Midlands and Lancashire
Commissioning Support Unit

Health and Social Care Analysis Community Fit

Descriptive Analysis of Health and Social Care Service Users in Shropshire and Telford & Wrekin 2014/15

March 2016

Contents

Executive Summary

This report links a number of datasets for the period of 2014/15 across health (Acute, Community, Mental Health and Ambulance Conveyances) and Social Care (assessments and packages of care) to examine the assumption that a very small proportion of the population aged 18 or over in Shropshire and Telford & Wrekin generate a very high proportion of the spend. It also looks at interactions between services to identify areas where a more integrated approach to commissioning across Health and Social Care might be beneficial.

The analysis is stratified in 2 ways:
• **Cost Groups:** Very High (highest 2% costing service users), High (2-10%), Medium (10-50%) and Low (lowest 50% costing service users).
• **Cohort Groups:** Service users that interact with both Health and Social Care services (H&SC) or Health services only (Health) or Social Care services only (SC).

These are the main findings:

A very small number of service users do consume a very high proportion of the cost with the top 2 percent highest costing service users having costs of £132,910,335 (33% of total cost) and consisting of only 4,218 service users whereas the total spend of up to 80% of service users (168,679) was less than this at £77,218,916 (19% of total cost). The average cost for the most expensive 2% of service users was £31,510 per user. The Very High cost group (top 2%) has the following characteristics:

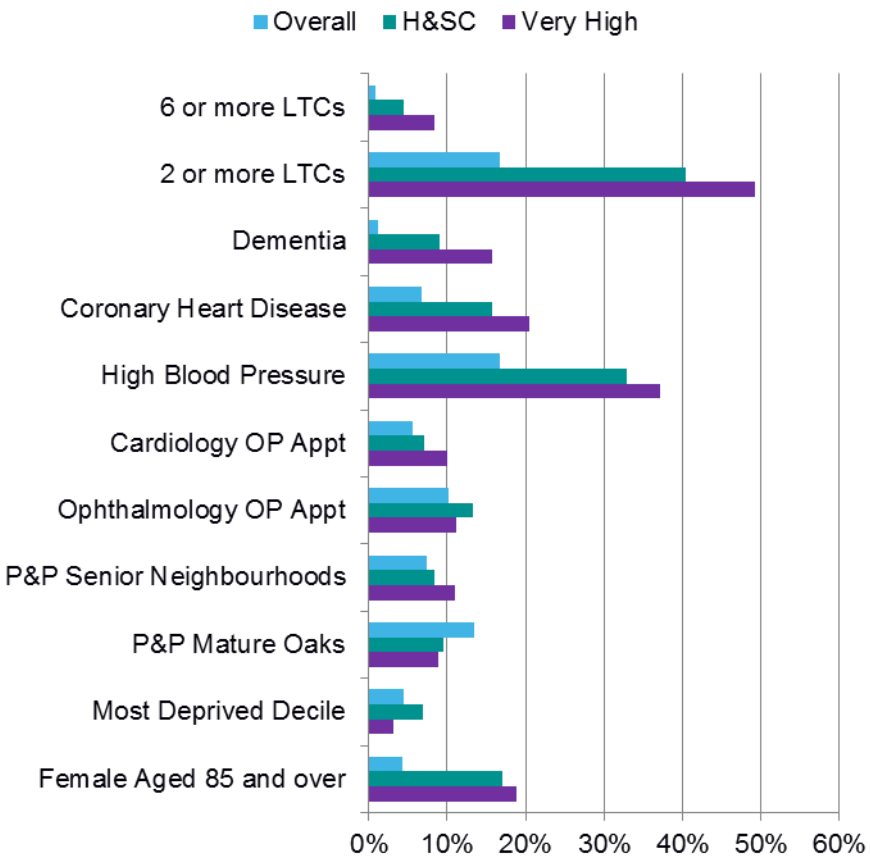
- More likely to be older (85+) – See pages 17 - 18
- More likely to be receiving multiple services from multiple agencies – See Interactions Section
- More likely to receive a Social Care package, Mental Health outpatient appointment or Mental Health inpatient spell – See page 13
- More likely to have Dementia, Chronic Kidney Disease, Diabetes, Heart Failure or Stroke – See page 30
- More likely to have 6 or more co-morbidities – See page 32

The findings suggest an integrated approach to commissioning Health and Social Care for people aged 18 and over may be beneficial as these are the highest cost group. Overall there are 210,859 (£408m) service users of which 192,543 (91%) costing £230m (56%) interacted with health services only, 16,079 (8%) costing £165m (40%) interacted with Health & Social Care services & 2,237 service users (1%) costing £13m (3%) interacted with Social Care only. Service users receiving both Health and Social Care services have an average cost 5 times higher than the overall average cost.

Executive Summary

Demography

The chart below compares the proportion of the population, Health & Social Care Group and Very High cost Group across a number of Demographic factors.



Costs and Interactions

The main findings for costs and interactions were:

- 2% of the matched population consume 33% of the costs
- Average cost of the Very High Group is 15 times higher than the overall average cost.
- 41% of the costs are for Acute Inpatients, 13% for Acute Outpatients and 23% for Social Care Packages
- 19% of the overall costs are for Social Care Packages within the Very High cost group
- 2,977 people interacted with all 4 types of services (Social Care, Acute, Community, Mental Health and Continuing Healthcare)

People receiving Social Care services are much more likely to interact with mental health services than the general population

- There are 15 combinations of the four main service groups (Social Care, Acute, Community and Mental Health), 4 of the groupings account for approximately three quarters of the overall costs. These are:
  - Acute Only (26%),
  - Acute and Community combined (23%).
  - Social Care, Acute and Community combined (13%).
  - All 4 service groups (12%).

Background

Current Government Health Policy includes a large focus on integrating health and social care services in local health economies to realise the efficiencies brought about by commissioning pathways rather than individual services. The latest NHS Planning Guidance (Delivering the Forward View: NHS planning guidance, 2016/17 – 2020/21) includes a ring-fenced £3.519 billion to "achieve better integration of health and social care in every area of the country". This is supported by the New Models of Care Vanguards that require a significant integration of services to deliver their ambitions. The majority of the Vanguards include the integration of health and social care services within their Value Propositions and therefore need to baseline the current provision and any overlaps in their local area.

In order to deliver the ambitious plans of The 5 Year Forward View, Local Health Economies will need to be able to:

- Identify potential areas that will benefit from integration
- Model the impact of any proposed service changes to deliver these benefits
- Monitor the impact of these changes to ensure they deliver the benefits.

The data available to support integration programmes nationally is limited as most datasets focus on individual service areas. There is also a lack of standardised commissioning datasets at an individual person level for a number of service areas, including Social Care, Community Services and Continuing Healthcare, that would allow linked datasets to be developed nationally.

Linked datasets can be created locally to enable system wide analysis of a number of commissioning functions, including:

- **Strategic Planning** by supporting need assessment, including Risk Stratification and mapping current pathways across health and social care
- **Procuring Services** by developing new population based payment mechanisms, such as, Capitated Budgets
- **Monitoring and Evaluation** by being able to track specific cohorts across their whole health and social care pathway

Midlands and Lancashire CSU (MLCSU) have developed a methodology for combining extensive data sets for NHS and Adult Social Care services across Shropshire and Telford & Wrekin. Whilst we were unable to match all records, we have been able to match the significant majority and as a result we have been able for the first time to start to analyse overall patterns of service utilisation and resultant costs across health and care services.

Methodology

The analysis in this report is based on a master list of service users that has been developed by matching a number of different datasets from Health and Social Care. The datasets were matched within a secure environment using data that was pseudonymised at source with no link back to data that would allow the re-identification of any individual. The data is based on the following criteria:

- Acute – All inpatient, outpatient and A&E activity for people aged 18 or over who either live in Shropshire or Telford & Wrekin or are registered with a Shropshire or Telford & Wrekin CCG GP Practice
- Ambulance – Ambulance conveyances to A&E for people aged 18 or over who either live in Shropshire or Telford & Wrekin or are registered with a Shropshire or Telford & Wrekin CCG GP Practice
- Social Care Assessments and Package of Care – Activity provided by Shropshire and Telford & Wrekin Council
- Mental Health – PbR and Non-PbR activity provided by South Staffordshire and Shropshire Healthcare NHS Foundation Trust
- Community - Contacts provided by Shropshire Community Health NHS Trust and SUS activity from Shropshire Community Health NHS Trust and Wye Valley NHS Trust.

The main dataset not yet matched is Primary Care activity although a small sample has been matched to examine what is possible if the data is linked for all Shropshire and Telford & Wrekin practices. A consistent dataset for every practice in Shropshire and Telford & Wrekin CCGs is required if this dataset is to be matched.

An index of unique NHS Numbers was created from all the datasets above to identify each individual person aged 18 and over living in Shropshire and Telford & Wrekin who had at least one service in 2014/15. Demographic, clinical, activity and cost information for all service users and services that they interact with have been appended to this master list.

There were 7 outliers whose overall costs were over £200,000 across the year. Although these skew the figures they do not change the conclusions and have therefore been left in this analysis. The costs were all dominated by a very expensive social care package and the people were younger (average age 48) with very few recorded long term conditions.

Assumptions

There are a number of assumptions that have been made within the report. These are:

- All pseudonymised NHS Numbers are correct and have been shared consistently by all data providers
- Where costs for activity were not provided they were derived from the following sources **(costs yet to be verified)**:
    - Social Care Package costs supplied by Shropshire Council used to fill in gaps in costs for Telford & Wrekin Council by matching on client group, care element and service type.
    - Social Care Assessment costs are based on a figure used in previous data matching projects at £152 per Assessment.
    - Ambulance Conveyance costs are based on a figure used in previous data matching projects at £192 per Conveyance.
    - Community Costs are based on unit costs from the NHS National Reference Costs for 2014-15. Minor Injuries Unit and Inpatient activity and costs were sourced from SUS (Secondary User Services) datasets. Where activity descriptions could not be matched then unit costs were taken from data from previous projects.
    - Mental Health Costs are based on PbR and Non PbR unit costs from the price activity matrix used for contract monitoring
- Long Term conditions have been derived from 4 years of SUS acute inpatient data using any diagnosis code (i.e. anyone admitted with an ICD10 Code in any position over the last 4 years is flagged as having that condition). This means that it has not been possible to identify a wider cohort of the population living with Long Term Conditions,
- People and Places socio-demographic profiles have been applied at Lower Super Output Area geographies
- 2014 based ONS Population Estimates have been used for the whole population. It is assumed, for the purpose of the odds ratios, that anyone who has not been matched does not receive any of the included services
- All uncosted activity has been excluded

What is included?

Included

- Acute Inpatient, Outpatient and A&E services for service users registered with Shropshire or Telford CCG or living in the Shropshire or Telford region (including Specialised Commissioning services)
- Community Inpatient, Outpatient, Minor Injuries Unit and Contact activity provided by Shropshire Community Health NHS Trust for Shropshire and Telford CCG's. Also includes SUS activity from Wye Valley NHS Trust.
- Mental Health Inpatient, Outpatient and Contact activity provided by South Staffordshire and Shropshire Healthcare NHS Foundation Trust for Shropshire and Telford CCG's
- Social Care Assessments and Packages of Care commissioned by Shropshire and Telford & Wrekin Councils
- Out of area Social Care Placements activity linked to any health activity they have consumed
- Service users aged 18 and above

Not Included

- Any Acute Block or Variable activity
- Community and Mental Health activity provided by any other Provider outside the region
- Primary Care activity and costs
- Urgent Care, Out of Hours and Walk in Centre activity and costs
- Continuing Healthcare
- Voluntary sector activity and costs, Carers activity and costs
- Social Care Self Funders
- Un-costed activity
- Any activity for service users aged under 18
- Any activity for service users where we could not determine their age
- Any activity for service users where we did not receive a pseudonymised NHS number

Matching Results

The total population aged 18 or over in Shropshire and Telford & Wrekin was estimated as 380,789 in 2014 (based on the 2014 ONS Population estimates). There were 210,859 service users who had at least one of the services in 2014/15. This cannot be interpreted as a precise proportion of the total population as some service users will have moved in or out of the region within the last year whilst the population is an average over the year.

The 210,859 matched service users were spread across 14 services. These service are listed below:

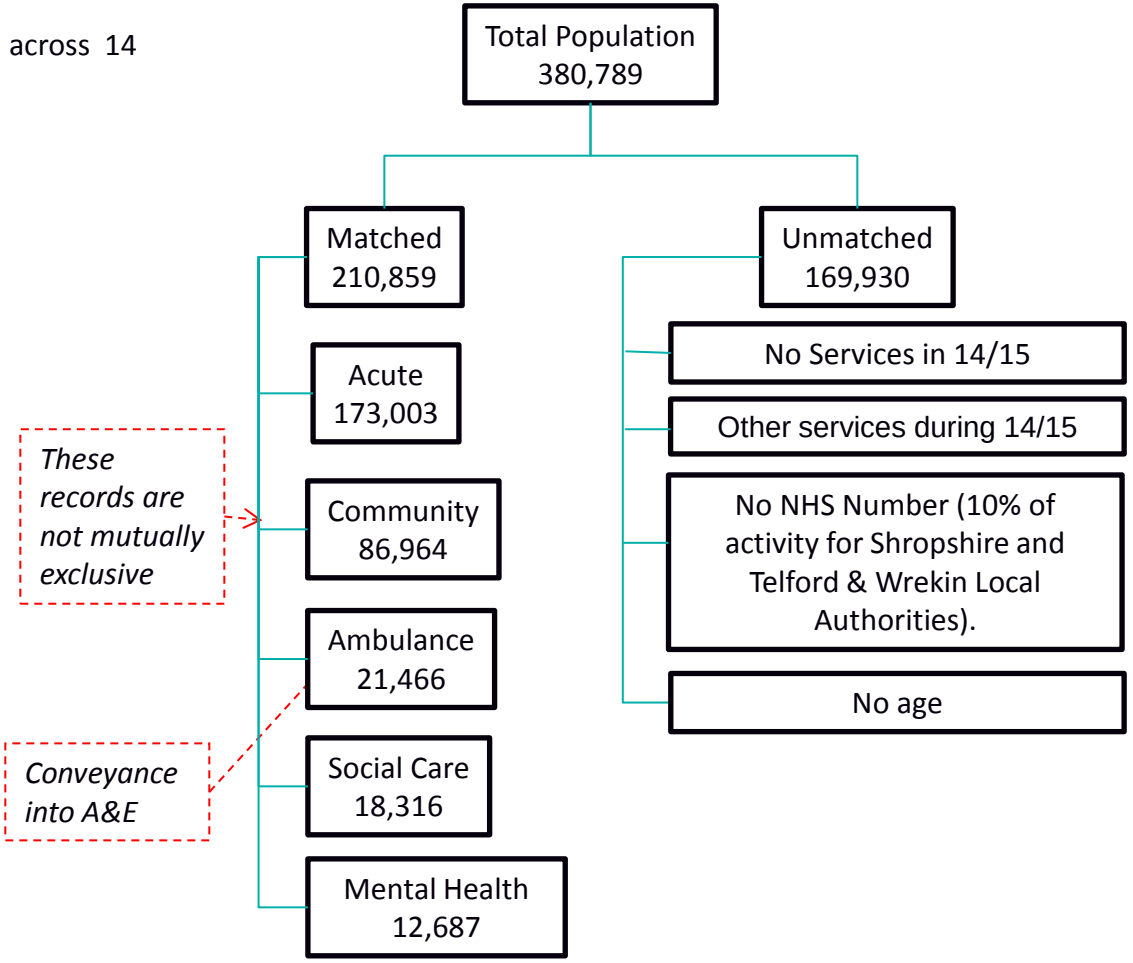
<u>Acute</u>
Acute Inpatients Elective/Day Case Spells
Acute Inpatients Emergency Spells
Acute Outpatients Attendances
Acute A&E attendances

<u>Community</u>
Community Contacts
Community Inpatients
Community Outpatients
Community MIU

<u>Ambulance Activity (conveyances into A&E)</u>

<u>Social Care</u>
Social Care assessments
Social Care Packages of Care

<u>Mental Health</u>
Mental Health Contacts
Mental Health Inpatients
Mental Health Outpatients



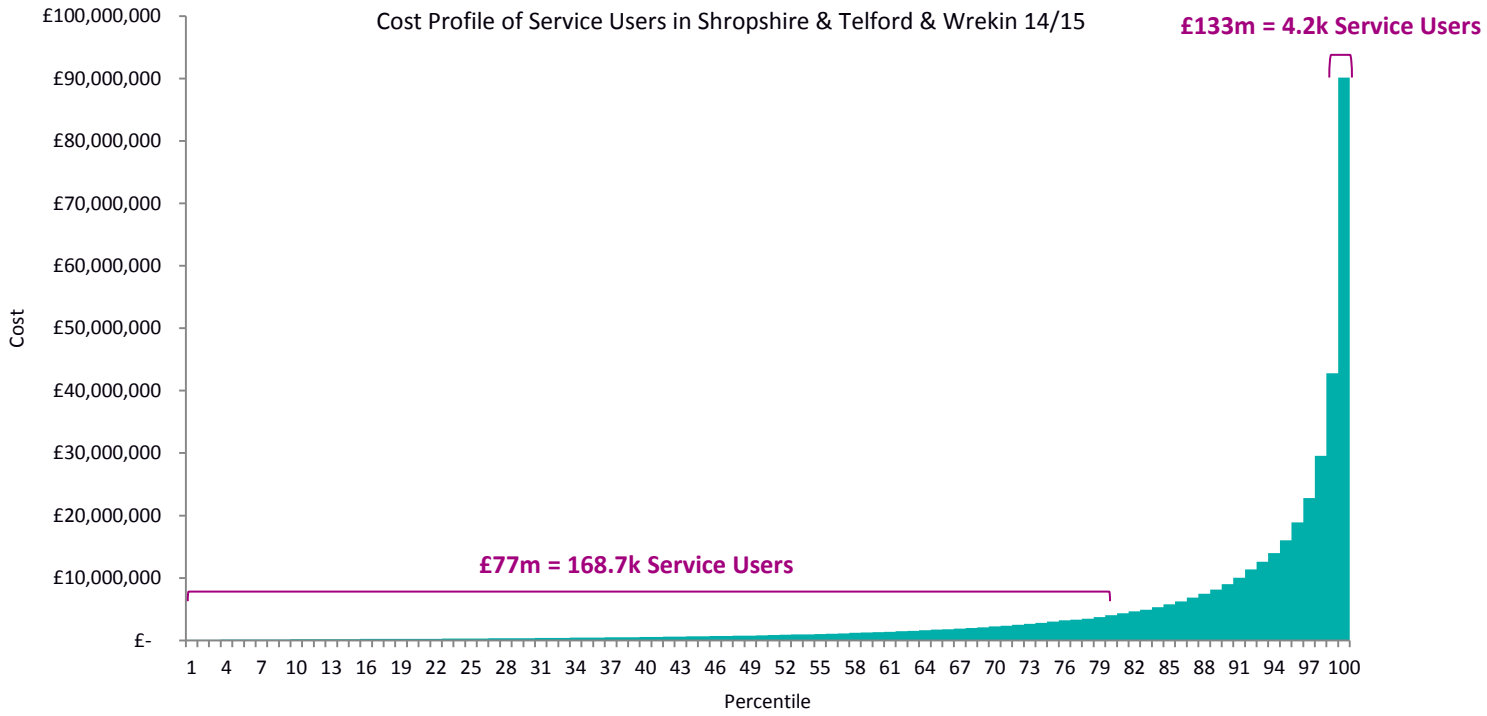
Costs

Cost of service users

The total cost of the analysed health and social care services incurred in 2014/15 was £408,147,156 which covered 210,859 service users.

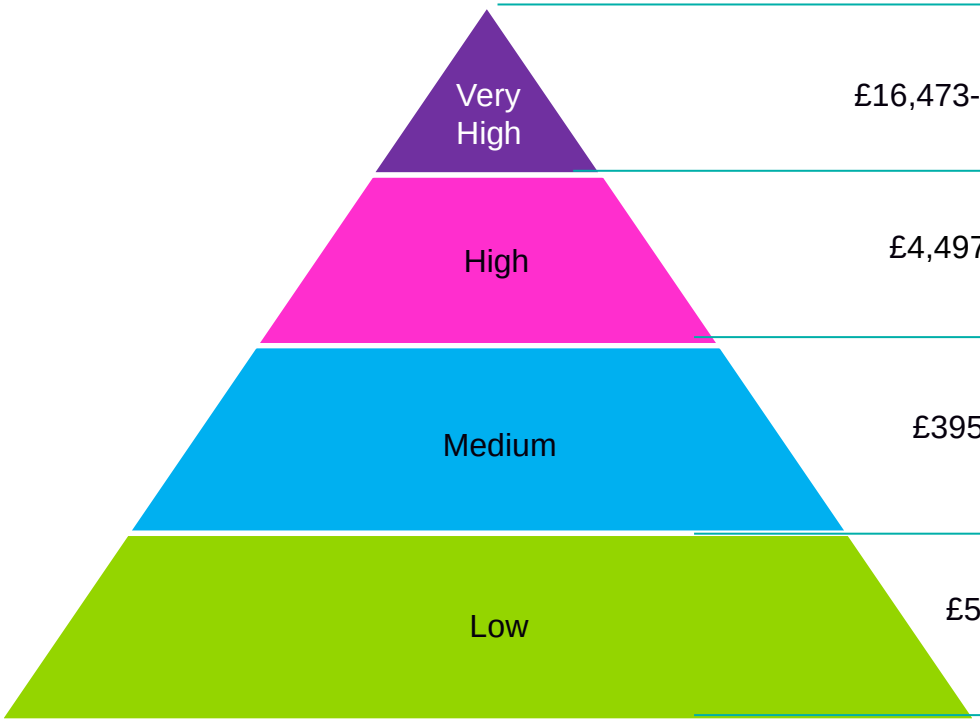
The highest costing 2% of service users cost £132,910,335 compared to the least costing 80% of service users who cost less than this at £77,218,916.

This shows a large proportion of costs were incurred by a relatively small proportion of service users.



Service User Cost Bands

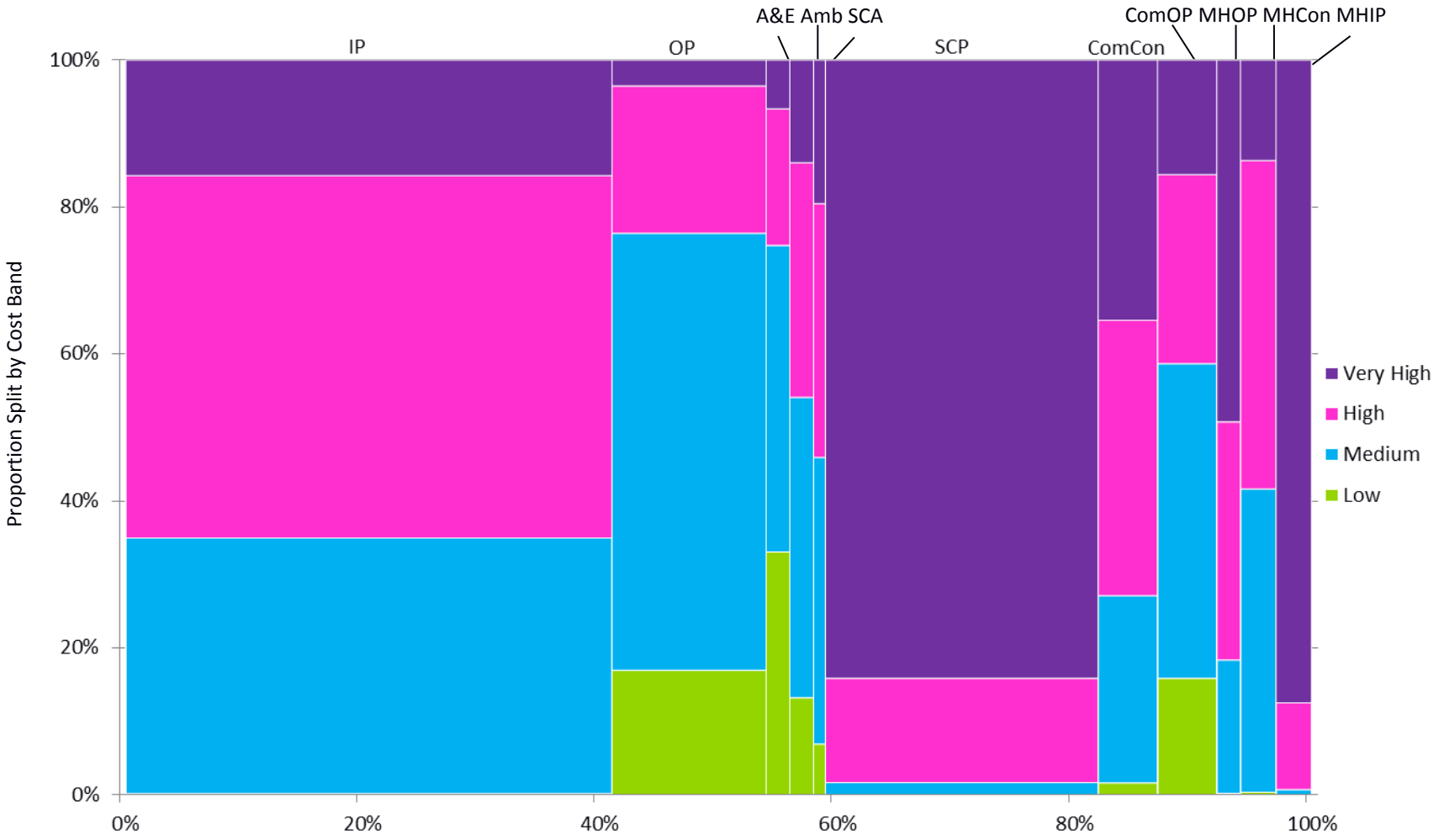
The service users have been grouped into 4 cost groups based on overall costs they consume. These are:
Very High (Top 2% of all costs) , High (Top 3-10% of all costs), Medium (Top 11- 50% of all costs), Low (Bottom 50% of all costs).



Cost band	Service Users	Total Cost / % of Total Cost	Average Cost
£16,473-£347,956	4,218	£132,910,335 33%	£31,510
£4,497-£16,472	16,872	£135,320,968 33%	£8,020
£395-£4,498	84,360	£122,143,127 30%	£1,448
£5-£394	105,409	£17,772,726 4%	£169

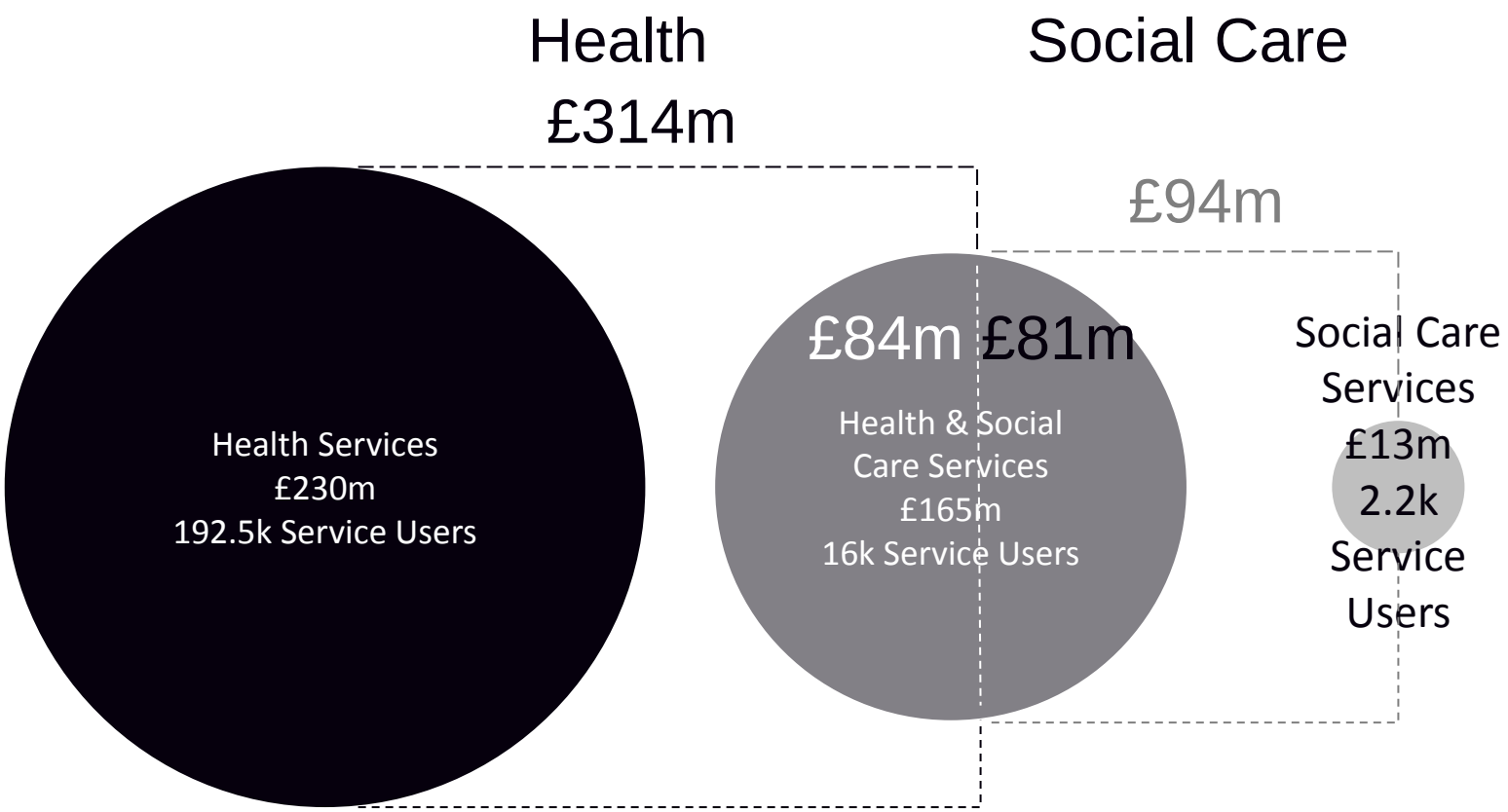
Cost of Services by Cost Bands

The mekko chart below illustrates the proportion of spend on each service by cost band. The size of the shaded area represents proportional spend. 41% of the costs are for Acute Inpatients, 13% for Acute Outpatients and 23% for Social Care Packages. 19% of the overall costs are for Social Care Packages within the Very High cost group



Overlap between services

91% of the matched population received Health services only and accounted for 56% of the costs compared to Health & Social Care Users who accounted for 8% of the matched population and 40% of the costs. The average cost of the Health and Social Care group was more than 5 times the average cost.

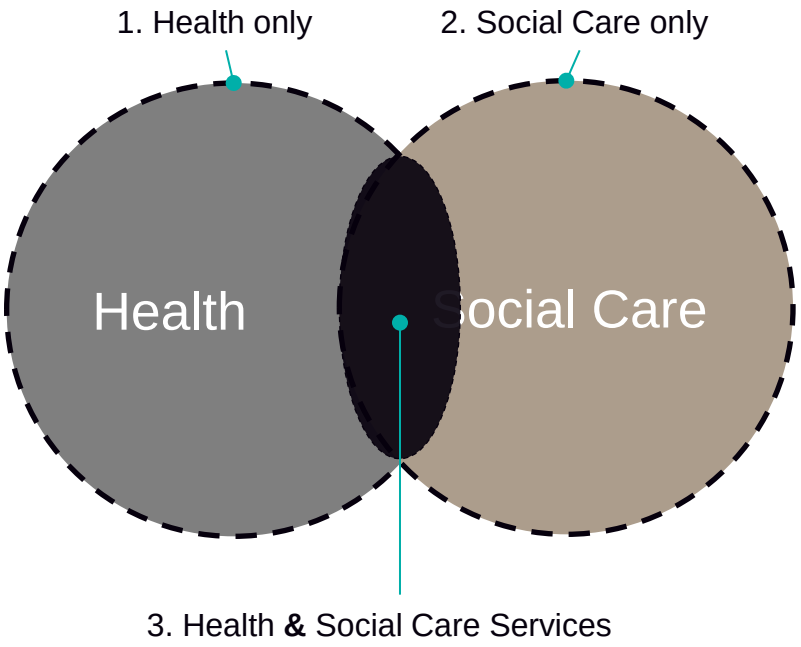


Demographics

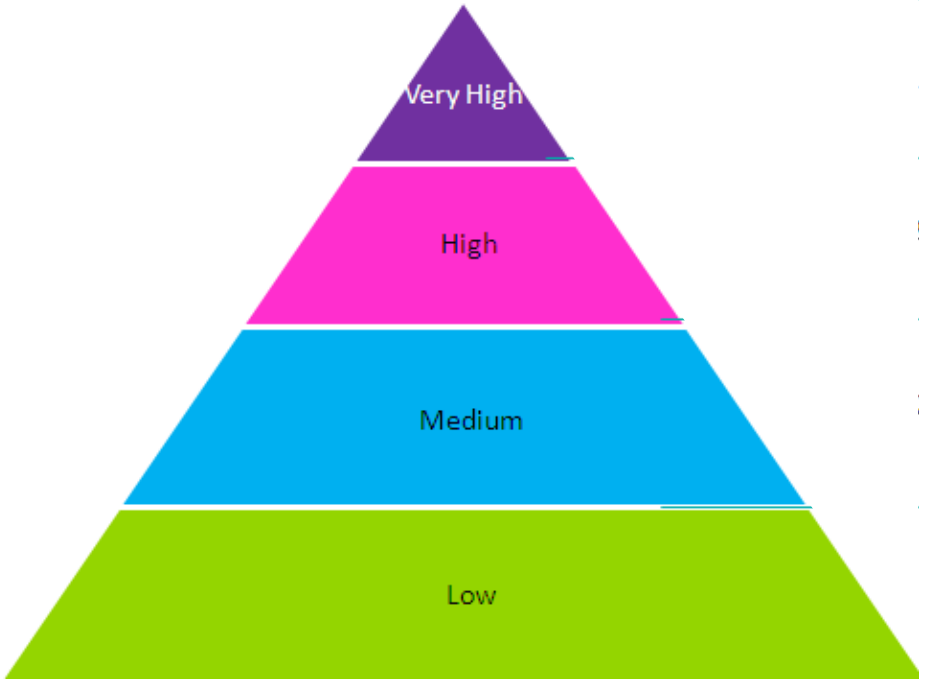
Comparison Groups

The following set of analyses consists of two benchmarking methods covering service usage and cost bandings. For service usage there are 3 comparison groups , these are Health only, Social Care only and Health and Social Care, as illustrated below. For costs, the four cost bands of very high, high, medium and Low cost service users will be compared against one another.

A. Service User Cohorts



B. Cost bands



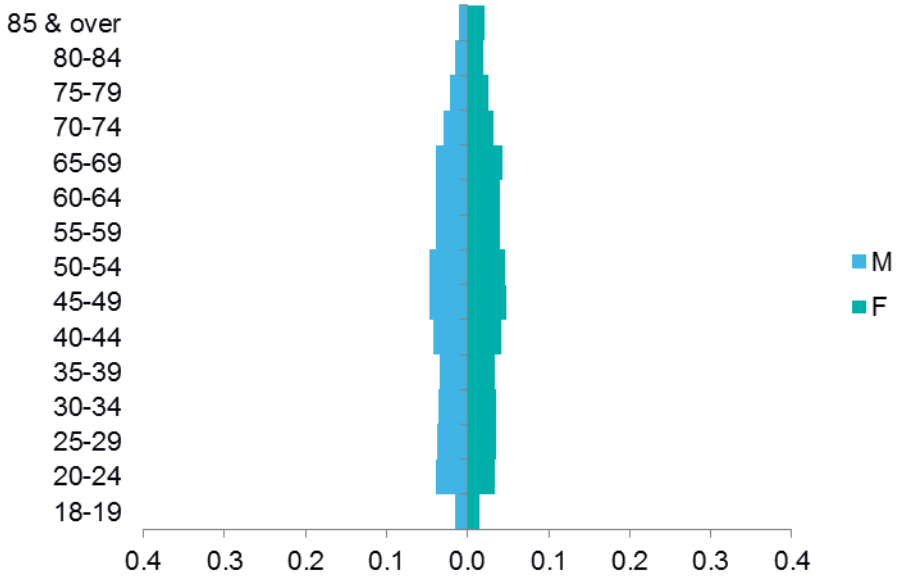
The comparison groups for analysis related to clinical condition & co-morbidities the comparative groups are health & Social Care services users and health service users.

Age and Gender Population Profile

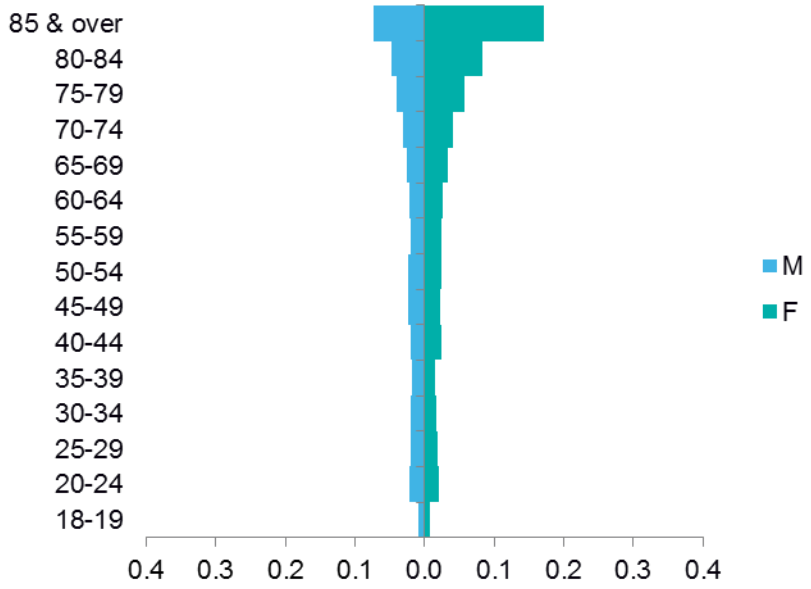
These charts illustrate the age and gender profile for service users against the Shropshire and Telford & Wrekin population that are aged 18 and over.

A high proportion of H&SC service user were female across the very older age bands. **17% of Health and Social Care service users and 19% of the Very High Cost Group were female and aged 85 or over in comparison to 2% in the Shropshire and Telford & Wrekin population aged 18 and over.** This may be due to a longer life expectancy for females meaning that a higher proportion of service users at these age bands are more likely to be female. **The age gender profile for the Health Only and the Low Cost groups are similar to the overall population aged 18 and over.**

Shropshire and Telford & Wrekin Population

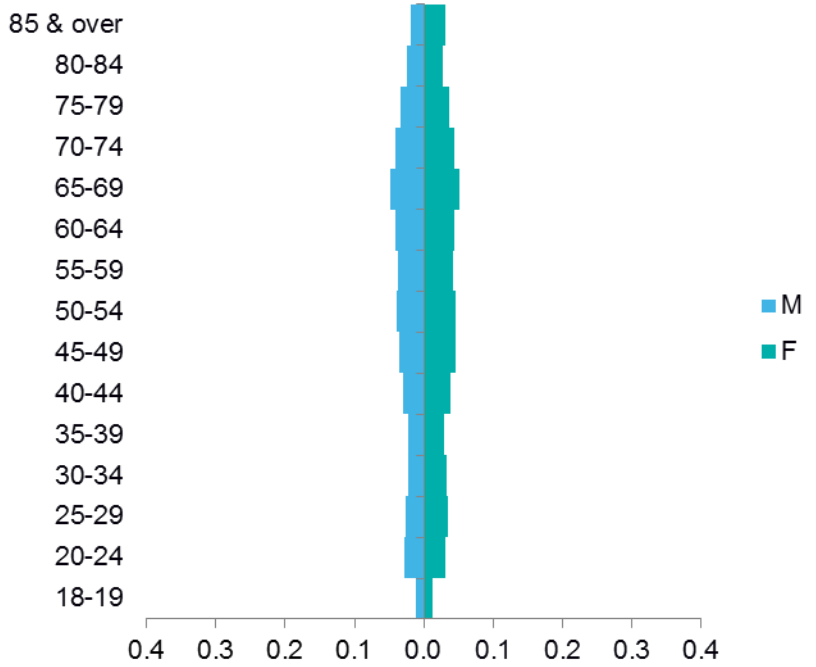


H&SC

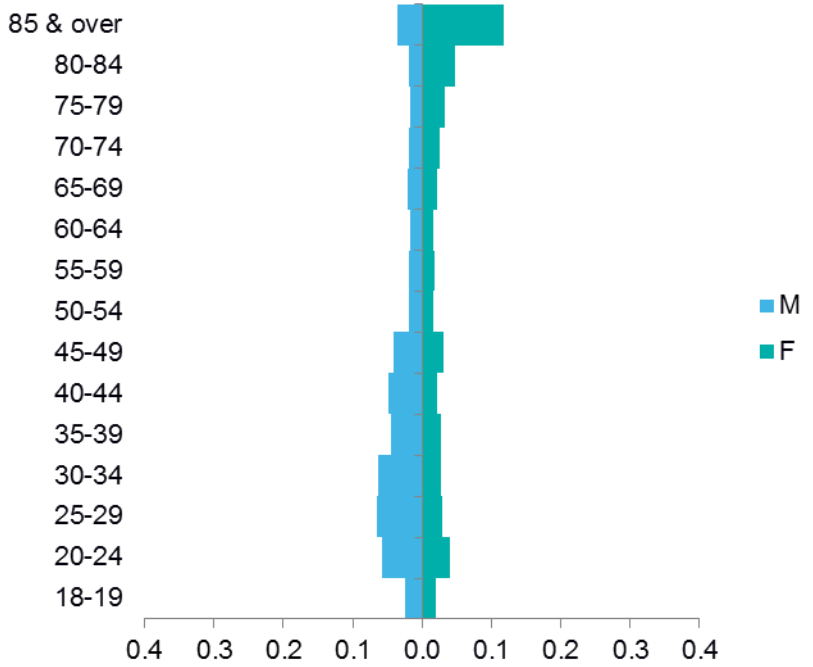


Age and Gender Population Profile

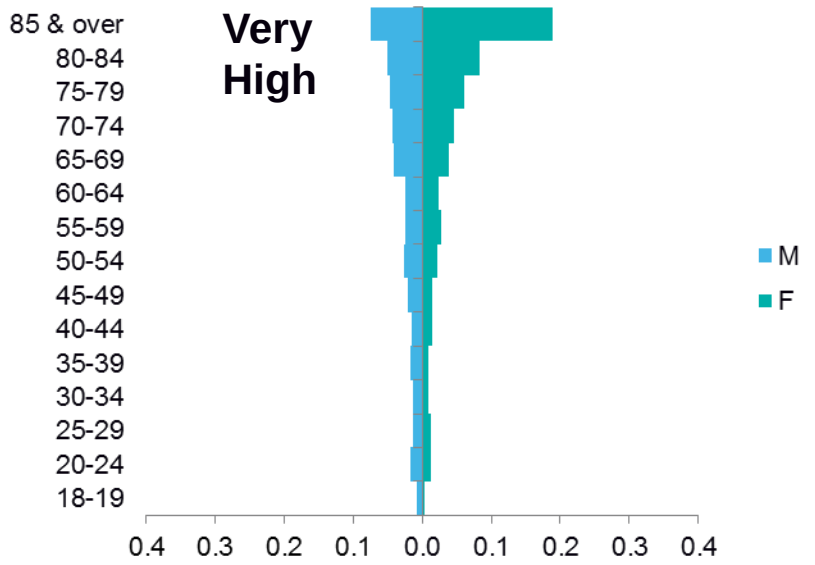
Health Only

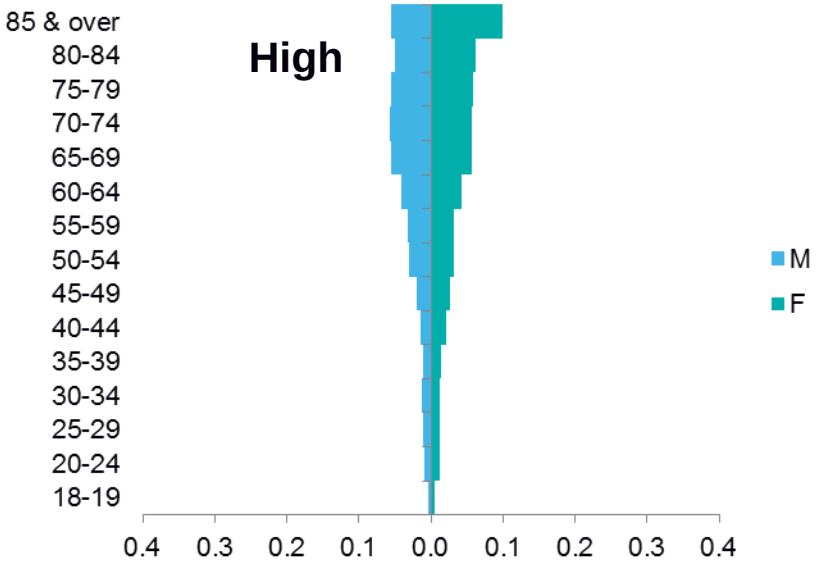


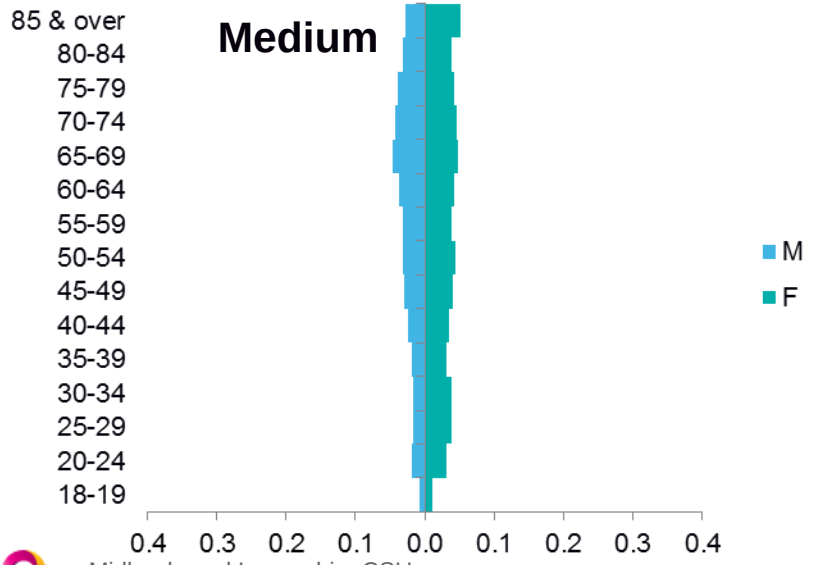
Social Care Only

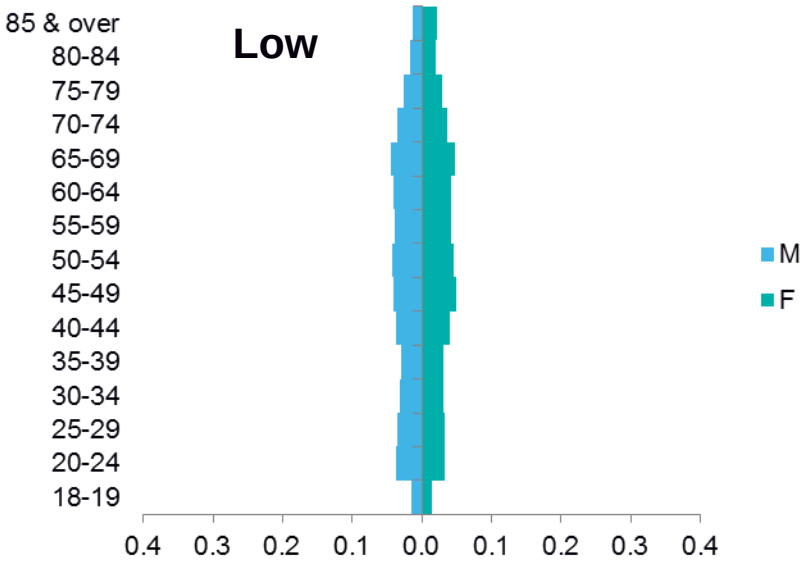


Age and Gender Population – Cost Stratified Groups





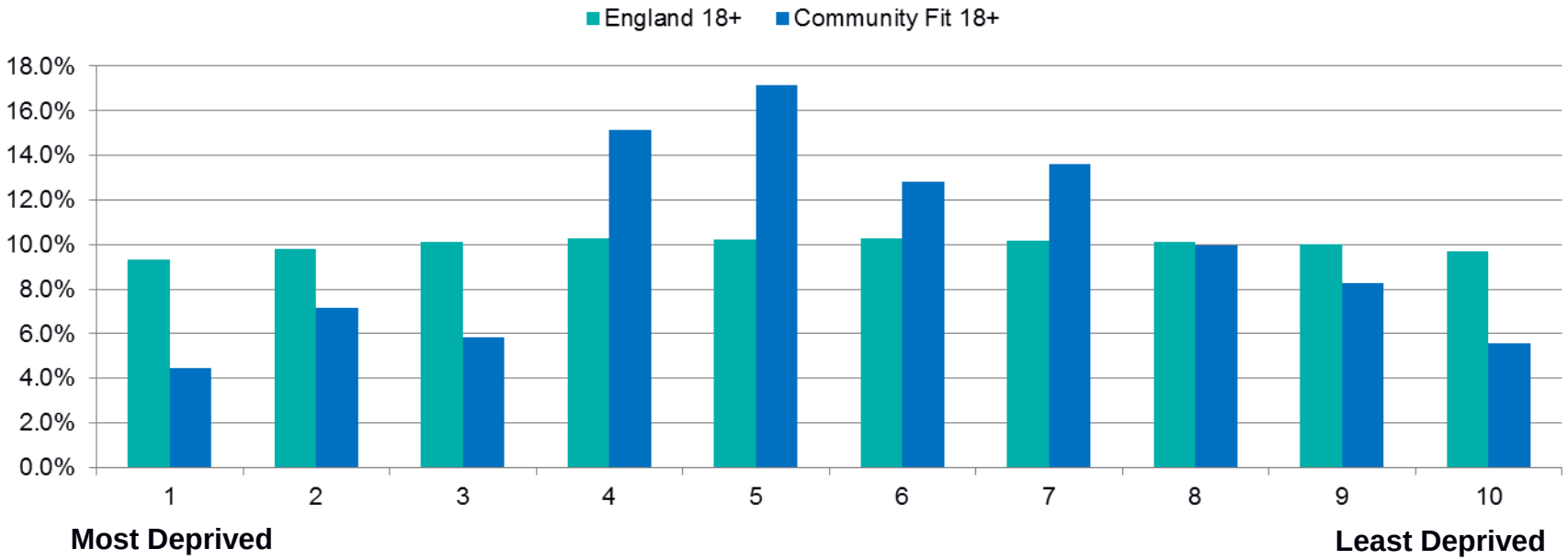




Deprivation Profile

The chart below illustrates the deprivation profile for the population of Shropshire and Telford & Wrekin aged 18 and over. The horizontal axis represents the IMD 2015 decile and the chart shows the percentage of the population in each decile based on the Lower Super Output Area (LSOA) where they live.

This shows that the Shropshire and Telford & Wrekin population reside more in middle deprivation deciles (4-7) than the national average. 4.5% of the Shropshire and Telford & Wrekin population aged 18 and over reside in the most deprived decile which is lower than the England average of 9.3%. 5.6% of the Shropshire and Telford & Wrekin population aged 18 and over reside in the least deprived decile in comparison to 9.7% for England.

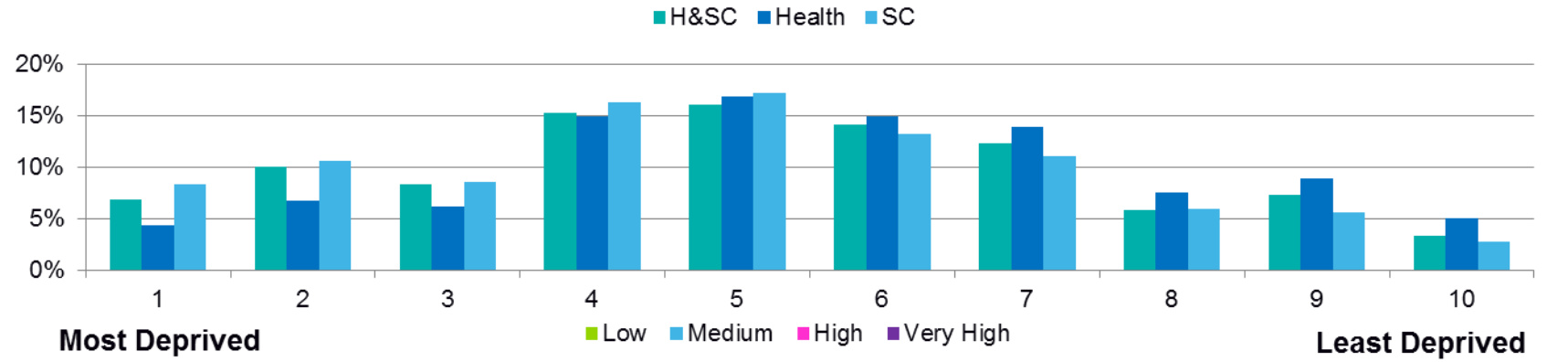


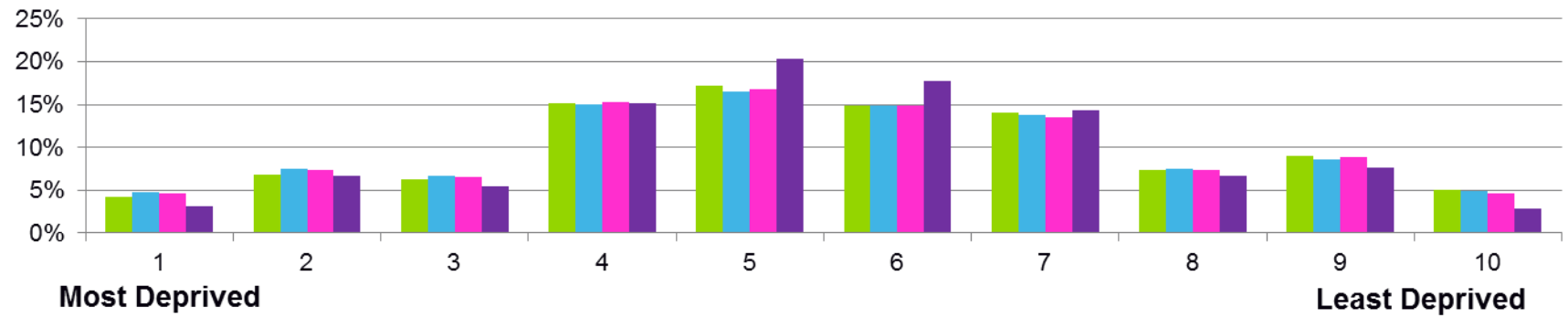
Deprivation Profile

These charts illustrate the deprivation profiles for service users that are aged 18 and over for the Shropshire and Telford & Wrekin region by service and cost group.

These show that 6.9% of Health and Social Care users reside in the most deprived areas in Shropshire and Telford & Wrekin, this is higher than health service users only (4.4%) and the Shropshire and Telford & Wrekin population aged 18 and over (4.5%).

3.2% of service users in the Very High cost band and 4.7% in the High cost band reside in the most deprived areas of the region. These are similar to Shropshire and Telford & Wrekin's population, where 4.5% reside in the most deprived areas (shown on previous page).

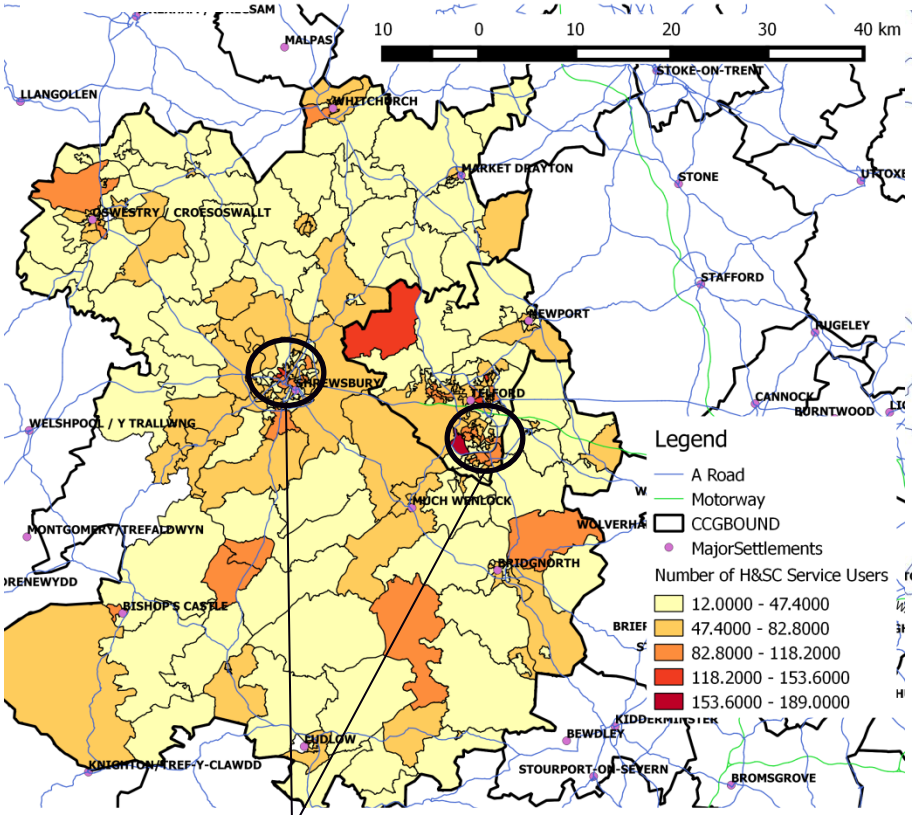




Geo-Demographic Profile – Number of Service Users

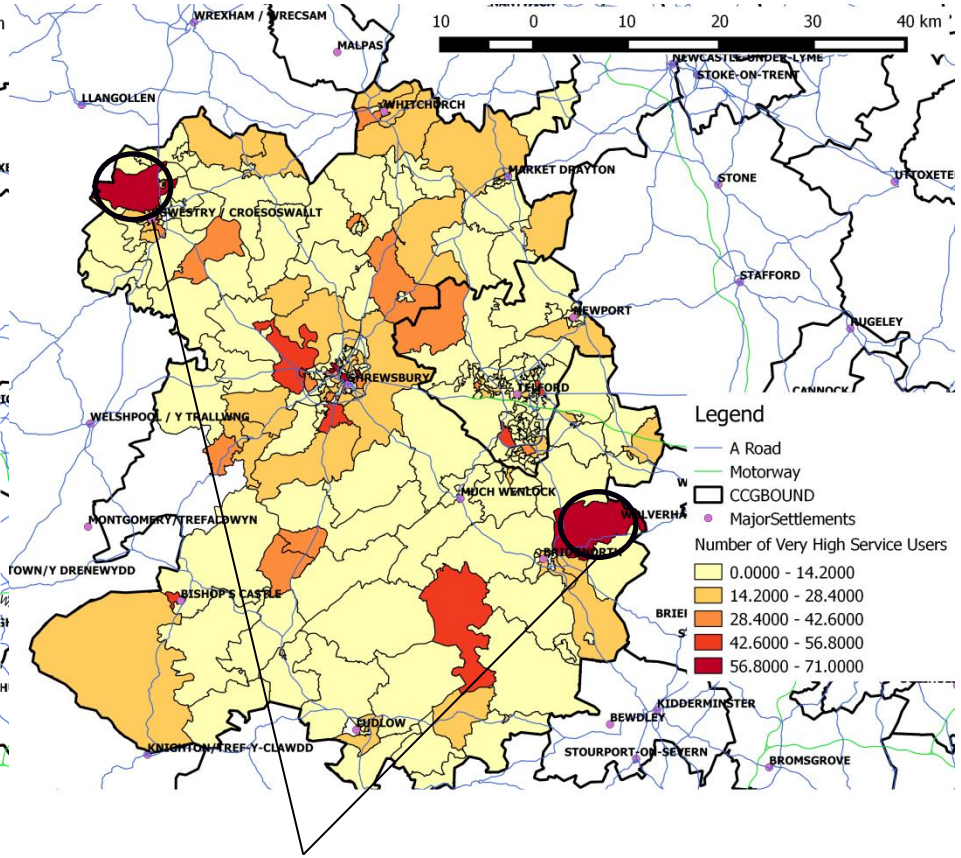
These maps show the number of service users during 2014/15 across Shropshire and Telford & Wrekin.

H&SC Users



There are LSOAs within the 2 main urban areas (Telford and Shrewsbury) with high numbers of people receiving health and social care services.

Very High Cost

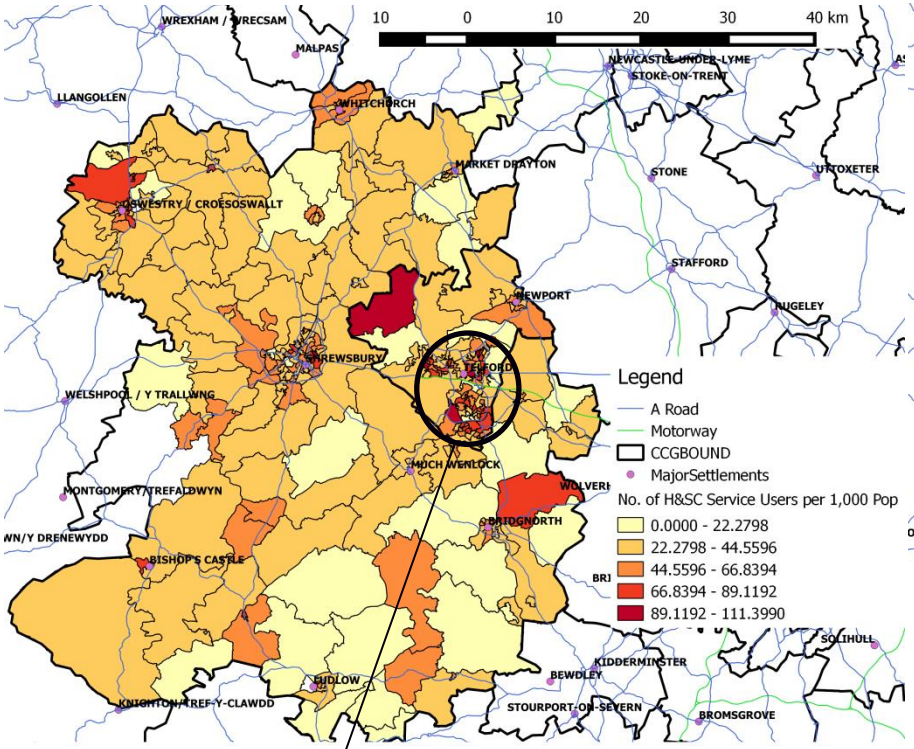


There are areas with large numbers of Very High Cost on the western (Oswestry) and eastern (Bridgenorth) borders. These may be areas with high residential and nursing home capacity.

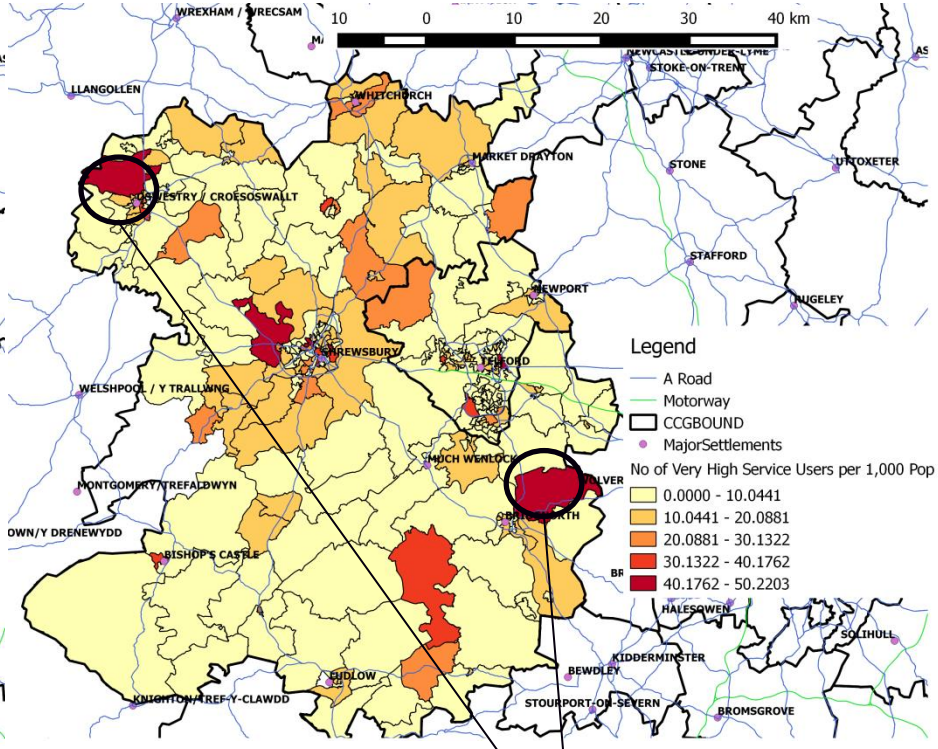
Geo-Demographic Profile – Rate per 1,000 18 and over Population

These maps show the rate of service users per 1,000 population age 18 and over during 2014/15 across Shropshire and Telford & Wrekin.

H&SC Users



Very High Cost



There are a number of LSOAs in and around Telford with high rates of Health and Social Care service users

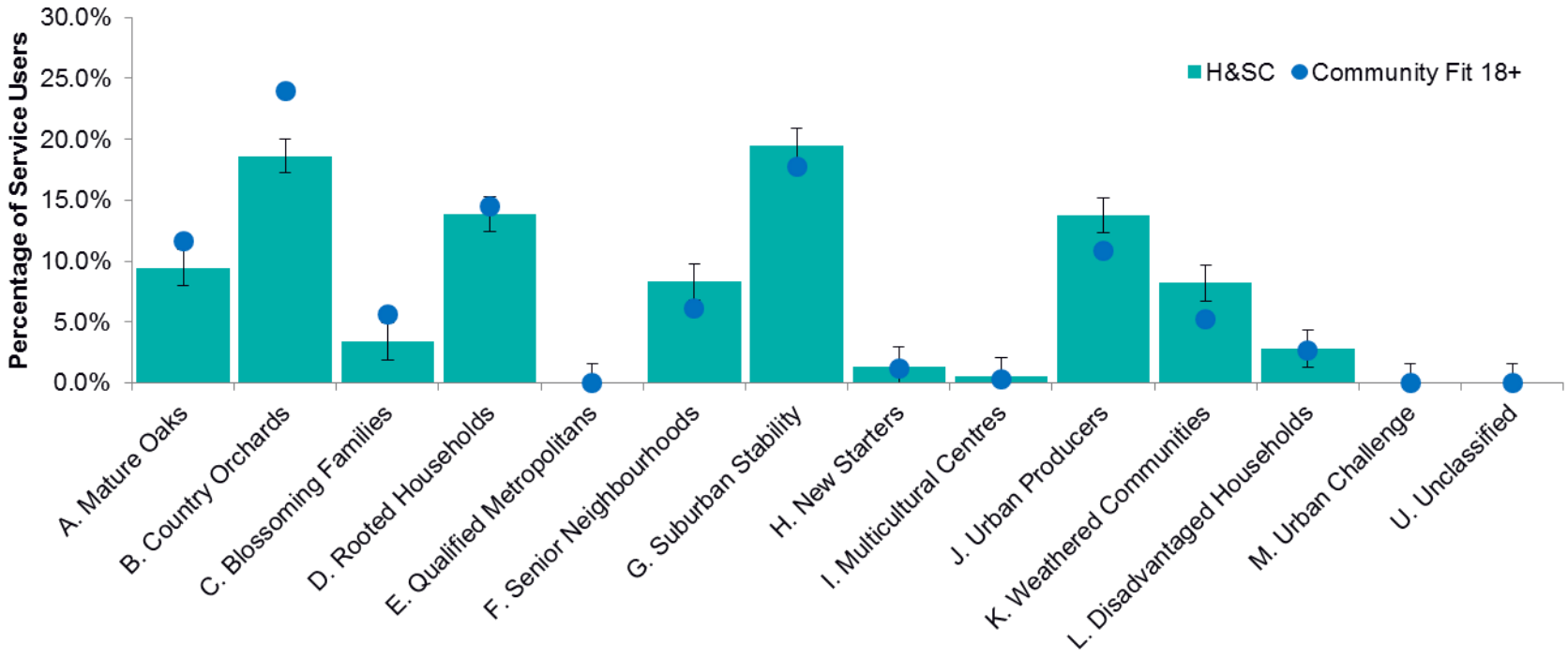
The same 2 areas appear for Very High Service Users when analysing rates as well as the numbers.

People & Places Tree Profiles

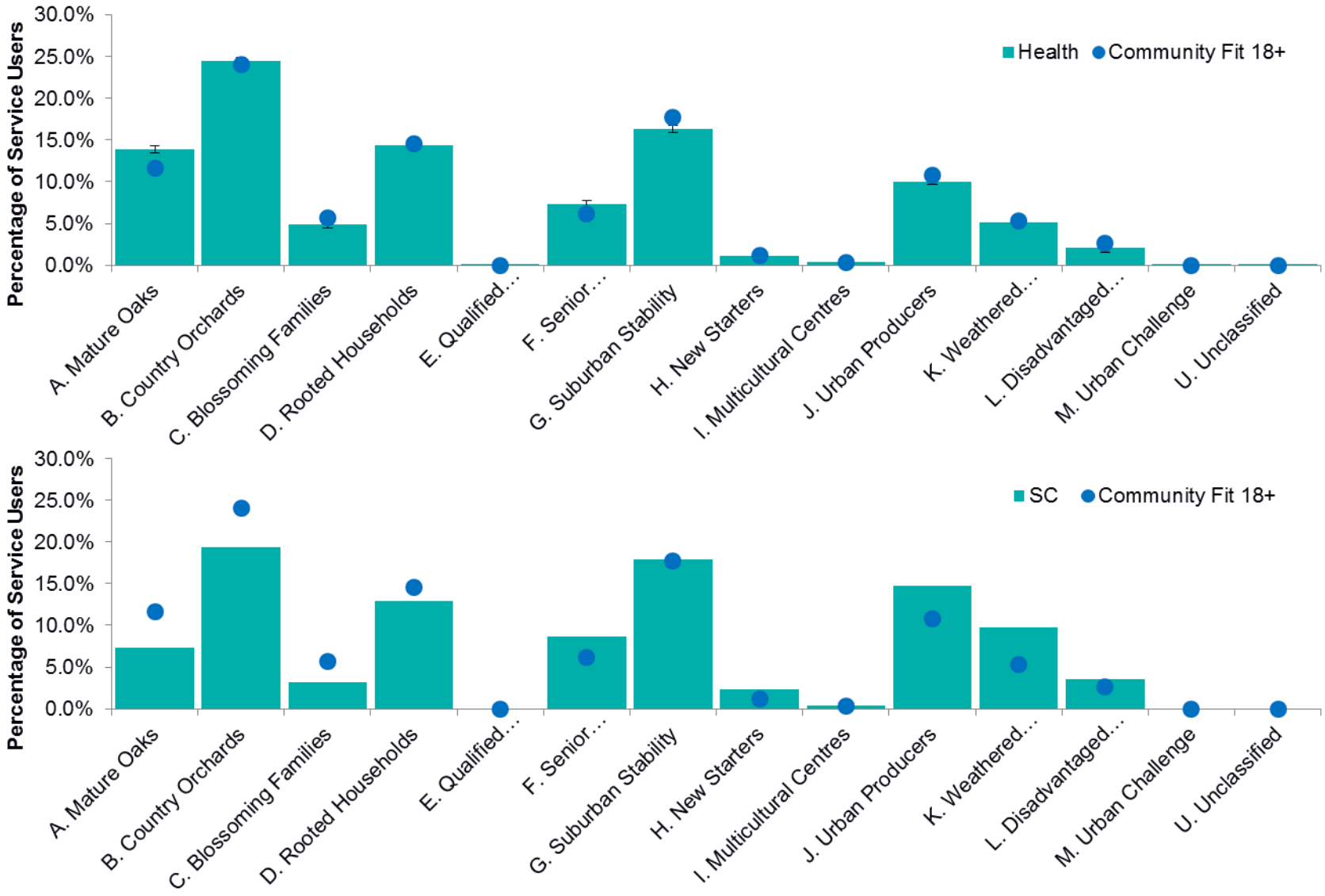
These charts illustrate the People & Places Tree Profiles for service users that are aged 18 and over for the Shropshire and Telford & Wrekin region.

The Health & Social Care Group has a lower proportion of people living in areas classified as Mature Oaks, Country Orchards and Blossoming Families and a higher proportion of Senior Neighbourhoods, Suburban Stability, Urban Producers and Weathered Communities than the overall Shropshire and Telford & Wrekin population and the Health Only Group.

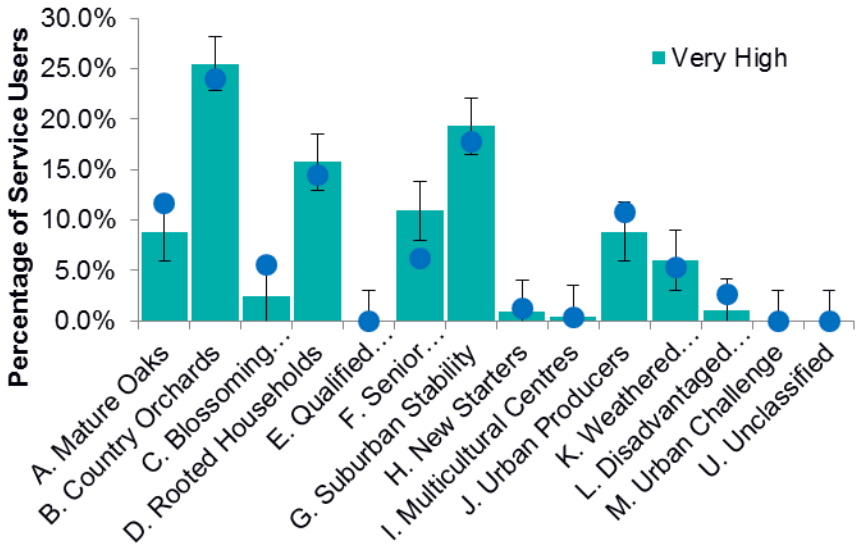
The Very High Cost Group has a lower proportion of people living in areas classified as Mature Oaks and Blossoming Families than the overall Shropshire and Telford & Wrekin population and a higher proportion of Senior Neighbourhoods.

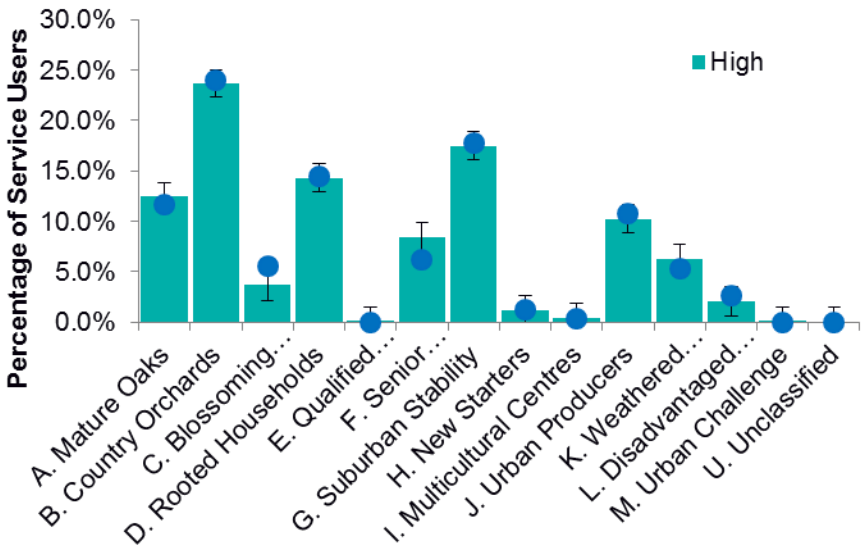


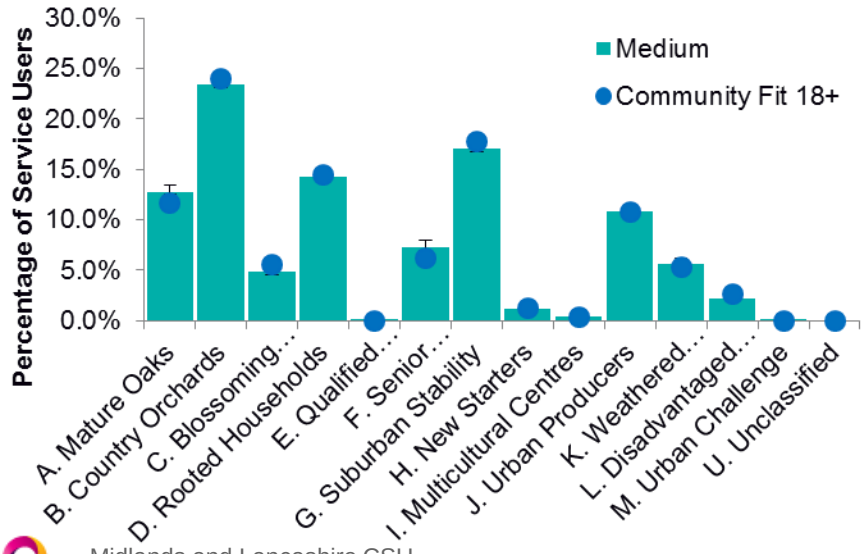
People & Places Tree Profiles

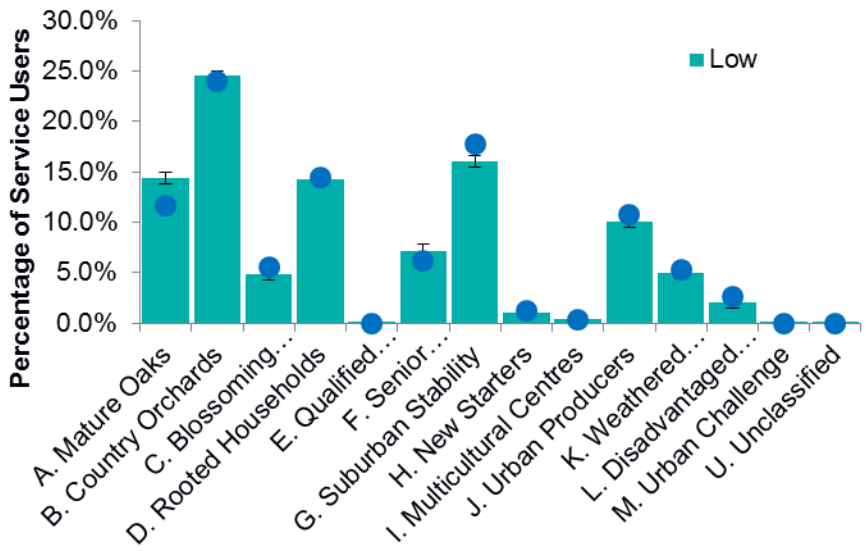


People & Places Tree Profiles – Cost Stratified Groupings





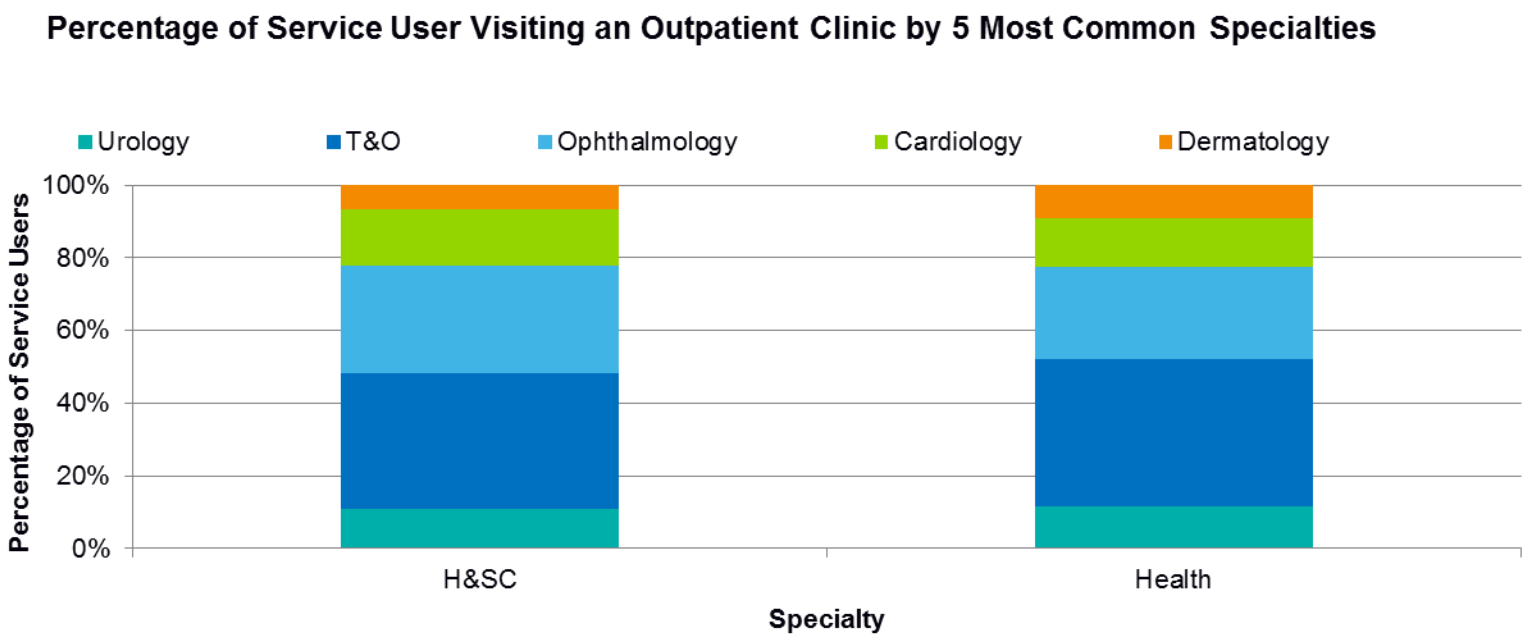




Top 5 Specialties (Based on Acute Outpatient Data)

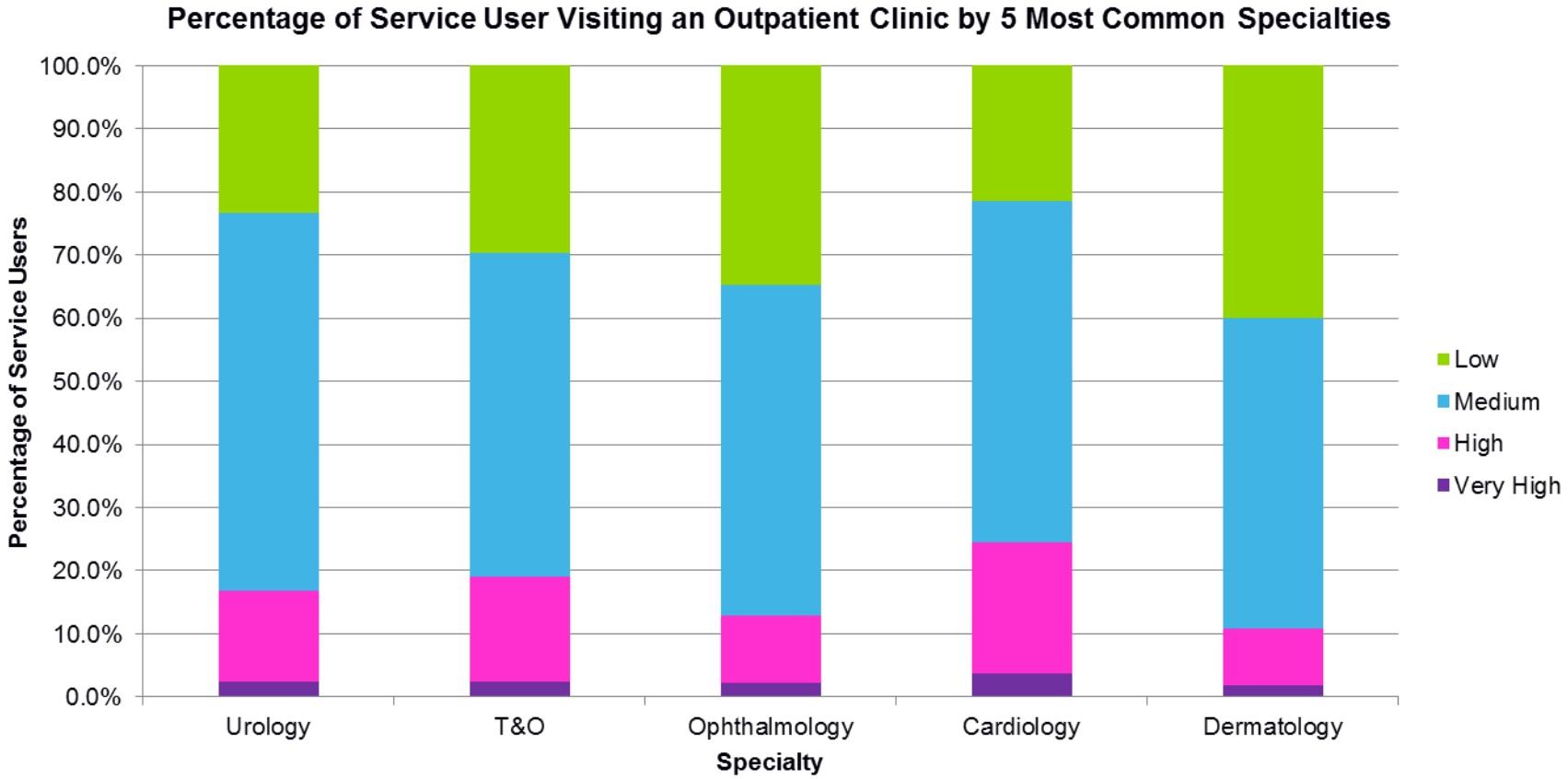
This chart illustrates the proportion of service users that visited an outpatient clinic during 2014/15 across the 5 most common acute specialties. Due to this analysis only being based on acute outpatient data it is not possible to profile Social Care only service users.

The most common specialty for those service users that visited an outpatient clinic during 2014/15 was Trauma & Orthopaedics with approximately a sixth of all the 210,858 people matched attending a clinic in 2014/15. **13% of Health and Social Care service users had an Ophthalmology outpatient appointment in comparison to 10% of Health only service users during 2014/15.** There were similar proportions of people who attended each of the top 5 specialities for Health and Social Care service users as there were for Health Only Service Users.



Top 5 Specialties (Based on Acute Outpatient Data)

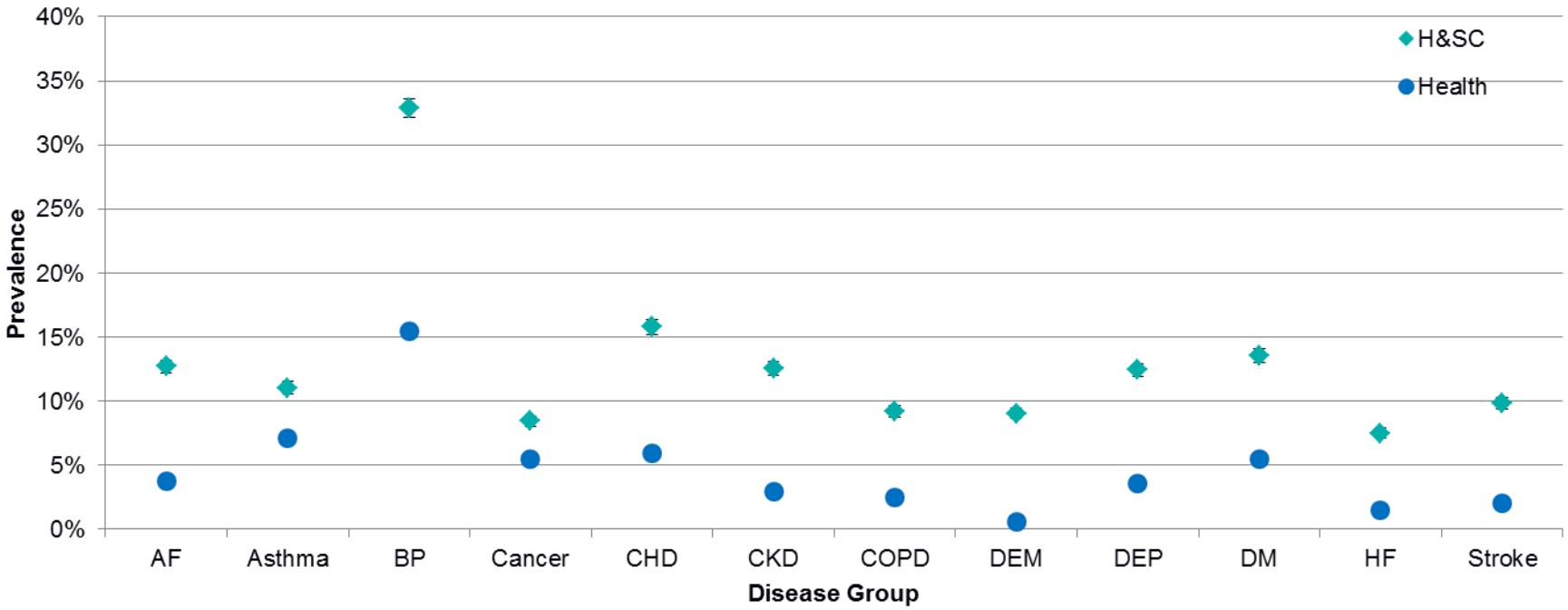
This chart illustrates the number of service users that visited an outpatient clinic during 2014/15 across the 5 most common acute specialties by cost band. **3.6% of service users that visited a Cardiology clinic, 2.4% who visited a Trauma & Orthopaedics clinic and 2.4% who visited a Urology clinic were in the Very High cost band. 40.0% of service users that visited a Dermatology clinic and 34.8% of service users that visited an Ophthalmology clinic were in the Low cost band.**



Disease Profile

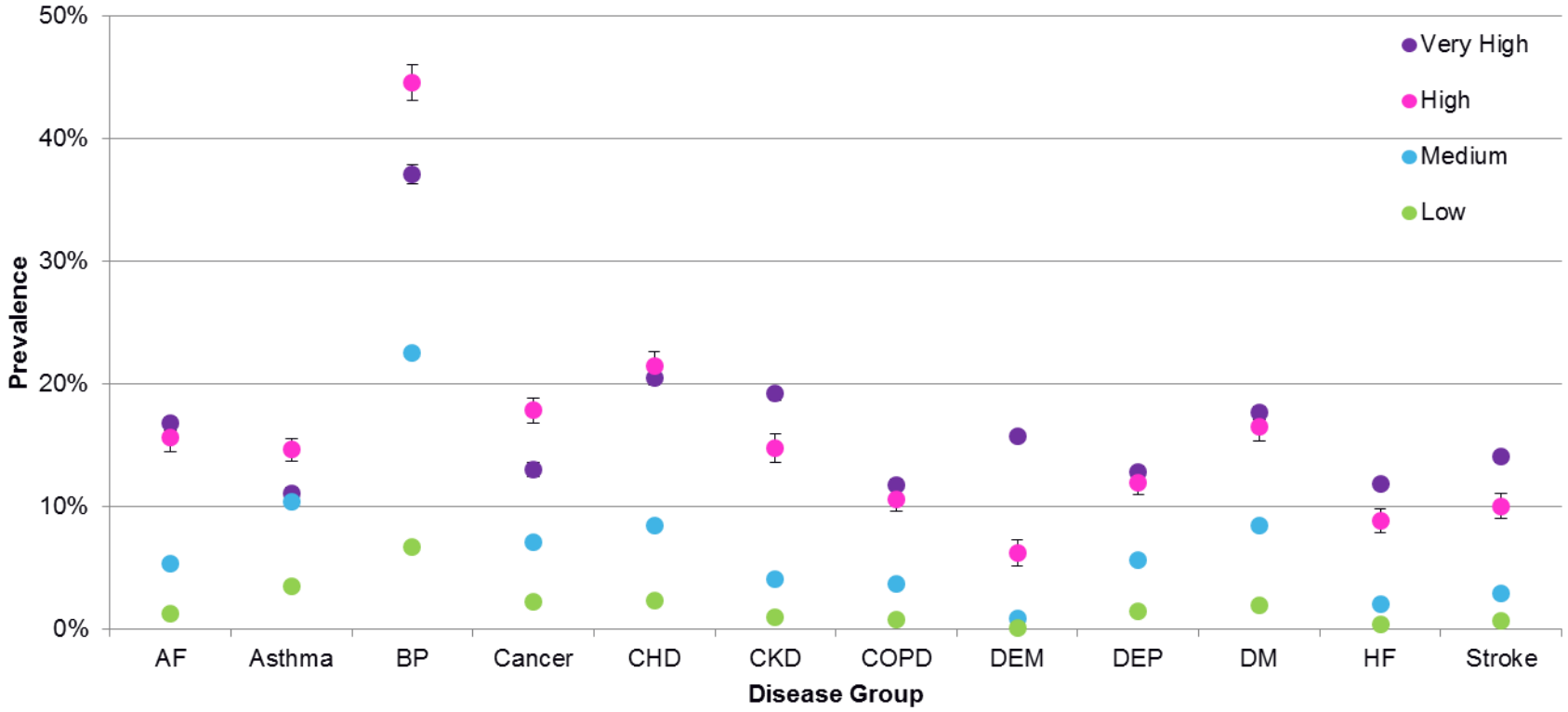
This chart illustrates the disease profiles for service users that are aged 18 and over for the Shropshire and Telford & Wrekin region. The disease profiles are based on the Quality & Outcomes Framework (QOF) definition of disease which have been applied to acute inpatient datasets for 2014/15. Due to it only being possible to ascertain disease profiles using acute inpatient data it is not possible to profile Social Care service users only.

Prevalence across the various disease groups is higher amongst H&SC service users in comparison to Health only service users. The **largest difference in prevalence rates were observed for high blood pressure 33% of H&SC service users were observed with the conditions in comparison to 16% Health only service users.**



Disease Profile – Cost Stratified Groups

Prevalence rates across the disease groups also vary across the cost bands. **High blood pressure is the most notable condition within the Low cost group with a prevalence rate of 7%.** In comparison the prevalence rate for this is 37% for the Very High cost band and 45% and 23% for the High and Medium cost bands. Dementia **is more prevalent in the Very High cost band at 16% in comparison to 6% in the High cost band.** Prevalence rates for a number of conditions such as High Blood Pressure, Asthma, Cancer and CHD are lower in the Very High cost band in comparison to the High cost band. It is also worth noting that acute data has been used to define condition due to the richness of clinical coding in this dataset. Therefore this may skew the number of people in each cost band.



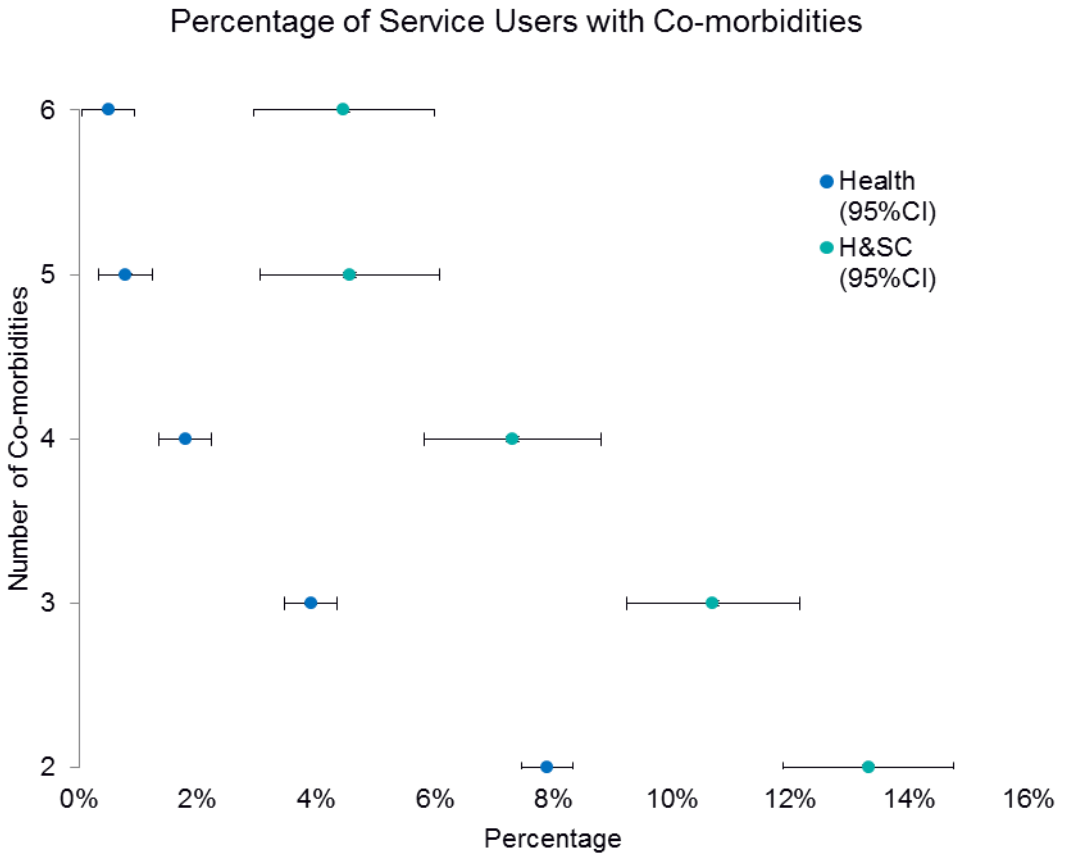
Co-Morbidity Profile

This chart shows the proportion of service users that have co-morbidities. The co-morbidities are based on the Quality & Outcomes Framework (QOF) definition of disease which have been applied to acute inpatient datasets for 2014/15. Where a service user has been categorised into 2 or more of these disease groups then they are classed as having co-morbidities. 6 represents 6 or more conditions. Due to it only being possible to ascertain disease profiles using acute inpatient data it is not possible to profile Social Care service users only.

13% of Health and Social Care service users were observed with two conditions whereas approximately 8% of health service users were observed with 2 conditions.

11% Health and Social Care service users were observed with 3 conditions in comparison to just over 4% in health service users.

This chart illustrates that co-morbidities are more prevalent amongst Health and Social Care service users in comparison to Health only service users. Up to 10 co-morbidities were recorded for H&SC users (not shown in chart).



Co-Morbidity Profile – Cost Stratified Groupings

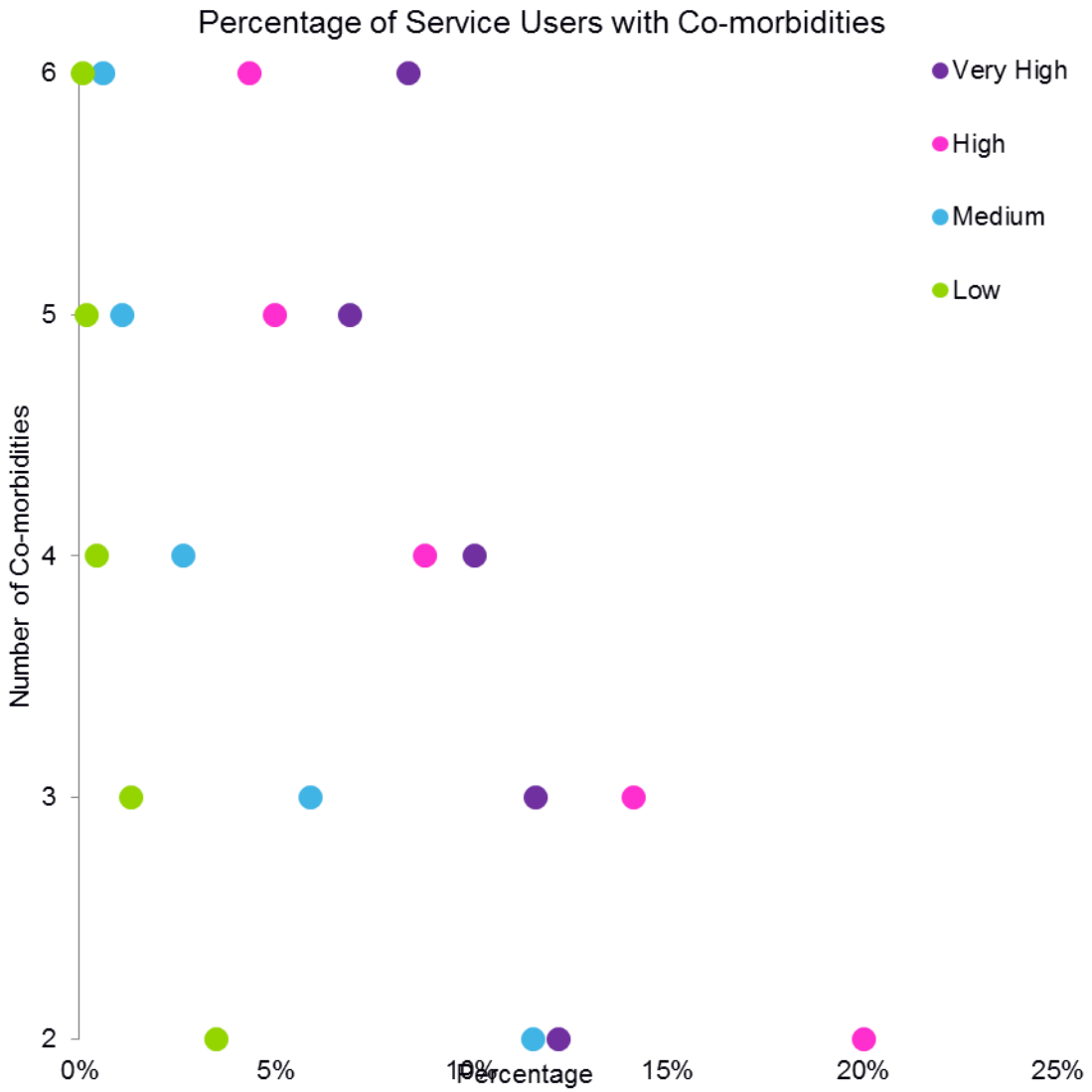
The co-morbidity profile varies across cost bands, most notably between the Low cost band and the rest where only 3% were observed with 2 conditions.

12% of service users in the Medium cost band were observed with 2 conditions.

A higher proportion of service users in the High cost group were observed with 2 or 3 conditions in comparison to the Very High cost group.

This analysis shows that co-morbidities above 3 conditions were more common amongst the Very High cost group.

8% of the Very High cost group had 6 or more co-morbidities.



Combinations of Long Term Conditions

The grid below shows the number of service users that have a range of multiple conditions and how these conditions overlap with one another.

The largest overlaps are between coronary heart disease (CHD) and high blood pressure (BP) where 9,606 service users have both. 8,540 service users have diabetes (DM) and high blood pressure. The largest overlaps between groups not including High Blood Pressure are Coronary Heart Disease and Diabetes (3,738) and Coronary Heart Disease and Atrial Fibrillation (3,729).

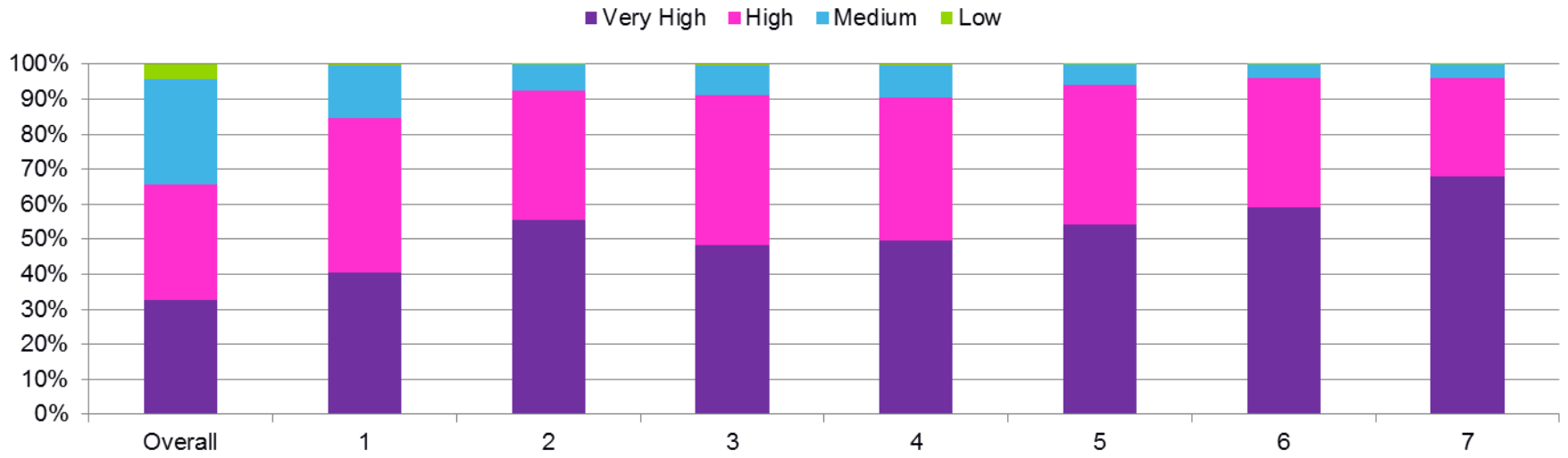
	AF	Asthma	BP	Cancer	CHD	CKD	COPD	DEM	DEP	DM	HF	Stroke
AF	9,254	1,348	6,137	1,374	3,729	1,985	1,405	760	680	2,005	2,186	1,479
Asthma		15,436	5,315	1,411	2,262	1,236	1,782	316	2,025	2,069	718	778
BP			35,145	5,270	9,606	5,295	3,532	1,559	2,940	8,540	2,946	3,657
Cancer				11,968	1,940	1,431	997	304	755	1,631	565	678
CHD					14,045	2,566	2,031	824	1,207	3,738	2,338	1,696
CKD						7,746	1,136	672	806	2,228	1,479	1,013
COPD							6,246	374	855	1,286	982	701
DEM								2,613	360	564	378	608
DEP									8,851	1,210	405	658
DM										12,791	1,270	1,266
HF											4,124	659
Stroke												5,514

Combinations of Long Term Conditions

There are a number of combinations of more than 2 Long Term Conditions that show large enough populations to examine in more detail. A random selection have been tested to examine their characteristics. A more appropriate selection can be sourced from Clinical Leads to perform full deep dives if required. The charts shows the cost banding profiles of each of the groups of conditions below. The Hypertension, Chronic Kidney Disease and Dementia combination has the highest proportion of costs in the Very High group (68%).

The initial combinations selected are:

1. Hypertension, Coronary Heart Disease and Diabetes (2,999, £18.4M)
2. Atrial Fibrillation, COPD and Diabetes (402, £4.0M)
3. Atrial Fibrillation, Hypertension, Coronary Heart Disease and Heart Failure (1,061, £9.0M)
4. Coronary Heart Disease, Depression and Diabetes (354, £3.0M)
5. Atrial Fibrillation, Hypertension, Coronary Heart Disease, Chronic Kidney Disease and Heart Failure (473, £5.0M)
6. Atrial Fibrillation, Hypertension, Coronary Heart Disease, Chronic Kidney Disease, Diabetes and Heart Failure (210, £2.6M)
7. Hypertension, Chronic Kidney Disease and Dementia (482, £6.7M)



Demographic Summary

Health and Social Care service users (not including Social Care Self Funders)

High proportion of H&SC service users were female across the older age bands.

7% of patients/clients within most deprived decile.

Lower proportion of people living in areas classified as Mature Oaks, Country Orchards and Blossoming Families and a higher proportion of Senior Neighbourhoods, Suburban Stability, Urban Producers and Weathered Communities

22% visited an Trauma & Orthopaedics clinic and 14% visited a Ophthalmology clinic

According to long term conditions registered in their secondary care record, 33% have high blood pressure and 13% or more have Atrial Fibrillation, Chronic Kidney Disease, Coronary Heart Disease or Diabetes.

13% observed with 2 long term conditions, 11% with 3 conditions and 4% with 6 or more conditions.

Health service users

Similar age and gender profile to the Shropshire and Telford & Wrekin population aged 18 and over.

4% of patients/clients within most deprived decile.

Similar People and Places Tree Profiles to the Shropshire and Telford & Wrekin population

16% visited a Trauma & Orthopaedics clinic and 10% an Ophthalmology Clinic.

According to long term conditions registered in their secondary care record, 16% have high blood pressure and 7% have Asthma.

15% observed with 2 long term conditions and 7% with 3 or more conditions

Cost Band Summary

Very High

Very high proportion in very old population (85+).

3% of patients/clients within most deprived decile.

Higher percentage of the Senior Neighbourhoods People and Places Tree profiles than Shropshire and Telford & Wrekin

19% visited a Trauma & Orthopaedics Outpatient clinic during 14/15

37% with high blood pressure, 21% with Coronary Heart Disease and 16% with dementia.

49% of service users in the Medium cost band were observed with 2 or conditions. 8% had 6 or more long term conditions.

High

Very high proportion in very old population (85+).

5% of patients/clients within most deprived decile.

More likely to live in Senior Neighbourhoods areas.

34% visited a Trauma & Orthopaedics Outpatient clinic during 14/15

45% with high blood pressure, 21% with Coronary Heart Disease and 18% with Cancer.

52% of service users in the Medium cost band were observed with 2 or conditions. 4% had 6 or more long term conditions.

Medium

Fairly even proportion of males to females across all 18+ age bands. Relatively younger population.

5% of patients/clients within most deprived decile.

More likely to live in Mature Oaks and Senior Neighbourhoods areas.

20% visited a Trauma & Orthopaedics Outpatient clinic during 14/15

23% with high blood pressure and 10% with Asthma

22% of service users in the Medium cost band were observed with 2 or more conditions.

Low

Similar age and gender profile to the Shropshire and Telford & Wrekin population aged 18 and over. Relatively younger population.

4% of patients/clients within most deprived decile.

More likely to live in Mature Oaks People Places Tree area than the Shropshire and Telford & Wrekin population.

10% visited an Trauma & Orthopaedics Outpatient Clinic during 14/15

Very low prevalence of long term conditions

Very low proportion with co-morbidities

Interactions between Services

Service Levels

The analysis covered in this section focuses firstly on the high level service group interactions with Social Care with a description for each of these covering caseload, activity and cost.

The next level of analysis focuses on the interactions between individual services with Social Care.

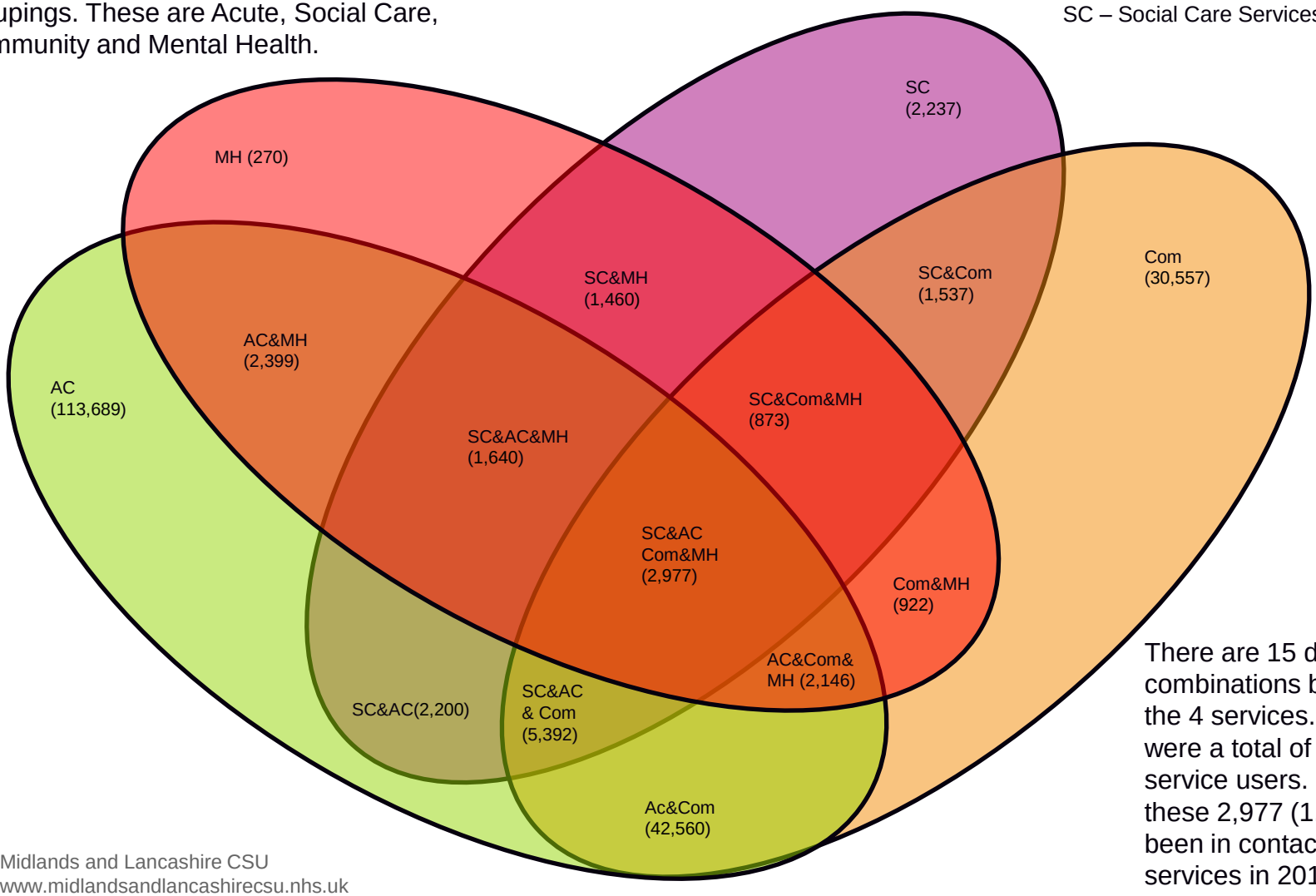
Then the final section of this report covers the interactions between groups of services e.g. urgent and nursing care etc.

High Level Services	Individual Services
Acute	Ambulance Conveyances into A&E Acute Accident & Emergency Acute Elective Inpatient Acute Emergency Inpatient Acute Outpatient
Community	Community Inpatient Community Outpatient Community Contacts Community MIU
Mental Health	Mental Health Inpatient Mental Health Outpatient Mental Health Contacts
Social Care	Social Care Assessments Social Care Packages

Interactions between Services across Health and Social Care

The Venn diagram illustrates the number of patients/clients that interact with the various services covered within the dataset. The 14 services have been grouped up into 4 groupings. These are Acute, Social Care, Community and Mental Health.

Key:
AC – Acute Services
Com – Community Services
MH – Mental Health Services
SC – Social Care Services



There are 15 different combinations between the 4 services. There were a total of 210,859 service users. Out of these 2,977 (1.4%) have been in contact with all 4 services in 2014/15.

Costs of interactions with Services across Health and Social Care

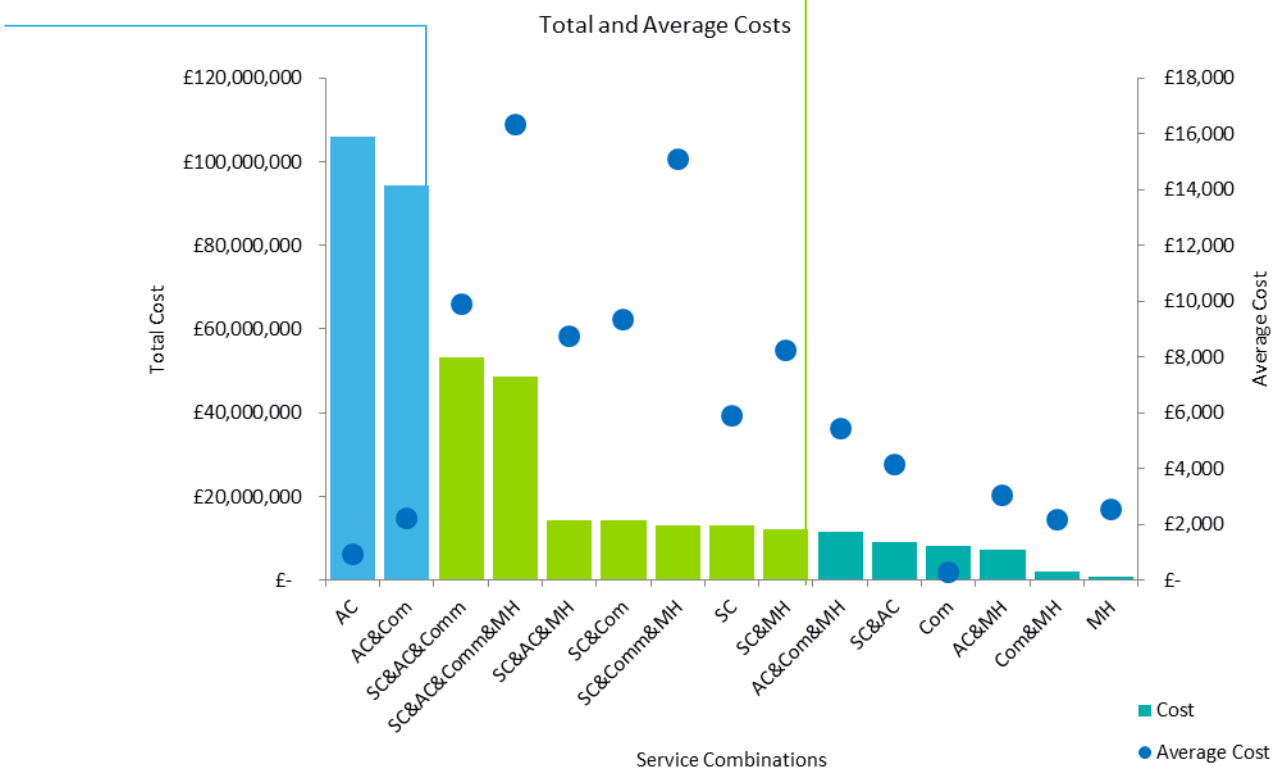
The chart below shows the total and average cost of each of the 15 service combinations shown in the Venn Diagram on the previous page. It shows that approximately three quarters of all costs were on 4 combination (Acute Only / Acute and Community / Social Care, Acute and Community / All 4 service types). The average cost of people who had all 4 service types was highest. Combinations that include Social Care services tend to have higher average costs than the other combinations.

Relatively Low Volume High Cost.

£168m spent on service users who interacted with Social Care and other Health services but with higher average cost per service user

Relatively High Volume Low Cost.

£200m spent on service users who interacted with Acute and Acute & Community Services but with the lowest average cost per service user



Interactions between High Level Services and Costs across Health and Social Care (Detail)*

Services	Service Users	Cost	Average Cost	SC Costs	AC Costs	Com Costs	MH Costs
SC	2,237	£13,153,480	£5,880	£13,153,481	£0	£0	£0
AC	113,689	£105,788,858	£931	£0	£105,788,852	£0	£0
Com	30,557	£8,161,876	£267	£0	£0	£8,161,876	£0
MH	270	£680,532	£2,520	£0	£0	£0	£680,532
SC&AC	2,200	£9,139,464	£4,154	£4,680,547	£4,458,917	£0	£0
SC&Com	1,537	£14,353,464	£9,339	£12,199,205	£0	£2,154,259	£0
SC&MH	1,460	£12,015,649	£8,230	£8,701,874	£0	£0	£3,313,775
AC&Com	42,560	£94,394,268	£2,218	£0	£78,442,908	£15,951,353	£0
AC&MH	2,399	£7,272,203	£3,031	£0	£3,340,863	£0	£3,931,340
Com&MH	922	£2,009,759	£2,180	£0	£0	£484,565	£1,525,194
SC&AC&Comm	5,392	£53,327,742	£9,890	£21,330,030	£22,526,484	£9,471,227	£0
SC&AC&MH	1,640	£14,365,796	£8,760	£7,164,909	£2,632,164	£0	£4,568,723
SC&Comm&MH	873	£13,180,744	£15,098	£9,964,992	£0	£732,141	£2,483,611
AC&Com&MH	2,146	£11,656,157	£5,432	£0	£6,358,070	£1,781,810	£3,516,276
SC&AC&Comm&MH	2,977	£48,647,165	£16,341	£21,869,316	£13,342,951	£4,736,344	£8,698,554
Total	**210,859**	**£408,147,156**	**£1,936**	**£99,064,354**	**£236,891,209**	**£43,473,575**	**£28,718,005**

Interpretation of the Analysis

2X2 Table

A table showing the number of Social Care service users and how many of them that do and do not interact with other services. This is highlighted in the dark shaded part of the 2x2 table.

Venn Diagram

A diagram showing the number of Social Care service users and the number that overlap with other services. This is highlighted in the area that overlaps between the two circles in the diagram.

Odds Ratio

A chart illustrating the odds ratio. If an odds ratio is >1 this means that Social Care service users are more likely to interact with a service in comparison to non Social Care service users. If the odds ratio is less than one then this means Social Care service users are less likely to interact with a service in comparison to non Social Care service users.

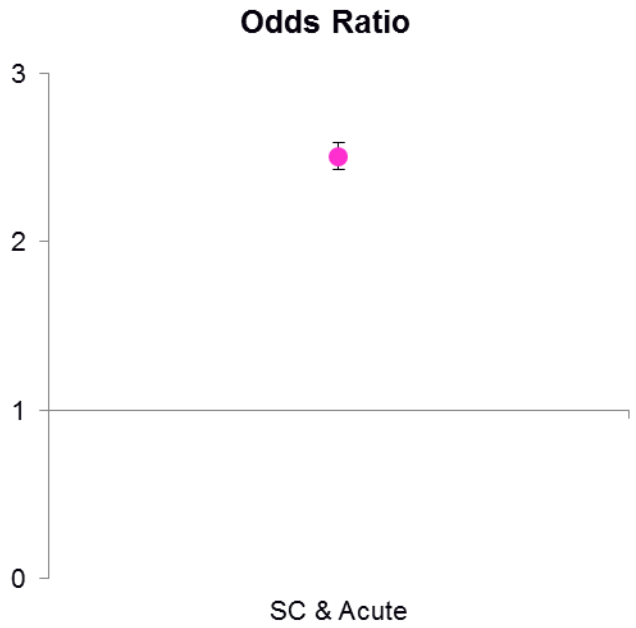
Cost Bands

A chart illustrating the breakdown of the total cost Social Care services with other services by cost bandings. Cost bandings based on individual cost percentiles of 0-50% (low), 50-90% (medium), 90-98% (high) and 98-100% (very high).

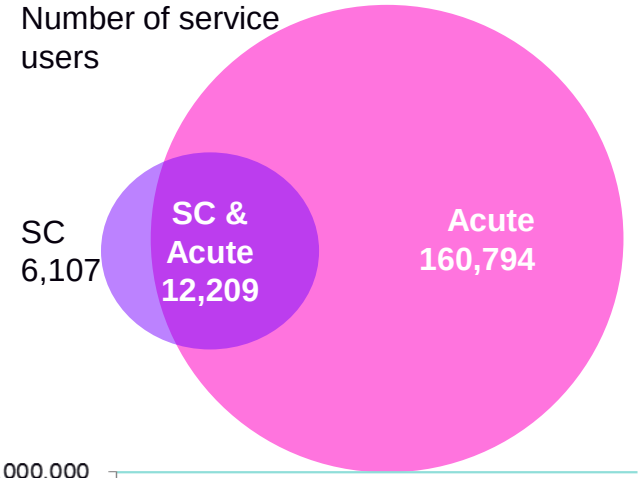
Interactions between Social Care & Acute Services

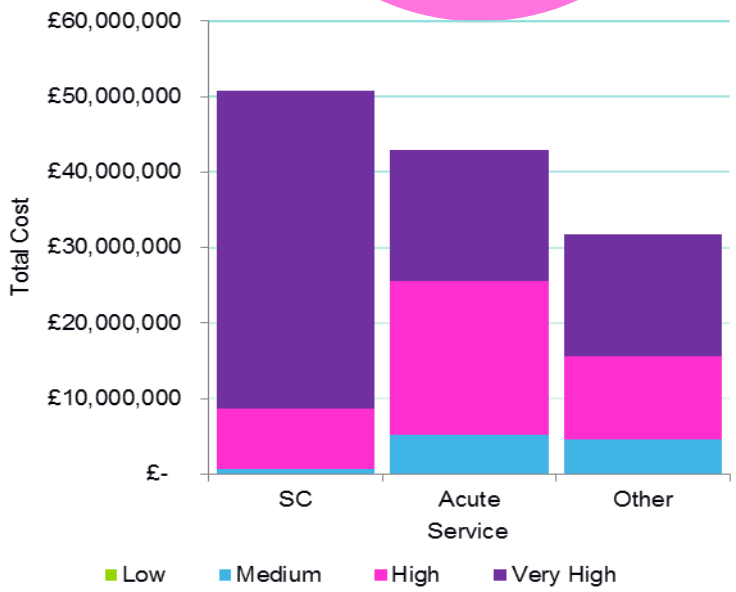
2x2 Table	SC	Other
Acute	12,209	160,794
Other	6,107	201,679

12,209 (5.8%) out of 210,859 matched service users used Social Care and Acute services



Odds ratio of 2.5 meaning that Social Care service users are almost 3 times more likely to interact with acute services compared to non Social Care service users.





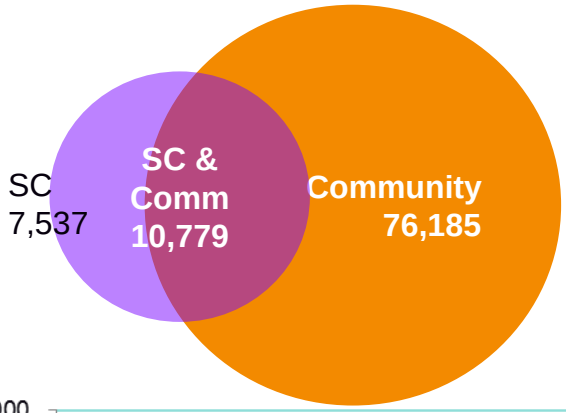
Majority of spend on service users in the Very High and High cost bands equating to £115.0m (92%) out of a total of £125.5m.

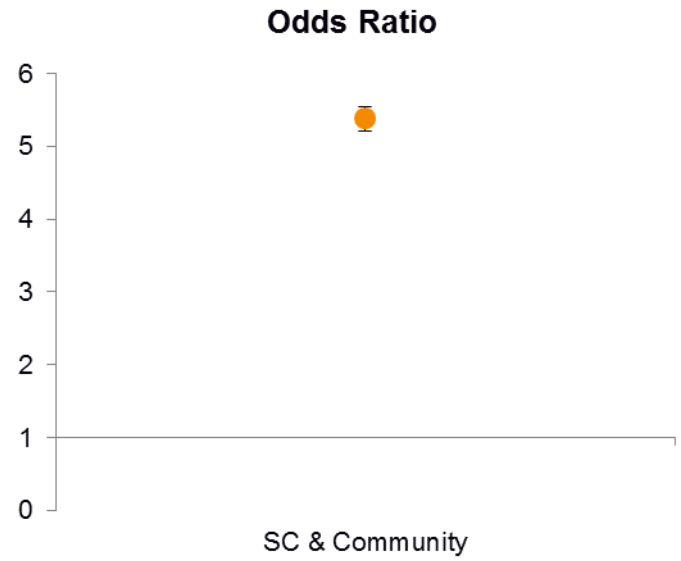
Interactions between Social Care & Community Services

2x2 Table	SC	Other
Community	10,779	76,185
Other	7,537	286,288

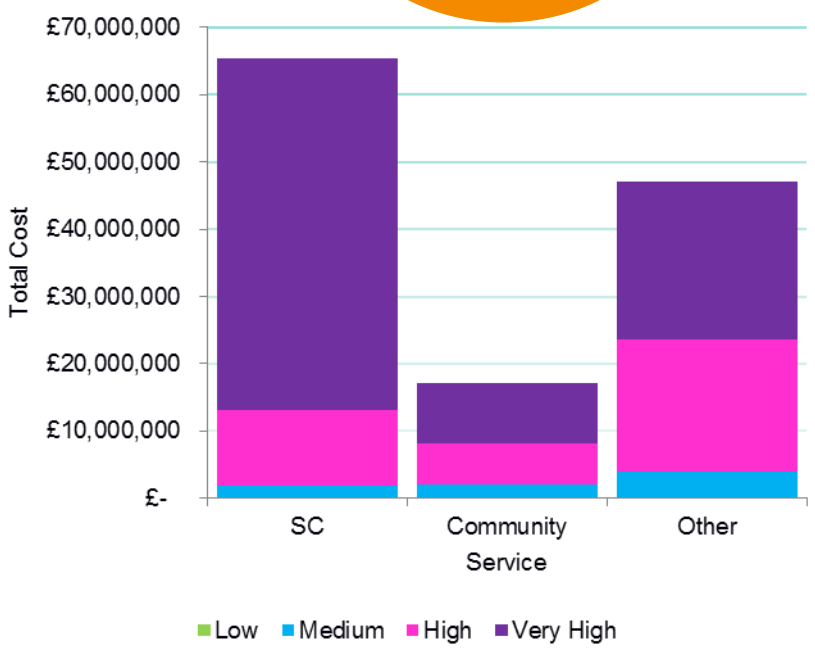
10,551 (5.0%) out of 210,859 matched service users used Social Care and Community services

Number of service users





Odds ratio of 5.4 meaning that Social Care service users are over 5 times more likely to interact with community services compared to non Social Care service users.



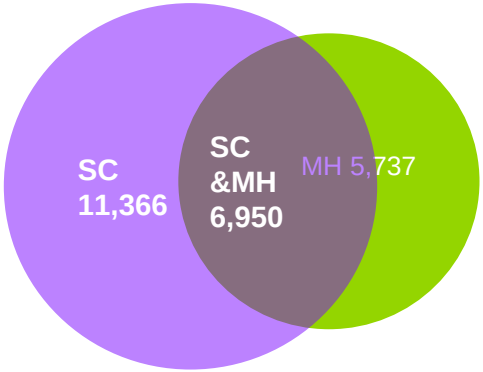
Majority of spend on service users in the Very High and High cost bands equating to £121.5m (94%) out of a total of £129.5m.

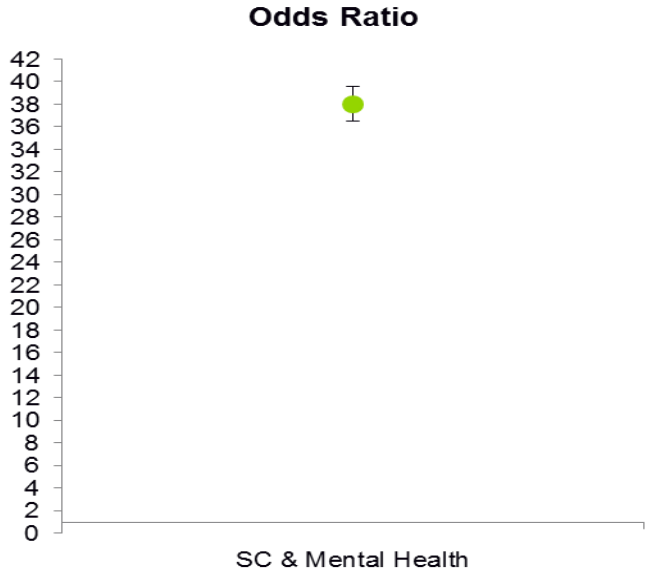
Interactions between Social Care & Mental Health Services

2x2 Table	SC	Other
Mental Health	6,950	5,737
Other	11,366	356,736

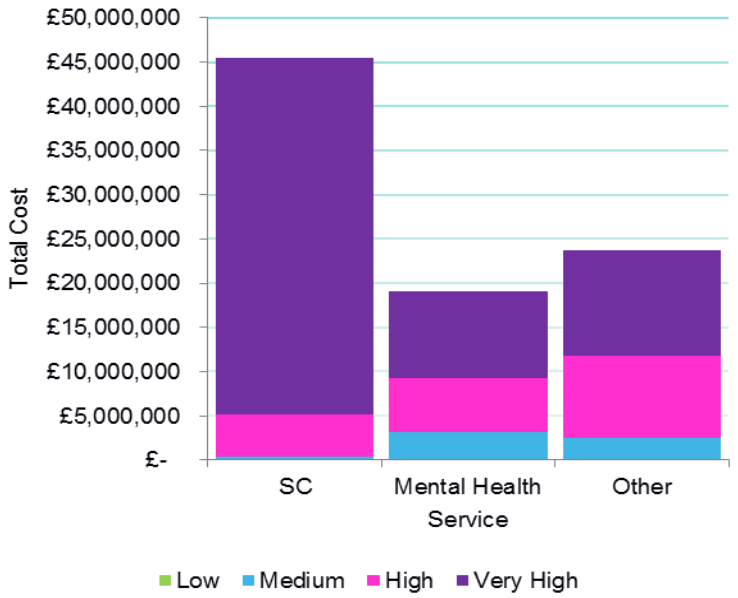
6,950 (3.3%) out of 210,859 matched service users used Social Care and Mental Health services

Number of service users





Odds ratio of 38.0 meaning that Social Care service users are 38 times more likely to interact with Mental Health services compared to non Social Care service users.



Majority of spend on service users in the Very High and High cost bands equating to £66.1m (93%) out of a total of £88.2m.

Interactions between individual Services across Health and Social Care

The grid below shows the number of service users that interacted with each one to one combination of services within the dataset. There were a high number of service users that had an outpatient appointment and a community contact. There also high numbers of people who had an outpatient appointment and a non emergency inpatient spell or an outpatient appointment and an A&E attendance. A high level of interaction existed between urgent care based services too (Ambulance, non emergency IP spell and A&E).

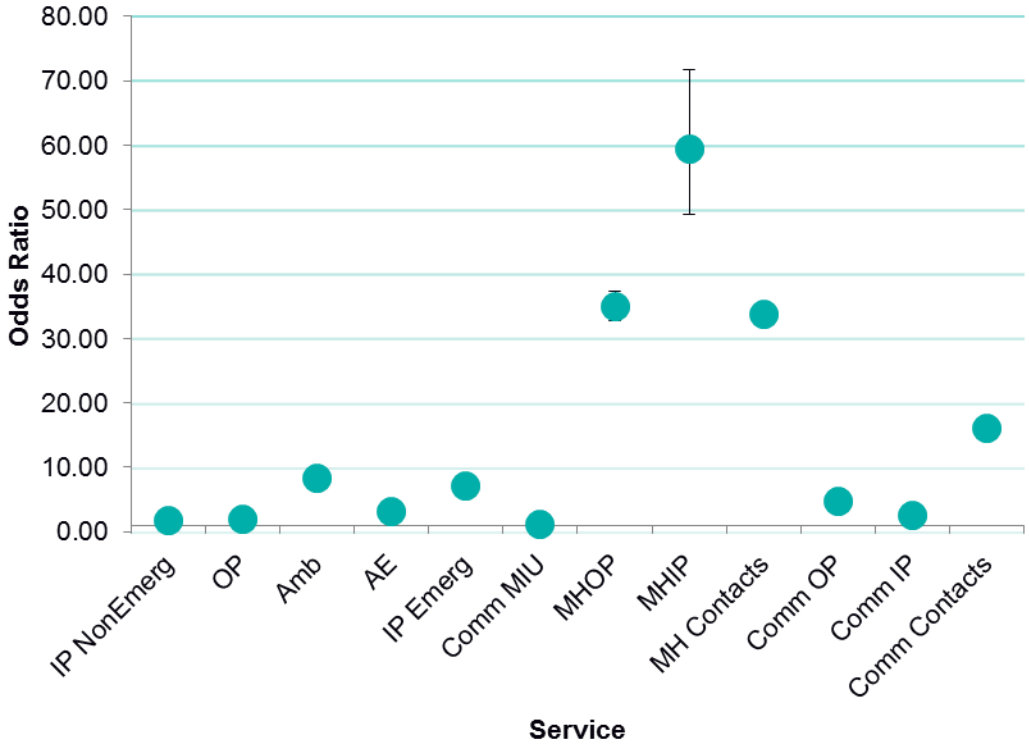
8,220 had a social care package, of which 5,996 had a social care assessment in the period of 14/15. 4,860 of these service users had one or more community outpatient attendance and 4,633 had one or more community contact. A large proportion of service users with a Social Care package interacted with urgent care spanning emergency inpatient spells (2,933), accident and emergency (3,170) and ambulance conveyances into A&E (2,639).

	IP Emerg	IP NonEmerg	Amb	OP	AE	SC Assess	SC Packages	Comm MIU	MHOP	MHIP	MH Contacts	Comm OP	Comm IP	Comm Contact
IP Emerg	26,873	7,628	12,708	19,191	18,829	5,181	2,933	1,014	2,134	214	2,773	11,341	87	8,419
IP NonEmerg		39,171	4,284	35,767	10,135	2,761	1,175	1,380	586	74	1,458	13,767	256	5,753
Amb			21,466	12,325	21,460	4,715	2,639	847	2,044	281	2,858	8,319	73	6,341
OP				134,886	33,283	8,573	3,978	4,385	2,004	257	5,113	40,381	301	14,668
AE					63,847	6,206	3,170	2,191	2,546	348	4,130	14,991	120	8,115
SC Assess						16,092	5,996	499	2,077	397	5,096	8,068	55	6,999
SC Packages							8,220	235	1,356	181	2,372	4,860	40	4,633
CHC								10,034	114	32	451	3,369	55	705
MHOP									3,891	251	1,440	1,778	44	1,489
MHIP										582	556	248	2	136
MH Contacts											10,224	4,714	22	3,463
CommOP												74,210	453	18,767
CommIP													595	84
Comm Contact														24,807

Odds Ratios between Social Care and Individual Health Services

The chart below illustrates the odds ratio which measures the level of association between Social Care service users and other services and the table to right displays the odds ratios with their confidence intervals. An odds ratio > 1 indicates that Social Care service users are more likely to interact with a particular health service.

This means that service users who receive Social Care services are 59 times more likely to experience a Mental Health Inpatient Stay, 35 times more likely to also have a mental health outpatient and 34 times more likely to also have a mental health contacts compared to the rest of the population aged 18 and over.



Service	Odds Ratio	Lower CI	Upper CI
IP NonEmerg	1.76	0.07	0.07
OP	1.99	0.06	0.06
Amb	8.29	0.29	0.30
AE	3.14	0.10	0.10
IP Emerg	7.18	0.24	0.25
Comm MIU	1.17	0.10	0.11
MHOP	34.99	2.24	2.40
MHIP	59.42	10.14	12.23
MH Contacts	33.76	1.41	1.47
Comm OP	4.61	0.14	0.14
Comm IP	2.60	0.58	0.74
Comm Contacts	16.04	0.52	0.54

Primary Care Analysis

Methodology

The following section is based on data for 3 GP practices in Shropshire and Telford & Wrekin (Stirchley Medical Practice, Oakengates Medical Practices and Haughmond View Medical Practice) and has been developed as a proof of concept to show how the overall analysis can be enhanced with the addition of a full primary care dataset. Data for Bridgnorth Medical Practice was shared but has been excluded as it was not comparable with the other Practices.

The data for all 3 practices was matched with the data on Acute, Community, Mental Health and Social Care costs from the main part of the report using the same pseudonymised NHS Number. The percentile groups were not recalculated for the 3 practices to ensure consistency across the whole report. Anyone who was not already identified in a Cost or Service Group has been identified in a new Primary Care group and their activity shown against this group. This does not assume they have had any activity in Primary Care.

The analysis cover 4 areas:

- **Prescribing –** The average number of prescriptions per person.
- **Primary Care Activity –** The average number of Surgery, Telephone and Home Based Consultations per person based on a selection of READ Codes that have been checked by the Practices involved.
- **Long Term Conditions –** People currently on a Long Term Condition Register based on the QOF rules applied at READ Code level.
- **Co-morbidities –** The number of Long Term Condition Registers that each individual is currently on based on the list of registers above.

The overall population aged 18 and over registered with the 3 practices that was used in the analysis is 28,366. Of these:

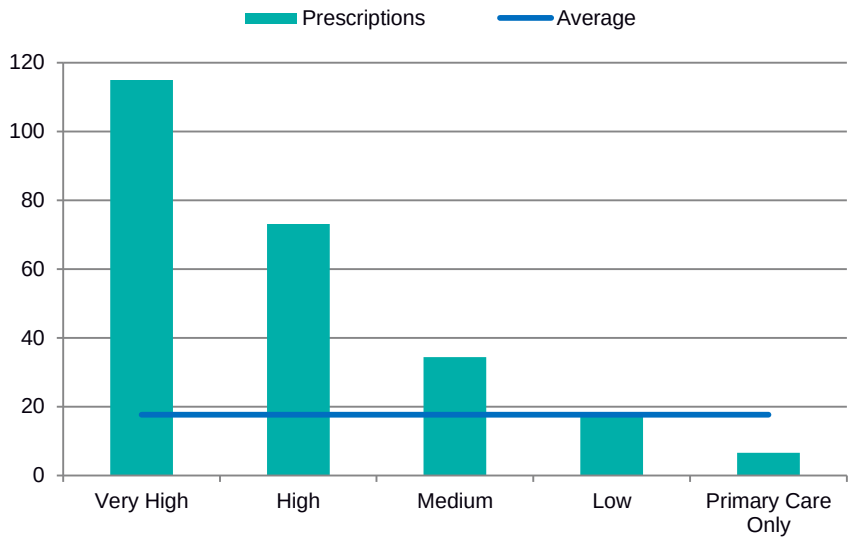
- 13,031 were matched against the other datasets and 15,335 were only in the Primary Care data
- 11,591 had at least 1 Acute service (Inpatient, Outpatient or A&E)
- 3,747 had at least 1 Community service (Inpatient, Outpatient, MIU or Contact)
- 788 had at least 1 Mental Health service (Inpatient, Outpatient or Contact)
- 1,261 had at least 1 Social Care service (Assessment or Package of Care)

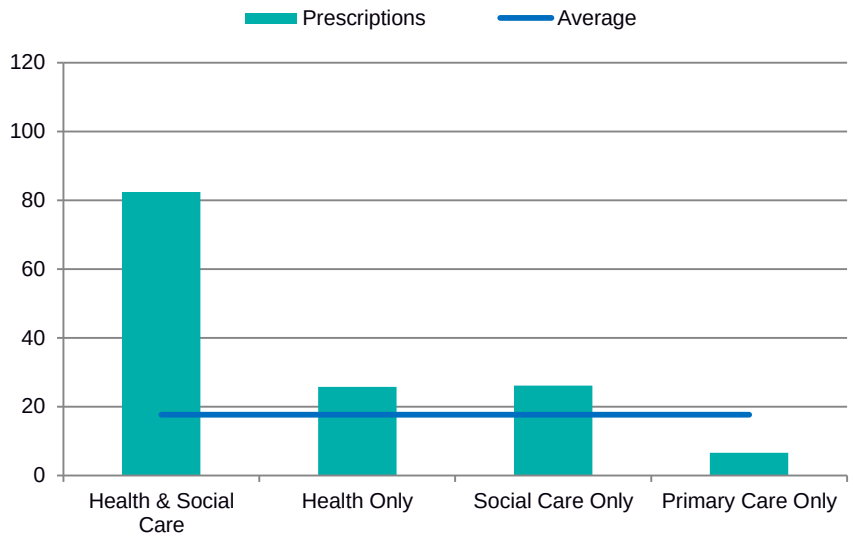
Primary Care Prescribing

The charts below show the average number of prescriptions per person by each of the Cost and Service Groups.

The average number of prescriptions per person increases in line with the cost groups with the Very High Cost Group 57% higher than the High Cost Group and more than 3 times higher than the Medium Cost Group.

The average number of prescriptions is more than 3 times higher for the Health & Social Care Group than both the Health Only and Social Care Only Groups.



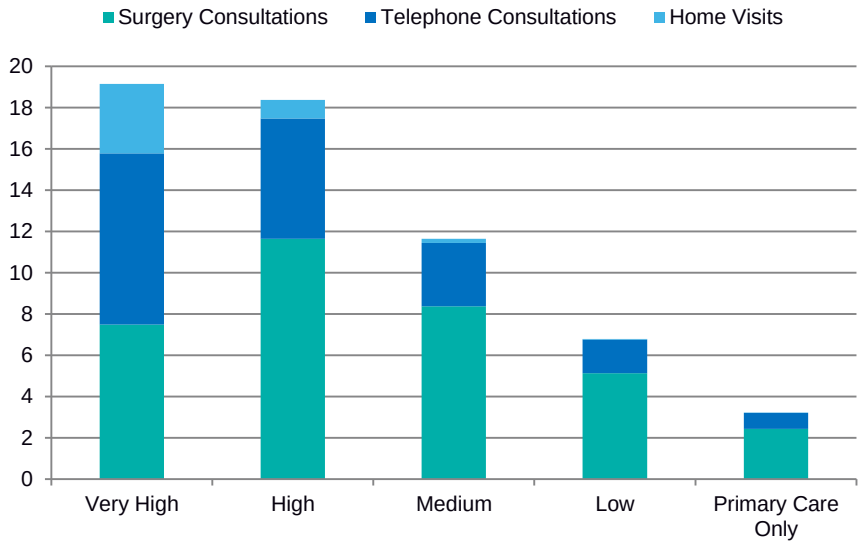


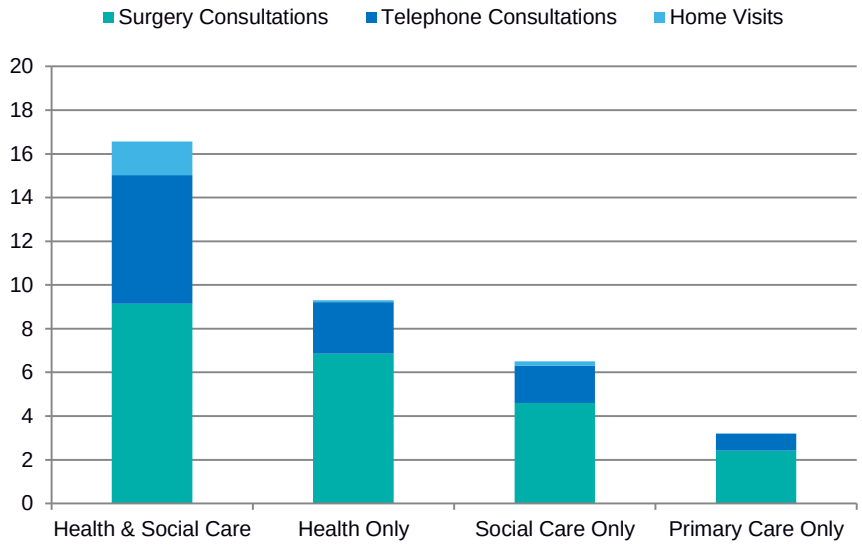
Primary Care Consultations

The charts below show the average number of Surgery Consultations, Telephone / Third Party Consultations and Home Visits per person by each of the Cost and Service Groups.

The Very High Cost Group had the highest average number of consultations although the High Cost Group had the highest average number of Surgery Consultations. 61% of the average number of consultations for the Very High Cost Group were Telephone Consultations or Home Visits.

The Health and Social Care Group has the highest average number of consultations compared to the other service groups as well as the highest number of each type. Almost all the Home Visits were in the Health and Social Care (59%) and the Health Only (34%) Groups.





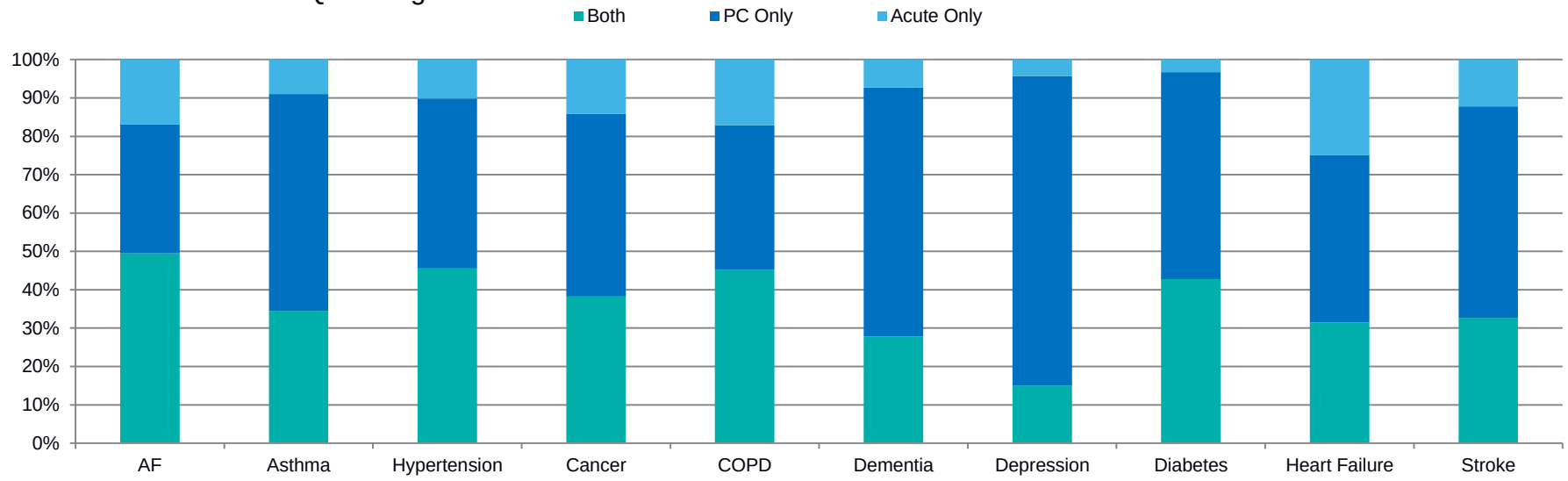
Long Term Conditions Methodology Comparison

The chart below compares the 2 methods of calculating Long Term Conditions (SUS data and Primary Care data) and shows the percentage overlap and the percentage of each Long Term Condition that was identified by each method individually. The CHD and CKD Registers were not calculated from the Primary Care data and the Epilepsy, Rheumatoid Arthritis and Peripheral Arterial Disease Registers were not calculated from the SUS data so have not been compared.

Atrial Fibrillation, COPD and Diabetes have the highest proportion identified in both dataset although this was 50% or lower for all of them.

The largest difference is for people identified in the Primary Care dataset but not in the SUS dataset and in particular there is a high proportion of people on the Dementia and Depression Primary Care registers that were not identified from SUS.

Heart Failure, Atrial Fibrillation and Diabetes show a high proportion of people identified from the SUS data who were not on a Primary Care Register. This may be an issue with the conversion of READ Codes to ICD10 codes or could be under diagnosis of these diseases on the QOF Registers.

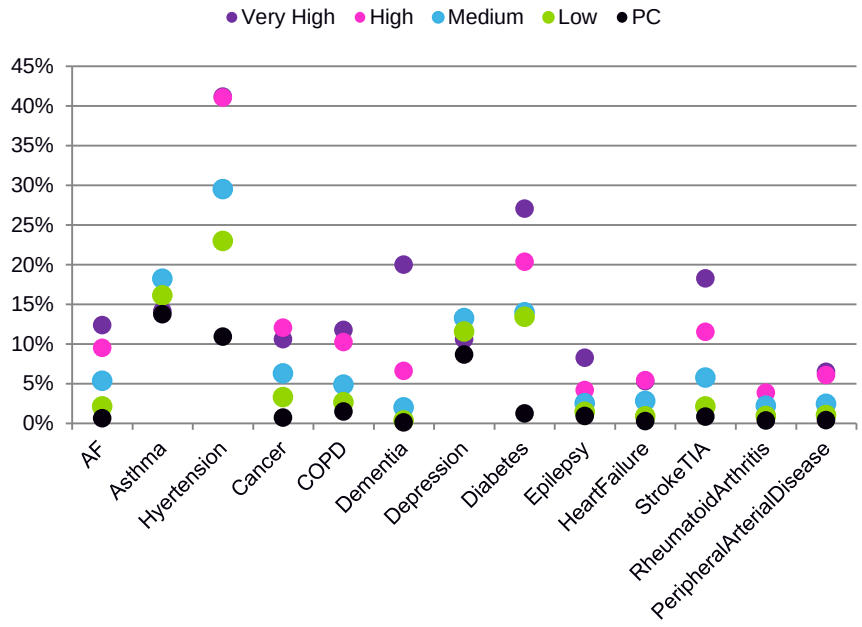


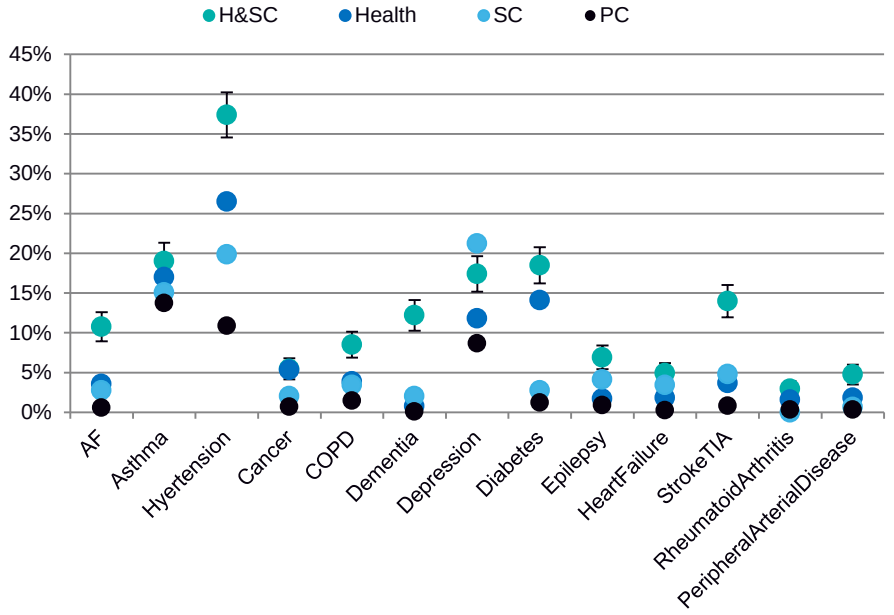
Long Term Conditions

The charts below show the prevalence rates of each Long Term Condition using the Primary Care data. The rates are different to the rates using Acute data on pages 29 and 30 but broadly show a similar pattern.

Hypertension has the highest prevalence rate in all groups other than the Primary Care Group where Asthma has the highest rate. Dementia is significantly more prevalent in the Very High and Health & Social Care than the comparator groups.

The prevalence rates for Asthma and Depression are similar across the costs and service groups suggesting these have little impact on the overall cost of an individuals pathway.



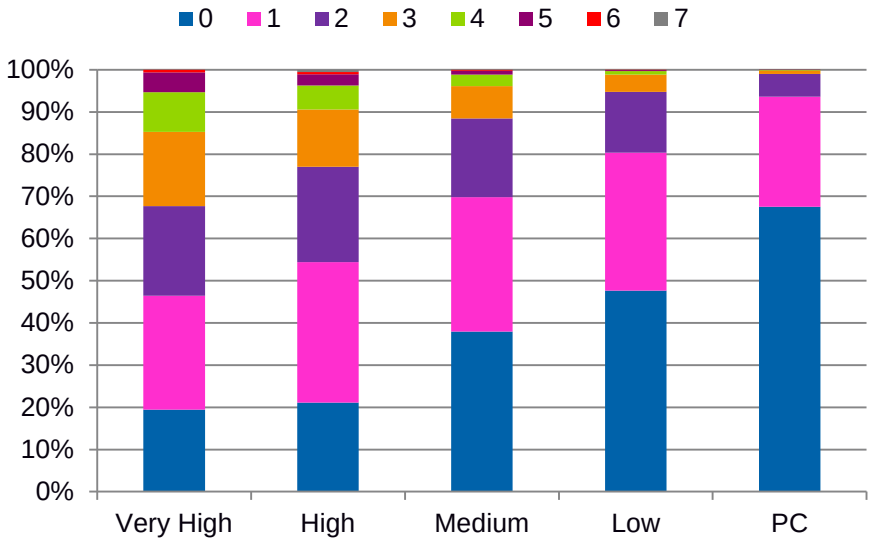


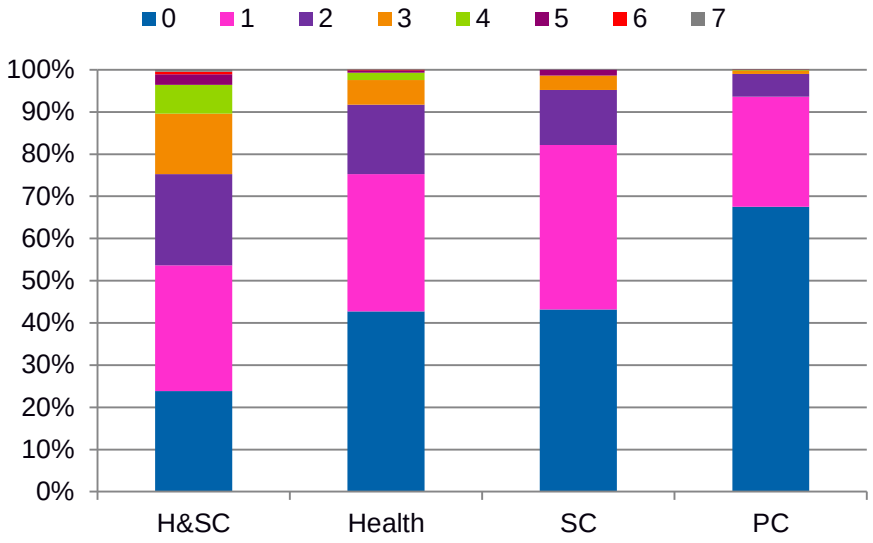
Co-Morbidities

The charts below show the number of Long Term Condition Registers each person is currently on by each of the Cost and Service Groups.

There is a higher proportion of people in the Very High Cost Group on 2 or more registers (54%) than the High (46%), Medium (30%) and Low (20%) Cost Groups. 32% of the Very High Cost Group had 3 or more Long Term Conditions compared to 23% in the High Cost Group.

There is a higher proportion of people in the Health and Social Care Group on 2 or more registers (46%) than the Health Only (25%), Social Care (18%) and Primary Care (6%) Groups. 25% of the Health and Social Care Group had 3 or more Long Term Conditions compared to 8% in the Health Only Group.





Additional Analysis using Primary Care Data

The slides in this section provide an overview of what is possible by analysing a linked dataset that includes Primary Care data. A number of other analyses are also possible with a full Primary Care dataset for all the practices with Shropshire and Telford & Wrekin. These include:

- Providing a whole picture of the patients registered with the CCGs to examine if the demographics are different for the population who do not use any Acute, Community, Mental Health or Social Care services over the year
- Improving the Long Term Condition coverage would allow the analysis of Prevalence Rates and Co-Morbidities in more detail.
- Developing an agreed methodology to cost the prescribing and consultation data so that Primary Care costs can be included in the financial analysis. This would allow the cost pyramid to be updated and show whether the same Very High Cost people also use a disproportionate amount of Primary Care resources.
- Analysing Mortality Rates across the Cost (Very High, High, Medium, Low and Primary Care) and Service (Health & Social Care, Health Only, Social Care Only and Primary Care) Groups to understand what the opportunity to intervene and change pathways in each group. For example, if there is a high mortality rate in a particular cost group it would show that there is limited opportunity to change these pathways.

Recommendations

Recommendations

A large proportion of spend on Social Care Packages, Mental Health Contacts and Mental Health Inpatients were on Very High cost service users. There may be scope for efficiencies to be gained and for the quality of services to be improved by removing duplication between these two types of services.

A larger proportion of females receive Health and Social Care services, especially in the older age groups, this may be due to the female population having a longer life expectancy than males and as a result living as a single occupier. Living arrangement is not included in the dataset so this as a cause can not be proved based on the analysis shown. Improving the life expectancy of males may delay the need for H&SC services in the female population.

Dementia, Atrial Fibrillation, Coronary Heart Disease, Chronic Kidney Disease, Diabetes and Stroke are more prevalent amongst the Very High Cost group. Co-morbidities are also more common amongst this group. This might suggest the basis for at least a component of a frailty register at practice level and in turn a focus for joint Health and Social Care case review.

Social Care service users are more likely to interact with Mental Health and Community services compared to other services. There may be scope to integrate services within these and to also identify potential future Social Care service users from within these services.

A large proportion of service users with a Social Care package interacted with urgent care. This may be an indication that more effective interventions are needed in the community to reduce the need for urgent care.

Appendix

Appendix A. People & Places Tree Profile Descriptions

People & Places geo-demographic classifications use census and lifestyle data to classify people by where they live. Each postcode has a classification which describes what lifestyle and characteristics of people that live there are likely to have. The postcode used in the dataset is based on residence at the moment in time the data was captured therefore may not represent an individuals lifestyle across years preceding this.

These are the Tree categories along with a brief description of each.

A. Mature Oaks – Smoking is least common amongst members of this Tree. Although they tend to be middle-aged or older, they do enjoy a good standard of living with some exercise being taken and a reasonable level of subscription to private health insurance.

B. Country Orchards –These people take a moderate amount of exercise and smoking is below average. The incidence of private health insurance is not high but this group has an active, working lifestyle and reasonable living conditions. As a result, their health is generally good.

C. Blossoming Families – Blossoming Families tend not to smoke and some take regular exercise. Their standard of living is good and they are a relatively young age group. Consequently, there is little ill health apart from the older members of the Tree, where there is some long-term illness.

D. Rooted Households – Smoking is uncommon and some regular exercise is taken. The majority are in good health and with low deprivation levels, health prospects are generally good.

E. Qualified Metropolitans – The incidence of smoking is below average but only around one quarter of Qualified Metropolitans take regular exercise. Since the population is mainly young and there is relatively little deprivation, health problems are scarce. Less than one quarter have private health insurance and this level is decreasing.

Appendix A. People & Places Tree Profile Descriptions

F. Senior Neighbourhoods –The incidence of smoking is very low but regular exercise is not high. Despite being a relatively old group, there is little ill health. However, there is some deprivation and poor living standards. Around one fifth have private health insurance.

G. Suburban Stability – Smoking just above average, one fifth take regular exercise. There are no major long term illness problems. Small amount of deprivation and few people have private health insurance.

H. New Starters – New Starters are likely to smoke but the level of exercise is low and decreasing. There are poor living conditions and high levels of deprivation in some households. For the rest, there is little long term illness but few have private health insurance

I. Multicultural Centres – Mainly a young population, many live in households that are particularly deprived and so may cause health problems in the future. They are unlikely to exercise or subscribe to private health insurance and their illness levels are above average.

J. Urban Producers – Many people smoke and few take regular exercise. Coupled with a relatively high number of deprived households, this results in many people being in poor health. Despite this, few have private health insurance.

K. Weathered Communities – Older population and some below standard living conditions, many Weathered Communities have poor health. Smoking is common and exercise levels are low. About one tenth of this group have private health insurance and this is decreasing.

L. Disadvantaged Households – Highest proportion of smokers. Take little exercise. There are many very deprived households. Consequently, even though they are a relatively young group, there is a high level of ill health with long-term illnesses being common. Less than ten percent have private health insurance.

M. Urban Challenge – Smoking is above average and exercise is uncommon, although it is increasing slightly. The incidence of private health insurance is low and falling. Long-term illness is common amongst the working population and this may be due to high levels of deprivation across the whole Tree category.

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