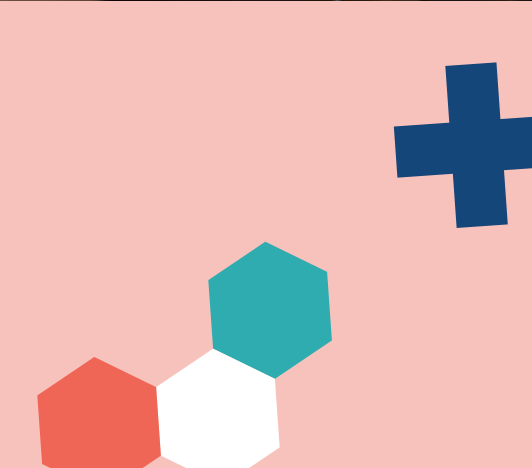
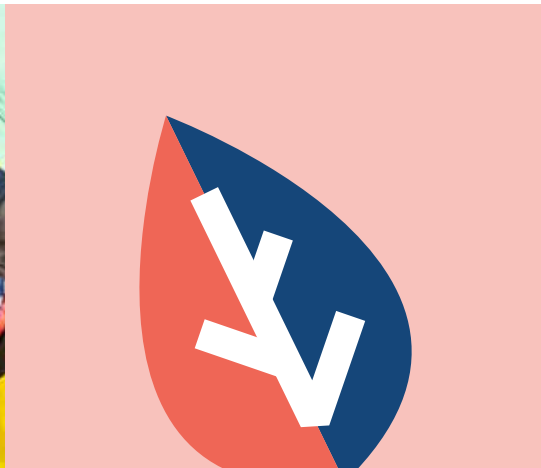
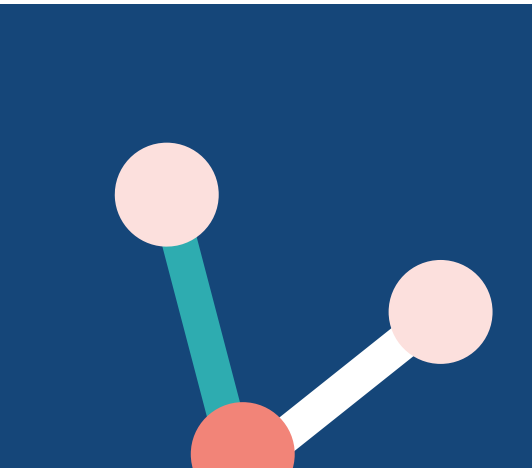


# WORK AND ACHIEVEMENTS



# Introduction

**I am very proud to introduce this brochure outlining the work and achievements of NIHR CLAHRC for East Midlands.**

Since January 2014 NIHR CLAHRC for EM has delivered a programme of world class research and capacity building work across the East Midlands working closely with its 60 partners across the NHS, local universities, local government, industry and the voluntary sector.

Our main aim has been to conduct world class research that makes a real difference on the frontline of health and social care in the East Midlands and beyond. From their inception our projects have been designed and conducted with a view to maximising their positive effect on healthcare practice.

We are proud of our track record of co-producing world-class applied research for patient and public benefit and service improvement.

As well as more than 80 research projects we have provided a number of other opportunities to help develop the capacity of the NHS and social care to engage in research and make the most of the latest evidence.

We have also set up an Implementation Hub with the aim of supporting our projects with the dissemination and implementation of their findings. The Hub provides a valuable advice and support service working in conjunction with our Director of Partner Relations Karen Glover.

We have created a number of excellent networks and centres of research that support the development of innovative research and researchers, such as data science and health inequalities amongst minority communities through our Leicester Real World Evidence Unit and the Centre for Black and Minority Ethnic Health. Other excellent networks include EMRAN (East Midlands Research into Ageing Network), our CLAHRC Faculty which has more than 300 members and EMCAPN (East Midlands Clinical Academic Practitioner Network).

Finally, we have provided a range of research opportunities for researchers including staff development, academic grants and opportunities to study and a range of short- and medium-term courses covering a range of topics. For example, we have supported over 150 PhD students in the last 5 years. We are pleased with the support that we have provided to the East Midlands research community.

We are delighted that the NIHR have agreed to continue our funding for a further 5-year period as part of their ARC (Applied Research Collaboration) funding round so that from October 2019 we will be known as NIHR ARC for EM. We are also grateful, not just to the NIHR, but to all of our partners across the East Midlands in the NHS, academia, social care, industry and the voluntary sector who continue to support our work both financially and through involvement in our projects and other activities.

This brochure outlines some of our activities going forward. As you can see, we have a range of exciting new opportunities with new research projects as well as many of our existing CLAHRC activities rolling into the ARC.

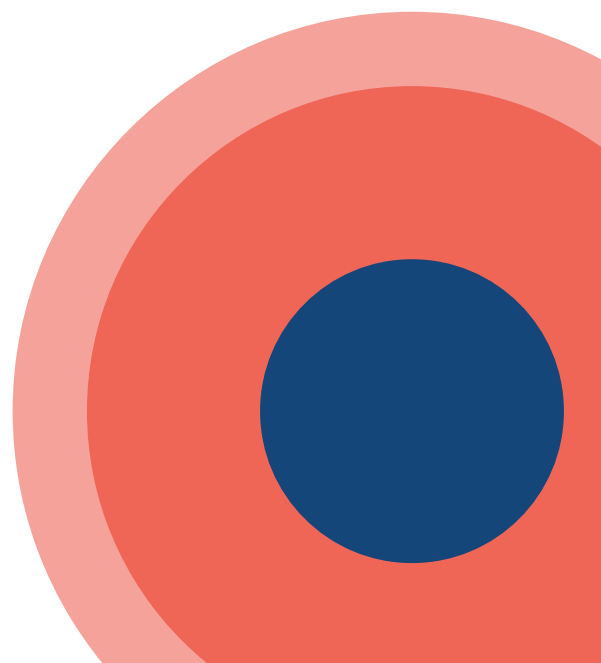
We hope you enjoy this summary of our achievements as NIHR CLAHRC for EM and look forward as NIHR ARC EM. We hope to work with you sometime in the next 5 years.



Professor Kamlesh Khunti

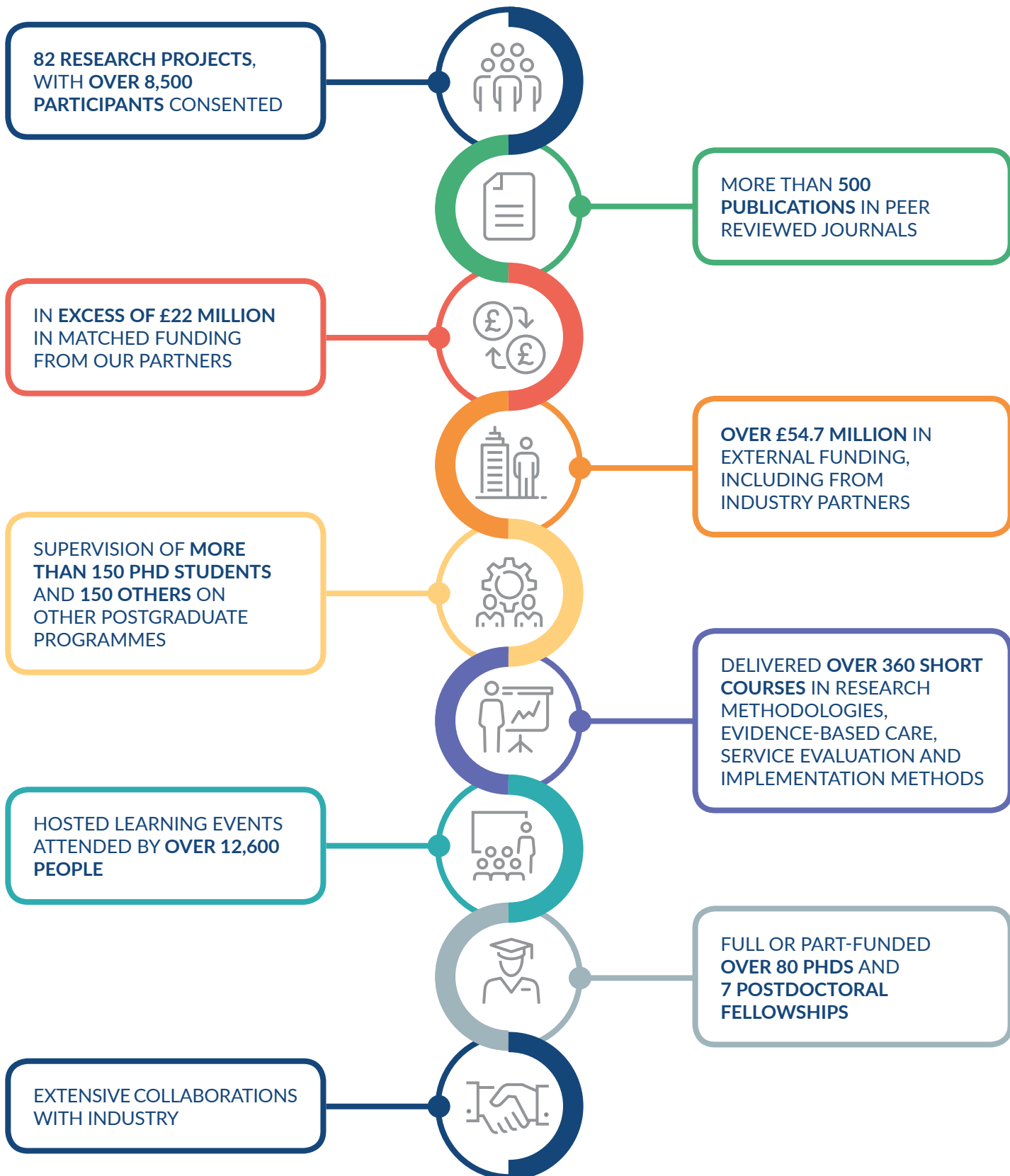
# Glossary

|                   |                                                                  |
|-------------------|------------------------------------------------------------------|
| <b>ADA</b>        | American Diabetes Association                                    |
| <b>ADHD</b>       | Attention Deficit Hyperactivity Disorder                         |
| <b>AHSN</b>       | Academic Health Science Network                                  |
| <b>AQUA</b>       | Assessing QbTest Utility in ADHD                                 |
| <b>ARC</b>        | Applied Research Collaboration                                   |
| <b>BME</b>        | Black Minority and Ethnic                                        |
| <b>CCG</b>        | Clinical Commissioning Group                                     |
| <b>CLAHRC</b>     | Collaboration for Leadership in Applied Health Research and Care |
| <b>CLAHRC LNR</b> | CLAHRC Leicester Northants and Rutland                           |
| <b>CLAHRC NDL</b> | CLAHRC Nottinghamshire Derbyshire and Lincolnshire               |
| <b>COPD</b>       | Chronic Obstructive Pulmonary Disease                            |
| <b>CRN</b>        | Clinical Research Network                                        |
| <b>DUK</b>        | Diabetes UK                                                      |
| <b>EASD</b>       | European Association for the Study of Diabetes                   |
| <b>EMAHSN</b>     | East Midlands Academic Health Science Network                    |
| <b>EMCAPN</b>     | East Midlands Clinical Academic Practitioner Network             |
| <b>EMPO</b>       | East Midlands Partnership Organisation                           |
| <b>EMRAN</b>      | East Midlands Research into Ageing Network                       |
| <b>FaME</b>       | Falls Management Exercise programme                              |
| <b>LSA</b>        | Leicester Self-Assessment                                        |
| <b>NICE</b>       | National Institute for Health and Care Excellence                |
| <b>NIHR</b>       | National Institute for Health Research                           |



# CLAHRC EM Achievements

Research themes within CLAHRC EM delivered a large volume and broad range of high-quality outputs, including:







# CLAHRC EM Research Studies

Examples of some research studies conducted by CLAHRC EM include:



An RCT to investigate the effect of structured education on people at risk of cardiovascular disease (3R Study)



“Move to teach, move to learn” – a collaborative programme to decrease sedentary time in primary school students (CLASS PAL)



Testing the impact and acceptability of implementing ‘A Safer Ramadan’ education programme in Muslim patients with type 2 diabetes



The electronic delivery of problem-solving CBT for depression in adolescents and young adults who self-harm



Developing and testing Risk stratification tools to identify patients with advanced COPD in primary care



An implementation strategy for reducing diabetes, cardiac and renal complications in people with type 2 diabetes (GP PROMPT)



Assessing QbTest Utility in ADHD (AQUA) – a trial to investigate whether the addition of an objective report (QbTest) can lead to earlier diagnosis without compromising diagnostic accuracy



An innovative hypoglycaemia pathway for admission avoidance: a partnership approach with a regional ambulance trust



Walking away after gestational diabetes (Babysteps) - to develop and implement a face-to-face and online lifestyle education programmes that meets the social and cultural needs of women with a history of gestational diabetes and evaluate the programme in terms of impact on exercise.



An RCT of the clinical and cost effectiveness of a specialist mood disorders team for refractory unipolar depressive disorder



CVD Risk in prisoners – which is exploratory and implementation research on NHS Health Checks in male-only prisons within Nottinghamshire and South Yorkshire. This is the largest project of this kind carried out in Europe.



Developing and evaluating an education programme aimed at increasing physical activity in individuals with diagnosed coronary heart disease (PACES)



Implementing NICE guidelines on bipolar disorder into routine primary and secondary healthcare: a comparison of implementation approaches



Development of the Leicester Diabetes Risk Score for BME populations

# CLAHRC Networks

We are pleased to highlight our range of specialist centres and networks which we will be taking forward in ARC-EM, including:



We have a **Real-World Evidence Unit** that emphasises our growing expertise in the use of routinely collected patient/service user data in applied health and care research. The Centre received start-up funding of more than a £1.6 m from University of Leicester, Astra Zeneca and Boehringer Ingelheim. The Centre works on a range of projects.



The development of the **Centre for Black and Minority Ethnic Health** to reduce health inequalities, to facilitate the dissemination of health information to all communities and to promote diversity in research involvement, engagement and participation.



The launch of the **East Midlands Clinical-Academic Practitioner Network** with the Institute of Nursing and Midwifery Care Excellence at Nottingham University Hospitals for staff in non-medical clinical-academic roles.



The development of the **East Midlands Research into Ageing Network (EMRAN)** to enhance collaborative research into ageing and older people across the East Midlands. The network brings together researchers, care professionals and members of the public to discuss and initiate collaborative applied health and care research. EMRAN have published 29 Discussion Papers covering all the major topics of interest as well as mapping all of the ageing research being carried out in the East Midlands. The network currently has more than 500 members. EMRAN's work is set to continue as a resource providing critical support in this area to the NIHR infrastructure in the East Midlands.



We set up a **CLAHRC EM Faculty** which has enabled us to bring together colleagues from health, care and academia across the region interested in research activity and findings. The Faculty has approximately 300 members. Faculty membership has bought a number of substantial benefits including access to a wide range of resources as well as eligibility to apply for CLAHRC research grants.



CLAHRC EM is an active member of **EMPO (East Midlands Partnership Organisations)** which is made up of nine health research groups across the region that allows us to co-ordinate our activities and present a joint offer. For example, we have played a full part in EMPO's jointly run organisation to support our region's STPs. We have attended and presented at joint events as well as held discussions with STP representatives and other EMPO organisations.

# CLAHRC Achievements

We are proud of our exceptional track record of translating evidence into routine practice within and beyond the region. The ARCs predecessor organisations, CLAHRC East Midlands, CLAHRC LNR and CLAHRC NDL, showed that research evidence can be implemented quickly to improve health and care and to reduce service costs.

Our findings have been adopted by services and are already delivering widespread benefits, including to people with mood disorders and other mental health conditions; COPD; musculoskeletal problems; chronic respiratory disease; and those at risk of or with type 2 diabetes.

Here are some examples of translation into health and care.

## 1. LEICESTER SELF-ASSESSMENT (LSA) DIABETES QUESTIONNAIRE

The Leicester Self-Assessment (LSA) developed by CLAHRC LNR in partnership with Diabetes UK is a short questionnaire of seven questions to assess level of risk of having and/or developing type 2 diabetes. The questionnaire can be found on the Diabetes UK website where it has been taken by more than 1.7m people. It is also widely available in paper form where it is used by Boots, Tesco chemists, Weight Watchers and BUPA. It is recommended in NICE guidelines and the NIHR have used it as an example of how they have contributed to growth.

The questionnaire has now been translated into four South Asian languages: Bengali, Punjabi, Gujarati and Urdu.

Research conducted by the Leicester Diabetes Centre and Diabetes UK has indicated that over 100,000 people who have used the tool have had their diagnosis of type 2 diabetes confirmed, in many cases much earlier than would otherwise have happened.





## 2. ASSESSING QBTEST UTILITY IN ADHD (AQUA-TRIAL)

The Assessing QbTest Utility in ADHD: A Randomised Controlled Trial (AQUA-Trial) project which has now been passed to the East Midlands Academic Health Science Network (EMAHSN) won the 2018 Health Service Journal (HSJ) Award for innovation in mental health for QbTest. The QbTest is a uniquely designed Quantitative Behavioural measurement system that is able to diagnose ADHD. AQUA explored the clinical value of the test alongside standard practice in Child and Adolescent Mental Health Services (CAMHS) and community paediatric services. Clinicians using the test reached diagnostic decisions 44% faster, and were twice as likely to rule-out ADHD with no loss of diagnostic accuracy.



EMAHSN then deployed the QbTest diagnostic tool at seven NHS sites across Derbyshire, Leicestershire and Lincolnshire, aiming to transform care by using the computerised system alongside traditional observation and interviews as well as to prove and quantify the impact on patient experience, efficiency and time to diagnosis. Evaluation of the project confirmed a reduction in time to diagnosis by an average of 153 days and identified an average cost saving of 32.6%. Savings were achieved through a reduction in the number of appointments needed for diagnosis and by ruling out ADHD sooner for ambiguous cases. Following the evaluation, United Lincolnshire Hospitals NHS Trust, Derbyshire Healthcare NHS Foundation Trust and Leicestershire Partnership NHS Trust announced they would continue to fund the QbTest.

Our AQUA project, which is the dissemination and evaluation of the QbTest has been adopted into the AHSN Atlas of Innovations. It is now in use in over 65 Trusts nationally and is currently being considered for the AHSN's national roll-out programme.

## 3. PHYSICAL ACTIVITY IMPLEMENTATION IN COMMUNITY DWELLING ADULTS (PHISICAL)

The Falls Management Exercise programme (FaME) is recommended by NICE as an effective intervention for reducing falls in older people. The CLAHRC EM PhISICAL study evaluated the implementation of FaME into routine practice in different areas of the East Midlands in order to understand the factors that make such a programme successful or not.

Following dissemination of findings from the PhISICAL study, all of the district councils in Leicestershire, Rutland and Derby City chose to continue to provide FaME using funds from elsewhere. These programmes have also been improved using the findings from the study. Additionally, the PhISICAL project team have held conversations with NHS England, The Royal Society for the Prevention of Accidents and Public Health England who are keen to disseminate the associated toolkit.



#### **4. STRUCTURED EDUCATION FOR PEOPLE WITH TYPE 2 DIABETES**

The Diabetes Education and Self-Management for Ongoing and Newly Diagnosed (DESMOND) programme for people with type 2 diabetes is used in 107 UK sites as well as in Ireland, Australia and other countries.

The CLAHRC-LNR project Walking Away from Diabetes was developed with learning from DESMOND and provides structured diabetes education for BME groups. This programme has informed the implementation of the National Diabetes prevention programme across England. The Leicester Diabetes Centre team are working with Ingeus as one of four national providers of the 'Healthier You' diabetes prevention framework and have seen over 75,000 referrals nationally.



#### **5. COUNSELLING IN PREGNANCY**

Our Counselling in Pregnancy project resulted in positive behaviour changes for pregnant women who smoke. This project has been adopted and fully incorporated into the national training programme for the National College of Smoking Cessation Trainers.

#### **6. GOING HOME FROM HOSPITAL**

Our Going Home from Hospital booklet (an advice guide for patients leaving hospital after a traumatic injury, resulting from a legacy CLAHRC NDL study) has been adopted by the East Midlands Major Trauma Centre, who provide copies (funded by the NHS) to all patients discharged from the MTC. Our Implementation Hub is working with the project team to disseminate the booklet to all of the other Trauma Centres in England to explore wider uptake.

#### **7. DIABETES MODEL OF CARE**

A senior CLAHRC EM researcher Dr Sam Seidu has developed a Diabetes Model of care which has been adopted by CCGs and is now being implemented in China and India.

#### **8. RISK ALGORITHM IN HYPOGLYCAEMIA**

CLAHRC EM researchers led by Professor Khunti have developed a risk algorithm for hypoglycaemia and hospital admission which has been validated and is now in international guidelines, and has become the accepted global target definition (3.1mmol).

#### **9. THERAPEUTIC INERTIA**

Researchers from CLAHRC EM led by Professors' Melanie Davies and Kamlesh Khunti have developed and reported a new definition of Therapeutic Inertia. Professor Davies has also led the integration of Therapeutic Inertia into the ADA-EASD Guidelines on management of diabetes. CLAHRC EM has also supported the work that the Leicester Diabetes Centre has been doing on Inertia including developing a new definition of it. This new definition is being added to international guidelines and will be a critical support in developing and maintaining the best approach to combatting the spread of type 2 diabetes. The American Diabetes Association have now taken this definition and are implementing a programme to overcome inertia.

## 10. A SAFER RAMADAN

The CLAHRC EM project A Safer Ramadan evaluated the acceptability and implementation of A Safer Ramadan. A Safer Ramadan consists of a patient education programme for people with type 2 Diabetes who observe Ramadan, a community champion training package for awareness raising and a Healthcare professional online training module. All components of the evaluated programme have been commissioned by Leicester City CCG, queries from areas of the UK with high Muslim populations have been received and over 40 health care professionals completed the training following its promotion at the 2019 DUK conference.



## 11. CITIES CHANGING DIABETES

The Cities Changing Diabetes programme is an international partnership programme led by Novo Nordisk that was developed to get cities worldwide to set goals and design interventions to drive down the number of people with type 2 diabetes in their city. Meeting these goals requires working together across sectors and disciplines, uniting stakeholders behind a common cause. Urban environments are already home to two-thirds of people with diabetes. This makes cities the front line in the fight against type 2 diabetes – and where we must take action to hold back the alarming rise of the condition.

In 2017, Leicester became the first UK and the third European city to join the global programme. Leicester was selected on a number of criteria, including the strength of the Leicester Diabetes Centre, who is leading the work; having an ethnically and culturally diverse population; and as a city, it is both passionate and motivated in supporting its community members to help prevent type 2 diabetes and support those who live with it on a daily basis. Professor Khunti led this involvement and has presented on the Leicester Changing Diabetes to the International Diabetes Summit at the House of Commons in December 2018.



## 12. PLAY DOMINO: TALK PROSTATE

Prostate Cancer is the most common cancer in men in the UK and African and African- Caribbean men are 2-3 times more likely to develop this cancer than white men and more likely to die from it. In response to this health inequality, the Centre for BME Health launched the Play Domino: Talk Prostate campaign in 2018 at an event which attracted over 80 people with presence from ITV Central News. The campaign includes all generations and men and women with the aim to raise awareness of the increased risk of prostate cancer and the need to be tested early. Since the launch event a number of events have been held which have been favourably received and the campaign has had continued positive media coverage with a number of high-profile famous people supporting the campaign.



# CLAHRC EM and Industry

We are very proud of our excellent relations with Industry. In the first year of CLAHRC EM, we developed a comprehensive industry strategy, setting out a mutually beneficial offer to existing and potential new commercial partners. The strategy was approved by the NIHR Office for Clinical Research Infrastructure and was positively received by NIHR who encouraged it to be shared with fellow CLAHRCs as an example of good practice.

Our Director of Partner Relations, a jointly funded post with EMAHSN, has responsibility for maintaining ongoing dialogue between ARC-EM and our industry partners.

Examples of collaborative working with industry partners include:



CLAHRC EM and ARC EM have received substantial financial support from Astra Zeneca and Boehringer Ingelheim to support the Leicester Real World Evidence Unit.



We receive annual co-funding from Novo Nordisk to support our work.



Professor Khunti is working in partnership with Novo Nordisk on the global 'Cities Changing Diabetes Initiative' to tackle urban diabetes (Leicester is the first UK City member).



Professors Khunti and Ng are working with Wavelet Health on the identification and management of people with multimorbidity and atrial fibrillation.



The AQUA project was a formal partnership with QbTech Ltd who provided in kind support, including test equipment and licenses.



Professors Morriss and Hollis are working with Janssen, Merck, Biogen, UCB and Intel on a multi-million award to develop, and evaluate remote monitoring technologies for depression, epilepsy and multiple sclerosis.



Professor Morriss is working with P1vital on a European Union Horizon Grant 2020 on early response to antidepressant treatment in primary care.



REBOOT Nottinghamshire project has received support from the Big White Wall Ltd.

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The ambulance service study of hypoglycaemia was supported by Merck.



The 3Rs study received support from Janssen.



Boehringer Ingelheim and Lilly provided support for our GP Prompt study.



As a result of our CLAHRC LNR study, 'A Safer Ramadan', Janssen Pharmaceuticals have funded a follow-on study on Ramadan.



Our CLASS PAL study is a collaboration with the "Designed to MOVE" initiative run by the corporate social responsibility arm of Nike in partnership with Lumo BodyTech Ltd.



Professor Morriss is working on a NIHR CRN adopted study of patients with generalised anxiety disorder with Alpha-stim, who provided funding.



We are working with PRIMIS on a CLAHRC EM GP PROMPT randomised controlled trial and CLAHRC EM (Enhancing Mental Health) PhD on an electronic notes guide to suicide risk assessment.



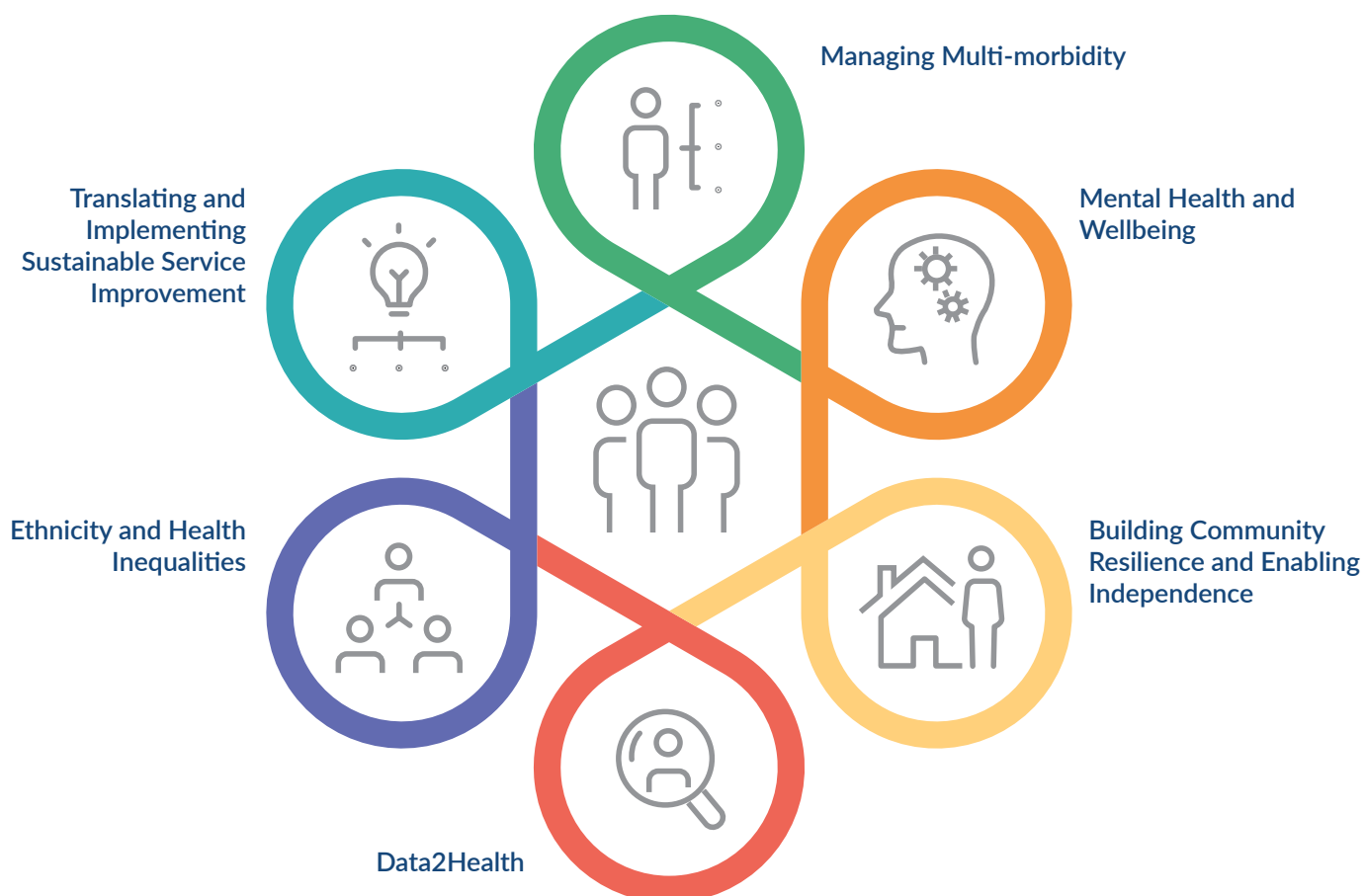
Our EMH theme are part of a consortium with Johnson and Johnson, Biogen, CTMM-Ti Pharma, GABO-Mi, Intel, Livassured, Simbiotica, Software AG and Tenacta looking at new digital approaches to managing depression on its own or with epilepsy or multiple sclerosis.



# Looking Forward – ARC EM

Our proposed ARC EM spans all of the region's NHS providers and commissioning groups, local authorities, three of the regions universities and a broad range of key industry and voluntary sector partners. Collectively, these members have committed £19.3m in co-funding to ARC EM over five years. We will work together to address specific health or care issues in the East Midlands.

We will use this funding to conduct world class research across six themes which are:



We will also use these funds to support the implementation of our project findings, offer a wide range of training and research opportunities and to host a wide range of networks that allow academics, clinicians, public health experts and interested members of the public to connect and collaborate.

We will continue to work closely with EMAHSN. We have a senior jointly funded post, joint funded work streams and joint strategies. EMAHSN have provided substantial funding to support the implementation of CLAHRC projects across the East Midlands. In the past year the two organisations have created the Collaboration for Innovation Spread which will work jointly to spread project findings from CLAHRC/ARC EM across the region. The collaboration formalises the arrangement whereby CLAHRC/ARC projects will be adopted and disseminated and implemented across the region and beyond.

# Our New ARC Themes



## **BUILDING COMMUNITY RESILIENCE AND ENABLING INDEPENDENCE**

Professor Marion Walker

The Building Community Resilience and Enabling Independence (BCREI) theme will undertake research to support independent living, improved care for stroke survivors and coordinated multi-service care, particularly for older people.



## **MANAGING MULTI-MORBIDITY**

Professor Kamlesh Khunti

The Managing Multimorbidity (MM) theme will carry out research to improve the health, care and safety of the growing number of people with more than one long-term condition.



## **MENTAL HEALTH AND WELLBEING**

Professor Richard Morriss

The Mental Health and Wellbeing (MHW) theme will carry out research to improve the mental health and wellbeing of our population and to increase access to effective therapies and treatments.



## **DATA2HEALTH**

Professor Keith Abrams

The Data2Health (D2H) theme will ensure the maximum use of existing large-scale linked data resources to address important questions for patients, the public and care services, both locally and nationally.



## **ETHNICITY AND HEALTH INEQUALITIES**

Professor Azhar Farooqi

The Ethnicity and Health Inequalities (EHI) theme will carry out research that considers health gaps between population groups, including those related to ethnicity, culture, wealth, disability, geography and education, so that our research is fully inclusive.



## **TRANSLATING AND IMPLEMENTING SUSTAINABLE SERVICE IMPROVEMENT**

Professor Natalie Armstrong

The Translating and Implementing Sustainable Service Improvement (TISSI) theme will work to ensure that our research findings are widely shared with our public and partner organisations to improve health and social care. It will support education so that more of our collaborators have the skills necessary to do high quality research.



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The National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care East Midlands (CLAHRC EM) is a partnership between Nottinghamshire Healthcare NHS Foundation Trust and the Universities of Nottingham and Leicester.

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