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# Supporting People Data Linking Feasibility Study: Executive Summary

## Background

1. The Supporting People Programme helps people find and keep a home that meets their needs and encourages independence in a healthy and safe environment. A total of £124.4 million is invested by Welsh Government in the Supporting People Programme annually. The Programme supports more than 60,000 people each year to live as independently as they can. It aims to prevent problems by providing help as early as possible.
2. A Research and Evaluation Steering Group, chaired by Cymorth Cymru, was set up to deliver longitudinal research to demonstrate the impact of the Supporting People Programme. The group comprised two members of the Supporting People National Advisory Board along with Local Authority, service provider and Welsh Government representatives. The group were keen to explore whether the innovative method of data linking could deliver a quantitative component to the evaluation of the Supporting People Programme.
3. Data Linking is a technique for creating links between data sources so that anonymised information that is thought to relate to the same person, family, place or event can be connected for research purposes.
4. In Wales, the Welsh Government Programme to Maximise the Use of Existing Data has been working with the UK Economic and Social Research Council (ESRC) to fund various activities to explore how ambitious Welsh Government can be in terms of making better use of existing data for Wales, much of which involves improving the availability of linked data for research purposes. Given the interest of the Supporting People Research and Evaluation Steering Group, this Feasibility Study was funded jointly by the ESRC, the Welsh Government Programme to Maximise the Use of Existing Data and the

Welsh Government Housing Policy Division in order to examine the feasibility of using linked data to deliver a quantitative evaluation of Supporting People.

5. The Project was carried out by a full-time researcher attached to the ESRC-funded Administrative Data Research Centre for Wales (ADRC-W), which is supported by the Welsh Government core-funded SAIL (Secure Anonymised Information Linkage) Databank at Swansea University. The project was completed within the information governance,
6. information security and ethical framework of the ESRC-funded UK Administrative Data Research Network<sup>1</sup>.

## Aims and Objectives

7. The overall aim of this study was to assess the feasibility of using the innovative method of data linking to deliver a quantitative component to the evaluation of Supporting People. Specifically, the aim of the study was to determine the feasibility of using linked administrative data to demonstrate the impact of the Supporting People programme on the use of health services. Within this broad aim, the project objectives were to:
  - assess the feasibility of bringing together an all-Wales dataset for Supporting People services;
  - find out what data could be acquired about the related outcomes for people accessing Supporting People services e.g. housing options and social care (to include establishing the process for data acquisition and any likely barriers to acquisition);
  - advise on whether sufficient data could be acquired to allow analysis for a range of service user subgroups;
  - assess the extent to which a robust control group<sup>2</sup> could be identified for analysis purposes;
  - advise on whether a quantitative evaluation would be able to identify any NHS cost offsetting associated with the provision of Supporting People services; and
  - make recommendations to Welsh Government as to whether a quantitative component to the Supporting People evaluation is likely to be possible using linked administrative data.

## Methods

8. The Study invited Supporting People leads from all 22 Local Authorities in Wales to participate.
9. The Study gathered information about the Supporting People administrative data held by all Local Authorities. Where possible within the limited timescales of the Feasibility Study, all Local Authorities were asked to provide Supporting People routine administrative data to allow it to be anonymously linked to routine health records held about service users, for analysis purposes.

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<sup>1</sup> <http://adn.ac.uk/>

<sup>2</sup> A control group is a group of individuals who have not received an intervention who can be compared with the group who have received the intervention, to determine whether it is the intervention that has caused any observed change. In this case, it will help us find out how Supporting People service users differ from people who are similar but who have not experienced a Supporting People intervention in terms of the outcomes that Supporting People is theorised to influence.

10. Using Supporting People routine administrative data from those Local Authorities who were able to participate in the Feasibility Study, a small number of key indicators of health service use were analysed. These included the number of days on which GP events occurred<sup>3</sup>, the number of A&E visits and the number of emergency hospital admissions before and after service users began receiving support from Supporting People.
11. The Feasibility Study examined health service use over a period of two years; this included the period before service users began receiving support and the period after the Supporting People intervention. In order to give an indication of the possible impact of Supporting People on health service use, findings were analysed for the 30-day periods 12 months before, 6 months before, 3, 2 and 1 months before, 1, 2 and 3 months after, 6 months after and 12 months after service users began receiving support.
12. In order to gather the most credible evidence about whether Supporting People is making a difference in the lives of its service users, the study needed to make recommendations on the feasibility of constructing a control group. Although further exploratory analysis would be required before a genuinely robust comparison could be made, please see the section on Creating a Control Group, below (beginning at Paragraph 57) for some provisional, purely indicative analysis based on a simple comparison of individuals who were referred to Supporting People but who were recorded as 'unsuccessful' and were therefore not provided with support or who were provided with support but 'failed to engage'.
13. This study makes use of data linked between two complex administrative sources (Supporting People routine administrative data and routine health records). The methods of analysis and data linkage used in this feasibility study were both innovative and exploratory. We have confidence in the results for the two local authority areas involved but a full data linking evaluation study is required before the findings can be generalised to all local authority areas and before we can conclude the extent to which observed patterns can be attributed to the Supporting People programme alone.
14. The Feasibility Study took place between March and September 2015.

## Findings

### Data Accessibility, Quality and Consistency

15. Information gathered from Local Authorities indicated various challenges in terms of data quality and data management e.g. inconsistent, incomplete or incorrect recording, duplicate records and data held in multiple systems.
16. Eleven Local Authorities reported that they held individual level Supporting People administrative data. Of these:
  - two Local Authorities (Blaenau Gwent and Swansea) were able to provide data for the Feasibility Study;
  - four Local Authorities were either in the process of providing data or were exploring the feasibility of providing data but weren't able to deliver the data by the Feasibility Study deadline;

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<sup>3</sup> Multiple GP Events will occur on a single day e.g. each drug prescribed or physical measurement e.g. blood pressure, is recorded as a separate event.

- three Local Authorities reported that issues around data protection and fair processing prevented them from sharing the data; and
  - two Local Authorities declined to provide data for the Feasibility Study due to lack of resources.
17. Seven Local Authorities reported that they did not hold administrative data for Supporting People service users at the individual level necessary for data linking. For these Local Authorities, individual-level data was held by providers only and was not collated by Local Authorities.
  18. Four Local Authorities were either unable to participate or failed to respond when approached for the Feasibility Study so insufficient information was collected about the administrative data they held for Supporting People.
  19. For the seven Local Authorities that did not hold individual-level data, the magnitude of the task of acquiring data directly from providers was scoped by the researcher, showing that data would need to be acquired from between 12 and 27 providers per Local Authority. Options for acquiring data from providers can be explored if a full data linking evaluation study proceeds.
  20. Although various challenges exist in terms of acquiring, reconciling and analysing the existing data, indications are that a quantitative evaluation is deliverable, at least for those Local Authorities that hold individual-level data.

### **Sample Characteristics and Linking Rates**

21. For Blaenau Gwent, data was successfully linked for 302 recipients of accommodation-based services for 2012-14 and 1,896 recipients of floating support<sup>4</sup> for 2003-2015 (over 90% of these records were for the period 2010-15). Although Blaenau Gwent agreed to supply data for older people receiving accommodation-based support, the data was not able to be processed within the limited timescale of the Feasibility Study.
22. The linking rates<sup>5</sup> for Blaenau Gwent Local Authority were 90% for accommodation-based services and 85% for floating support.
23. For Swansea, data was successfully linked for 13,463 Supporting People service users<sup>6</sup> covering the period 2004-15. The overall linking rate across all years was 75% but the data quality was higher for more recent years, with linking rates of over 90% for 2011-15.
24. Linking rates<sup>7</sup> were high and Supporting People administrative data for Blaenau Gwent (floating support and accommodation-based support) and Swansea Local Authorities showed little evidence that the cases that were not linked differed in any systematic way from the cases that were linked. The exceptions, where the linking rates were relatively lower, were for those user groups where contact

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<sup>4</sup> Floating support is more flexible in its nature than fixed support; it can be provided in a wide range of places, including supporting a person in their own home. A support worker may have a number of clients at one time and provide a flexible support service to meet their individual needs.

<sup>5</sup> The linking rate is the proportion of Supporting People service users for whom a record also existed in the routine health records.

<sup>6</sup> The data included both floating support and accommodation-based support.

<sup>7</sup> The linking rate is the proportion of Supporting People service users for whom a record also existed in the routine health records.

information would be expected to be less accurate e.g. women experiencing domestic violence and people with a criminal offending history.

25. Indications are that Supporting People administrative data held by Local Authorities in Wales could be successfully linked in order to deliver a full quantitative evaluation study.

## **Health Service Use**

26. The findings of the Feasibility Study are based on data that is restricted to two Local Authorities and, due to the limited timescales involved, the findings are based on a relatively simple provisional analysis of the data.
27. For Blaenau Gwent Local Authority, findings are reported for floating support only, as the number of records was greater and the analysis therefore more robust.
28. The findings are reported for Blaenau Gwent and Swansea Local Authorities separately. This is because:
  - as noted above, the Blaenau Gwent analysis is restricted to floating support service users while the Swansea analysis includes data for both floating support and accommodation-based support;
  - the sets of data for the two Local Authorities relate to different time periods; and
  - the data contained different information with regard to Supporting People services, with Blaenau Gwent providing data on the 'Lead Need' i.e. the main reason for referral, and Swansea providing information about the 'Service Group' i.e. the type of service to which the user was referred.
29. The number of categories of 'Lead Need' or 'Service Group' for which findings are presented in Charts 1 to 9, below, varies because categories with relatively small numbers of service users or health service events have been suppressed due to the risk of disclosure. Small numbers would be less of a problem for a full data linking quantitative evaluation, where data for greater numbers of service users would be available for analysis.
30. In order to allow valid comparisons to be made between different service user sub-groups, the numbers of GP events are expressed as the rate per service user and the numbers of A&E visits are expressed as the rate per 100 service users.
31. Overall indications are that a quantitative evaluation would be likely to produce statistically robust substantive findings. By comparing the characteristics of Supporting People service users in the Local Authorities for which data can be linked with service users in the remaining Local Authorities, a strong indication could be provided of the generalisability of the findings for the whole of Wales.
32. When interpreting the findings on the use of health services, it should be noted that, for some users, an initial increase in the use of health services may be a positive impact of the support provided by Supporting People, where health conditions may have gone untreated during periods when individuals were at risk of homelessness.
33. It should also be noted that, as mentioned above, the findings are based on a relatively simple initial analysis of the data. For example, initial exploratory analysis shows that a proportion of Supporting People service users made repeated use of the service over time; the support provided also varied in

terms of both duration and intensity (i.e. type of support<sup>8</sup>). However, for the Feasibility Study it has not been possible to develop the complex analysis methods necessary to disentangle these issues in order to reliably separate the period during which support was being provided from the period after support ended. The Feasibility Study has therefore focused on the simpler distinction between events before and after the date when support first began. The more complex kinds of analysis that could be undertaken as part of a full data linking evaluation study would be designed to analyse events separately for the periods during and after support was provided and for service users with different service use profiles.

### **Number of Days on which GP Events Occurred**

34. At the point when the analysis was completed, SAIL contained GP Event data for around 70% of GP practices in Wales and the geographical coverage was not even. This means that the analysis of GP Events relates to around 68% of Supporting People service users for Blaenau Gwent Local Authority, whereas 99% of Supporting People service users for Swansea Local Authority have SAIL GP event data. Efforts by SAIL to acquire data from additional GP practices continue.
35. For the majority of the Supporting People service user subgroups shown in Charts 1 to 3, below, a similar pattern can be seen in the number of days on which GP events occurred (monthly rate per service user). The monthly rate increases up to and around the point in time when service users began receiving support from Supporting People, followed by a decline which, by 12 months (and in some cases by 6 or even 3 months) after the Supporting People intervention, fell to below the pre-support level.
36. Further analysis would be necessary to establish whether the reduced level of GP use described above was maintained longer-term.
37. The subgroups of Supporting People service users for which the pattern described above was not seen (see Charts 1 to 3, below) were as follows:
  - Supporting People floating support service users aged 16 to 24 years in Blaenau Gwent Local Authority.
  - For Swansea Local Authority, Supporting People service users being supported either for alcohol dependency or for domestic abuse, because they had learning difficulties, were a refugee or were defined as 'vulnerable young people'.
38. The difference in rates by Local Authority seen in Chart 1, below, may be explained by the fact that the Blaenau Gwent analysis is restricted to floating support service users while the Swansea analysis includes data for both floating support and accommodation-based support. Floating support is likely to be provided to people with relatively less severe needs so it would not be surprising if they also made less use of GP services. Differences in access to GP Out of Hours services may also play a part.
39. Possible explanations for the higher rate of GP use among older people in Swansea (see Chart 3b, below) are that:
  - the Swansea data includes greater numbers of older people than the Blaenau Gwent data (45% of service users are aged over 55 years for Swansea compared with 25% aged over 55 years for

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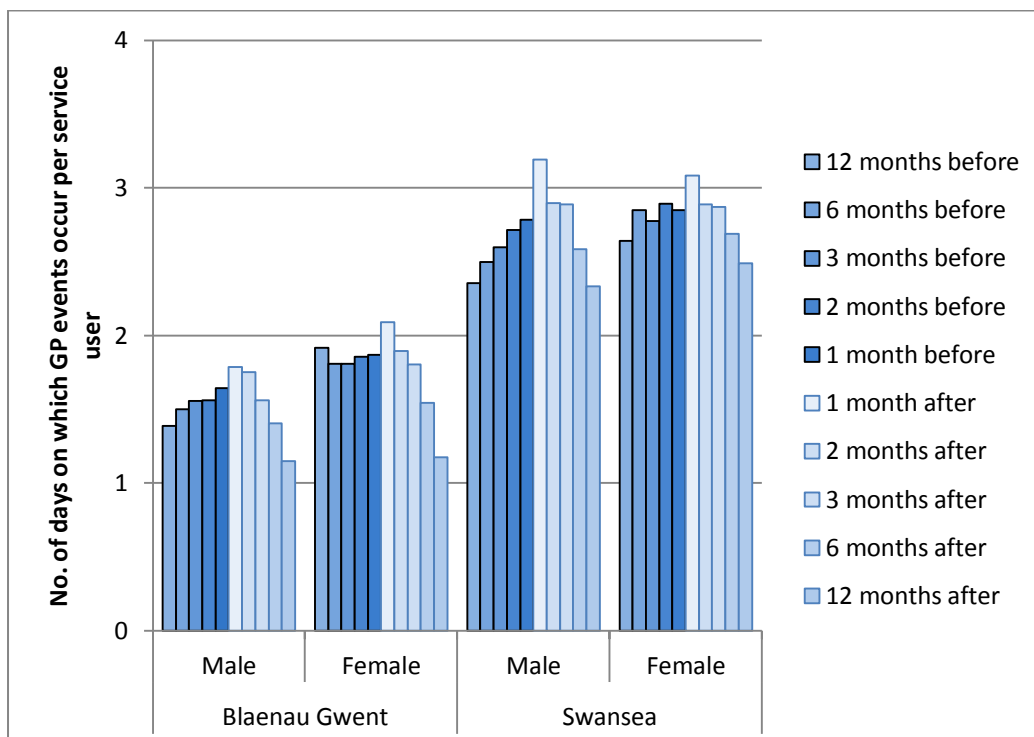
<sup>8</sup> Floating support and accommodation-based support.

Blaenau Gwent) because the Swansea data includes both sheltered tenants and floating support for older people;

- as noted above in Paragraph 35, the GP Event data is more complete for Swansea and, because older people tend to generate more GP Events, we will be missing relatively more older people from the Blaenau Gwent analysis;
- there may be a difference in recording practice between the two Local Authorities. Further investigation would be needed to establish whether, for example, when people aged over 55 years present to Supporting People, they are coded by default as ‘People over 55 years of age with support needs’ even if they also belong to another ‘Lead Need’ or ‘Service Group’ category. Working closely with data providers to explore these kinds of issues would be a key part of a full data linking evaluation study; and
- the figures are calculated per service user rather than per older person.

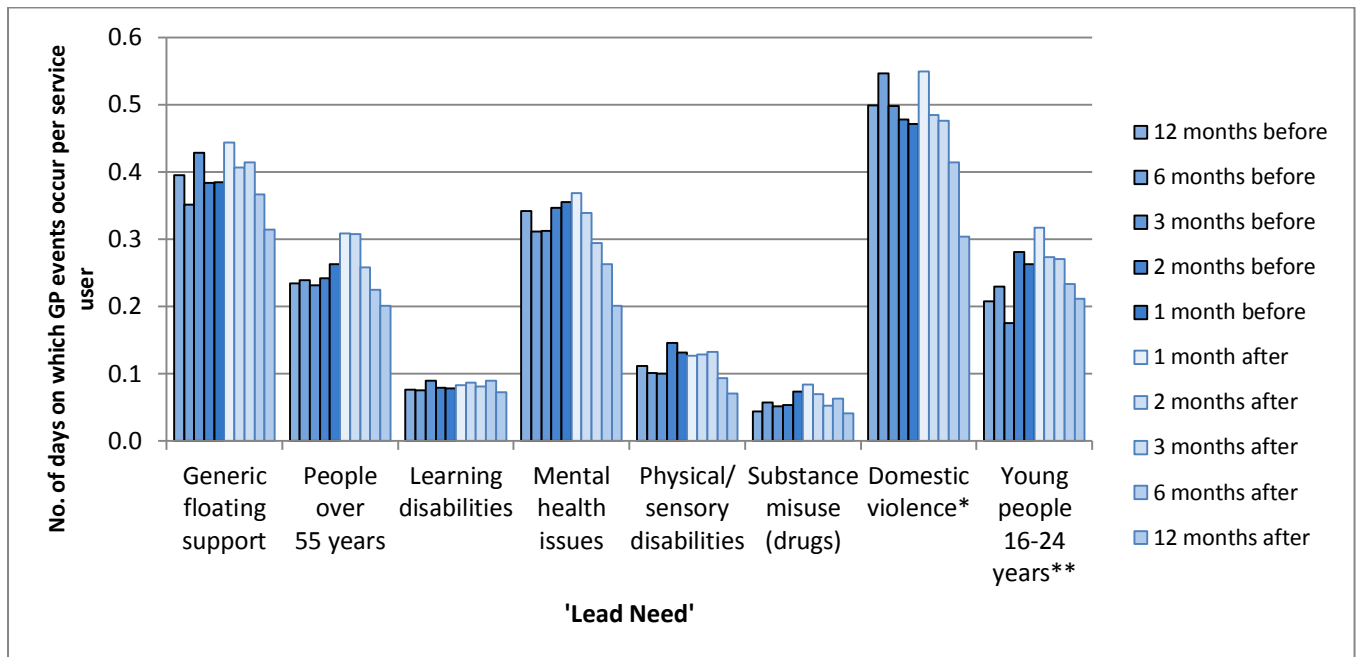
40. As noted above, an initial increase in the use of health services may be a positive impact of the support provided by Supporting People. It is also likely that analysing the data separately by whether repeated use has been made of Supporting People services and by duration and intensity of service provision will help to clarify the relationship between the support provided by Supporting People and levels of health service use. The more complex kinds of analysis that could be undertaken as part of a full data linking evaluation study would be designed to examine these issues further.

**Chart 1 Number of days on which GP events occurred per service user in the months before and after support start date by Local Authority<sup>a</sup> and gender of service user**



<sup>a</sup> Swansea Local Authority Supporting People administrative data contains records for all service users; for Blaenau Gwent, the analysis is presented for floating support service users only.

**Chart 2 Blaenau Gwent Local Authority Supporting People floating support: number of days on which GP events occurred per service user in the months before and after support start date by service user 'Lead Need'<sup>a</sup>**



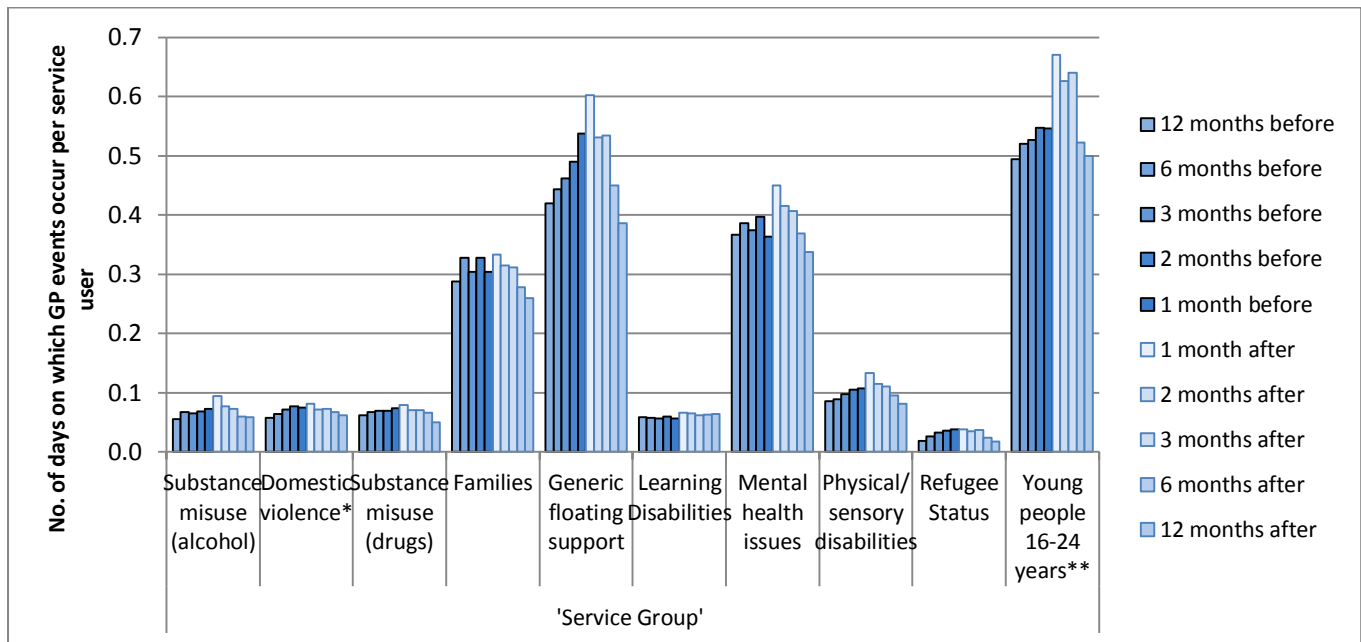
<sup>a</sup> 'Lead need' categories containing fewer than five service users have been suppressed e.g. care leavers, people with alcohol issues, people with chronic illnesses.

\* Figures are for 'women experiencing domestic abuse' so are shown per female service user.

\*\* Figures for young people aged 16-24 years are shown per service user aged 16-24 years.



**Chart 3a Swansea Local Authority: number of days on which GP events occurred per service user in the months before and after Supporting People support start date by 'Service Group' (excluding Older People – for Older People see Chart 3b)<sup>a</sup>**

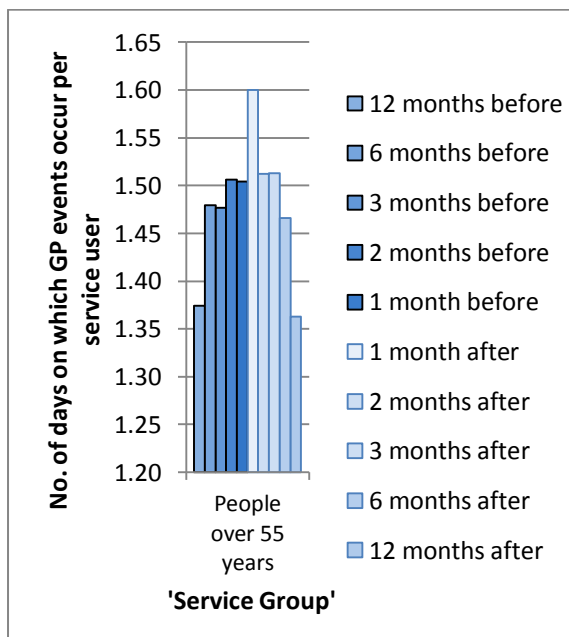


<sup>a</sup> Service users were excluded where no 'Service Group' code was provided (less than 1% of service users) or where there was an error in the service group code (6% of service users).

\* Figures are for 'women experiencing domestic abuse' so are shown per female service user.

\*\* 'Vulnerable young people' are defined as those aged 16-24 years; figures are shown per service user aged 16-24 years.

**Chart 3b Swansea Local Authority: number of days on which GP events occurred per service user in the months before and after Supporting People support start date: Older People <sup>a</sup>**



<sup>a</sup> Service users were excluded where no 'Service Group' code was provided (less than 1% of service users) or where there was an error in the 'Service Group' code (6% of service users).

## Accident and Emergency Visits

41. SAIL contains A&E data for all individuals registered with a GP in Wales.
42. Two key issues must be kept in mind when interpreting the analysis of A&E visits shown in Charts 4 to 6, below:
  - some individuals may attend A&E for conditions for which they should consult a GP; and
  - A&E attendance is known to be related to the distance patients need to travel to access their nearest A&E Department<sup>9</sup>. The distance service users need to travel will be different for Blaenau Gwent and Swansea Local Authorities and for different individuals within those Local Authorities.

The more complex kinds of analysis that could be undertaken as part of a full data linking evaluation study would be designed to examine this issue further.

43. The difference in rates by Local Authority seen in Chart 4 below, may partly be explained by the fact that the Blaenau Gwent analysis is restricted to floating support service users while the Swansea analysis includes data for both floating support and accommodation-based support; however, differences in access to GP Out of Hours services may also play a part.
44. For some of the Supporting People service user subgroups shown in Charts 4 to 6 below, a similar pattern can be seen in the number of A&E visits (monthly rate per service user) as was seen for GP visits. The monthly rate increases up to and around the point in time when service users began receiving support from Supporting People, followed by a decline that by 12 months (and in some cases by six or even three months) after the Supporting People intervention, fell to below the pre-support level.
45. Further analysis would be necessary to establish whether the reduced level of A&E use described above was maintained longer-term.
46. It should be noted that when the data for A&E Visits is analysed by 'Lead Need' for Blaenau Gwent and 'Service Group' for Swansea Local Authority, as in Charts 5 and 6 below, the numbers of service users or events for some subgroups is relatively small. Small numbers would be less of a problem for a full data linking evaluation study, where data for greater numbers of service users would be available for analysis.
47. The subgroups of Supporting People service users for which the pattern described above was seen (see Charts 4 to 6, below) were as follows:
  - Female Supporting People floating support service users in Blaenau Gwent Local Authority.
  - Blaenau Gwent Supporting People floating support service users with mental health issues or a physical disability.
  - Swansea Supporting People service users being referred to a specialist service for individuals with drug dependency or to a specialist service for people with a sensory or physical disability.

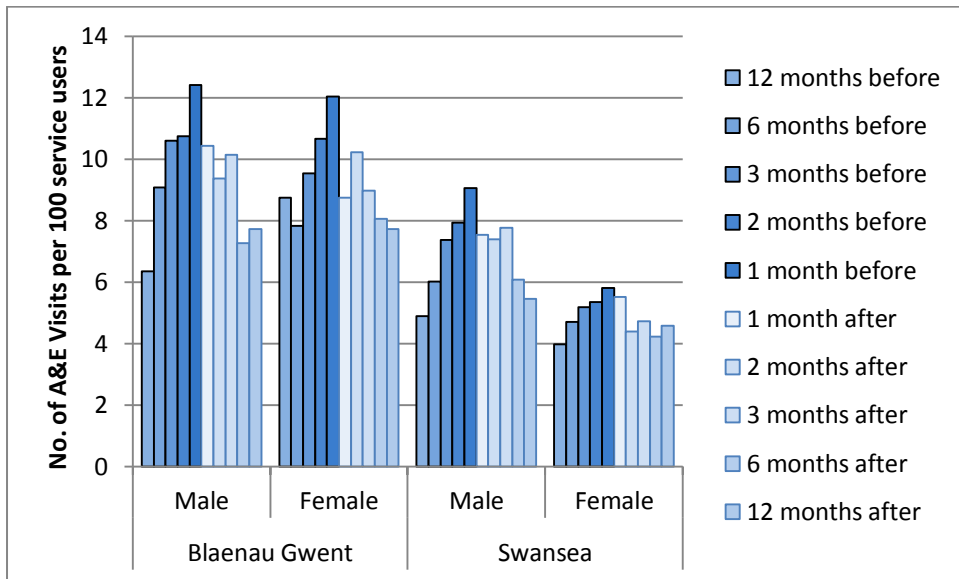
The remainder of the service user subgroups did not show the pattern described above.

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<sup>9</sup> Lyons R, Lo S, Heaven M, Littlepage B (1995) Injury surveillance in children – usefulness of a centralised database of accident and emergency attendances. *Injury Prevention* 1995; 1:173-176 doi:10.1136/ip.1.3.173.

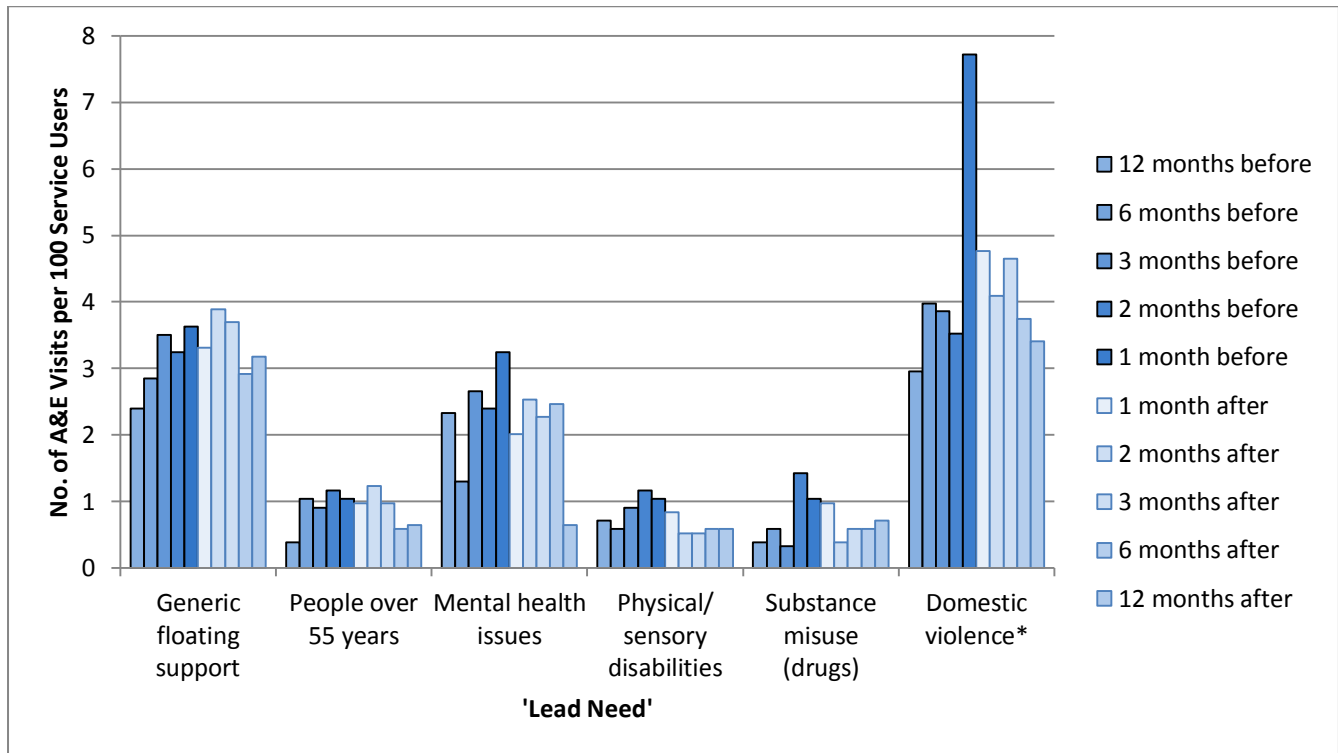
48. As noted above, an initial increase in the use of health services may be a positive impact of the support provided by Supporting People. It is also likely that analysing the data separately by whether repeated use has been made of Supporting People services and by duration and intensity of service provision will help to clarify the relationship between the support provided by Supporting People and levels of health service use. The more complex kinds of analysis that could be undertaken as part of a full data linking evaluation study would be designed to examine these issues further.

**Chart 4 Number of A&E visits per 100 service users in the months before and after support start date by Local Authority<sup>a</sup> and gender of service user**



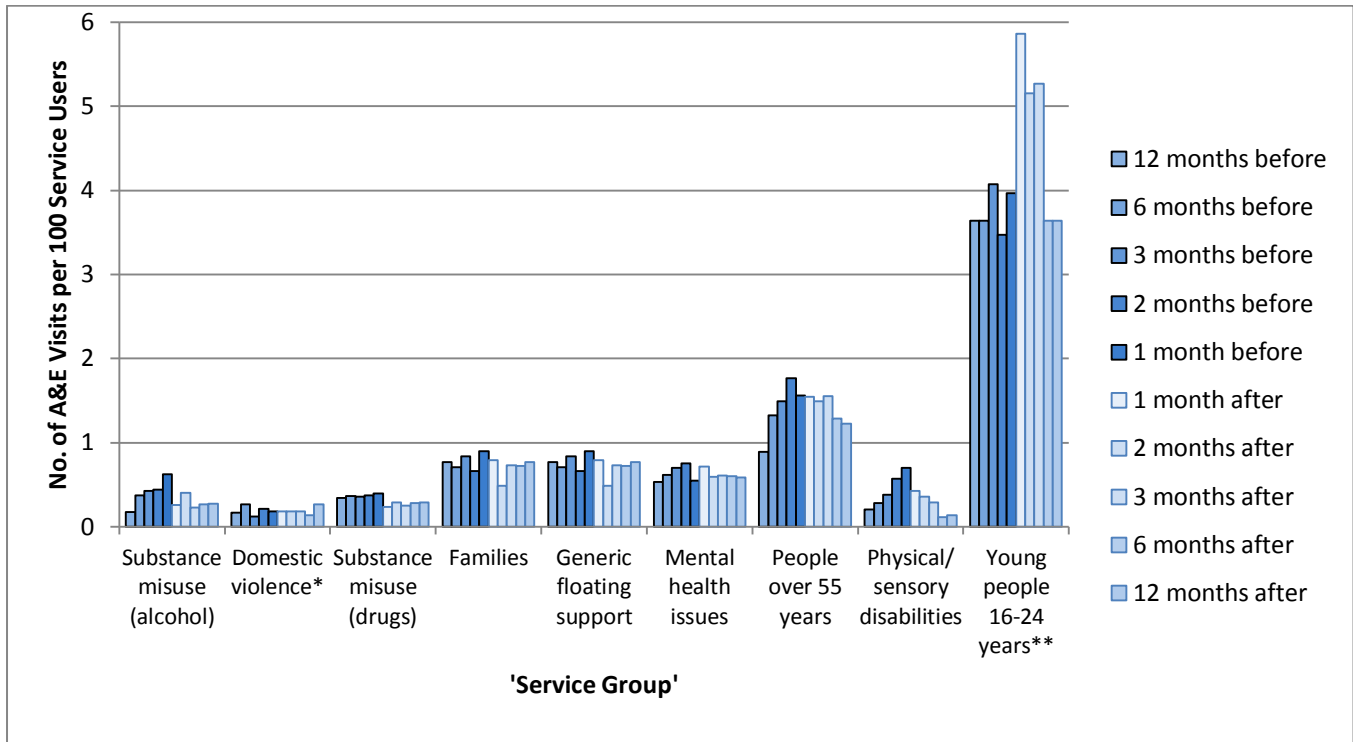
<sup>a</sup> Swansea Local Authority Supporting People administrative data contains records for all service users; for Blaenau Gwent, the analysis is presented for floating support service users only.

**Chart 5 Supporting People floating support in Blaenau Gwent Local Authority: number of A&E Visits per 100 service users in the months before and after support start date by service user 'Lead Need'<sup>a</sup>**



<sup>a</sup> 'Lead need' categories containing fewer than five service users have been suppressed e.g. learning disability, young people aged 16 to 24 years.

**Chart 6 Swansea Local Authority: number of A&E Visits per 100 Supporting People service users in the months before and after support start date by 'Service Group'<sup>a</sup>**



<sup>a</sup> Service users were excluded where no 'service group' code was provided (less than 1% of service users) or where there was an error in the 'Service Group' code (6% of service users). 'Service Group' categories containing fewer than five service users have been suppressed e.g. learning difficulty, refugee.

\* Figures are for 'women experiencing domestic abuse' so are shown per female service users.

\*\* Figures for young people aged 16-25 years are shown per service user aged 16-25 years.

## Emergency Hospital Admissions

49. SAIL contains hospital admissions data for all individuals registered with a GP in Wales.

50. For the feasibility study, the decision was made to focus purely on emergency admissions – this was partly because the kinds of conditions that might be associated with an individual receiving Supporting People services were likely to result in emergency rather than elective admissions and partly because the timing of elective admissions would be more difficult to tie down to the specific spells of support.

51. For some of the Supporting People service user subgroups shown in Charts 7 to 9 below, a similar pattern can be seen in the numbers of emergency hospital admissions (monthly rate per 100 service users) to those seen for GP events. The monthly rate increases up to and around the point in time when service users began receiving support from Supporting People, followed by a decline which, by 12 months (and in some cases by six or even three months) after the Supporting People intervention, fell to below the pre-support level.

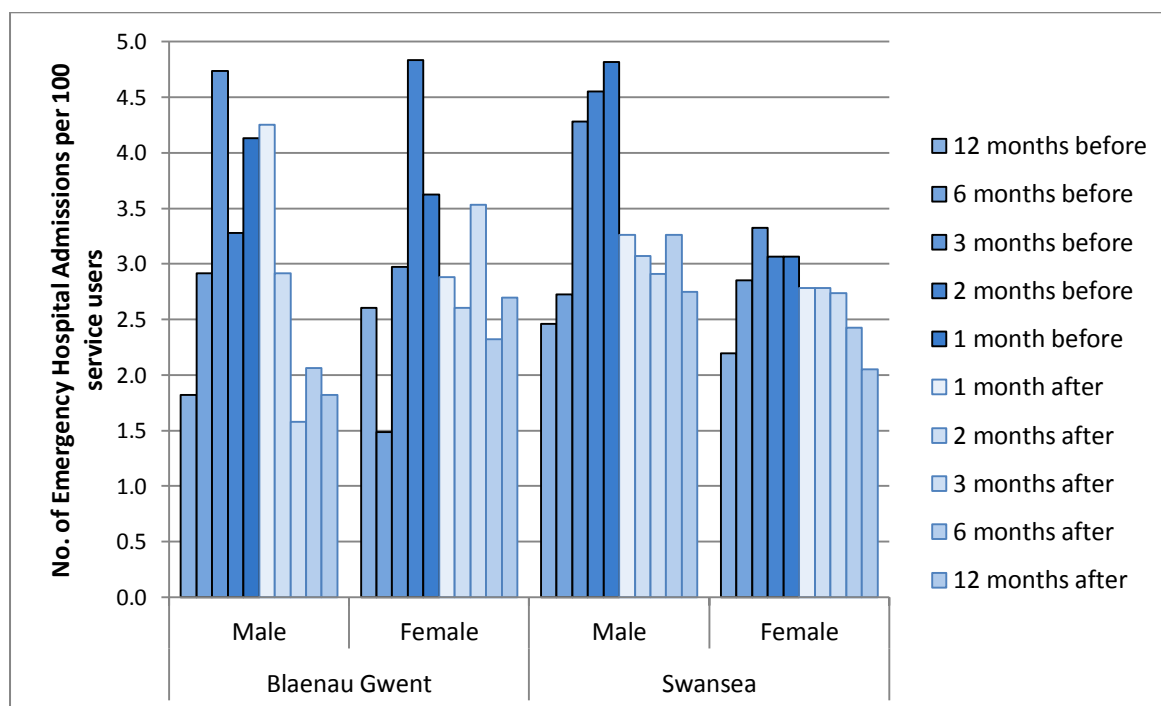
The subgroups of Supporting People service users for which the pattern described above **was seen** (see Charts 7 to 9 below) were as follows:

- Female Supporting People service users in Swansea Local Authority.

- Blaenau Gwent Supporting People floating support service users with the ‘lead need’ of generic floating support’ and with mental health issues.
- Swansea Supporting People service users being referred to generic floating support or to a specialist service for domestic violence, substance misuse (drugs), mental health issues or a physical/sensory disability.

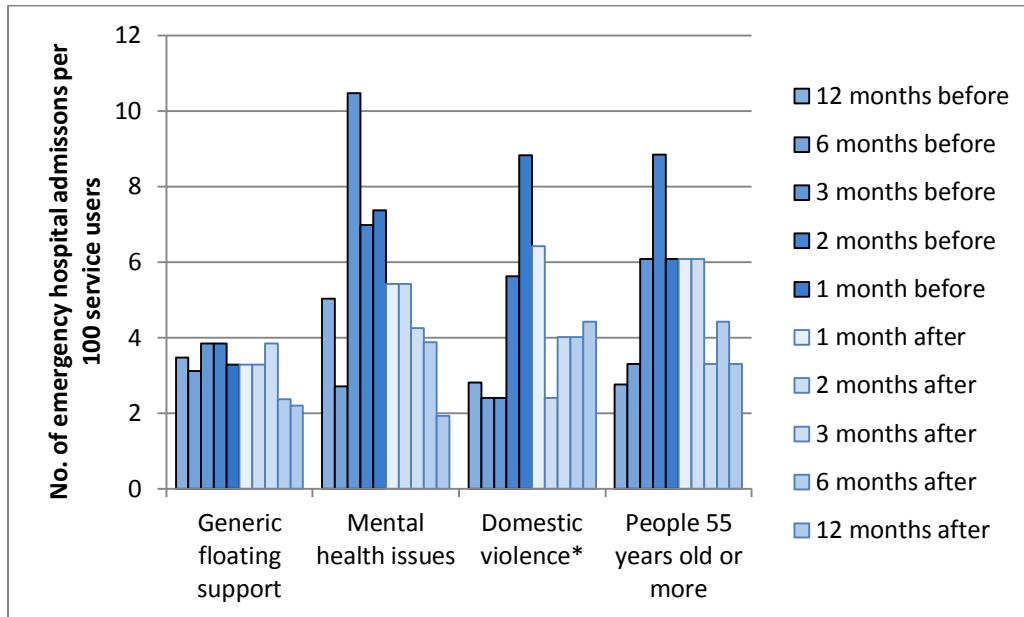
52. Small numbers mean that for the Feasibility Study the margin of error around the differences shown in Charts 7 to 9 are relatively wide but where a consistent effect or trend over time is observed, this is nevertheless worthy of note and suggests some association between the support provided by Supporting People and levels of health service use.
53. The difference in rates by Local Authority seen in Charts 7 to 9, below, may be explained by the fact that the Blaenau Gwent analysis is restricted to floating support service users while the Swansea analysis includes data for both floating support and accommodation-based support. Floating support is likely to be provided to service users with relatively less severe needs so it would not be surprising if they also had fewer emergency hospital admissions.
54. As noted above, an initial increase in the use of health services may be a positive impact of the support provided by Supporting People. It is also likely that analysing the data separately by whether repeated use has been made of Supporting People services and by duration and intensity of service provision will help to clarify the relationship between the support provided by Supporting People and levels of health service use. The more complex kinds of analysis that could be undertaken as part of a full data linking evaluation study would be designed to examine these issues further.

**Chart 7 Number of emergency hospital admissions per 100 service users in the months before and after support start date by Local Authority<sup>a</sup> and gender of service user**



<sup>a</sup> Swansea Local Authority Supporting People administrative data contains records for all service users; for Blaenau Gwent, the analysis is presented for floating support service users only.

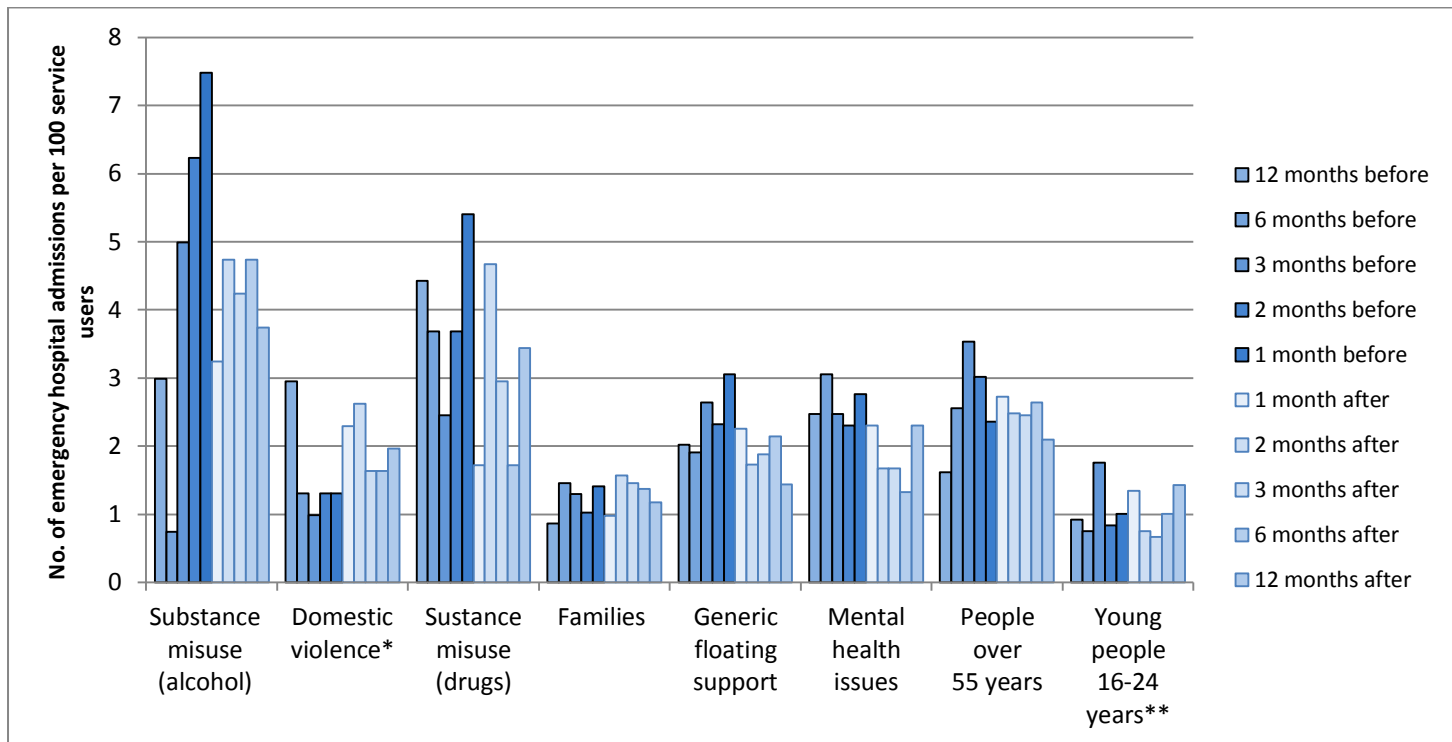
**Chart 8 Blaenau Gwent Local Authority Supporting People floating support: emergency hospital admissions per 100 service users in the months before and after support start date by service user 'Lead Need'<sup>a</sup>**



<sup>a</sup> 'Lead need' categories containing fewer than five service users have been suppressed e.g. young people 16-24 years and refugee status.

\* Figures are for 'women experiencing domestic abuse' so are shown per female service user.

**Chart 9a Swansea Local Authority: number of emergency hospital admissions per 100 service users in the months before and after Supporting People support start date by 'Service Group' (excluding physical/sensory disabilities – for physical/sensory disabilities see Chart 9b)<sup>a,b</sup>**



<sup>a</sup> Service users were excluded where no 'service group' code was provided (less than 1% of service users) or where there was an error in the service group code (6% of service users).

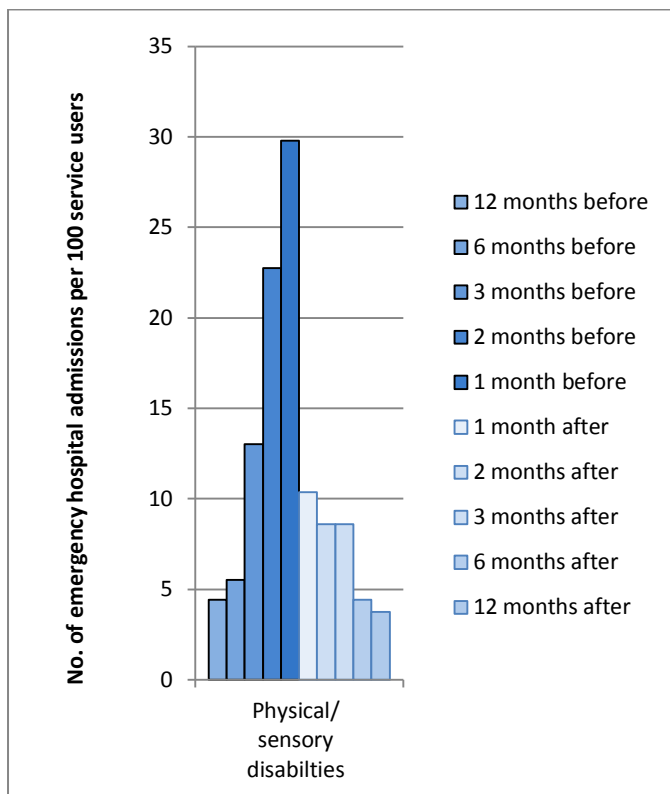
<sup>b</sup> Service user categories containing fewer than five service users have been suppressed e.g. learning disabilities and refugee status.

\* Figures are for 'women experiencing domestic abuse' so are shown per female service user.

\*\* 'Vulnerable young people' are defined as those aged 16-24 years; figures are shown per service user aged 16-24 years.



**Chart 9b Swansea Local Authority: number of emergency hospital admissions per 100 service users in the months before and after Supporting People support start date by 'Service Group': physical/sensory disabilities**



55. An analysis of the top five reasons for emergency admissions was undertaken in order to provide a picture of the baseline situation before service users began receiving support from Supporting People, for service users compared with people of a similar age and gender living in the same local authority. This analysis is designed to examine whether, irrespective of whether the level of health service use were different, the reasons for health service use were different.
56. Table 1, below, shows the top five reasons for emergency hospital admissions for Blaenau Gwent floating support Supporting People service users compared with the top five reasons for a control group. The fact that the top reasons for the Supporting People floating support recipients are 'injury and poisoning' and 'mental health', when the top reasons for the general population are cancer and diseases of the circulatory system is consistent with Supporting People support being provided in response to a health crisis for some recipients. The same analysis for Swansea Local Authority showed a similar pattern, with 'injury and poisoning' appearing in second position for Supporting People recipients compared with fifth position for the general population (see Table 2, below). It should be noted that below these headline ICD10 'chapter headings' further detail is available that could be analysed in greater detail if a full data linking evaluation study were to proceed; in this case, it is notable that 'senility' was among the most frequent 'Symptoms or signs with no diagnosis classifiable elsewhere' for the Supporting People recipients but not for the general population. It is also worth noting that three of the five most frequent 'Injury and poisoning' codes for Supporting People recipients were 'Poisoning by non-opioid analgesics, antipyretics and anti-rheumatics', 'Poisoning by psychotropic drugs, not elsewhere classified' and 'Poisoning by narcotics and psycho-dysleptics (hallucinogens)'. Poisonings were not among the five most frequent 'Injury and poisoning' codes for the general population.

57. For Swansea Local Authority, the reasons for Emergency Hospital Admissions were compared in the year before and the year after first support start date in order to examine which ICD 10 chapter of primary diagnosis changed the most. Only the reasons that decreased are shown in Table 2, below, because there was only one reason for which emergency hospital admissions increased during the year after first support start date and this was 'diseases of the respiratory system. It is worth noting that two of the reasons that decreased the most after the Supporting People start date were related to mental health and injury and poisoning.
58. It should be noted that, because the analysis is based on relatively small numbers of health events, change over time can only be based on small numbers, so it should be kept in mind that the findings shown in Table 2, below, should be considered both exploratory and qualitative in nature. For a full data linking evaluation study, where records from multiple Local Authorities could be combined for analysis purposes, small numbers would be less of a problem.

**Table 1 Blaenau Gwent Local Authority: the top five reasons for emergency hospital admissions<sup>a</sup>**

Order (top first)	Supporting People floating support recipients	The general population <sup>b</sup>
1	Injury and poisoning <sup>c</sup>	Neoplasms (i.e. cancer and melanoma)
2	Mental, behavioural and neurodevelopmental disorders	Diseases of the circulatory system
3	Symptoms or signs with no diagnosis classifiable elsewhere <sup>d</sup>	Infectious and parasitic diseases
4	Diseases of the digestive system	Diseases of the digestive system
5	Diseases of the respiratory system	Endocrine and nutritional disorders

<sup>a</sup> Main reason for emergency admission only; excluding pregnancy and childbirth.

<sup>b</sup> For people of a similar age and gender living in the same local authority.

<sup>c</sup> Full ICD10 text (International Statistical Classification of Diseases and Related Health Problems 10th Revision) is 'Injury, poisoning and certain other consequences of external causes'.

<sup>d</sup> Full ICD10 text is 'Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified'.

**Table 2 Swansea Local Authority: the top six reasons for emergency hospital admissions (for Supporting People recipients and a general population comparison group) plus the reasons for emergency hospital admissions that showed the greatest decrease after the Supporting People start date<sup>a</sup>**

Order (top first)	Supporting People recipients: ICD10 code that decreased the most	Supporting People recipients: top five ICD10 codes	The general population <sup>b</sup> : top five ICD10 codes
1	Diseases of the circulatory system	Symptoms or signs with no diagnosis classifiable elsewhere <sup>d</sup>	Symptoms or signs with no diagnosis classifiable elsewhere <sup>d</sup>
2	Mental, behavioural and neurodevelopmental disorders <sup>c</sup>	Injury and poisoning <sup>c</sup>	Diseases of the respiratory system
3	Injury and poisoning <sup>c</sup>	Diseases of the circulatory system	Diseases of the circulatory system
4	Diseases of the musculoskeletal system and connective tissue	Diseases of the digestive system	Diseases of the digestive system
5	Diseases of the skin and subcutaneous tissue	Diseases of the respiratory system	Injury and poisoning <sup>c</sup>

<sup>a</sup> Main reason for emergency admission only; excluding pregnancy and childbirth.

<sup>b</sup> For people of a similar age and gender living in the same local authority.

<sup>c</sup> Full ICD10 text (International Statistical Classification of Diseases and Related Health Problems 10th Revision) is 'Injury, poisoning and certain other consequences of external causes'.

<sup>d</sup> Full ICD10 text is 'Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified'.

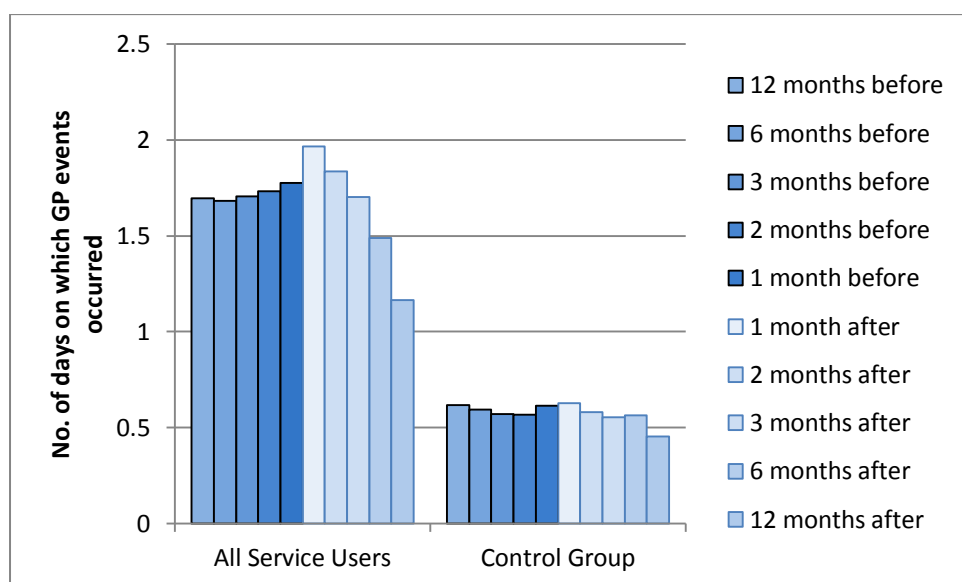
## Creating a Control Group

59. As noted above, the creation of a control group will allow the most credible assessment to be made of the impact of Supporting People.
60. Although further exploratory analysis would be required before a genuinely robust comparison could be made, some provisional, purely indicative analysis is provided below. Chart 10, below, shows the number of days on which GP events occurred for all Blaenau Gwent floating support service users compared with individuals who were referred to Supporting People but who were recorded as 'unsuccessful' and were therefore not provided with support or who were provided with support but 'failed to engage'. The following was found:
  - Supporting People service users had on average around 1 more GP event per month than the comparison group in the months before the reference date. The difference in the level of GP use may be explained by a number of factors, including that the controls failed to engage because they were experiencing crises that were relatively less severe than those who do engage or that the

crises were so severe that they were withdrawing not only from Supporting People but also from primary care services.

- Those receiving support from Supporting People had a greater use of GPs in the period immediately after support began than the comparison group; this may suggest that Supporting People was helping service users make more appropriate use of health services, which at the point of crisis means seeking treatment.
- Those receiving support from Supporting People showed a greater decline in use between the period of 1 month after and 12 months after the reference date (an average decline of 0.8 days on which GP events occurred per service user compared with an average of 0.2 days for those who were ‘unsuccessful’ or ‘failed to engage’); this may suggest that Supporting People was helping service users in ways that reduced the burden on health services. Equally, the reduction may to some extent be greater for service users than controls because, as mentioned above, the service user group may have contained higher risk individuals.

**Chart 10 Blaenau Gwent Local Authority Supporting People floating support: number of days on which GP events occurred per record in the months before and after being referred to Supporting People<sup>a</sup> – all service users compared with a comparison group<sup>b</sup>**



<sup>a</sup> For service user records, GP events are reported before and after support start date. For ‘unsuccessful’ records and records where ‘reason for leaving’ was ‘failed to engage’, GP events are reported before and after ‘declaration date’.

<sup>b</sup> The comparison was made up of records where the individual was ‘unsuccessful’ and individuals who were provided with support but had a ‘reason for leaving’ of ‘failed to engage’.

## Creating a Cost Offset Model

61. At a minimum, a cost offset model could be applied to all individual Supporting People service users for whom data is provided to SAIL, allowing the estimated net benefits to be reported split by Local Authority, service user group etc. With further development work:

- the potential exists to refine a cost offset model based on national, Local Authority or provider level estimates by replacing those estimates with information about the real numbers and costs of the ‘adverse health events’ experienced by Supporting People service users and for any chosen control or comparison group(s);

- if additional routine administrative data is acquired, more refined estimates could be developed for adverse events of other kinds e.g. antisocial behaviour;
  - by refining the cost of adverse events, an improved calculation of the net ‘benefit’ of the Supporting People Programme can be provided; and
  - if the cost offset model is built into SAIL, the calculations could be run automatically and a standard reporting template developed to allow annual reporting with minimal ongoing resource requirements.
62. The use of linked routine administrative records would allow, in addition, the exploration of the cost of some of the ‘benefits’ uncoded in the Capgemini model , including ‘improving health’ and, if required, monitoring of changes in costs and benefits over time i.e. over the long-term.

## Conclusions

63. Although various challenges exist in terms of acquiring, reconciling and analysing the existing data, the study shows a quantitative evaluation is deliverable for those Local Authorities which hold individual-level data.
64. The acquisition of additional administrative datasets to allow the reporting of further indicators of the impact of Supporting People, e.g. on the use of homelessness and social care services, could be undertaken if a full data linking evaluation study proceeds.
65. Overall, linking rates for Supporting People routine administrative data for Blaenau Gwent (floating support and accommodation-based support) and Swansea Local Authorities were generally high and the subgroups of service users for which the linking rates were relatively lower were those where contact information would be expected to be less accurate, e.g. women experiencing domestic violence and people with a criminal offending history. If the same or similar patterns were seen for all Local Authorities in Wales, the majority of Supporting People service user subgroups would be equally well-represented in the analysis.
66. Creating a control group would allow the most credible assessment to be made of the impact of Supporting People. A range of options for creating a control group exist, some of which are likely to result in the creation of a more robust control group than others and some of which will require the acquisition of additional datasets. In practice, control groups should be constructed using as many as possible of the methods proposed and sensitivity analysis undertaken to test their suitability before choosing to use one or more in the final analysis. Even if not all options for a control group are feasible, a range of informative caveats could be provided about the robustness of the analysis and the likely extent to which any findings could be considered conclusive.
67. If a full data linking study proceeds, it would be feasible to commission a separate “cost offset” model which could be applied to all individual Supporting People service users for whom data is provided to SAIL, allowing the estimated net benefits to be reported split by Local Authority, service user group etc.
68. If a full data linking evaluation study proceeds, a parallel qualitative study would help to inform the final choice of control or comparison group(s), to inform the analysis and to provide further explanations for the observed patterns of health service use.

## Recommendations

69. Welsh Government should provide funding for a full quantitative data linking evaluation study of the Supporting People Programme across all Local Authorities in Wales using linked routine administrative data.
70. In order to provide a standardised dataset for analysis that is consistent across all Local Authorities in Wales, the Welsh Government Supporting People team should:
  - ensure that the redeveloped Supporting People Outcomes Data spreadsheet includes, in place of the current 'unique identifier', all necessary identifiers in a suitable format to allow the data to be shared with the SAIL Databank i.e. full name, data of birth, gender, full address including postcode and, if possible, National Insurance Number;
  - make an assessment of whether any other analytically necessary information contained in the routine administrative data for Supporting People is not currently included in the Outcomes Data and to add this into the redeveloped Supporting People Outcomes Data spreadsheet;
  - add into the terms and conditions for Local Authorities receiving Supporting People funding as of 1st April 2016 a mandatory requirement to provide this data to SAIL for Supporting People evaluation, service planning and other research and statistical purposes; this should include the use of a suitable privacy notice for service users and suitable data disclosure agreements between each Local Authority and both SAIL and NWIS; and
  - as part of the Supporting People Outcomes guidance, Local Authorities should be required to ensure providers collect full post codes with addresses and that they should be collected in separate columns.
71. For Local Authorities that do not hold individual-level data, options for acquiring data from providers must be explored.
72. For impact indicators relating to topics beyond health e.g. homelessness and housing, social care, crime, labour market participation and/or benefit receipt, additional routine records should be acquired for linking.
73. Welsh Government should consider commissioning in parallel:
  - the development of a cost offset model using linked routine administrative data; and
  - a parallel qualitative study to inform the final choice of control or comparison group(s), to inform the analysis and to provide further explanations for the observed patterns of health service use.
74. It is recommended that the Research and Evaluation Steering Group continue to provide oversight and advice to the project, reviewing membership as necessary.

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Full Research Report: available at: <http://gov.wales/statistics-and-research/supporting-people-data-linking-feasibility-study/?lang=en>

Views expressed in this report are those of the researchers and not necessarily those of the Welsh Government

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Mae'r ddogfen yma hefyd ar gael yn Gymraeg.

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