

# **Creating Intelligence that enables effective action - The role of population intelligence in supporting the WMCA objectives**

## **1 Introduction**

1.1 The WMCA Wellbeing vision is to generate the good health and wellbeing within the West Midlands population that is essential to strong economic growth. This can best be achieved by keeping people healthy rather than managing the consequences of ill health. This has led the WMCA to develop its vision of a wellbeing agenda based on three premises.

- Keeping people healthy (prevention) will deliver the greatest improvements in outcomes
- Delivering better health and wellbeing for the people of the West Midlands by focusing on outcomes not services:
- Improving wellbeing outcomes requires concerted action across the whole system (private, public, voluntary, communities and individuals).

1.2 In addition the Wellbeing Board has made a clear commitment that all WMCA Wellbeing initiatives will be expected to deliver improvements in health and wellbeing outcomes and deliver changes against one or more of three key objectives that are part of the strategic objectives of the WMCA:

- Reducing the demand for public services and thereby reducing public service expenditure – keeping people healthy so reducing the need for intensive service use
- Improving productivity - healthy people with a good sense of wellbeing are essential to delivering strong economic growth and vibrant communities
- Breaking the cycle of inequalities which both limit the potential of today's working age adults, and, through an intergenerational effect limit "tomorrow's" potential of the children and young people who have a "poor start".

1.3 This agenda with its focus on actions across the system which generate outcomes that have an impact on wide parts of the system (e.g. the links between mental wellbeing and educational attainment) requires a broad understanding of population data and the behaviours and values of people within the West Midlands. This paper explores initial work on developing a dashboard of key wellbeing indicators that will allow the Wellbeing Board to assess the current situation of people in the West Midlands together with how key population indicators can be incorporated into other key WMCA dashboards (e.g. air quality and transport). Secondly this paper sets out how we are starting to build data, evidence and understanding of the West Midlands population into powerful analysis to that enables effective decisions and action. This is in line with the vision for research and intelligence set out in the WMCA's Policy Research Plan - <https://governance.wmca.org.uk/documents/s286/Report.pdf>

## **2. WMCA Wellbeing Board Preliminary Draft Dashboard**

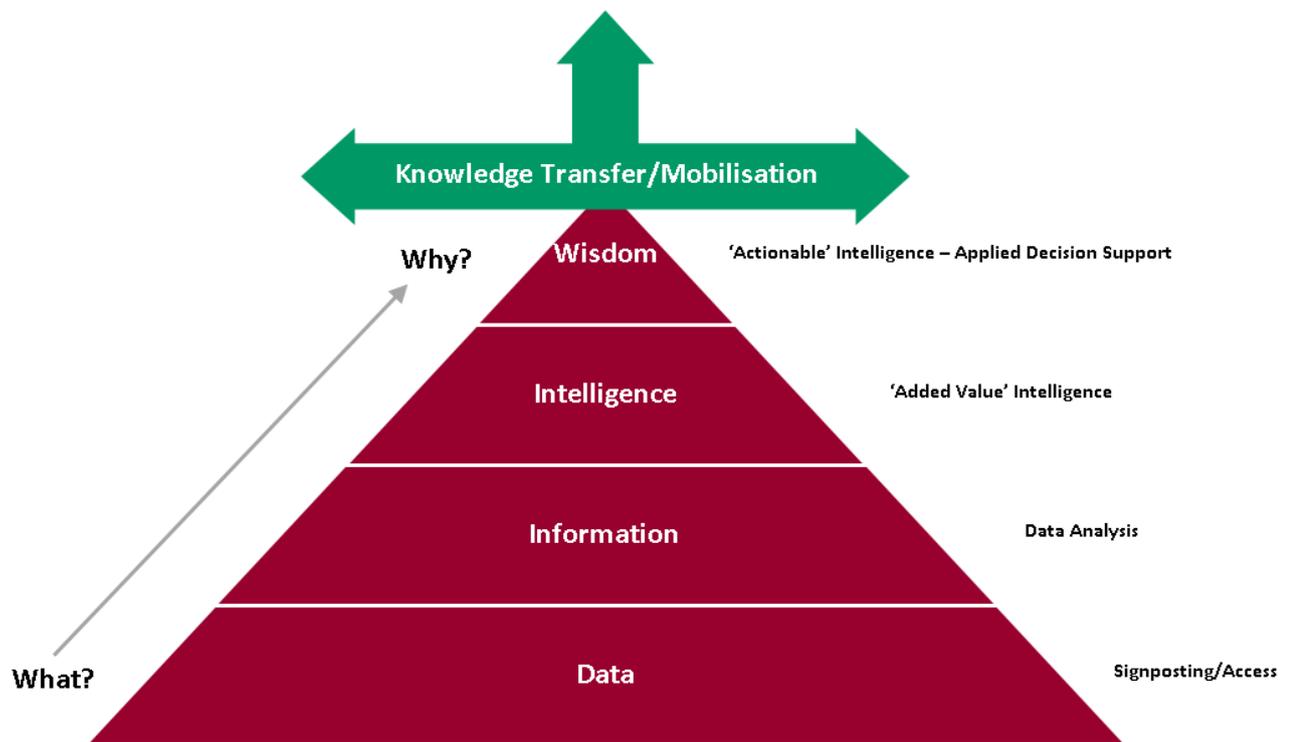
2.1 The overall WMCA strategic plan and indicator set already includes overarching wellbeing indicators on healthy life expectancy and health inequalities. An initial Wellbeing dashboard has been developed which builds on this small set of indicators to present a broader selection of wellbeing indicators that can be used to assess progress on the wellbeing agenda by the WMCA Wellbeing Board and the WMCA Board. It could

also form the basis of a more 'real time' indicator set that could be used by stakeholders across the West Midlands. The format of the dashboard is in line with other WMCA dashboards but includes additional trend data.

- 2.2 The set of sentinel indicators have been chosen to allow the Wellbeing Board to assess the current situation in the WMCA constituent member but we could provide this information across the wider West Midlands area as well. It also provides a snapshot of how the WMCA area is currently performing and highlights the progress (or lack of) being made. The dashboard includes overarching indicators looking at life expectancies and general wellbeing, plus indicators on key WMCA Wellbeing Board priorities around children & young people, mental health and CVD/Diabetes prevention. (See Appendix 1)
- 2.3 In discussion with the WMCA Director of Strategy, it was recognised that the population data available also offers the potential to provide key indicators that address the wider determinants of health within other dashboards also being developed by the WMCA, e.g. housing, transport, etc. We are therefore exploring the potential to provide a greater range of indicators on these wider determinants. In support of our ability to look at this wider population data at a WMCA level, PHE has recently started to analyse the data within its outcomes framework at a devolved authority level. A broad range of online outcomes indicator data is now presented at the WMCA geography in Public Health England's (PHE) [Outcomes Framework](#).
- 2.4 In early 2018, we anticipate being able to make use of some new functionality within Public Health England's online [Fingertips](#) platform to present an online, fully up-to-date interactive dashboard. This will include user defined indicator selection pick lists which should enable users to create custom 'profiles' for the WMCA geography.

### **3 Moving from Data to Wisdom – the 'What' to the 'Why'!**

- 3.1 The real power of the data and evidence can only be realised if we have the ability to assess and interpret this information so that it allows better decision making and real time assessment of how actions are impacting on the West Midlands population (figure 1).



- 3.2 Over the last six months we have been bringing together intelligence expertise from across local government, universities, NHS, PHE and other sectors to provide expert interpretation of a broad range of population and public health-related data. This is part of the wider work to develop a Population Intelligence Hub (See box).

- 3.3 Bringing this expertise together provides the opportunity to translate and present often complex analytical findings as understandable actionable intelligence for strategic decision-makers. This also provides the opportunity to help better understand populations (not just health) – e.g. population segmentation.
- 3.4 The first areas of collaborative intelligence we have been exploring are linked to current priorities:
- 1 Developing better intelligence on healthy life expectancy. This has now also led to work with national experts on how we can improve the measurement of healthy life expectancy and work by local authority analysts on the picture in the West Midlands.
  - 2 Children and Young People – as part of the scoping of this priority area we have brought together not only health data but a wide set of population data. In addition with support from our academic collaborators we have started to turn this data and evidence into evidence reviews that will be used to underpin the business case for initiatives to improve outcomes for children and young people. An example is work to understand what lies behind the statistics on educational attainment at 16 (the single biggest predictor of life expectancy in adulthood) which therefore is important from both the wellbeing and skills and productivity perspectives (see appendix 2). This analysis is underpinned by the basic epidemiological principals for trying to understand what is happening in time, in person and in place<sup>1</sup>.
  - 3 Providing intelligence into other WMCA priority areas. This includes discussions with PHE exploring how we could support the youth justice work stream and working with transport colleagues on understanding the implications of air quality on health.
  - 4 Geographic mapping of data and spatial analysis to understand patterns, identify hotspots and highlight anomalies. Again this work is linked to work on Wellbeing priorities (e.g. the data on childhood obesity below) and to wider discussions on how these spatial analytical skills could be used to support the wider work of the WMCA.

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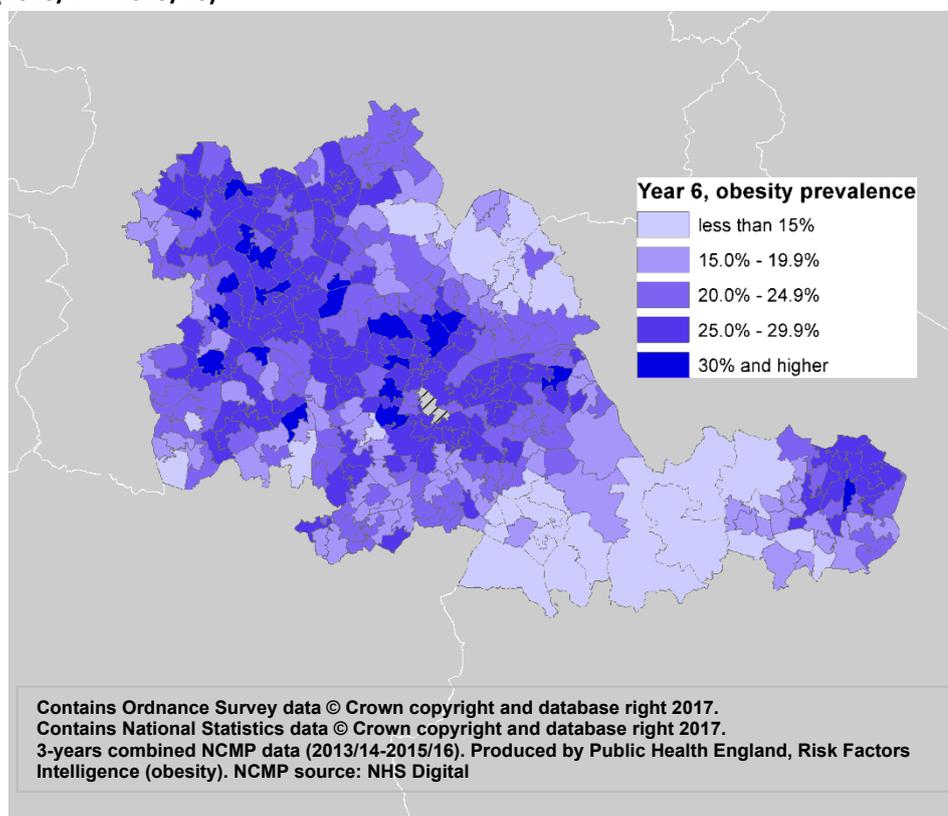
<sup>1</sup> This would also support the thinking emerging from the developing West Midlands ODA about the questions that the ODA needs to be able to answer ('what happened'; 'why did it happen'; 'what will happen'; 'what should we do')

**The population hub** will be a centre of excellence for the West Midlands. By creating a virtual hub that works closely with the new West Midlands Office of Data Analytics, intelligence and insight for the Combined Authority area can be brought together and delivered from an easy to access centre of expertise. The hub is in development, with a long-term goal of coordinating and strengthening current sources of intelligence skills and expertise within the West Midlands area. It is currently producing outputs to support the work of the Wellbeing Board, and providing input to existing work programmes.

The Population Hub will benefit from dedicated personnel and resources, but will also co-ordinate and maximise available resources situated across the intelligence 'family' in the West Midlands. It is envisioned as an asset for the whole West Midlands area and will be a centre for producing and disseminating the most up to date information in accessible formats

- 5 The next step is to combine and overlay other supplementary datasets onto spatial maps to add further insight and aid understanding (e.g. the work that PHE and West Midlands Police have doing to bring together police and A&E data to understand patterns and trends in violence across the West Midlands).

**Prevalence of obesity in Year 6 (%) across the West Midlands Combined Authority Middle Super Output Areas (2013/14 - 2015/16)**



- 3.5 The spatial map above illustrates the importance of how information is presented so we are also developing the use and application of infographics to bring together the intelligence and evidence in easily digestible slidesets, e.g. school readiness, mental health, children and young people, health and wealth.

**4. Moving from wisdom to action – the ‘why’ to the ‘how’!**

- 4.1 Turning intelligence into action requires a foundation of robust information that combines data with an understanding of the local context. Across the West Midlands data and local knowledge are being used to create new ways of working and develop new approaches to solve existing problems. We already have considerable expertise in delivering this complex combination of intelligence and insight (see in Appendix 3 an example from Coventry of work on Multiple and Complex Needs). The intention is we will use the population intelligence Hub to pull together this expertise in conjunction with the WMCA Office of Data Analysis.
- 4.2 In support of this West Midlands Public Health Intelligence Group (WMPHIG) have been conducting a skills and knowledge audit across WMPHIG to better understand the composition and level of expertise, within the local analytical community. At the

same time, with the support of all the Directors of Public Health in the West Midlands we now have collaborative activity across the WMPHIG with a sub-group of colleagues currently undertaking analytical work at scale on behalf of others.

4.3 In order to develop our ability for the WMCA to turn insight into action we are:

- Developing centres of excellence for the West Midlands, as exemplified by the newly formed Behavioural and Social Science Working Group. This working group provides a point of contact for specialist expertise, and a means of collaboration to enhance existing work streams, e.g. embedding behavioural science techniques into the work of the Thrive Mental Health Commission action plan and developing a feasibility study for behaviour change of professionals. This group is also linked to national experts in behaviour change and we have already held a workshop that brought national and regional experts together.
- Convening specialist workshops in conjunction with national experts and sector leaders, e.g. a Data Science workshop in conjunction with the Association of Directors of Public Health in the West Midlands.
- Developing a West Midlands Virtual Health Economics team as part of the WM PHE Centre and involving health economics and economics academic colleagues. In addition Learning for Public Health West Midlands (LfPHWM) in conjunction with the West Midlands Association of Directors of Public Health (WMADPH) are holding a conference on the 18<sup>th</sup> January that is focussing on the links between Health and Wealth.
- Utilising and brokering access to specialist public health expertise and knowledge held elsewhere within PHE (e.g. behavioural insight, health economics, advanced statistical modelling, air quality (Centre for Radiation, Chemical and Environmental Hazards (CRCE)) etc.
- Learning from other PHE Local Knowledge & Intelligence Service teams across England, particularly those with combined authorities, e.g. North West LKIS – Greater Manchester, We are planning to run an internal symposium to share learning across these areas. In particular we have already been able to access work undertaken by London on children and young people within the criminal justice system.
- Exploring the potential to develop cross-sectoral, complimentary analyses and sharing of technology, applications, software, e.g. with Transport for West Midlands.
- Using embedded PH registrars to support analytical work. Currently we have PH trainees embedded with both the Thrive and Transport teams.

## **5. Moving from action to impact – the ‘how’ to the ‘impact/return on investment’**

- 5.1 The ultimate aim for the WMCA should be to demonstrate how actions taken have led to sustained and improved outcomes for the people of the West Midlands.
- 5.2 To achieve this aim, the planning and use of data and intelligence needs to be integrated into the strategic development, planning and delivery processes. This means effective intelligence and insight to support strategic change, modelling the likely impact of this change and measuring the impact as change is implemented and maintained. By accurately measuring and monitoring impact as part of delivery we enable feedback on what is working, to what extent and for whom. In addition by bringing in expertise on qualitative data of peoples experiences we can show how the work of the WMCA is shaping the experiences of its residents, and how this is impacting on their wellbeing.
- 5.3 At the moment the majority of the work on intelligence to assess the impact of the change we are developing and delivering has been focussed on supporting the delivery of the Thrive West Midlands agenda. This has included support on developing research protocols, embedding behaviour change into the Thrive programmes, accessing academic and national expertise to support the programme and developing evidence based proposals for interventions. However, we are now working with Transport colleagues on how we could model and assess the health, wellbeing and population impacts of the major infrastructure developments that have recently been agreed (e.g. Brierley Hill).
- 5.4 The work to date has only been possible due to funding and resources provided by PHE, and the resource in kind that has been provided by Local Authorities, NHSE and Universities. Going forward we are working with these stakeholders to establish more sustainable resources. This includes how elements of this agenda could be supported under the ODA, work with our academic partners to submit a bid for major programme funding for a five year period and discussion with PHE nationally about the West Midlands becoming an exemplar for the intelligence approach we are describing.

## Appendix 2: Helping to better understand the 'stories' behind headline statistics

**53% of all children in WMCA area achieved 5 GCSEs A\*-C including English & Maths.**

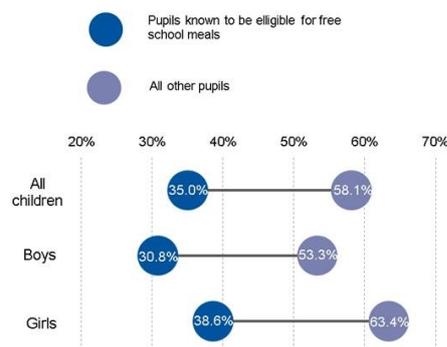
But there's a series of important 'stories' behind this number...

- How does attainment vary by geography within the WMCA area?
- Are there significant differences by gender?
- If you receive free school meals (FSM), does this have an impact?
- Do children living in more deprived areas perform more poorly?
- Does having English as a second language make a significant difference?
- Are there significant differences by ethnicity?
- If you have a Special Educational Need (SEN), how is this likely to affect your level of attainment?

The answer to these questions can be presented visually (see below) and we have been looking at different ways to present this information to help people understand the data.

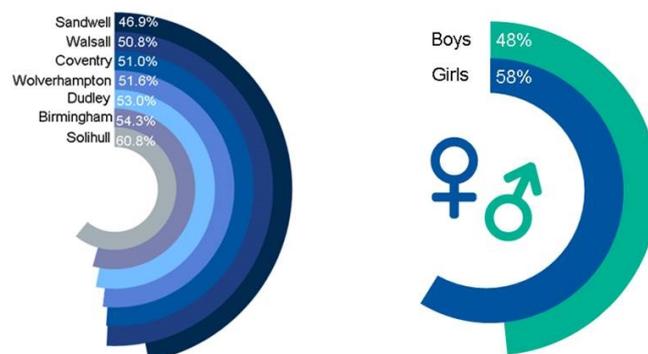
### GCSE attainment\* in the WMCA by Free School Meal status and gender

Pupils achieving 5 GCSEs A\* to C including English and Maths in 2014/15



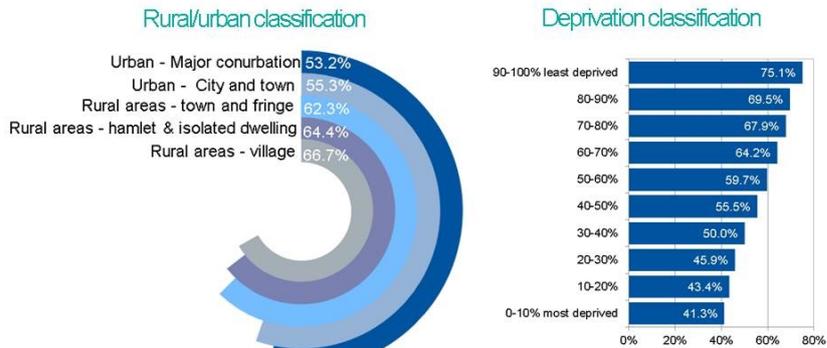
### GCSE attainment\* by local authorities in WMCA

Percentage of pupils achieving 5 GCSEs A\* to C including English and Maths in 2014/15



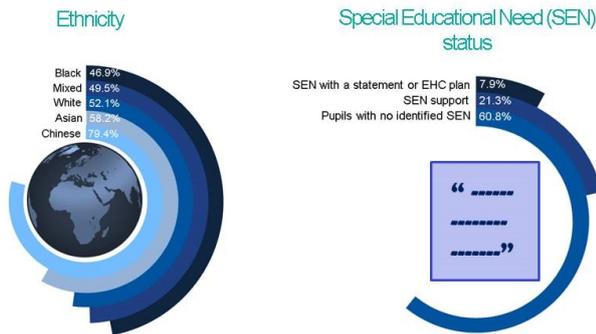
## GCSE attainment in the West Midland Region by geographic classification

Pupils achieving 5 GCSEs A\* to C including English and Maths in 2014/15  
Based on local authority of the pupil's residence, at the end of the academic year



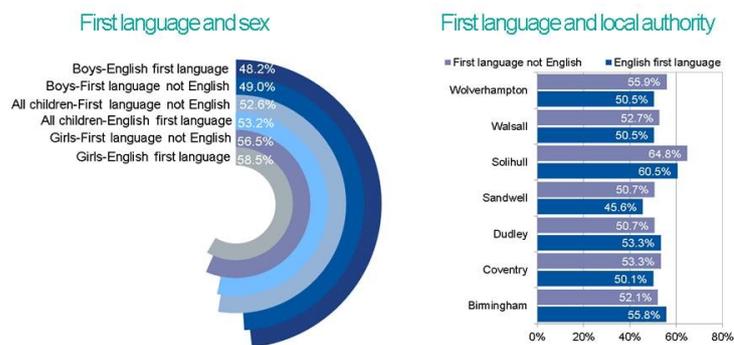
## GCSE attainment\* in the WMCA

Pupils achieving 5 GCSEs A\* to C including English and Maths in 2014/15



## GCSE attainment\* in the WMCA by pupils first language and gender

Pupils achieving 5 GCSEs A\* to C including English and Maths in 2014/15



## Summary

Just over half (53%) of all children in WMCA area achieved 5 GCSE A\*-C including English and Maths which is lower than England average.

- Geography - attainment among children in Solihull (60.8%) was 1.3x higher than in Sandwell (46.9%).
- Gender – Attainment among girls (58%) was 10% higher than for boys (48.4%).
- Free school meals (FSM) - Pupils not in receipt of FSM were 1.7X more likely to achieve 5 A\*-C including E&M compared to pupils eligible for FSM.
- Deprivation – Pupils living in the most affluent areas of WMCA were 1.8x more likely to achieve 5 A\* to C's including E&M compared to those living in the least affluent areas.
- English as second language – With the exception of Birmingham and Dudley pupils with English as a second language, in all other LA's in WMCA, were more likely to achieve 5 A\*-C including E&M at GCSE.
- Ethnicity – Pupils from Chinese and Asian backgrounds had higher levels of attainment whilst Black and Mixed race pupils lower.
- SEN – Pupils with SEN support status were 3 x less likely to achieve 5 A\*-C including E&M and pupils with an Education Healthcare Plan 7.7x less likely.

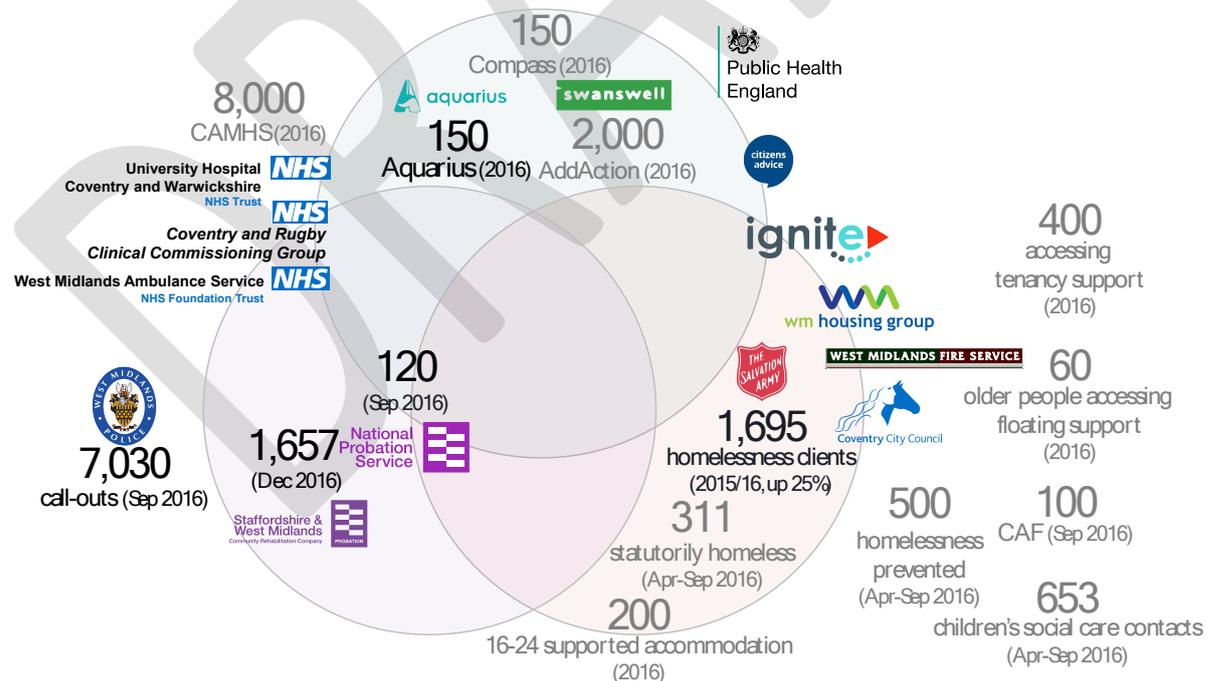
## Appendix 2: Using intelligence to inform the work of the Multiple and Complex Needs (MCN) Board in Coventry.

Individuals facing multiple complex needs (MCN) are people who experience several problems at the same time, often face ineffective contact with services, and live chaotic lives. This can be a combination of offending behaviour/violence, homelessness, substance misuse, mental ill-health, or adverse childhood experiences.

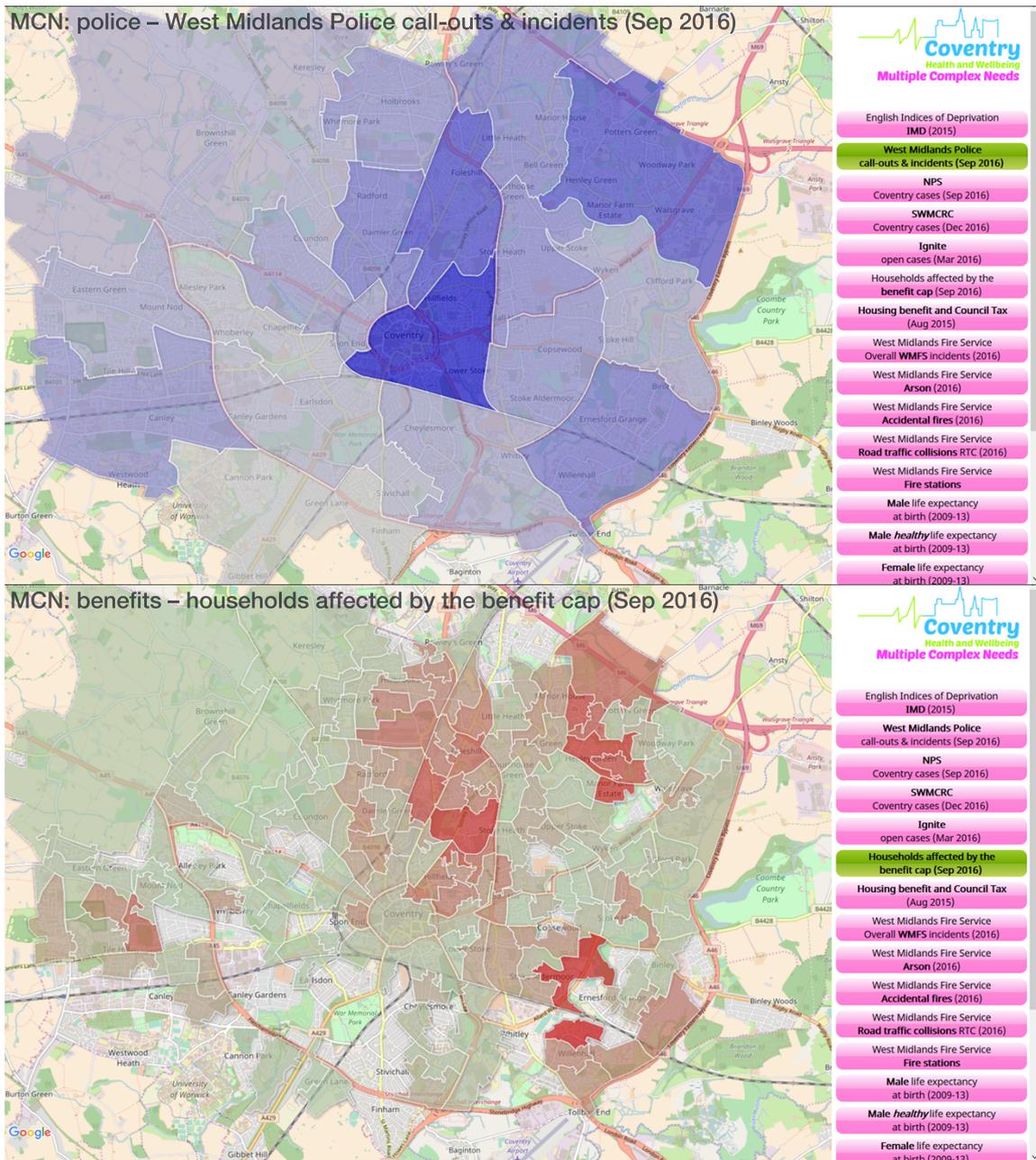
Outcomes for people facing MCN are poor, despite the disproportionate time and resources spent on this group of people across different services such as social care, housing and homelessness, police, fire, NHS, criminal justice, probation and substance misuse services. To services, they are a significant source of repeat demand for public services and are amongst the 'hardest to help'.

In Coventry, this partnership of over twenty different agencies, including representation from the WMCA, is using intelligence to deliver action to address a local issue of high priority. Their work is informed by local and national data, alongside evidence and insight obtained from evaluating what works.

Local data held by public service agencies has been aggregated and anonymised to give estimates of need across Coventry, and build a better understanding of groups who may be at risk of experiencing multiple and complex needs. An output of this work is shown below.



Representing this information geo-spatially made local levels of need and the demand for services more visible.

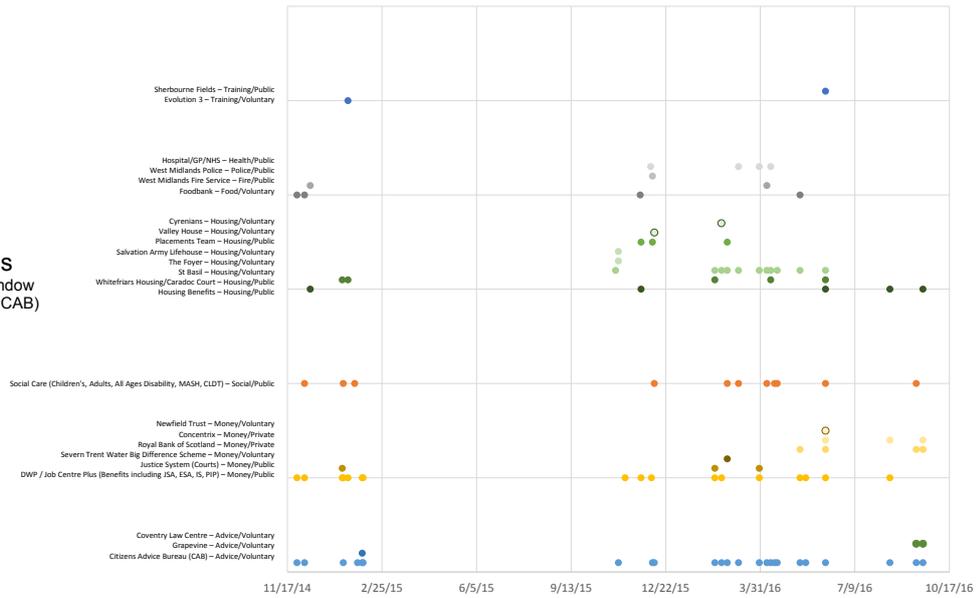


Mapping data held by different public agencies such as the police, fire service and probation services allowed the Coventry Multiple Complex Needs Board to see, for the first time, correlations and patterns in the need and demand for services.

Epidemiological data was enhanced by focusing on individual patient journeys to provide insights into the types of actions that partners could take to alleviate some of the problems faced by this target group.

Interventions for Client X Nov 2014-Oct 2016

**24**  
agencies  
through the window  
of one agency (CAB)



These insights pointed to combined and integrated efforts for key sub-populations within Coventry. A multi-agency one-stop shop called 'Steps for Change' has been adopted by the MCN board as an innovative approach to meeting the needs of some of the most vulnerable people in Coventry. This pilot initiative was located in an area likely to be noticed by potential beneficiaries and brings together key agencies in one location to deliver advice and support in an informal setting. It was designed to remove some of the barriers to seeking appropriate help, whilst at the same time providing opportunities for improved data capture and cross-agency working. The Board have also used these insights to re-organise existing activities and trail new ways of working to better suit those they serve. An example of this is the joining-up of existing case management forums by the board; to provide multi-agency input to people at a crucial point in their journey.

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