reduce inequalities, and protect health throughout life.