MANCHESTER CITY COUNCIL

A day in the life of a Local Government Intelligence Team

The priorities, data, challenges and opportunities

Paul Holme – Strategic Lead for Intelligence & Data Science @ Manchester City Council

July 2019

The Manchester Strategy sets a long-term vision for Manchester's future and describes how we will achieve it. It provides a framework for actions by our partners working across Manchester – public sector organisations, businesses, the voluntary sector and our communities. ***It is not a strategy for Manchester City Council, but for Manchester****. We all have a role to play in making our city the best it can be.*

Themes include:
- A thriving and sustainable city
- A highly skilled city
- A progressive and equitable city
- A liveable and low-carbon city
- A connected city

Our Corporate Plan

The Council's priorities for the next 2–3 years.

1 YOUNG PEOPLE

From day one, support Manchester's children to be safe, happy, healthy and successful, fulfilling their potential, and making sure they attend a school graded 'good' or better:

- Ensure all children have high-quality education
- Support more Manchester children to have the best possible start in life and be ready for school and adulthood
- Reduce number of children needing a statutory service.

2 HEALTHY, CARED-FOR PEOPLE

Work with partners to enable people to be healthy and well. Support those who need it most, working with them to improve their lives:

- Support Mancunians to be healthy, well and safe
- Improve health and reduce demand by integrating neighbourhood teams that are connected to other services and assets locally, delivering new models of care
- Reduce the number of people becoming homeless and enable better housing and better outcomes for those who are homeless.

3 HOUSING

Ensure delivery of the right mix of good-quality housing so that Mancunians have a good choice of quality homes:

- Accelerate and sustain delivery of more housing, with enough affordable housing for those on low and average incomes, and improved quality of housing.

4 NEIGHBOURHOODS

Work with our city's communities to create and maintain clean and vibrant neighbourhoods that Mancunians can be proud of:

- Enable clean, safe, vibrant neighbourhoods
- Reduce greenhouse gas emissions and improve air quality.

5 CONNECTIONS

Connect Manchester people and places through good-quality roads, sustainable transport and better digital networks:

- Improve public transport and highways, and make them more sustainable
- Facilitate the development of the city's digital infrastructure, to enable delivery of transformed public services and support a thriving digital economy.

6 GROWTH THAT BENEFITS EVERYONE

To support our priorities, we need to continue to promote and drive sustained economic growth and job creation that benefits everyone:

- Support good-quality job creation for residents, and effective pathways into those jobs
- Facilitate economic growth of the city.

7 WELL-MANAGED COUNCIL

Support our people to be the best and make the most of our resources:

- Enable our workforce to be the best they can be through the Our People Strategy and Our Manchester behaviours
- Balance our budget, including delivering savings, reducing demand through reform, and generating income.

Themes include:

- Giving young people the best start
- Enabling people to be health and well
- Delivery of the right mix of housing
- Create and maintain clean and vibrant neighbourhoods
- Connecting people and places
- Growth that benefits everyone
- Making the most of our resources

The Policy, Performance and Reform Division

(Policy, Performance, Research, Data Governance, Complaints, Reform)

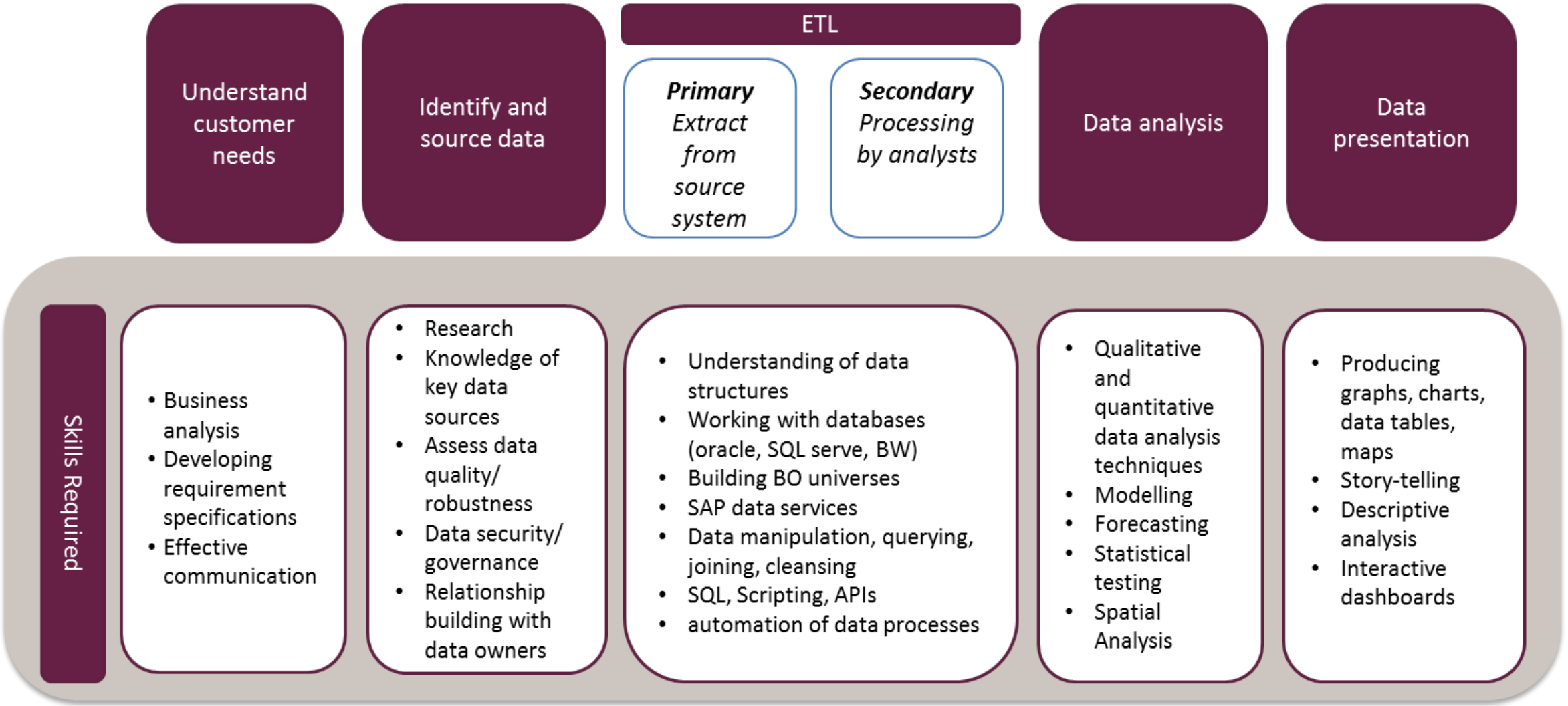
We provide high quality strategic advice, support and challenge to deliver the priorities for the Council, for the benefit of the city of Manchester. These are as set out in the MCC Corporate Plan and the Our Manchester Strategy.

What we do:

- We provide professional, honest and objective advice to **enable informed decision-making**
- We **provide high quality performance, data, research and intelligence, and develop bespoke evidence** that we stand behind
- We develop a **consistent narrative** that can be used for multiple purposes
- We provide **expertise in a wide range of areas of funding and programme management, policy, strategy and practice**
- We **deploy a range of change, improvement and project management techniques**
- We **deliver a range of statutory functions** including performance reporting to Government, management of complaints, producing a Local Plan, and contributing to a Local Transport Plan

Skills analysis

In order to deliver high quality data analysis it is essential that we have the right skills across the service, and in the right proportions. The flow chart below maps out the key stages of the process in developing our intelligence products – from communicating with our customers through to delivering high impact reports and visualisations



Research Team Structure and Focus – My Bit (in the main)

Corporate Plan	Involvement
Young People	
Health	
Housing	
Neighbourhoods	
Connections	
Inclusive Growth	
Well Managed	

Lots | Some | Little

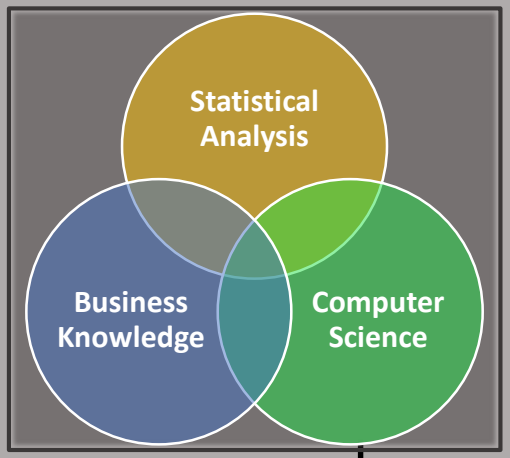
Key Questions

Paul Holme
Strategic Lead

Directorate Lead

Data Science

Approach



Core Team
Permanent

Projects Team
Fixed Term

Partnerships
(ONS/Academic)

1 Researcher
2 Researcher
3 Researcher
4 Researcher
5 Researcher
6 Researcher
7 Researcher
8 Researcher
9 Researcher

1 Research Asst
2 Research Asst
3 Research Asst

Our Manchester

Early Years / School Readiness

Children's Services

Early Help / Complex Families

Health & Social Care (Evaluation, Performance, Business Cases)

Bringing Services Together

Consultation/Engagement

Homelessness

Data Systems

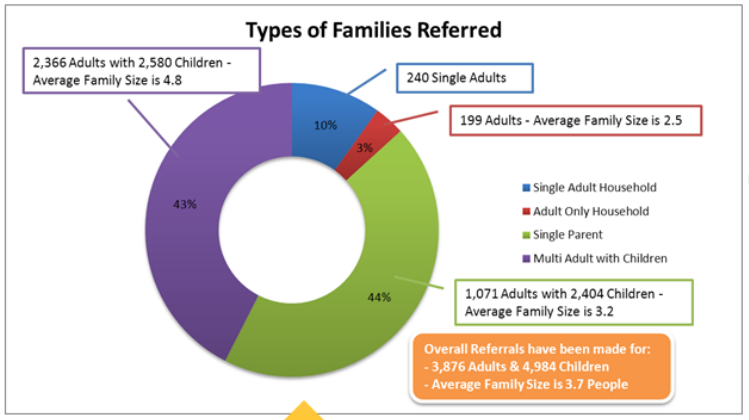
Predictive Modelling / Segmentation

Analysis of Demand → Business Case Research → Business Case Testing & CBA → Evaluation Planning & Methods → Data Processes & Techniques → Evaluation (Process/Impact) → Feedback / Engagement

Identifying Demand

Who and What (single issues)?

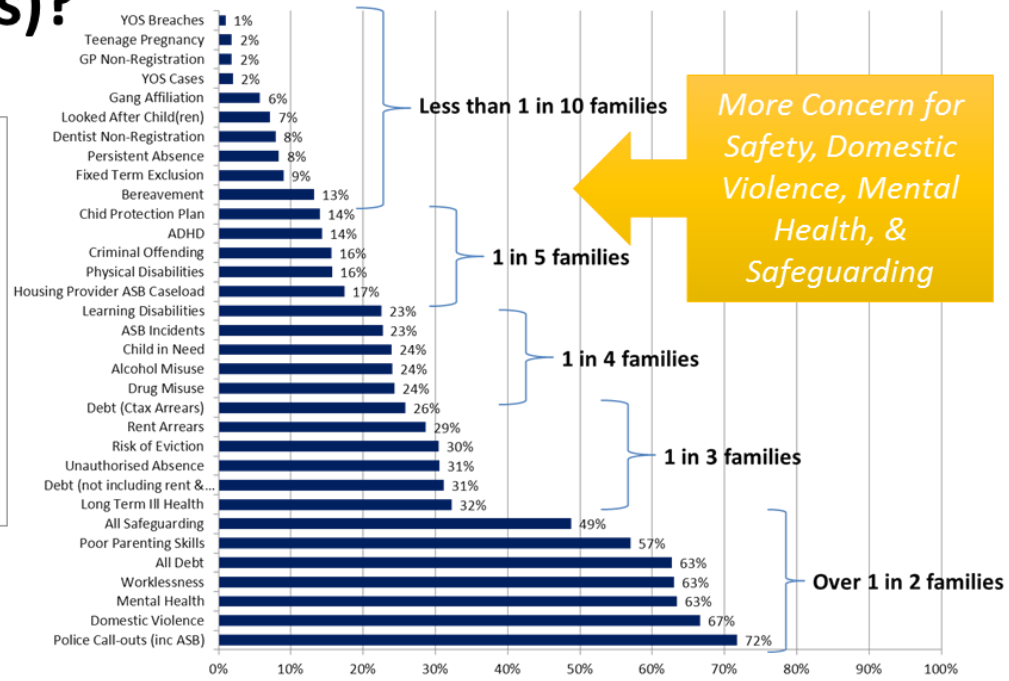
Different People



More Young Families and fewer Single Adults

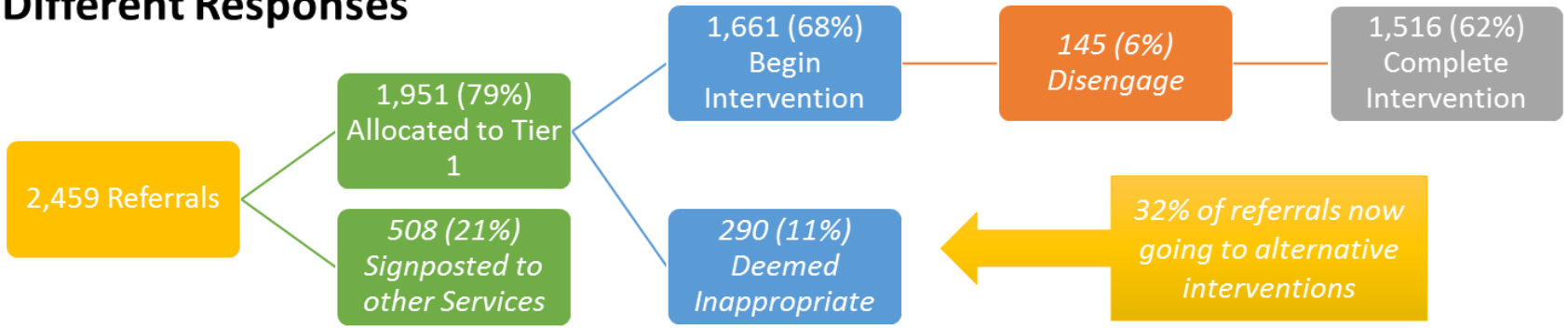
Different Issues

Presenting issues present in referred families



More Concern for Safety, Domestic Violence, Mental Health, & Safeguarding

Different Responses



Families with these Presenting Needs...	also have these Presenting Needs	Presenting Need	Parmanent Exclusion	Gang Affiliation	GP Non Registration	Teenage Pregnancy	Looked After Child(ren)	Long Term Ill Health	Fixed Term Exclusion	ADHD	Dentist Non Registration	Physical Disabilities	Child Protection Plan	Risk of eviction	Criminal Offending	Bereavement / loss seperation	Alcohol Misuse	ASB Incidents	Learning Disabilities	Drug Misuse	Rent arrears	Debt Issues (other than Rent)	Persistent Absence	Domestic Violence	Child in Need	Poor Parenting Skills	Mental Health	Police Call-outs (inc ASB)	All Safeguarding	Worklessness
Parmanent Exclusion		1%	100%	7%	0%	7%	0%	7%	71%	21%	14%	29%	29%	29%	57%	29%	29%	71%	29%	43%	29%	57%	86%	71%	50%	64%	86%	86%	79%	79%
Gang Affiliation		2%	5%	100%	14%	24%	19%	14%	38%	48%	33%	14%	33%	48%	67%	29%	43%	62%	33%	62%	48%	62%	48%	67%	33%	90%	67%	86%	86%	81%
GP Non Registration		6%	0%	5%	100%	15%	15%	12%	8%	5%	86%	17%	32%	29%	29%	37%	31%	44%	31%	32%	44%	37%	29%	71%	41%	73%	58%	78%	88%	78%
Teenage Pregnancy		8%	1%	7%	12%	100%	11%	17%	29%	19%	43%	24%	41%	31%	43%	45%	37%	60%	35%	45%	45%	45%	37%	76%	37%	76%	76%	81%	89%	91%
Looked After Child(ren)		11%	0%	3%	7%	6%	100%	7%	25%	15%	19%	18%	0%	20%	40%	24%	26%	42%	33%	34%	28%	28%	37%	72%	0%	65%	64%	86%	100%	82%
Long Term Ill Health		12%	1%	2%	6%	11%	7%	100%	19%	24%	27%	53%	30%	20%	29%	33%	35%	45%	62%	26%	31%	38%	38%	65%	37%	75%	80%	81%	75%	89%
Fixed Term Exclusion		15%	5%	4%	3%	11%	16%	12%	100%	29%	17%	17%	27%	24%	47%	24%	30%	52%	35%	40%	36%	41%	71%	71%	43%	69%	72%	90%	86%	87%
ADHD		15%	2%	6%	2%	9%	12%	18%	34%	100%	17%	30%	22%	25%	33%	25%	30%	51%	55%	40%	32%	40%	47%	70%	44%	78%	80%	84%	78%	93%
Dentist Non Registration		18%	1%	4%	29%	18%	14%	19%	18%	15%	100%	25%	37%	34%	32%	33%	37%	49%	32%	40%	41%	46%	33%	73%	34%	71%	71%	85%	85%	88%
Physical Disabilities		18%	2%	2%	5%	10%	12%	35%	18%	26%	23%	100%	28%	23%	28%	35%	36%	44%	51%	31%	35%	44%	43%	64%	37%	76%	76%	77%	77%	89%
Child Protection Plan		19%	1%	3%	7%	11%	0%	14%	19%	13%	24%	19%	100%	23%	36%	27%	34%	47%	30%	35%	34%	37%	40%	76%	0%	73%	67%	89%	100%	90%
Risk of eviction		20%	2%	5%	8%	11%	12%	12%	21%	19%	28%	20%	29%	100%	40%	23%	32%	59%	26%	39%	68%	50%	43%	69%	31%	69%	76%	87%	71%	87%
Criminal Offending		22%	3%	5%	6%	11%	18%	13%	32%	19%	20%	19%	34%	30%	100%	26%	33%	57%	28%	39%	37%	37%	50%	76%	33%	66%	67%	94%	85%	89%
Bereavement / loss seperation		22%	2%	3%	10%	15%	13%	18%	21%	18%	25%	29%	32%	21%	32%	100%	36%	50%	34%	41%	35%	46%	39%	71%	37%	77%	81%	84%	82%	87%
Alcohol Misuse		23%	2%	4%	8%	12%	14%	18%	24%	20%	27%	28%	39%	29%	40%	35%	100%	53%	31%	52%	37%	43%	43%	77%	35%	72%	82%	87%	87%	93%
ASB Incidents		25%	3%	3%	7%	12%	14%	14%	26%	22%	22%	22%	33%	33%	42%	30%	33%	100%	29%	37%	37%	40%	49%	79%	34%	71%	74%	98%	81%	89%
Learning Disabilities		25%	2%	3%	7%	10%	16%	29%	25%	34%	21%	37%	31%	21%	30%	30%	29%	42%	100%	33%	34%	37%	40%	66%	35%	75%	80%	81%	81%	90%
Drug Misuse		26%	2%	5%	7%	13%	16%	12%	29%	25%	27%	22%	36%	32%	42%	36%	47%	54%	33%	100%	38%	44%	47%	79%	36%	73%	83%	89%	88%	90%
Rent arrears		28%	1%	3%	9%	12%	12%	13%	24%	18%	25%	23%	31%	50%	36%	27%	31%	48%	31%	34%	100%	57%	42%	69%	34%	68%	72%	85%	78%	88%
Debt Issues (other than Rent)		30%	3%	4%	7%	11%	11%	15%	25%	21%	26%	27%	32%	34%	33%	34%	33%	49%	31%	37%	53%	100%	44%	70%	35%	72%	78%	86%	77%	89%
Persistent Absence		32%	3%	3%	5%	8%	12%	13%	37%	21%	16%	22%	29%	25%	38%	24%	28%	50%	28%	34%	33%	38%	100%	69%	42%	71%	72%	88%	84%	88%
Domestic Violence		39%	2%	2%	7%	9%	14%	13%	22%	18%	21%	19%	33%	24%	35%	26%	30%	49%	28%	34%	32%	35%	41%	100%	37%	68%	70%	90%	84%	87%
Child in Need		40%	2%	2%	6%	7%	0%	12%	22%	19%	16%	18%	0%	17%	25%	22%	22%	35%	24%	25%	26%	28%	41%	60%	100%	63%	59%	74%	100%	81%
Poor Parenting Skills		60%	1%	3%	7%	9%	13%	14%	21%	20%	20%	22%	31%	23%	29%	28%	27%	43%	31%	30%	31%	35%	41%	66%	38%	100%	70%	82%	81%	84%
Mental Health		61%	2%	2%	5%	9%	13%	16%	22%	21%	20%	23%	29%	26%	30%	29%	31%	45%	33%	35%	33%	39%	42%	69%	35%	70%	100%	85%	77%	87%
Police Call-outs (inc ASB)		62%	2%	2%	6%	8%	14%	13%	22%	17%	19%	18%	31%	24%	34%	24%	26%	48%	27%	30%	31%	34%	42%	71%	36%	67%	68%	100%	80%	87%
All Safeguarding		70%	1%	2%	7%	9%	16%	12%	21%	16%	19%	19%	35%	20%	31%	24%	27%	[illegible]	28%	30%	29%	31%	40%	67%	49%	67%	62%	81%	[illegible]	84%
Worklessness		80%	1%	2%	6%	8%	12%	13%	20%	18%	19%	20%	29%	23%	31%	24%	27%	[illegible]	29%	29%	31%	34%	39%	66%	37%	64%	66%	[illegible]	[illegible]	100%

61% of families have a Mental Health issue = c.2,400 families

NHS

Based on 3,997 families

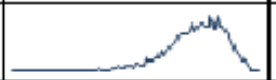
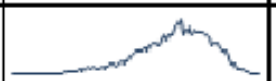
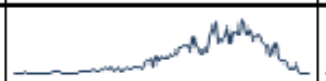
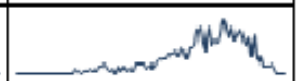
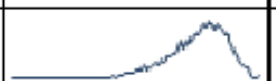
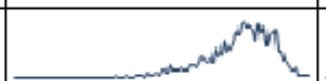
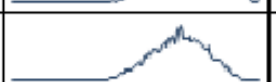
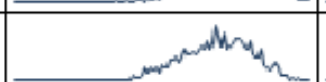
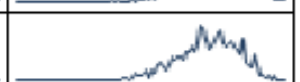
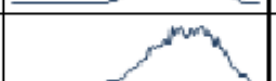
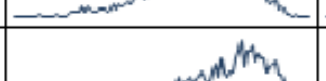
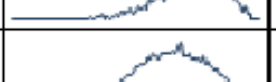
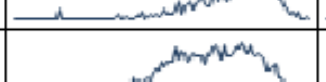
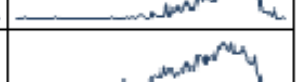
45% of families with a Mental Health issue are also linked to ASB = c1,000 out of c.2,400 families

77% of families also have Safeguarding = c1,800 out of c.2,400

MANCHESTER CITY COUNCIL

Condition pressures

Multiple Long Term Conditions ⇒ Integrated Support Needs

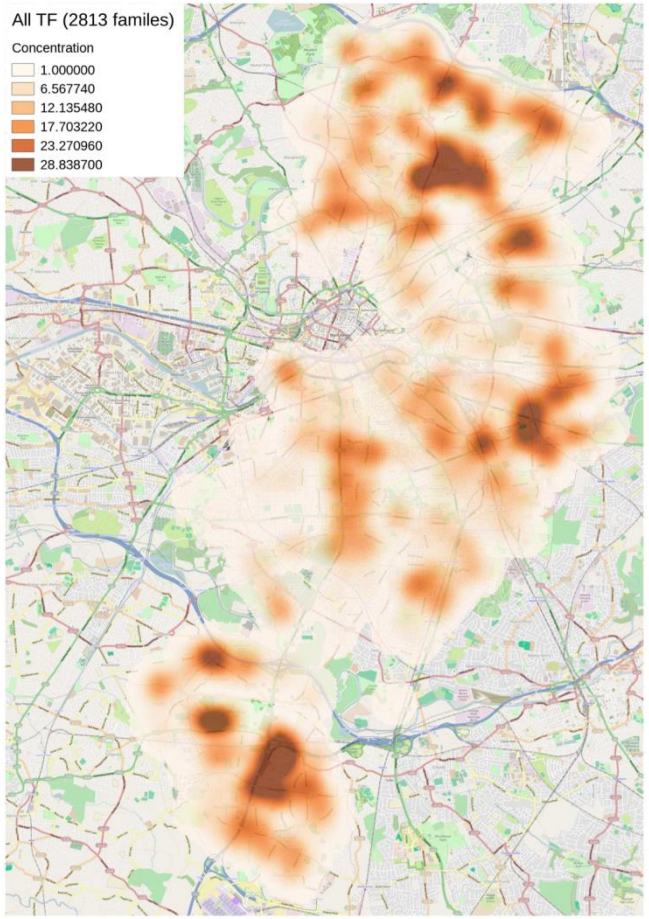
	Number of Patients	% Patients aged	Number of other LTCs	Average number of A&E Attendances	Average number of NEL Attendances
		0 20 40 60 80 100	01234567	0 20 40 60 80 100	0 20 40 60 80 100
Asthma	52721				
Atrial Fibrillation	4867				
Cancer	8985				
Chronic Kidney Disease (18+)	10805				
COPD	9773				
Coronary Heart Disease	12869				
Dementia	2417				
Depression (18+)	53905				
Diabetes (17+)	24686				
Heart Failure	3308				
Hypertension	52386				

Produced by MCC Public Intelligence (PRI) and Manchester NHS CCGs Business Intelligence

Location of Troubled Families

These areas are similar with regards of Median Income, Types of problems the TFUs have, Deprivation indices

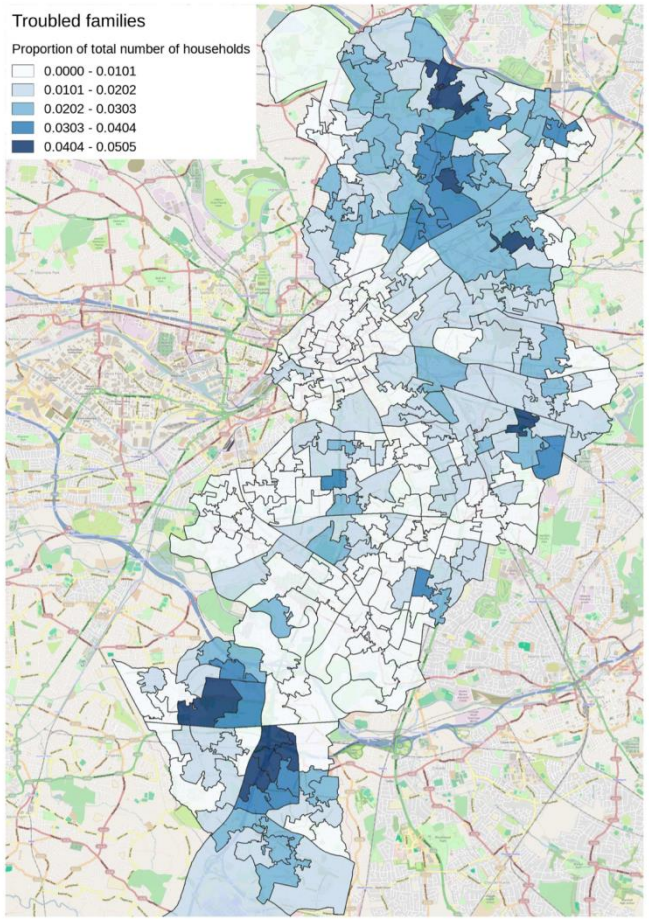
But they differ in: Transience, Predominant tenure

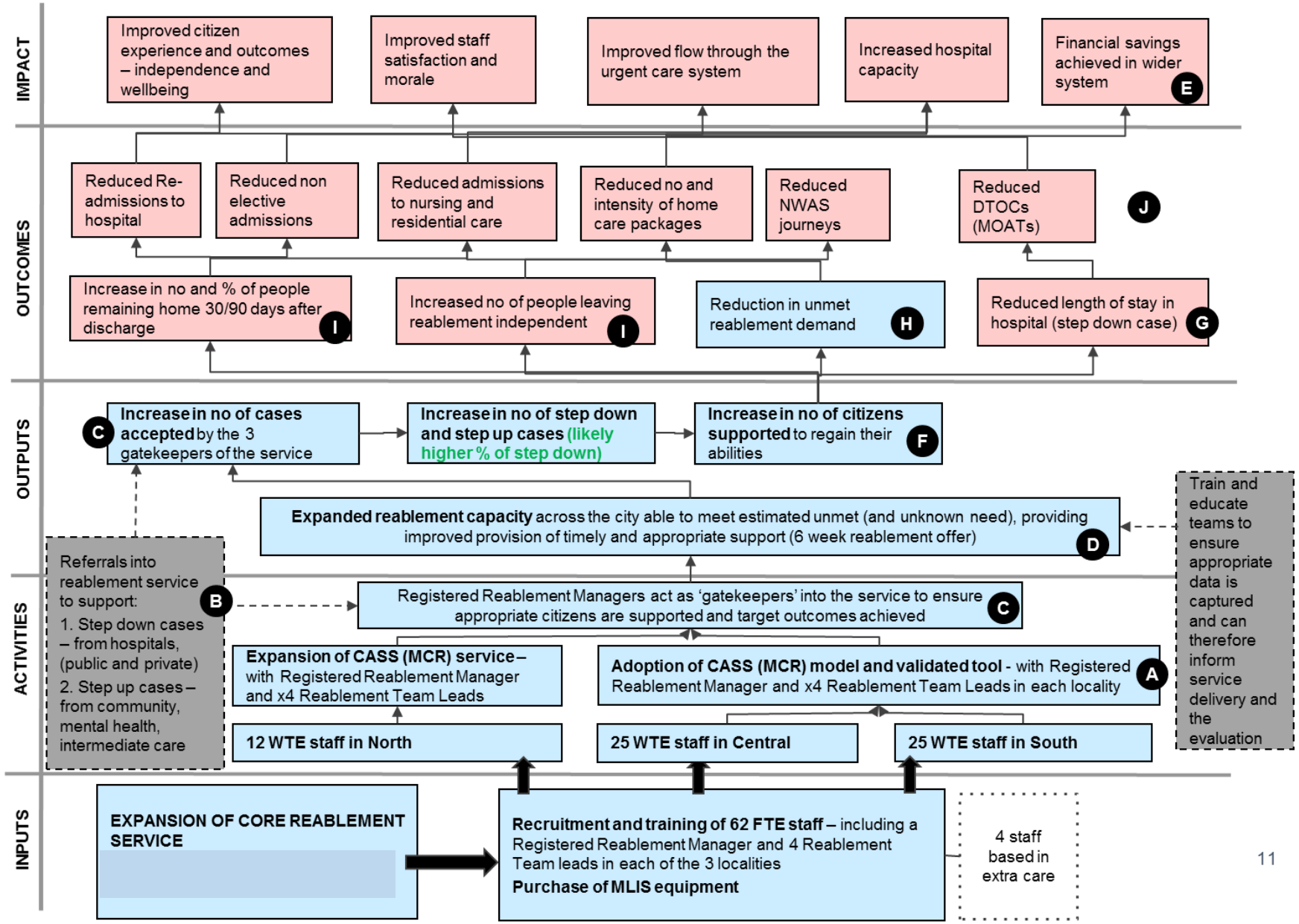


Density of Troubled Families

TF scattered across all the city. Very few areas with no TFUs (Didsbury). Number of TFU never exceeds 5% of all households in any LSOA

Substantial clusters: Harpurhey, Gorton / Belle Vue, Whythenshawe




IMPACT
Improved citizen experience and outcomes – independence and wellbeing
Improved staff satisfaction and morale
Improved flow through the urgent care system
Increased hospital capacity
Financial savings achieved in wider system
E
OUTCOMES
Reduced Re-admissions to hospital
Reduced non elective admissions
Reduced admissions to nursing and residential care
Reduced no and intensity of home care packages
Reduced NWAS journeys
Reduced DTOCs (MOATs)
J
Increase in no and % of people remaining home 30/90 days after discharge
I
Increased no of people leaving reablement independent
I
Reduction in unmet reablement demand
H
Reduced length of stay in hospital (step down case)
G
OUTPUTS
C
Increase in no of cases accepted by the 3 gatekeepers of the service
Increase in no of step down and step up cases (likely higher % of step down)
Increase in no of citizens supported to regain their abilities
F
Expanded reablement capacity across the city able to meet estimated unmet (and unknown need), providing improved provision of timely and appropriate support (6 week reablement offer)
D
Train and educate teams to ensure appropriate data is captured and can therefore inform service delivery and the evaluation
ACTIVITIES
Referrals into reablement service to support:
1. Step down cases – from hospitals, (public and private)
2. Step up cases – from community, mental health, intermediate care
B
Registered Reablement Managers act as 'gatekeepers' into the service to ensure appropriate citizens are supported and target outcomes achieved
C
Expansion of CASS (MCR) service – with Registered Reablement Manager and x4 Reablement Team Leads
Adoption of CASS (MCR) model and validated tool - with Registered Reablement Manager and x4 Reablement Team Leads in each locality
A
12 WTE staff in North
25 WTE staff in Central
25 WTE staff in South
INPUTS
EXPANSION OF CORE REABLEMENT SERVICE
Recruitment and training of 62 FTE staff – including a Registered Reablement Manager and 4 Reablement Team leads in each of the 3 localities
Purchase of MLIS equipment
4 staff based in extra care

Cost Benefit Analysis

Based on period 2015 to 2020

Costs = £33.3m

- Investment in Core Service Deliver; and Unlocks Partner Support (c.£5.3m)
- Spend profile reduces from c.£7.7m to £6.1m pa between 2015 & 2020

Benefits = £63.5m

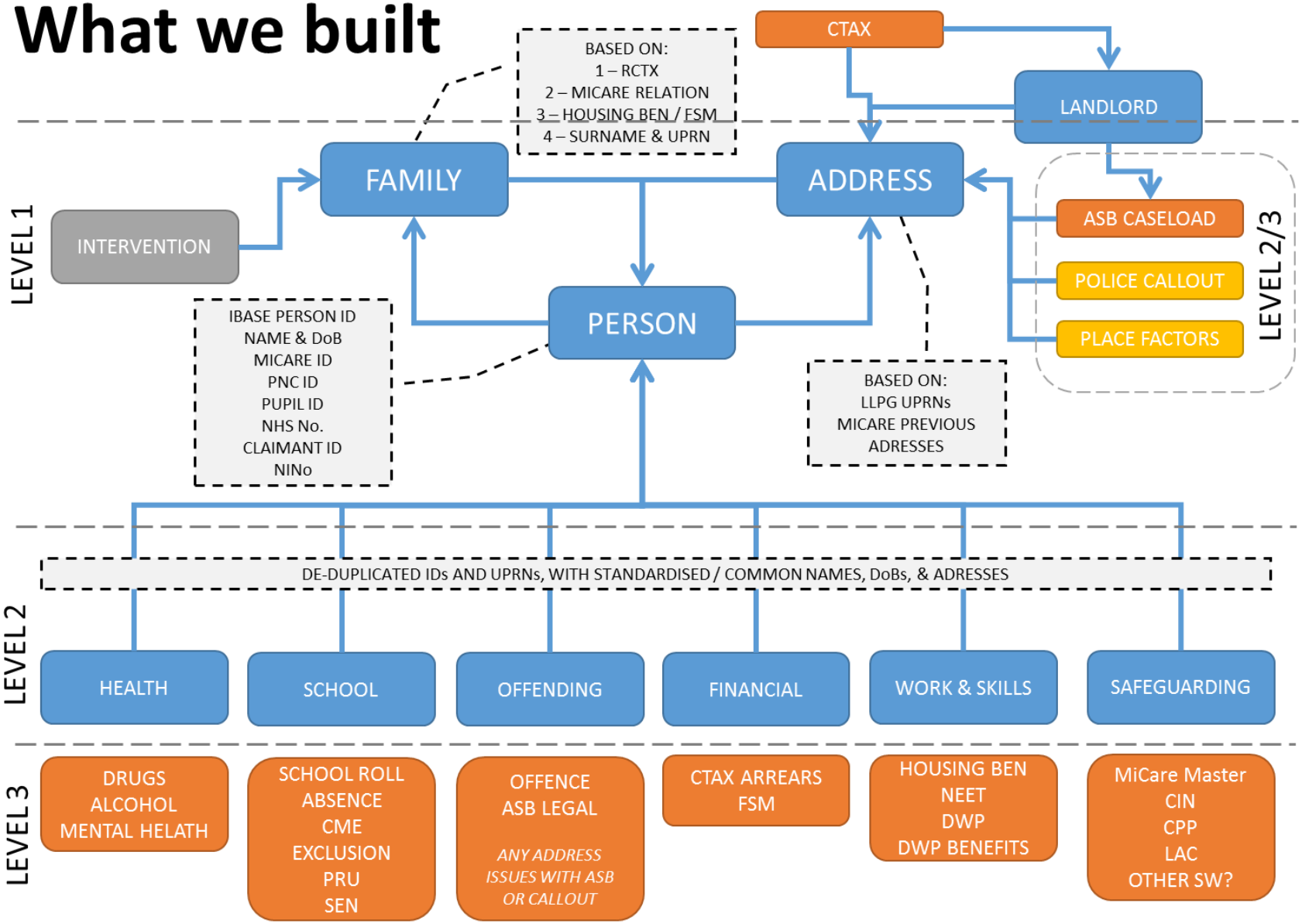
- Benefits across a range of metrics & agencies
- Benefits profile increases from £6.1m pa to £18.3m pa between 2015 & 2020

Return on Investment = £1.90

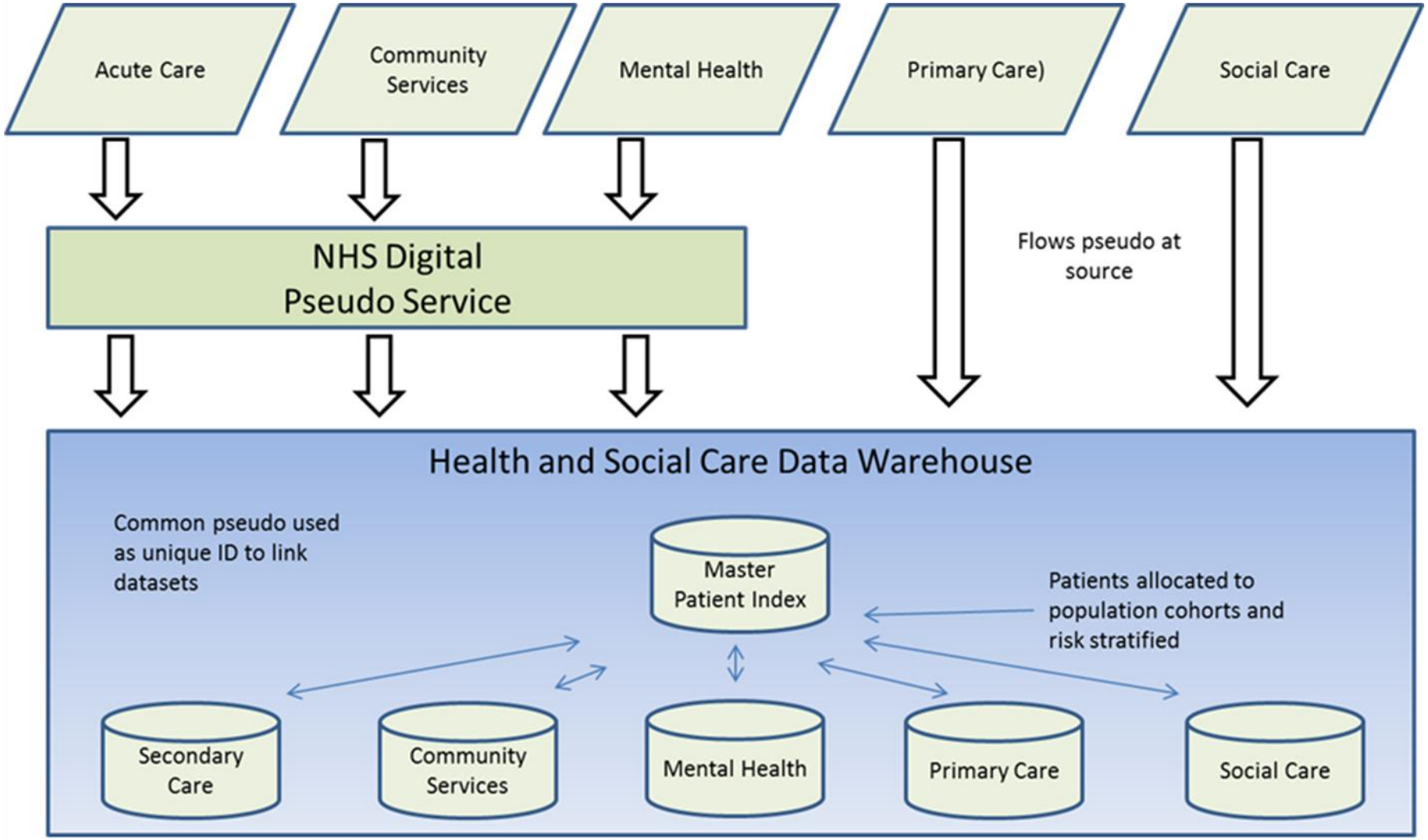
- The expansion of EH and the ongoing uptake of EHAs appears to have driven the ROI up from c.£1.48 to £1.90

NOTE: WORK IN PROGRESS

What we built

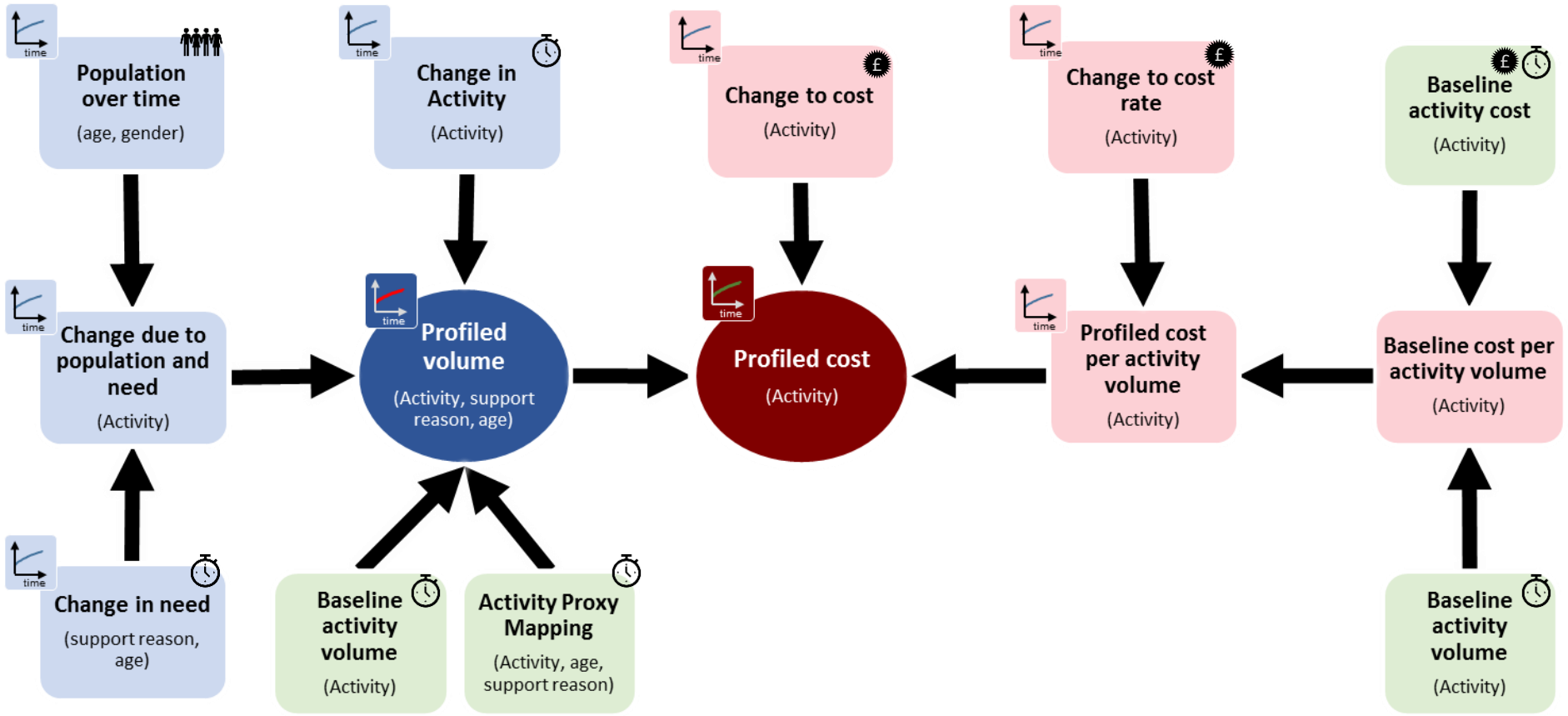


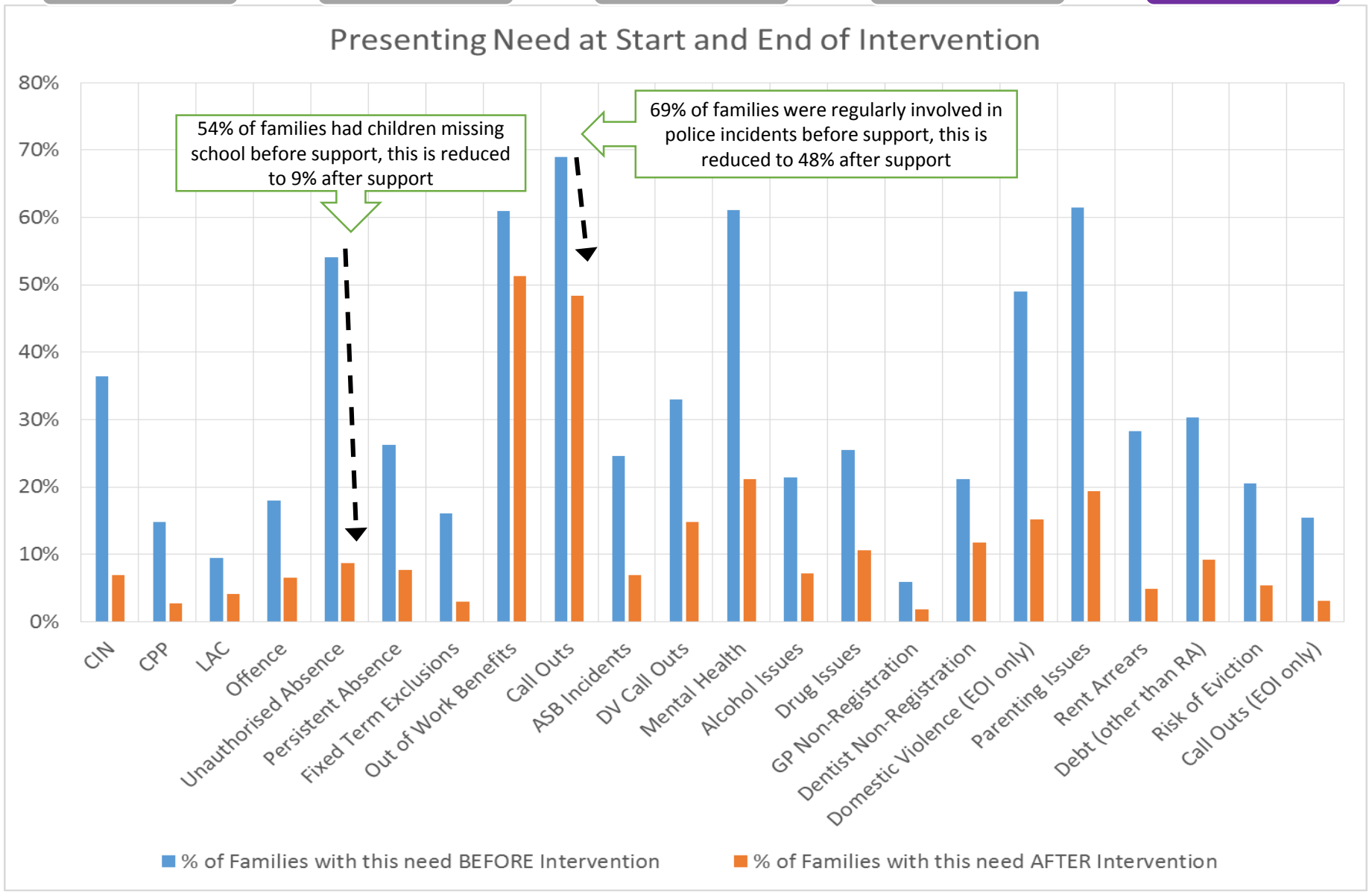
What we built



Datasets linked together via common person pseudonym derived from NHS Number

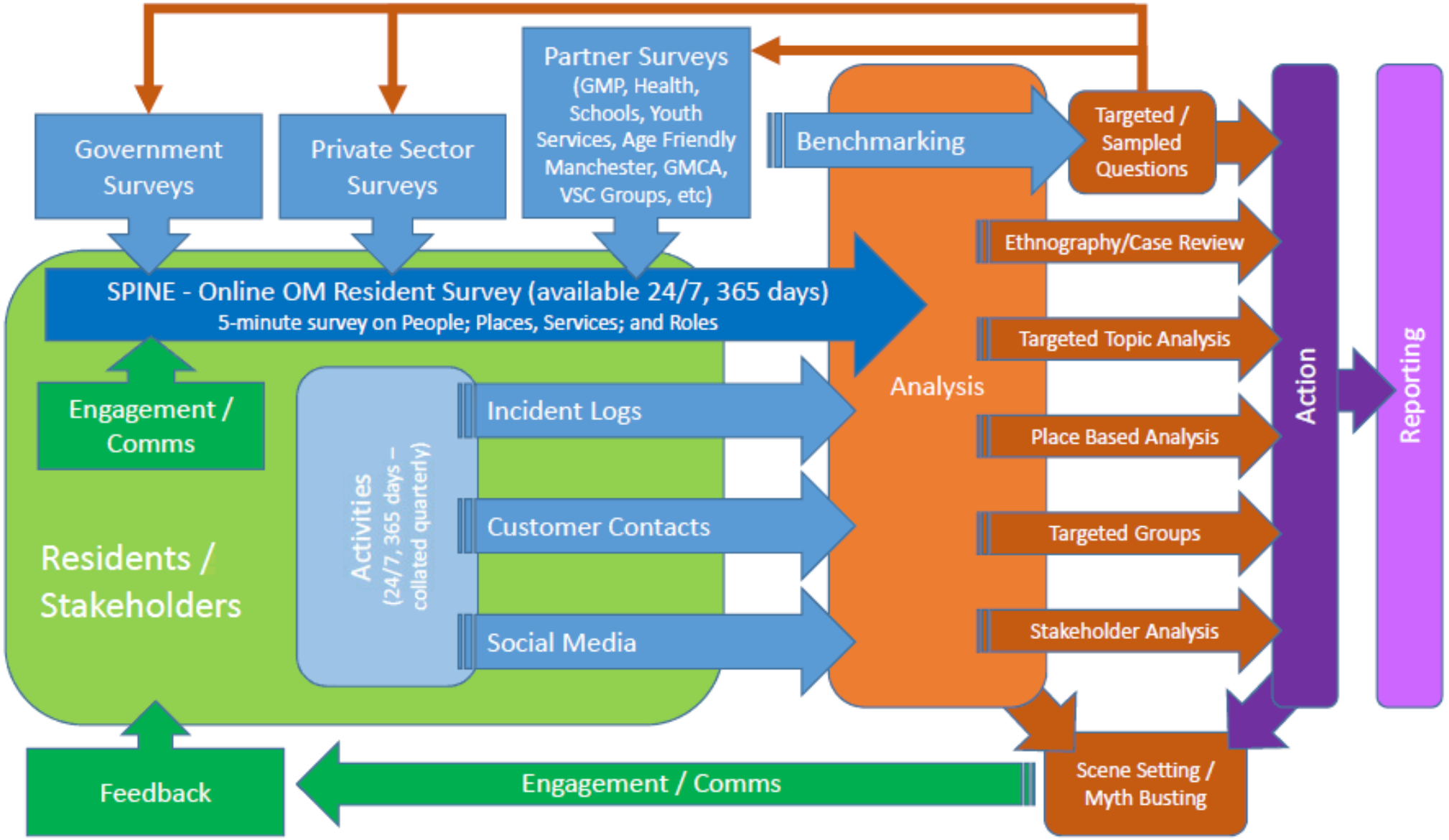
How the data is used in the model to calculate projections of future demand





Based on 4,576 families

Analysis of Demand → Business Case Research → Business Case Testing & CBA → Evaluation Planning & Methods → Data Processes & Techniques → Evaluation (Process/Impact) → Feedback / Engagement



Some of our questions:

1. Giving young people the best start
   a) Finding the predictors for children who might not be ready for school?
2. Enabling people to be health and well
   a) Understanding the complex flows between H&SC services?
3. Delivery of the right mix of housing
   a) Tracking a complex network of resident movement and pressures on housing?
4. Create and maintain clean and vibrant neighbourhoods
   a) Listening to our residents and connecting them into local assets?
5. Connecting people and places
   a) Understanding the links between places and what they affect?
6. Growth that benefits everyone
   a) Matching economic growth to skills and wellbeing?
7. Making the most of our resources
   a) Demand and budgets forecasts?

Systems Dynamics Models

Risk Stratification & Segmentation

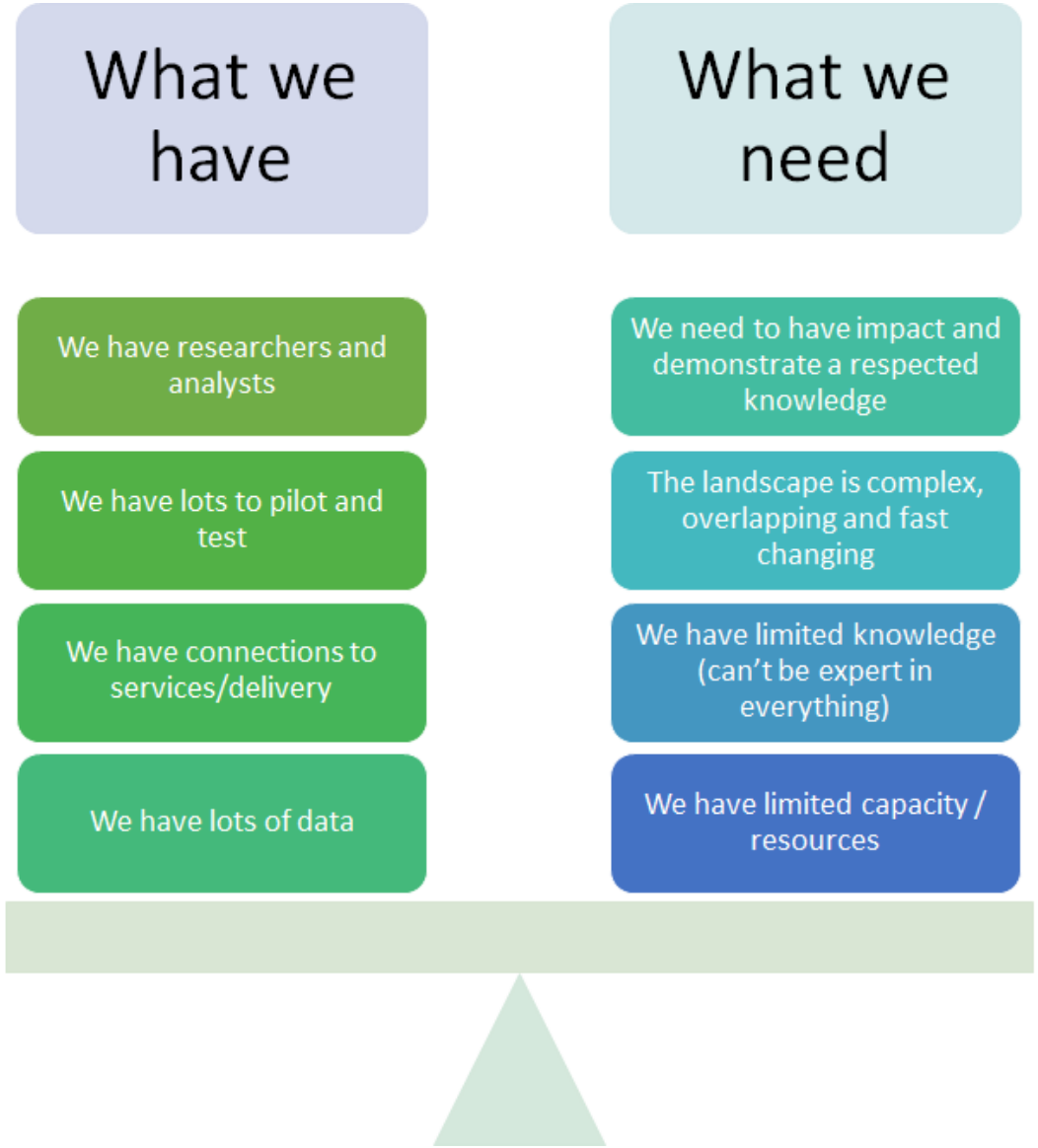
Predictive Models & Decision Trees

Engagement & Sharing / Feedback Tools

Financial Modelling

Spatial Analysis

So why am I here today?



So why am I here today?

Any questions or comments please contact:

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