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Evaluating the contribution of Community Engagement to the impact on health inequalities of the national regeneration initiative New Deal for Communities

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1. Rational for the research

Community engagement (CE) refers to actions that aim to engage people who are the target of policies in decisions that impact on their lives. Internationally it is more commonly referred to as 'community empowerment'. The focus may be a community of 'place' (i.e. residents of a particular neighbourhood) or a community of interest (i.e. people with a disability). There is considerable diversity in the activities included under the rubric of community engagement ranging from informal relationships of social support, through consultation by formal organisations particularly public agencies, to actively engaging people in the design and delivery of services/policies as partners with formal organisations or through direct community ownership/control. In recent years community engagement has been central to policies aimed at reform of local government, the NHS, policing, education and housing, regenerating disadvantaged neighbourhoods and reducing health inequalities.1-8 It is a key component of the new UK government's policies including in particular the 'Big Society' agenda.9,10

In 2006/7 several of the applicants undertook systematic reviews of research on the process, impact and cost effectiveness of community engagement on health and health related outcomes for the National Institute for Health and Clinical Excellence (NICE).11-13 These reviews found evidence of positive outcomes for 'engaged' individuals including: increased self efficacy, confidence and self-esteem; improved social networks; a greater sense of community and security; improved access to education leading to increased skills and paid employment and self-reported improvements in physical and mental health, health related behaviour and quality of life. However, the reviews also found evidence that CE can have unintended negative impacts on 'engaged' individuals including physical and emotional health costs, consultation fatigue and disillusionment. Additionally, some evidence points to potentially important relationships between the type or level of CE and impacts on intermediate social determinants of health at a community level including, for example, improved uptake and effectiveness of services 14, improved living conditions including housing quality15 and both 'bonding' and bridging social capital.16

These NICE reviews, however, also concluded that much available research was of poor quality and identified major gaps in the evidence subsequently highlighted in NICE guidance.5 These included a lack of good quality evidence on: the relative effectiveness of different CE approaches in engaging people in different social groups/communities; the social and health outcomes of different approaches to CE for people who are engaged and at the community level; and differential impacts of CE on different social groups/communities.5

Three additional problems with the evidence base for CE interventions have a particular bearing on the research described here. First, none of the studies included in the NICE reviews assessed the impact of CE on health inequalities. Indeed, very few measured any health outcomes at the population level. Second, the CE activities themselves and the way they were implemented were poorly described in the evaluations. It was therefore rarely possible to identify what the intervention consisted of, for example, what the levels of intensity and type of CE were, or whether there were distinct components of the CE activity associated with specific outcomes. This makes it difficult to interpret the findings of evaluations and hence to identify

recommendations for future policy. Third, there is an almost universal absence of adequate information on resource use, and especially the opportunity costs of CE to community members. These conclusions on the limitations of the evidence base on the impact of CE have been confirmed by two more recent reviews.16,17

The research described here will address these problems and advance the evaluation of CE approaches and their impact on health inequalities focusing on New Deal for Communities (NDC). This area-based regeneration policy initiative consisted of local programmes implemented in 39 of the most disadvantaged neighbourhoods in England. Each local programme was funded for 10 years from 1999/2000 to 2010/11. In total £2.29 billion was spent, £1.56 billion from core NDC funds amounting to an average £50 million per area by the end of the initiative.18 All local NDC programmes had to achieve outcomes in five policy domains: to reduce unemployment and crime and to improve health, education and the physical environment including housing.

Community Engagement was a sixth outcome domain but was also approached as a vehicle for achieving outcomes in the other thematic domains. Although CE had a common goal across local NDC programmes, there has been considerable variation in how it has been developed and implemented as well as contrasts in the populations served and the local contexts. The NDC policy therefore provides an unparalleled opportunity to compare different approaches to community engagement against social and health outcomes at both the individual and area levels and examine differential impacts across social groups.

The research described here will also take advantage of rich datasets resulting from two evaluations of the NDC: one recently completed the other on-going. First, the government funded 10 year National NDC Evaluation, led by Sheffield Hallam University. This began in 2000 and collected data on residents' engagement and a range of outcomes (described later.) Second, we will draw on datasets and local contacts developed as part of our current evaluation of the impact of the NDC policy initiative on health inequalities which began in January 2010 and runs for 3 years funded by the Department of Health Policy Research Programme.

2. Research questions

The research aims to answer four questions:
(1) Which community engagement approaches used by NDC local programmes engage which social groups?
(2) Do different approaches to community engagement have different outcomes?
(3) Do social and health outcomes associated with NDC approaches to community engagement vary across groups defined by age, ethnicity, gender and material circumstances?
(4) What is the cost effectiveness of different approaches to community engagement?

3. The research design and analysis

The research involves mixed methods and consists of three linked work packages.

Work package 1; a typology of NDC approaches to community engagement

This work package consists of three stages. During Stage 1 a preliminary typology will be developed using secondary data sources. This process will utilise data from a range of secondary sources including: descriptions of NDC places and people and a typology of local NDC programmes produced for our current DH funded study; reports from the NDC National Evaluation Team; the 2002 Ipsos/MORI survey (described later); and NDC documents in the public domain including annual reports, local evaluation reports and financial returns. The analysis will use a narrative synthesis approach.24 Data extracted from different sources will be combined to produce

textual descriptions of CE structures and process in each of the 39 NDC areas. These descriptions will also include estimates of baseline levels of engagement for each area allowing us to take account of NDC areas' different starting points with respect to CE and capacity to engage.18 Thematic analysis of these 39 descriptions will then be conducted to identify recurrent elements across the NDC areas. These will then be linked in a higher order synthesis using ideas webbing to produce a preliminary typology of NDC approaches to CE.25

This preliminary typology will be refined using data collated during Stage 2. This involves fieldwork in 10 NDC areas purposively sampled to include: (i) area and population diversity; (ii) a range of types of approaches to CE based on the preliminary typology; (iii) NDC areas for which we have relatively little secondary data; and (iv) NDC areas in which the National Evaluation Team concluded CE was associated with programme outcomes. Initial entry to the sites will be through key informants identified at each NDC area during our current DH funded study. The fieldwork will consist of two elements: identifying and analysing local documents on approaches to CE and semi-structured interviews with residents and managers involved in the NDC.

1. *Identifying previously unidentified local documents on CE activities:*

Key informants including both local residents and professionals involved in delivering the NDC identified during our current DH funded study will be asked to identify local documents/reports that could provide additional information on structures and processes for CE and in-kind costs. These will be subjected to thematic content analysis.

2. *Semi-structured interviews:*

These will be conducted with five key informants at each of the 10 sites – three local residents involved in NDC partnership boards or other significant CE activities and two professionals with experience of NDC CE activities giving 50 interviews in total across the 10 sites. The interviews will last around an hour and will collect short focused responses to questions about the processes and structures of CE, respondents' perspectives on the level of engagement in the activities they are familiar with, their perceptions of the impact of population mobility in their neighbourhood on engagement and their knowledge of any in-kind costs involved in the CE activities they are familiar with. The preliminary typology developed during Stage one of WP 1 will be used to structure the interviews. The interviews will be tape recorded, partially transcribed and analysed thematically. The interviews will adhere to Lancaster university ethical procedures for informed consent, data protection, and fieldworker safety. We will use the contacts with the NDC sites established during our current DH study to identify these informants.

Stage 3 will involve the refinement of the preliminary CE typology on the basis of the analysis of documents and interview data generated during Stage 2 fieldwork. These thematic analyses will focus on identifying additional insights into CE processes and outcomes as well as extracting any information potentially relevant to the economic analysis. Thus the development of the typology will be iterative, incorporating data from multiple sources. Finally during Stage 3 the typology will be tested for face validity and applicability to particular sites in telephone/email discussions with key informants from as many of the 39 NDC sites as possible. Although the NDC programmes all ended by March 2011 we have already made contact with key informants in the majority of the 39 areas and we are working to maintain these contacts for the duration of our existing DH study. Many of the NDC areas have established successor or 'legacy' bodies to the NDC partnership which is making it easier for us to do this.

Work package 2: cost effectiveness

This work package will assess the cost effectiveness of different CE approaches. Data on direct and in kind costs will be obtained from three sources: secondary data provided by the National NDC Evaluation Team; local documents identified during fieldwork in the purposive sample of ten NDC; and interviews with residents and managers at these sites. Additionally, we will undertake brief telephone interviews with managers with experience of CE in as many of the remaining 29 NDC sites as possible using contacts established during our current DH funded study. We recognise that these data will be limited to specific areas of CE activity and be restricted to larger in-kind costs. These types of data will probably not be available for all NDC sites as we may not be able to identify appropriate respondents everywhere but we have existing contacts with the majority of areas that we will work to maintain.

The analysis will be undertaken in two stages. Stage 1 will involve the compilation of data to estimate the total costs of CE activities for individuals and at the level of NDC Partnerships. Stage 2 will relate those costs to the categories defined in the typology. Some elements of direct costs will be estimated using conventional accounting methods based on expenditure data from all 39 NDC sites and other documents. These will be combined with the results of the analysis of impact (WP3 below) to reach an overall estimate of the 'programme costs'. These sources may also provide additional information on the in-kind costs of CE activities but the fieldwork in stage 2 of WP 1 will enable us to collect some 'in kind' cost data during interviews with NDC managers with experience of CE activities in as many of the NDC areas as possible.

Estimates of the opportunity costs of the time spent by individuals in CE activities with the NDC Partnerships will be based on the responses to questions in the Ipsos/MORI household surveys. There are conventional rules for costing individual time; using for example the minimum wage rate, the average wage or the wage in their current or last occupation and the choice will clearly change the calculations substantially. As reports of time spent on community engagement are not available, these opportunity costs will be estimated in ratio or relative terms based on the different levels of engagement identified in the Ipsos/MORI surveys. Given that the focus of the analysis is the *comparison* between different approaches to CE, this reliance on ratios or relative levels will not detract from the quality of the analysis. The time commitment involved in higher levels of engagement can be derived from a cross sectional survey of resident members of NDC boards undertaken by the National NDC evaluation team and the proposed semi-structured interviews with 30 residents with experience of CE at a strategic level – 3 residents in each of 10 NDC sites.

The effectiveness of the different typologies will be derived from the impact analysis to be undertaken in WP3 (below). The incremental costs of engagement will be presented alongside improvement in the outcome measures using a cost and consequences approach, i.e. comparing costs from different perspectives (individuals, community, NHS, societal) with different kinds of benefits. In turn it will then be possible to compare the relative cost-effectiveness of each type of CE in the typology in terms of the individual, community, societal or NHS costs for a unit percentage improvement in any one of the health measures.

Work package 3: Statistical analysis of impact

This work package will provide detailed analyses of the social and health outcomes resulting from NDC interventions and how these relate to level and type of CE. To achieve this, the CE typology and specific variables capturing elements of CE from work package 1 will be linked to various data sources (see below for description of

data to be used) to test the following sub-hypotheses:

H1: Type of CE will be associated with social and health outcomes among residents engaged in NDC activities. Here we will assess the impact of CE on the health of NDC residents. Health status (captured by self-rated health and the 5-item mental health inventory of the SF-36) will be compared across different CE types. Possible confounding factors (e.g. involvement in other non-NDC activities and possible effect modifiers (e.g. socioeconomic status) will be examined using multivariable regression models. We will also explore associations between CE type and social outcomes (including time commitment, burnout and positive experiences).

H2: Type of CE will be associated with changes in health and the social determinants of health over time in the whole NDC population: Using the MORI surveys from 2002/4/6/8, change in health and social determinants of health across CE types will be described as: i) individual trajectory of change (for continuous outcomes measured on up to 4 occasions); ii) step change between first and last follow-up (e.g. quitting smoking); iii) repeated binary outcomes such as repeated measures logistic regression or multivariate binary response model, as appropriate. These models can be implemented in MLwin, for example. Using NDC area level administrative data, trends from 1998 to 2008 by CE type will be plotted. This analysis will be based on ecological data (at the level of NDC area or comparator area) and will be descriptive in nature. More sophisticated time series analysis will not be possible due to the small number of time points available. However, plots of change over time for different outcomes can potentially shed light on which domains and outcomes have changed and when this change began. In addition, the analyses of impact will be undertaken across variables capturing specific elements of community engagement, rather than across the overall typology indicator. This will enable us to provide more detail on the relationship between community engagement and outcomes, and to examine the impact of CE in the event that a clear CE typology does not emerge from WP1.

*H3: Some types of CE are effective in reducing health inequalitie*s: To assess the contribution of CE to remedying disadvantage, health at end of follow-up will be compared across NDC CE types with comparator areas as the reference and controlling for baseline health. To assess reduction of the health gap between NDC areas and the England average requires data describing health in areas from across the socioeconomic spectrum. These are available from the Health Survey for England in comparable years (1998 to 2008) for a limited set of outcomes (self-rated health, long-term illness and smoking). Health Survey for England data is being aggregated to small area level and matched on area deprivation and socio-demographics during our current DH funded study and these datasets will be available for this analysis. Ecological analysis will describe time trends in the prevalence of poor health and health behaviours in NDC areas with different types of CE and compared to areas from across the socioeconomic spectrum.

Residential mobility and missing data: Residential mobility is a challenge to impact analysis of area-based interventions. Detailed analysis of 'movers' by the National NDC Evaluation Team 27 has shown that, compared with people staying in NDC areas, people moving in are more likely to be younger, white minorities or from a non-white ethnic minority background, to live in larger households and to be privately renting their home. People moving out of NDC areas, compared with those moving in, are more likely to be older, in employment and moving into owner-occupied accommodation. There was no consistent evidence of a difference in outcome change on most indicators, but NDCs with higher levels of residential mobility experienced less positive change than the NDC average in relation to housing and physical environment indicators. As noted above we will also explore the link between

residential mobility and community engagement in the interviews to understand this phenomenon more. In the quantitative analysis, we will adjust for residential mobility and for variables shown to predict mobility or desire to move in this dataset as potentially important explanatory factors in the relationship between CE and outcomes. Multilevel modelling, using a random effects approach, utilises longitudinal data for those who participate in only some waves, so analysis is not restricted to those in all four waves. In addition, imputation for missing values can be used to generate a simulated value for each incomplete data point on important explanatory factors. Multiple imputation methods,28 which yield several imputed datasets, will be used to explore the sensitivity of the findings to missing data, though these are based on the assumption of missing at random and will be useful for some but not all of the planned analyses.

4. Study population

We will use secondary and primary data from or about the resident population of the 39 NDC areas. The average population of these areas is 9,800, ranging from 5,000 to 20,100. The areas are predominantly urban and 28 are in the most deprived, decile in England, ten in the second most deprived and one in the third most deprived.19 Seventeen have more than 90% white residents, while in seven white residents comprise less than half of the population. In the 2001 census, compared to the England and Wales average, NDC areas had a higher proportion of residents who were manual workers or living in lone-parent households or aged under 16. There were fewer owner-occupiers and higher levels of multiple deprivation.

5. Exploring differential impacts

We aim to measure differential impacts of NDC approaches to community engagement by measures of socioeconomic position including educational qualifications, employment status and housing tenure. These data are available from the Ipsos/MORI surveys carried out for the National NDC Evaluation in all 39 NDC and comparison areas in 2002/4/6/8. Our research is also taking advantage of the unique post-coded administrative datasets constructed by the National Evaluation Team. These contain ecological indicators of levels of deprivation for the populations of all 39 NDC areas and matched comparison areas. We will also have information on the industrial history of the areas.

Addressing health inequalities is at the core of this research. We aim to evaluate the contribution NDC approaches to community engagement made to the overall impact of the NDC policy initiative on health inequalities. We will explore the relationship between NDC approaches to community engagement and changes in health related outcomes amongst: (i) the populations of NDC areas compared with comparator areas (remedying disadvantage); NDC area populations relative to the English national average (reducing the gap between deprived and average areas); and individual-level socioeconomic group within each NDC area (reducing the gap within areas). This will allow us identify any differential impact of CE on health-related inequalities.

6. The community engagement interventions

Community engagement has been central to the NDC policy initiative with residents involved in all stages of development across all thematic areas. The scale of this commitment is reflected in expenditure figures: between 1999 and 2008 18% of total NDC expenditure across the six themes was spent on interventions classified as relating to community engagement. Of this 13% went to capacity building initiatives, 11% to community development officers and 18% to community facilities.18 Each local NDC was overseen by a multi-sector partnership board including the local authority, NHS, private and voluntary agencies and local residents and typically

chaired by a resident. Thematic programmes and specific projects also adopted partnership models. Initially we have grouped community engagement approaches used by the NDC local programmes into four types: community engagement in or control of the design/delivery of services; inclusive strategic decision-making (e.g. resident members of boards); community capacity building (e.g. community development initiatives and community chests funding); and community liaison/consultation. However, within this common framework, structures and processes for community engagement have varied across NDC areas.18 Producing a more refined typology of NDC approaches to CE will be an important element of the study proposed here.

7. Sources of data

Our research is utilising secondary data sources including data collected by the National NDC Evaluation led by Sheffield Hallam University which ended in 2010 and new empirical data. Brief descriptions of the sources of different types of data are provided below.

Social and health outcomes

These data are being obtained at the individual and area level for NDC and matched comparator areas from two National NDC Evaluation Team sources: the Ipsos/MORI household surveys repeated in 2002/4/6/8 and the post-coded routine administrative datasets. In addition we are also using data from the Health Survey for England 2001-2008 inclusive. The outcome measure we have access to include:

- Measures of the social determinants of health and health inequities for NDC areas and matched comparison areas including: employment status; income; participation in education/training; fear of crime; satisfaction with the local area; sense of community; trust in local agencies/services; low income rate; educational attainment rate; rates of staying in education; higher education entry rate; crime rates; house prices; IMD scores total and sub-domains.
- Measures of health outcomes in NDC areas and matched comparator areas including: self-rated health; long-term illness; mental health inventory (from the SF-36); smoking, fruit and vegetable consumption; leisure time and physical activity; teenage pregnancy rate; low birth-weight rate; standardised mortality rate.
- Average rates of health outcome measures for areas across the social spectrum: Teenage pregnancy rate; low birth weight rate; standardised mortality rate.

Data on approaches to, and experience of community engagement

Data on the awareness of the NDC and on level and type of engagement in NDC activities (and changes over time) in all NDC areas have been obtained from the Ipsos/MORI household surveys conducted in 2002/4/6/8. Richer data are available from a cross sectional survey of resident members of NDC Partnership Boards and from case studies conducted by the National Evaluation Team. Additionally, new primary data on structures and processes associated with community engagement and experience of CE are being collected during the interviews with residents and managers in the purposive sample of 10 NDC areas.

The costs of NDC approaches to community engagement

Secondary data are available on the costs of community engagement activities in all NDC areas on the following categories: capacity building (NDC governance, youth, BME, women, elderly, general); improved community services/equipment; youth support or services; promotion/communications/marketing/raising awareness; new/improved use/access to community facility; community radio; Community Chest;

community development workers; and community events/activities. We will also obtain data from local documentation and interviews described earlier which will provide a basis for estimating the scale of in-kind costs across an area including:
i. Use of buildings for committee meetings, office, public meetings, etc.;
ii. Subsidies for utilities (council tax, electricity, gas, telephone/ internet);
iii. Any personnel provided by other organizations for CE initiatives;
iv. Subsidies for office materials;
v. Provision of meals / refreshments;
vi. Training provided without cost.

Though not ideal, cost effectiveness analyses rarely have access to ideal data. We believe they will allow a relatively sophisticated calculation of some elements of the cost of CE compared to existing research. In the economic analysis we are also exploring the potential of QOF data from general practices in NDC areas.

8. Sample sizes

Primary data sources:

- *Fifty semi-structured interviews:* thirty local NDC residents and twenty past-NDC managers will be interviewed. These interviews will be conducted across the 10 purposively selected NDC areas – giving five interviews in each site. The residents will be selected based on their experience of engagement at a strategic or thematic level in NDC decision making. NDC managers will be selected based on their knowledge of local CE strategies, processes and outcomes across the policy themes.
- *Up to 29 telephone interviews with past NDC managers* focusing on the nature and level of in-kind costs of CE activities in as many of the remaining 29 NDC areas as possible.

Secondary data sources:

- *National NDC Evaluation Team Ipsos/MORI household survey*: involved four repeated surveys in 2002/4/6/8 and a random probability sample of residents in NDC and comparator areas. Each survey: n=19,500; Longitudinal panel n=3,500 with complete data across the four waves; n=13,000 with some repeat data.
- *National NDC Evaluation Team survey of resident members of NDC Partnership Boards*, conducted in 2009 involved a sample of 300 residents who had been or were members of NDC partnership boards
- *Health Survey for England 2001-2008*, involves a random probability sample of residents in areas drawn from across the socioeconomic spectrum across England n=2,000/ year
- *National Evaluation of NDC: post-coded routine administrative dataset* includes population data on all NDC areas and matched comparators. The linkage is ecological: area information is linked to an individual case but does not involve the use of any matching keys that would allow individuals to be identified. The area codes that we will use are part of the published dataset and therefore the process is not in breach of the assurances made to the data subjects.
- *Quality and Outcomes Framework (QOF) data* for General Practice populations in the 10 case study NDC areas
- *Annual financial returns for every NDC area 1999-2008*: this database referred to as System K, contains annual expenditure information for each thematic area for each NDC area from 1999/2000 to 2008/9. Information is also available on the level of income obtained from non-government sources for joint funding of projects.

Statistical power for impact analysis
Analyses assessing the impact of CE on social and health outcomes will be based on existing data in the cross-sectional and panel elements of the Ipsos/MORI surveys and the administrative dataset aggregated to NDC areas. Both of these data sources also provide data on matched comparator areas. With the Ipsos/MORI surveys available sample size depends on the outcome of interest and survey waves used. The impact analysis also depends on being able to identify a suitable CE typology which divides NDCs into groups large enough for analysis. This cannot be known at this stage, but assuming (simplistically) that four CE types are identified with 25% of the NDC population in each we illustrate power for different types of outcomes.23 There are 3,500 respondents providing data from all four waves, alpha is specified as 5% level and we allow for a design effect (due to clustering of individuals within NDC areas) of 2.0. This will provide 80% power to detect an odds ratio of 1.4 for the highest compared with lowest CE for categorical outcomes. It will provide 80% power to detect a difference of 0.3 standard deviations between highest and lowest CE types for continuous scores.

9. Synthesis and Dissemination

Preparation of reports, articles and conference presentations will be on-going but with a particular emphasis in the final two months. At this point two short accessible briefings will be produced focusing on key messages for community engagement in future policies aiming to reduce health inequalities and for the evaluation of CE in the future. Findings from this research will also be presented at a national conference to be organised as part of our DH funded NDC evaluation.

10. Public engagement in the research

Members of the public as NDC residents and paid workers are involved in the research as co investigators and advisers. Ann-Marie Pickup is a lay co-applicant and resident of an NDC area. Margaret O'Mara, another NDC resident is a member of our current DH Advisory Group and collaborator on this project. Our collaborator Liz Kessler was public space co-ordinator for the EC1 NDC programme in London from 2004 - 2009. In addition, there are resident activists and NDC workers from other areas on the Advisory Group for our current DH funded study. These 'lay experts' bring extensive knowledge and practical experience of NDC approaches to CE and will contribute to identifying local data sources, the construction of research tools and the conduct of fieldwork including identifying local informants.

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