

How to develop an existing Memorandum of Understanding between Public Health South Tees and Teesside University into a research system for Middlesbrough Council and Redcar & Cleveland Borough Council into a Research Ecosystem: Final Report

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1. SUMMARY

Middlesbrough Council and Redcar & Cleveland Borough Council (MCRCBC) serve a population that face significant physical, social and economic issues which contribute to inequalities. Systemic problems lay at the heart of these inequalities and need a long-term systemic response to support communities and populations to value their health and wellbeing. The key drivers for the stalling of both life expectancy at birth and healthy life expectancy in the area are due as much to the broader changes in social determinants of health than they are about changes in health care. The region has been hit hard by the COVID pandemic.

A Memorandum of Understanding (MOU) was signed in May 2019 between Teesside University (TU) and MCRCBC to develop shared work around teaching, business and enterprise and research in the public health field. The aim of this work was to explore how the existing MOU can be developed further to include other departments to develop a research system that will enable the two Local Authorities to become more research active in public health and other areas and included six objectives related to this and to make recommendations for moving forward with the development of a research ecosystem.

We carried out a survey with heads of service at MCRCBC as well as Councillors and those in voluntary organisations. We carried out focus groups at TU and at MCRCBC and convened a community group which met four times during the project to discuss how their involvement could be included going forward. Three themes were found from the qualitative work (Aims of MOU, Facilitators and Barriers) with 12 sub-themes within these.

We indicate within our findings how NIHR support could support a research ecosystem which encompasses key players within the Local Authorities (LAs), University and third sector. Imperative to this, we argue, is the development and involvement of a community group which understands the needs of the area.

Recommendations to current MOU group

- I. To use the current MOU as a mechanism to secure funding, including from NIHR national and regional infrastructure (e.g. Clinical Research Network) for co-production research with embedded researchers and taking into consideration findings from this current project.
- II. To consider including other departments at the LA and identify research champions across those.
- III. To have a sub-group which leads on research work between the LAs
- IV. To include Assistant Deans for Research and Innovation as members of the group
- V. To look at including research students across different schools at TU on research projects

- VI. To identify latent skills of staff in the LA
- VII. To include community involvement
- VIII. To use the MOU as the key mechanism for co-production research between the LA and TU going forward.
- IX. To carry out a mapping exercise of work being carried out by the LAs and TU and to identify a repository for the work
- X. To develop a training package for TU and LA staff in relation to co-production research
- XI. To produce a regular newsletter of work done/being carried out to be shared across TU, the LA and other key players

2. CONTEXT

The health of people in Middlesbrough and Redcar & Cleveland is generally worse than England averages with both areas being in the most deprived districts/unitary authorities with many children living in low income families (31.8% in Middlesbrough and 25.2% in Redcar & Cleveland) [1, 2]. Life expectancy is 12.6 years lower for men and 12.0 years lower for women in the most deprived areas of Middlesbrough and 11.0 lower for men and 7.3 years lower for women in the most deprived areas of Redcar & Cleveland when compared to those in the least deprived areas [1, 2].

MCRCBC serve a population that faces significant social and economic issues which contribute to inequalities. Systemic problems lay at the heart of these inequalities and need a long-term systemic response to support communities and populations to value their health and wellbeing [3]. The key drivers for the stalling of both life expectancy at birth and healthy life expectancy in the area are due to the broader changes in social determinants of health than they are about changes in health care [4]. The region has been hit hard by the COVID pandemic [5].

As a civic university, it is important for Teesside University (TU) to work with local partners in the area. Part of the TU mission is to generate and apply knowledge that contributes to the economic, social and cultural success of students, partners and the communities it serves. The University has in place a Corporate Social Responsibility Framework which captures a commitment to service, which they deliver through working in partnership with individuals, communities and civic organisations to address the needs and aspirations of local communities in the Tees Valley [6].

A Memorandum of Understanding (MOU) was signed in May 2019 between TU and MCRCBC to develop shared work around teaching, business and enterprise and research in the public health field. To date this work has focused on collaborations with Public Health South Tees (PHST – the shared function of the two LAs). This proposed project aimed to use the learning from the work to date to develop links in other departments at both TU and MCRCBC and to make recommendations for the future work of the MOU.

3. AIMS, OBJECTIVES AND METHODS

The aim of the work was to explore how the existing MOU between PHST at MCRCBC and TU can be developed further to include other departments to develop a research system that will enable the authorities to become more research active in public health and other areas and included six objectives:

OBJECTIVE 1: To examine how the current MOU is being operationalised with PHST and TU.
A focus group was held with current members of the MOU Steering Group at both TU and MCRCBC to identify current strategies and plans.

OBJECTIVE 2: To examine how the existing MOU can be extended to include all departments at MCRCBC by surveying all Heads of Service (HOS), demographically elected Councillors and relevant stakeholders, such as Senior Managers at the Clinical Commissioning Groups (CCGs) and senior clinical staff from South Tees Hospitals NHS Foundation Trust and VCS organisations.

An online survey was sent to all HOS at MCRCBC, demographically elected Councillors and Managers at the CCG to identify how research evidence is currently obtained, how important evidence is and key research priorities, research needs and barriers and facilitators to carrying out research. To investigate more fully key research priorities, capacity issues, commissioning, research needs and barriers and facilitators with three departments at MCRCBC.

OBJECTIVE 3: To investigate more fully key research priorities, capacity issues, commissioning, research needs and barriers and facilitators with three departments at MCRCBC.

Purposive in-depth online focus groups were carried out with HOS and relevant Officers within three strategic areas within Focus groups were held with three departments at MCRCBC (Children's Social Care, Planning and Regeneration).

OBJECTIVE 4: To ascertain key research priorities, capacity issues, commissioning, research needs and barriers and facilitators from the TU perspective.

4a: Purposive interviews were carried out with TU Associate Deans for Enterprise and Business Engagement and Research and Innovation and research centre leads across the university to ascertain key research priorities, knowledge exchange capacity, structural incentives for collaborative research and barriers and facilitators from the TU perspective.

4B: A focus group was held with lecturers and researchers at TU who have experience of co-production work.

OBJECTIVE 5: To work with members of the public and the voluntary sector to make recommendations to develop a Patient/participant information (PPI) group to be involved in future research.

We met with members of the public four times to discuss how a PPI group could be established and to develop recommendations of how we could link into existing community groups and how we can develop a future community group to be involved in the MOU, as well as what expectations of that involvement would be.

OBJECTIVE 6: To make recommendations for developing the existing MOU to include strategies related to capacity issues, key research priorities and bidding activity.

We used the findings from OBJ 1-5 to make recommendations for developing the existing MOU to include key research priorities and bidding activity plans for the next 3 years and to develop how these can be operationalised. This includes measurable outputs and outcomes associated with the MOU to demonstrate the long-term success or non-success.

OBJECTIVES 3-5: ANALYSIS

Data was subjected to framework analysis. Data was coded by the study team using a list of a-priori themes. Our analysis of the likelihood of embedding new ways of working was informed by Normalization Process Theory (NPT) [4]. This model considers factors that affect implementation in four key areas; how people make sense of a new practice (coherence); the willingness of people to sign-up and commit to the new practice (cognitive participation); their ability to take on the work required of the practice (collective action); and activity undertaken to monitor and review the practice (reflexive monitoring) [4].

4. RESULTS

Results relating to objectives 1, 3, 4a and 4b

In order to get a full understanding of what research is happening and what the barriers and facilitators are, we carried out a number of interviews/focus groups (Table 1).

Table 1: Numbers of participants

Objective/Group		Participants		
		Male	Female	Total
1 – MOU group	1 Focus Group	6	5	11
3A – Children’s Social Care	2 Focus Groups	0	19	19
3B - Planning	1 Focus Group	3	2	5
3C - Regeneration	2 Focus Groups	7	5	12
4A – University leaders	Interviews	3	2	5
4B – Researchers	Focus Group	0	7	7
Total		19	40	59

Results are themed below with indication of which objective the answer came from and link to the four components of NPT (coherence, cognitive participation, collective action, reflexive monitoring). Detailed responses are shown in Appendix 1. We found three main themes and 12 sub-themes and NPT coding across these (Table 2).

Table 2: Qualitative coding of research aims

MAIN THEME 1: AIMS OF MOU	
	NPT CODE
SUB-THEME 1A: Relationship building	Coherence
SUB-THEME 1B: Making co-production research easier	Coherence
SUB-THEME 1C: LA staff being involved in research	Coherence
SUB-THEME: Building confidence of academics/researchers	Coherence
SUB-THEME 1E: Importance of MOU	Coherence
MAIN THEME 2: FACILITATORS	
SUB-THEME 2A: Appoint leads/contact people	Collective action
SUB-THEME 2B: Internal and external communication	Collective action
SUB-THEME 2C: Training opportunities for LA staff	Collective action
SUB-THEME 2D: Follow up post projects	Reflexive Monitoring
MAIN THEME 3: CHALLENGES	
SUB-THEME 3A: Cross departmental work	Cognitive Participation
SUB-THEME 3B: Staff turn-over/organisational	Cognitive Participation
SUB-THEME 3C: Restrictions/formality	Cognitive Participation

A) MAIN THEME 1: AIMS OF MOU

Sub-Theme 1a: Relationship building

Participants reported that the MOU could be used as a vehicle to increase co-production of research between academics and LA staff, by facilitating two-way interactions that would make their research more impactful and would build research capacity in LA:

"We thought that by developing a relationship or a partnership with colleagues from [PHST] we would therefore provide a platform for those working in practice to co-deliver [teaching] sessions. At the same time, having an opportunity to gain insight into projects that require research" (Group 1)

"It's not just research informing practice, but also practice informing research to make it relevant in practice. [...] practitioners will learn from researchers and researchers too will learn from practitioners" (Group 4B).

Sub-Theme 1b: Make co-production research easier

Participants were hopeful that the MOU could help to make aspects of the research process easier, such as ethics applications and data sharing between the organisations, by developing standard templates and (data sharing) agreements underneath the umbrella of the MOU. The MoU was envisioned to more than a standalone document that combines and supports various administrative processes and legal contracts in each organisation.

"It's really important.... That we ensure that we bring in stakeholders, local authorities, private sector partners, really early doors, to embed them and understand their needs and requirements are and make sure that actually, we are genuinely co-creating a lot of our research" (Group 4A)

"A lot of the contracting stuff that takes up so much time, like data sharing agreements, so if that could happen at a wider institutional level as part of the MOU process, it would save us so much time with contracting" (Group 4B).

Sub-Theme 1c: LA staff being involved in research

The importance of ownership was seen as important to LA staff in order to develop and be involved in research projects.

"Being involved (in co-production research) would give officers more ownership of the research to be able to develop it specifically for our own needs and to guide how it develops" (Group 3B).

"They've got their day job, they'd love to, to be doing some of the... academic research, but they just never really get the opportunity. Because the day to day takes over. I think people would be enthused by getting something back out of it. (Group 3C)

Sub-Theme 1d: Building confidence of academics/researchers

Moreover, by making co-production research more accessible and feasible within the university, the MOU was perceived as a great opportunity for researchers/academics to build their confidence in engaging with external organisations:

“Putting someone in the position where they’re faced with an external organisation, where they feel stupid, is not going to make that happen” (Group 4B).

“So there's a big transition that we will need to play in terms of not just supporting those staff that are research active but actually starting to start to encourage those that are not research active as yet but have the potential to become more research intensive” (Group 4A)

Sub-Theme 1e: Importance of MOU

The importance of the MOU was appreciated across all participants and also that both groups could learn and support each other with a particular emphasis on working on tackling real issues with those in our communities.

“So, we could learn and support each other.... How we could work jointly together” (Group 1)

“I think the important part (of a MOU) is really how to bring the University into tackling real issues that matter to the people of Teesside, given that we are a civic university” (Group 4A)

B) MAIN THEME 2: FACILITATORS

Sub-Theme 2a: Appoint leads/ contact persons

To enable these benefits for those involved and make the MOU work in practice, participants identified the need for a lead or contact person in both organisations who can help researchers and LA staff to navigate both organisations and broker contact to the right people in each organisation for particular projects and activities.

“We should consider the creation of a corporate intelligence team” (Group 3B)

“This person should be almost like the spokesperson to disseminate the work within the organisation. [...] {For example} as researchers from large organisations coming in, they find it really hard to navigate the school system [...] You need to check in with them and say, you know, you're the lead? Can I, I'm thinking of doing x, how does that fit into this work?” (Group 4B)

Sub-Theme 2b: Internal and external communication

To further activate researchers in participating in the MOU, communication was deemed important, both internally to help researchers make sense of the MOU and what it means for them in practice, and externally to partner organisations to promote the work taking place within the MOU:

“The university needs to be that upfront in terms of saying, this is what it means for you in practice [...] like a clear process from the University's point of view of what the MOU means in practice for that researcher” (participant 3).

"So internal communication could be worked on, but also that external facing promotion [...] we need to start making our product look a bit nicer on that [...] I don't think we're good at telling that story to the outside world" (participant 3).

Sub-Theme 2c: Training opportunities for LA staff

The opportunities for developing skills for the LA staff was seen as a really important component of the MOU moving forward.

"I certainly think there are a lot of skill gaps... so any sort of training, CPD opportunities that could be developed for us would always be beneficial" (Group 3B)

"If we've got expertise from our [university] staff... we could perhaps take part in future develop training opportunities.... and also share with them any courses that... could be useful to them" (Group 4A)

Sub-Theme 2d: Follow-up post projects

In line with the aims identified for the MOU (to facilitate co-production research through relationship building), researchers encouraged the inclusion and resourcing of follow-up activities after research projects have been completed under the MoU. For example, by conducting post-project reviews after 3 or 6 months to gauge progress in implementation of research findings, scope new research opportunities and collect feedback on the co-production process:

"How do we track that like, customer satisfaction, that they're happy with our service, you know, did we achieve what they wanted us to achieve? And is there like a process that we can put in but that would just be from our service" (Group 4B).

"So, for me, it would be working over the next four years to do that longer study and then at the end of that four years to look back and go well what did we achieve...? Okay, and you delivered this building, that building, you created these jobs but what was the actual impact on your residents?" (Group 3C).

C) MAIN THEME 3: CHALLENGES

Sub-Theme 3a: Cross departmental work

Working across departments was seen as a real issue at present and something that would need to be considered moving forward for both the University and for the LA.

"It's about communication, and I think part of the challenge [at the University level] is that the MOU fits within the Enterprise and Business Engagement (EBE) portfolio as opposed to the research portfolio... So, if there are particular members of staff within a school that aren't aware of this, it might just be because it's not working its way out through the EBE portfolio" (Group 1).

"I've never considered if you like, wellness, mindfulness and mental health on the projects, physical projects that we do" [council] (Group 3C).

Sub-Theme 3b: Staff turnover/ dealing with organisational change

However, it was highlighted that a challenge for the work is when one of the leads or contact persons would leave their organisation, reducing the organisation's memory for the MoU and access to developed relationships and networks, ensuring that this position could be take over easily by another person within the organisation would add strength to the agreement.

Similarly, high staff-turnover among researchers was perceived as a challenge by the participants for relationship building efforts and the sharing of contacts under the MOU. In this context, some researchers, particularly in the early stage of their careers, expressed reluctance in adding their hard-earned contacts to the MOU for fear of losing them when leaving the university. This was deemed particularly the case for researchers on fixed term contracts, whose lack of job security could hinder them in investing in relationship building under the MOU:

"That's a reasonable concern to have, I mean, particularly of Early Career Researchers. Because you're, you're potentially in such a precarious situation anyway, like you say, pledging allegiance and kind of given all your resources up to, to something that that may not actually benefit you, in the long term, to an organisation that may also not seek to benefit you in the long term" (Group 4B).

Sub-Theme 3c: Restrictions/formality

In this sense, researchers preferred a MOU that would not be overly prescriptive and restrictive for their research activities and relations with external partners. For instance, some participants raised concerns about whether the agreement would make it more difficult to work with other external organisations who were not part of the MOU. Furthermore, understanding the resource and time commitments is imperative:

"From experience of working in the local authority what I can say is that {research} usually not the highest priority within a local authority culture. What tends to happen is that when people have to justify how you're spending for a programme, that we quickly just put something together and come up with a justification" (Group 1)

"I think we've got massive resource constraints. To be perfectly honest, I cannot imagine in our team, where we could find at the moment any time at all, to work collaboratively, well not collaboratively...co-production" (Group 3C)

D) SURVEY RESULTS

Although we had expected to get around 70 responses, due to the pandemic, dissemination of the survey proved problematic and responses were limited. Furthermore, because of the pandemic we were unable to include participants from South Tees Hospitals NHS Foundation Trust. The reasons for the low numbers may be due as well to the large number of online surveys that have been produced during the pandemic, leading to *survey fatigue* [7]. In total 25 individuals responded to the survey from HOS ($n=9$; 4 male) CCGs/VCS organisations ($n=5$; 1 male) and Ward Councillors ($n=11$; 5 male).

HOS and CCG/VCS organisations were asked if they were aware of the current MOU with 5/8 of HOS and 1/4 in the CCG/VCS organisations.

Although some of the groups had spoken to researchers or academics about carrying out research (HOS n=3; CCG/VCS n=4; ward councillors n=1) in particular this was not reported by ward councillors. Of the 8 that had spoken to researchers or academics about carrying out research the majority of them had spoken to people at Teesside University.

Current evidence- based practice was seen as really important. Evidence is currently found from a variety of sources and most did not know the procedures for carrying out the research. It was obvious that barriers were time/resources and access to trained academics/researchers. Research training is required that starts with the basics (Appendix 2).

CCG/VCS participants and ward councillors were also asked how well they think LA’s use research evidence in their decision making with 1/5 CCG/VCS organisations and 9/11 or ward councillors reporting they were using it excellently or quite well.

There was clearly some learning around certain issues that need to be considered moving forward (Figure 1, Appendix 3):

Figure 1: Areas to consider



E) RESEARCH PRIORITIES

We asked respondents in the survey and in focus groups related to Children’s Services, Planning and Regeneration what their research priorities were. There were 40 different responses given to this. Many of these show examples of cross departmental need (Figure 2).

Figure 2: Research priorities

HOS	CCG/VCS	Ward Councillors	Children’s Services/LA	Planning/LA	Regeneration/LA
GROUP 2	GROUP 2	GROUP 2	GROUP 3A	GROUP 3B	GROUP 3C
Behaviours during COVID restrictions	Trauma and substance use and therapy	Why do we make so little progress in improving the health and wellbeing of our residents?	How do we measure success in Children’s Social Care?	Understanding the needs of local people	The impact of capital growth investment on local communities
How effective is a Practice Model at improving and shaping service delivery?	Understanding how to work in complexity	Understanding the needs of constituents	How do we maximise the voice of the child in what we do?	Addressing local health inequalities	Unemployment growth
What works when supporting adolescents who are neglected?	The impact of social prescribing	The impact of private landlords on the area	How can we use public health information (e.g. through school health nurse) to inform social work practice?	Balancing economic growth, health and deprivation	The role of wellbeing, mindfulness and mental health in regen
How effective is the use of Care Orders at home to ensure permanency for the child?	What makes a good collaboration?	Economic regeneration of the town (using other town models)	Contextual Safeguarding	The impact of health on economic development	Dementia accessibility in buildings
What factors affect the stability of long-term placements with family/friends?	The impact of person-centred support on people with complex needs	Transport issues	The impact of unregistered provision for children on the edges of care	Deprivation and Hot Food takeaways	Localised information on air quality
What are the risk factors for children of parents who are in drug treatment?	Impact of COVID and in particular with faith and BAME communities and organisations	Green spaces and the use of alleys as potential shared community spaces	The use of care orders in the home		Health and welfare benefits of external spaces
Financial and economic analyses	Impact of youth work		Domestic violence/domestic abuse and adolescent to parent violence		
Need long term data and trends on different areas			Teenage pregnancy		

F) COMMUNITY GROUP

The fifth objective in this project revolved around working with members of the public and the voluntary sector to make recommendations to develop a PPI group to be involved in future research. The group met four times during the project, with each session lasting around an hour. The number of participants involved in each session varied due to members' other commitments but ranged from 10-15 participants at each session and included a diverse range of individuals working in areas such as justice, healthcare, advocacy, and education. An overview of each session is provided in the figure below, and each session took the form of a semi-structured focus group, which was led by one member of the research team and supported by another. It was important that the research team not be too prescriptive in the direction of these groups, because as much input as possible into identifying the topics of importance surrounding the overarching question from participants was a key part of the group. Sessions were recorded and then transcribed, and in addition responses were gathered via a secure online 'forum' (padlet), the link to which was only shared with those who had attended the particular session to which it pertained. Session outlines are given in Appendix 4. Results are given below in relation to five themes (Figure 3):

Figure 3: Community group themes and quotes

<p align="center">Why were you interested in taking part in this group?</p>
<p><i>"To develop understanding and knowledge. Also share thoughts, ideas and opinions to help drive or influence change".</i></p> <p><i>"I want to see how working with local community groups and leaders within the community to influence others. My agenda is to get people more active"</i></p> <p><i>"I'm interested in facilitating health behaviour change in a bottom-up way, rather than dictating to people what they should be doing (which may not be realistic)."</i></p> <p><i>"To develop research that will hopefully make a difference".</i></p>
<p align="center">What community-led groups are you aware of? Do they generate or use research to aid their work?</p>
<p><i>I work for two national charities that provide training (debt issues) for Citizens Advice, Local Authorities, housing associations and independent advice agencies. Research is integral to the work in identifying current trends and training issues"</i></p> <p><i>"I am aware of a number of community led groups but I'm not sure if they use or generate research. The group I represent is trying to use evidence for the types of support we would like to deliver, to ensure a greater chance of success by learning from others".</i></p>
<p align="center">Where do you see research as fitting into helping your community?</p>
<p><i>"Listening to the voice of the people who live in the community is the strongest indicator of the issues. Without research you cannot know what the community priorities are and how things can improve. Also, being involved with research and then being informed of the outcomes and action plans can raise a sense of belonging and value".</i></p> <p><i>"I believe that an understanding of evidence in relation to your goals is important both for success and to identify any new knowledge that might be developed".</i></p>
<p align="center">What expertise do you feel you could bring to a community research group?</p>
<p><i>"I've seen the impact from a personal and professional perspective. I've seen the impact it could make and whilst I don't profess to be an expert, do have some understanding".</i></p> <p><i>"Research experience and a willingness to challenge"</i></p>
<p align="center">When you were setting up this community research group, who would you recruit?</p>
<p><i>"A cross section of people, from all walks of life who can bring different experience and views.</i></p> <p><i>"Who is on the group is less important than who is directing/overseeing its work. If local people are influencing what is being researched there is more chance of obtaining trust and buy-in. Ensuring all voices are heard should be a key principle, this will require a range of approaches to match people's preferred means of communicating."</i></p> <p><i>"I would recommend an Asset Based approach to seek to ensure lived experience is valued"</i></p> <p><i>"Recruit local influencers? Those that speak to others and can come with more than their own views"</i></p>

The sessions culminated in the group formulating and then agreeing upon a set of recommendations that they would make in relation to the setting up of a community research group:

- The research group must be representative of the population, in terms of age, ethnicity, gender etc., and the privacy of members must be ensured.

- There must be a clear statement/justification for why research is needed. This could be Terms of Reference or a 'Mission Statement'.
- Integrity must be at the heart of any research that the group participates in. To ensure this, the group should be an independent organisation. Transparency is a fundamental part of this integrity.
- All research questions must be underpinned by sufficient prior public engagement. The group must represent and serve the interests of the community.
- The research group itself must have a clearly defined structure, which includes clear 'chains of authority', aims and objectives, and guidelines for record-keeping.
- The group must have a clear idea of to whom the research is to be disseminated and why, as well as who the group is ultimately answerable to.
- Any research process must be flexible and needs to be iterative in light of potential input from the community.
- The group should benefit the community and those who participate in the group itself but should not make unrealistic promises.

5. A PROPOSAL FOR MOVING FORWARD WITH THE CURRENT MOU: DEVELOPING A RESEARCH ECOSYSTEM

Figure 5: Research ecosystem



Developing a research ecosystem with many different actors can have many difficulties which revolve around expectations, time and structural challenges [8, 9]. Three components are reported in being needed to develop a research ecosystem (Evidence Creation, Evidence Translation and Evidence Implementation)[10] and these have been taken into account in our recommendations for moving forward. The key components are shown in figure 5.

The results of this current project have indicated the willingness of all parties to take part, however some key issues were identified. For the last eight years a research co-production ecosystem has been happening with Durham County Council and Teesside University. To date, they have completed 15 evaluations and are currently working on another three projects. They have co-authored a book and published eight peer-reviewed articles with eight different practitioners [8, 11-18]. The work has been funded, in the main by the Public Health Team with no stability to that funding. Appendix 5 shows the structure of workload for carrying out research they have developed. The work in MCRCBC takes this work forward and includes different organisations and structures so fits into strategic groups in the region which means that the work can cover enterprise, business, teaching and research. By working with

LAs we are able to look at community approaches to dealing with the key issues in that geographical area. LAs have access to data, knowledge that can be used to make differences at a population level for these communities. All of this, however is dependent on funding.

A) Actions to implement a research ecosystem in Middlesbrough Council and Redcar & Cleveland Borough Council

In order to move forward, we have detailed below what is needed in terms of the four components of NPT to move the work forward (Table 3).

Table 3: Key components needed to move work forward using NPT

Coherence	Reflexive Monitoring	Cognitive Participation	Collective Action
To work together to secure funding for the work – in particular to pay for key people to carry out the work	Discussion of current/past research projects within MOU meetings	Clear guidelines on how to carry out research and expectations	Flexible and different ways of working on co-production projects should be developed and encouraged
Set up a sub group of the MOU group to concentrate on the research perspective and feed into the MOU group	Follow-up activities and satisfaction measuring across different key players involved	Data sharing agreements	Key partnerships should be developed in relation to the work
Information re the MOU should be discussed as part of inductions in each organisation	Research champions identified in different departments at the LA	Regular training on key components of research	Working with LA staff to ensure staff have any co-production research projects acknowledged in work load
Training opportunities	Research champions identified in different schools at the TU	Key training and involvement in bidding for funding (including CRN and NIHR)	
Support	Research Champions identified in the different VCS organisations	Flexibility to consider staff turnover	
A community group should be set up which feeds into all aspects of the work			

Recommendations to current MOU group

- XII. To use the current MOU as a mechanism to secure funding, including from NIHR national and regional infrastructure (e.g. Clinical Research Network) for co-production research with embedded researchers and taking into consideration findings from this current project.
- XIII. To consider including other departments at the LA and identify research champions across those.
- XIV. To have a sub-group which leads on research work between the LAs
- XV. To include Assistant Deans for Research and Innovation as members of the group

- XVI. To look at including research students across different schools at TU on research projects
- XVII. To identify latent skills of staff in the LA
- XVIII. To include community involvement
- XIX. To use the MOU as the key mechanism for co-production research between the LA and TU going forward.
- XX. To carry out a mapping exercise of work being carried out by the LAs and TU and to identify a repository for the work
- XXI. To develop a training package for TU and LA staff in relation to co-production research
- XXII. To produce a regular newsletter of work done/being carried out to be shared across TU, the LA and other key players

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Appendix 1: Qualitative coding

MAIN THEME 1: AIMS OF MOU		
SUB-THEME 1A: RELATIONSHIP BUILDING	GROUP	NPT CODE
"We thought that by developing a relationship or a partnership with colleagues from [PHST] we would therefore provide a platform for those working in practice to co-deliver [teaching] sessions. At the same time, having an opportunity to gain insight into projects that require research"	1	Coherence
"We do need to develop closer working relationships [with researchers]"	3B	Coherence
"It's about trust and relationship building. Talking to them regularly, that's the key"	4A	Coherence
"It's not just research informing practice, but also practice informing research to make it relevant in practice. [...] practitioners will learn from researchers and researchers will learn from practitioners"	4B	Coherence
"It's more just, am I putting it into their language? And they understand the findings as well [...] you've completed your project, but you've still got good relationships"	4B	Coherence
SUB-THEME 1B: MAKING CO-PRODUCTION RESEARCH EASIER		
"I think one of the things that strikes me is understanding what the critical issues are for Middlesbrough at the moment"	3A	Coherence
"It's the combination of knowledge exchange, and working in partnership and collaboration on shared challenges"	4A	Coherence
"It's really important.... That we ensure that we bring in stakeholders, local authorities, private sector partners, really early doors, to embed them and understand their needs and requirements are and make sure that actually, we are genuinely co-creating a lot of our research"	4A	Coherence
"A lot of the contracting stuff ...takes up so much time, like data sharing agreements, so if that could happen at a wider institutional level as part of the MOU process, it would save us so much time with contracting"	4B	Coherence
SUB-THEME 1C: LA STAFF BEING INVOLVED IN RESEARCH		
"So there's a lot more {LA} staff that have research skill, and have done research training and have PhDs and that's not always acknowledged, or people are not aware of people who have those skills and are not utilised"	1	Coherence
"Being involved (in co-production research) would give officers more ownership of the research to be able to develop it specifically for our own needs and to guide how it develops"	3B	Coherence
"They've got their day job, they'd love to, to be doing some of the... academic research, but they just never really get the opportunity. Because the day to day takes over. I think people would be enthused by getting something back out of it."	3C	Coherence
SUB-THEME 1D: BUILDING CONFIDENCE OF ACADEMICS/RESEARCHERS		
"So, there's a big transition that we will need to play in terms of not just supporting those staff that are research active but actually starting to starting to encourage those that are not research active as yet but have the potential to be to become more research intensive"	4A	Coherence
"Putting someone in the position when they're faced with an external organisation, where they feel stupid is not going to make [things] easy"	4B	Coherence
SUB-THEME 1E: IMPORTANCE OF MOU		
"So, we could learn and support each other.... How we could work jointly together"	1	Coherence

"One of the real bonuses [of co-production work] with the University is that we can actually have a foot in the door to be able to conduct research"	3A	Coherence
"We would need some support, just to make sure that what we are doing is ethical"	3A	Coherence
"I think any inputs on bids will be absolutely welcomed. But the critical thing is that it uses a localised approach"	3C	Coherence
"I think the important part (of a MOU) is really how to bring the University into tackling real issues that matter to the people of Teesside, given that we are a civic university"	4A	Coherence
MAIN THEME 2: FACILITATORS		
SUB-THEME 2A: APPOINT LEADS/CONTACT PERSONS		
"We should consider the creation of a corporate intelligence team"	3B	Collective action
There is a need for a lead/contact person(s): "This person should be almost like the spokesperson to disseminate the work within the organisation. [...] {for example} as researchers from large organisations coming in, they find it really hard to negotiate the school system"	4B	Collective action
SUB-THEME 2B: INTERNAL AND EXTERNAL COMMUNICATION		
"What you want to do, I think, is then hear a bit more about the products of the relationships that the MOU is supporting.... I think we've got opportunities with the University to disseminate interesting things through the University updates and the communication channels that we have"	4A	Collective action
"The university needs to be clear upfront in saying 'this is what it means for you in practice [...] like a clear process ... of what the MOU means in practice for that researcher"	4B	Collective action
"So internal communication could be worked on, but also that external facing promotion [...] we need to start making our product look a bit nicer on that [...] I don't think we are good at telling that story to the outside world"	4B	Collective action
SUB-THEME 2C: TRAINING OPPORTUNITIES FOR LA STAFF		
"We wanted to develop skills within the team, that sort of skill tends to be lacking among the majority of practitioners in their field - I saw this as an opportunity... As joint efforts"	1	Collective action
"[Staff being involved in co-production research] would be really good because it helps our staff team to understand more about the benefits of the research, why they need to be involved, and what impact they will see from it"	3A	Collective action
"I certainly think there are a lot of skill gaps... so any sort of training, CPD opportunities that could be developed for us would always be beneficial"	3B	Collective action
"If we've got expertise from our [university] staff... we could perhaps take part in future develop training opportunities.... and also share with them any courses that... could be useful to them"	4A	Collective action
SUB-THEME 2D: FOLLOW UP POST PROJECTS		
"Now that would tell me that...begs a question for me about our effect- the effectiveness of our earlier interventions. And so, it really would, would be interesting for me to think about how effective our earlier interventions are to prevent children escalating through the system"	3A	Reflexive monitoring

So, for me, it would be working over the next four years to do that longer study and then at the end of that four years to look back and go well what did we achieve...? Okay, and you delivered this building, that building, you created these jobs but what was the actual impact on your residents?"	3C	Reflexive monitoring
"How do we track that like, customer satisfaction, that they're happy with our service, you know, did we achieve what they wanted us to achieve, and is there a process that we can put in that would just be from [the university]"	4B	Reflexive monitoring
MAIN THEME 3: CHALLENGES		
SUB-THEME 3A: CROSS DEPARTMENTAL WORK		
"It's about communication, and I think part of the challenge [at the University level) is that the MOU fits within the EBE portfolio as opposed to the research portfolio.... So, if there are particular members of staff within a school that aren't aware of this, it might just be because it's not working its way out through the EBE portfolio"	1	Cognitive participation
"I've never considered if you like, wellness, mindfulness and mental health on the projects, physical projects that we do" [council]	3C	Cognitive participation
"Departments within the council specifically do work in silos and [the information needed] may be within a different department"	3C	Cognitive participation
SUB-THEME 3B: STAFF TURN OVER/ORGANISATIONAL CHANGE		
Staff turnover is "a reasonable concern to have, I mean particularly to ECRs, because you're potentially in such a precarious situation anyway. [...] pledging allegiance and king of giving all your resources up to"	4B	Cognitive participation
SUB-CODE 3C: RESTRICTIONS/FORMALITY		
"From experience of working in the local authority. What I can say is that that's {research} usually not the highest priority within a local authority culture. What tends to happen is that when people have to justify how you're spending for a programme, that we quickly just put something together and come up with a justification"	1	Cognitive participation
"I think we've got massive resource constraints. To be perfectly honest, I cannot imagine in our team, where we could find at the moment any time at all, to work collaboratively, well not collaboratively...co-production"	3C	Cognitive participation
"I mean, you get the photos with the signature, shake hands, you get your photo on the website, but then.... What's next?"	4A	Cognitive participation
"By the very nature of you selecting a MOU with someone, you are saying you are my preferred provider of X. So, from a business growth point of view, if there's a conflict of interest in terms of an opportunity with someone else, [...] that could hinder it "	4B	Cognitive participation

Appendix 2: Answers to open ended questions in survey (Objective 2)

	HOS	CCG/VCS	Ward Councillors
Why research is important	Evidence based decisions	Evidence based decisions	Evidence based decisions
	To ensure practice is current		A decision can be made using evidence
How evidence is currently found	The internet	The internet	The Internet
	Google	Twitter	LGA
	Weekly policy alerts	Regional and national stakeholders	Demographic services and committees
	Peers	Own research	Peers
	Relevant national bodies	Relevant national bodies	
Current procedures for carrying out research	Do not know	Do not know	
	Information from council departments	Raise funds	
		Commission research	
Facilitators for carrying out research	None	Funding	Demographic services and committees
	Information from council departments	Desire and motivation	Facebook
			Reports held on intranet
Barriers for carrying out research	Time	Experience and knowledge	Time
	Resources/Funding	Resources/Funding	Resources/Funding
	Access to academics/researchers	Lack of local expertise	Lack of research experience
What research training is needed	Understanding the full research process	Understanding the full research process	Understanding the full research process
	A full course of instructions including the basics	Understanding where research might help answer a question	A full course of instructions including the basics
	Understanding where research might help answer a question		
	How can we use research to improve service delivery		
	How can we link local intelligence to identify research priorities		
Anything else	This is something we have not given much thought to as an organisation		

Appendix 3: Answers from CCG/VCS participants on how LA's use research evidence

	CCG/VCS	Councillors
How LAs use research evidence - positive	There has been no evidence to suggest otherwise	Because the relevance Scrutiny Committee will invite in specialists to give them advice
Learning	They don't describe data in a way we need	Sometimes decisions are made on limited responses
	No-one ever asks us for evidence	Sometimes research does not include the views of the public
	No feedback on any data that is shared	
	No evidence of local need	
	Public surveys are not considered	
How well research evidence is generated by LAs - positive		They have always answered any questions expertly when asked
Learning	We are never asked to contribute	Incorrect stats were recently given
	A lot of data collected but not used to inform policy and political decision making	Not a lot of community consultation
How research evidence is used by the wider local system - positive		[there was a] presentation by the Director of Public Health that referred to the Marmot Report
Learning	Lots of information but not always shared	Lack of knowledge means correct questions may not be asked of the evidence by Councillors
What prevents research evidence being used in decision making by the local system?	Fear of getting it wrong	The right questions are not asked at the start
	Time to properly plan	Not cost-effective
	Lack of expertise in applying research within decision making	Political agendas
	Individual organisation agendas	Lack of understanding of a particular subject
	Not working collaboratively where shared budget	
What are the things that would enable research evidence to be used better by the local system in decision making	Have researchers to help guide	Taking residents opinion into account
	More collaboration and partnership working	Officers need to keep up to date with research findings and disseminate better
	Independent depositary for data	More government financing
	Clear governance and accountability framework for how data is collected and used and which data informs strategies and plans	Better communication

Appendix 4: Community group session outlines



Appendix 5: role clarity example (Durham)

Aspect of evaluation	University responsibilities	Local authority responsibilities
Induction	Spend one half day each shadowing the other in their day job (time permitting) to get to know each other better and to understand their roles.	
<i>Steering Groups</i>	Note taking for the meetings	Identification of Steering group members
		Chairing of steering group
	The arranging of dates and times for steering group meetings and the setting of the agenda will be a joint responsibility	
	Roles and responsibilities of the wider steering group will be discussed and decided upon depending on the needs of the evaluation. Additionally, a Steering Group is held once a quarter to discuss co-production work and share learning amongst the local authority leads other key and university staff.	
<i>Evaluation Protocol</i>	Conduct basic literature review outlining evidence for teen parent programmes and their impact on well-being and future employment.	Provide expertise on national and local policy relating to their portfolio
	Design initial protocol including combined literature review, and proposed methods for data collection and analysis	Provide feedback on the initial protocol for the final draft.
	Evaluation Protocol to be shared with the steering group once finalised for comments	
<i>Governance</i>	Take lead on university ethics application – to be completed prior to any data being shared with the university	Take lead on LA research application pack and any Caldecott agreements needed to share data with Teesside University. Liaise with necessary people at Council.
<i>Data collection and Analysis</i>	TO BE COMPLETED FOR EACH PROJECT	
<i>Final Report</i>	Background section of report to be shared between. University will take lead on writing up the literature search. LA to take the lead on writing up of current national and local policy relevant to their portfolio.	
	Take the lead on writing up the methodology section of the report.	Take lead on participant recruitment section of the methodology
	Provide feedback on sections of the Methodology written by LA.	Provide feedback on the Methods section written by University
	Responsibility for writing up the data analysis section of the report will be shared between the university and the LA. Each will be responsible for writing up any analysis that they carried out.	
<i>Dissemination</i>	Take the lead in identifying sources of academic dissemination	Take the lead in identifying ways to disseminate the findings within the local authority
	Take the lead in writing any journal articles or conference abstracts	Assist in the writing of journal articles. Steering Group may also assist.

	<p>The role of presenting any findings at conferences will be split between the university and the LA. A decision will be made on a conference by conference basis as to who shall present.</p> <p><i>All abstracts must be approved by the academic PI – Professor Dorothy Newbury-Birch and LA lead with at least two week’s notice.</i></p> <p>All members of the steering group will be given the opportunity to contribute to publications. We will follow BMJ guidelines on authorship, potential authors must contribute to publications otherwise they will not be named.</p>
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