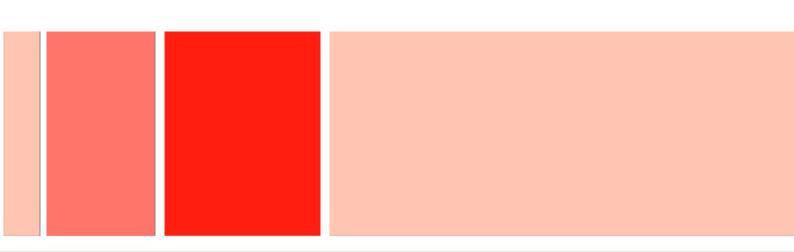




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Supporting People Data Linking Feasibility Project: Research Report



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An ESRC Data Investment

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

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Glossary of Acronyms

A&E Accident and Emergency

ADRC Administrative Data Research Centre

ADRC-W Administrative Data Research Centre in Wales

ADRN Administrative Data Research Network

ADS Administrative Data Service

DAA Data Access Agreement

DPA Data Protection Act

DWP/HMRC UK Department for Work and Pensions/HM Revenue & Customs

ESRC Economic and Social Research Council

FPN Fair Processing Notices

HIRU Health Information Research Unit

ILLY One of the Supporting People Data Systems in use in Local

Authorities in Wales

IGRP SAIL Information Governance Review Panel

KAS Knowledge and Analytical Services

MoJ UK Ministry of Justice

NISCHR National Institute for Social Care and Health Research

NHS National Health Service

NWIS NHS Wales Information Service

RCT Randomised Control Trials

SAIL The Secure Anonymised Information Linking Database

SLA Service Level Agreement

SQL Structured Query Language

SP Supporting People

SPNAB Supporting People National Advisory Board

SPRINT One of the Social Services Data Systems in use in Local Authorities in

Wales

WDS Welsh Demographics Service (GP registration history database)

Glossary of Terms

Accommodation-based support As distinct from floating support, accommodation-

based support is tied to particular accommodation.

Capgemini Model The UK Department for Communities and Local

Government commissioned Capgemini to create a

model to assess the financial benefits of the

supporting people programme in England as a whole and in the regions and Local Authorities across England. A similar model is in use in Northern Ireland.

Data Max Welsh Government Knowledge and Analytical

Services Programme to Maximise the Use of Existing

Data.

Floating support Floating support is more flexible in its nature than

accommodation-based 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.

ILLY One of the Supporting People Data Systems in use in

Local Authorities in Wales.

'Lead Need' The main reason for referral to Supporting People as

recorded in the Supporting People administrative data.

accommodation-based support.

Research and Evaluation

Steering Group

The group, chaired by Cymorth Cymru, that was set up to deliver longitudinal research to demonstrate the

impact of the Supporting People Programme.

'Service Group' The type of Supporting People service to which the

user was referred as recorded in the Supporting

People administrative data.

SPRINT One of the Social Services Data Systems in use in

Local Authorities in Wales.

1 Introduction

Policy Background

- 1.1 The Supporting People Programme provides housing-related support to help vulnerable people to live as independently as possible.
- 1.2 In 2014-15 the Supporting People budget was £124.4 million. This is an annual budget and the total grant available changes according with budgetary constraints. The programme supports more than 60,000 people each year and aims to prevent problems by providing help as early as possible.
- 1.3 There are two key elements to the type of support provided long-term and short-term long-term maintenance support is designed to help people retain or gain independence and avoid the need for more costly interventions such as entering care, and short-term more preventative services designed to help people avoid homelessness. The programme is largely preventative in nature and this is in keeping with the aims of The Housing Act (Wales) 2014.
- 1.4 The vision of the Supporting People Programme is to help people find and keep a home that meets their needs and encourages independence in a healthy and safe environment.
- 1.5 The aims of the Supporting People Programme are:
 - to help vulnerable people live as independently as possible; and
 - to provide people with the help they need to live in their own homes, hostels, sheltered housing or other specialist housing.
- 1.6 A Research and Evaluation Steering Group was set up to aid in the development of longitudinal research to demonstrate the impact of the Supporting People Programme and to ensure effectiveness and value for money. The group comprised three members of the Supporting People National Advisory Board along with Local Authority, service provider and Welsh Government representatives. The group is developing a twin strand approach, including qualitative and quantitative research.
- 1.7 The routine administrative data relating to people accessing Supporting People services did not contain indicators of the impact of services on those people, e.g. on their health, housing circumstances or economic status, and the data held by Local Authorities about the outcomes of Supporting People service users did not lend itself data linking (for further discussion, see Chapter 2). The group therefore proposed to explore the use of linked routine administrative data to assess the impact of Supporting People services on the people accessing those services. A proposal was made to Lesley Griffiths AM, Minister for Communities and Tackling Poverty, who agreed to part-fund a feasibility project to ascertain the potential of data linking, undertaken using the SAIL (Secure Anonymised Information Linking) Databank and the Administrative Data Research Centre for Wales, to contribute to a Supporting People evaluation.

The Potential Contribution of Data Linking

- 1.8 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.
- 1.9 In 2006, the Welsh Government National Institute for Social Care and Health Research (NISCHR) funded the creation and development of the Health Information Research Unit (HIRU) at Swansea University. The aim of this unit was to develop a means by

which routinely collected health data from many different sources could be utilised in a linked way whilst conforming to international best practice in terms of information security. The process developed was called Secure Anonymised Information Linking (SAIL). SAIL demonstrated how routine administrative data from multiple sources could be made available for research purposes in a safe, secure and robust manner¹ (further information about the process and about SAIL is provided in brief in Chapter 2 of this report and in greater detail in the Technical Report – see Chapter 2 and Appendix B).

- 1.10 At the UK level, research funders, government departments and devolved administrations formed the Administrative Data Taskforce 2012. As a result, the Economic and Social Research Council and other funders created a UK Administrative Data Research Network, which includes an Administrative Data Research Centre (ADRC) in each country of the UK. A collaborative bid between Cardiff University and SAIL at Swansea University was successful in bidding to become the ADRC in Wales; future data linking projects taking place in Wales would therefore be completed at the ADRC in Wales (ADRC-W) and within the information governance, information security and ethical context of the ADRN.
- 1.11 The Welsh Government Knowledge and Analytical Services Programme to Maximise the Use of Existing Data (Data Max) has been working with the UK Economic and Social Research Council to explore how ambitious Welsh Government plans can be in terms of making better use of existing data for Wales. Much of this work involves improving the availability of linked data for research purposes. As a result of these activities, it became clear that data linking may have the potential to assist in evaluating the Supporting People Programme. This project was therefore part-funded by the Welsh Government and the ESRC to examine the feasibility of using linked data to deliver a quantitative evaluation of the impact of the Programme. The Project was carried out by a full-time researcher attached to the Administrative Data Research Centre for Wales.

Project Aim and Objectives

1.12 This feasibility project aimed to explore the contribution that data linking could make to the evaluation of the Supporting People Programme through assessing the ways in which health service use varies according to the characteristics of people accessing Supporting People services. In addressing this research aim, the study will be part of a larger project to evaluate the impact of the Supporting People Programme in Wales.

1.13 Objectives:

- to assess the feasibility of creating an all-Wales dataset bringing together routine administrative data for services delivered through the Supporting People Programme in Wales;
- to identify any barriers to the acquisition of the Supporting People routine administrative data for linking;
- to identify what additional datasets could be acquired that would contain indicators of the impact of Supporting People services on service users, e.g. on their health, housing circumstances and economic status;
- to advise on the extent to which routine administrative data can be acquired for various subgroups of service users within the wider population of Supporting People recipients;
- to assess the extent to which a control group can be identified for analysis purposes;

¹ All research proposals using SAIL can only proceed if approved by a group of independent reviewers called the Information Governance Review Panel (IGRP).

- to advise on the likelihood of a future project being able to identify any NHS cost offsetting associated with the provision of Supporting People services; and
- to make recommendations to Welsh Government as to whether a quantitative evaluation of the Supporting People Programme in Wales will be feasible using linked routine administrative data.
- 1.14 Given the vulnerability of some of the groups supported by Supporting People, it was accepted from the outset that it may not be possible to evaluate the impact of Supporting People either on all user groups or for the whole of Wales. The feasibility study was therefore expected to identify where any gaps in evidence were likely to remain despite the use of linked data and, if necessary, to recommend where a full evaluation project would need to be constrained in certain ways, for example limited to certain user groups or geographies.

Project Governance

- 1.15 The research post dedicated to this study was funded jointly by Welsh Government and the ESRC. The researcher was based at Swansea University, where she had a line manager responsible for managing HR processes, ensuring the project adhered to the correct project management procedures, supporting the researcher in managing key project risks and, where possible, exploiting existing networks in order to help achieve the project objectives. The researcher also had an academic supervisor to provide quidance on training and development, analytical methodology and the use of SAIL as well as coaching on SQL, data manipulation etc. The ADRC statistician and an ADRC Research Support Team project adviser also provided advice and support to the researcher. Additionally, the researcher was part of a small team of analysts funded by the Welsh Government and ESRC and attached to the ADRC Wales, which allowed her to draw on informal networks for advice and support as well as being able to take part in the SAIL User Forum. However, in terms of the delivery of analytical projects, this post is supervised by the Welsh Government Knowledge and Analytical Services Team Lead for the Data Max Programme. For this project, both the Data Max Team Lead and the Supporting People research lead were jointly responsible for the day to day running of the project and for the supervision and guidance of the researcher.
- 1.16 The researcher attended the monthly meetings of the Supporting People Research and Evaluation Steering Group, providing a monthly update consisting of:
 - a one-page progress report; and
 - a revised version of the Report Skeleton.
- 1.17 In turn, the Supporting People Research and Evaluation Steering Group reported on the progress of the group and its work to the Supporting People National Advisory Board (SPNAB), who provide advice to the Minister on the proposed strategic direction for the Supporting People Programme.

Report Structure

1.18 The processes, issues, problems and limitations encountered in the Project are documented in this Report, as well as recommendations regarding the feasibility of using data linking to deliver a full quantitative evaluation. Chapter 2 describes the project methodology as well as the opportunities and challenges of working with linked data. Chapter 3 provides the Project findings with regard to the acquisition of Supporting People data, including findings about the process of acquiring data, the challenges encountered and the implications for a full evaluation project; this Chapter

also provides recommendations for how data collection for Supporting People could be improved to facilitate future research and data linking activities. Chapter 4 presents the findings with regard to linking rates and the characteristics of the sample of Supporting People service users. Chapter 5 presents the findings of some initial exploratory analysis of the Supporting People datasets. Chapter 6 presents the findings from the substantive analysis of a set of indicators of the impact of Supporting People on health service use. Chapter 7 explores the feasibility of creating a control group for a full evaluation project. Chapter 8 discusses the potential to deliver a cost-offset model as part of a full evaluation project. Chapter 9 makes recommendations about the feasibility of and options for using data linking to deliver a full quantitative evaluation of the impact of the Supporting People Programme.

2 Methodology

- 2.1 The key research questions for the Feasibility Study were:
 - whether linking routine administrative data about the people accessing Supporting People services to other routine administrative records had the potential to allow us to analyse the impact of the services on those people, e.g. on their health, housing circumstances and economic status; and
 - for the Feasibility Study, whether an analysis could be completed of a small number of key indicators of health service use (relating to the use of primary care, A&E and hospitals) before and after people began receiving support.
- 2.2 In order to answer the broad questions identified above, this Study used a range of methods, including:
 - a brief literature review or 'Rapid Evidence Assessment'²;
 - a collection of information from Local Authorities and Supporting People providers about the Supporting People routine administrative data they held;
 - the acquisition of Supporting People routine administrative data from two pathfinder Local Authorities for linking to routine health records; and
 - some initial exploratory and provisional substantive analysis of that data.
- 2.3 The following sections provide a brief summary of the methods used in the Study. For a more detailed discussion of the methodology, please see Chapter 2 of the Technical Report. The findings of the literature review are presented in Chapter 3 of the Technical Report.
- 2.4 The Feasibility Study took place between March and September 2015.

The key advantages of data linking for the evaluation of Supporting People

- 2.5 The technique of data linking presents some challenges (for further discussion, please see Chapter 2 of the Technical Report); however, it has some key advantages that the Supporting People Research and Evaluation Steering Group felt might make it particularly suitable for delivering a quantitative component to the evaluation of the Supporting People Programme:
- 2.6 Where data from 22 Local Authorities, held in up to 22 different formats, potentially plus data from numerous providers, needed to be brought into a single, harmonised dataset, data linking using SAIL/ADRC-W was felt to be the best solution.
- 2.7 Data linking also offered distinct advantages with regard to researching the outcomes of Supporting People service recipients:
 - Since the Programme works with vulnerable groups e.g. people with substance misuse problems, and has a remit specifically around preventing homelessness, Supporting People service recipients were likely be relatively mobile and hard-to-reach. Flagging Supporting People recipients anonymously in routine administrative data would therefore be likely to be easier, more reliable and significantly less expensive as well as being potentially ethically more acceptable than finding people accessing services who would be prepared to participate in evaluation research in the 'real world'.

² A Rapid Evidence Assessment is one of a number of different methods for reviewing existing evidence in use in Government in the UK. It is a 'quick overview of existing research on a (constrained) topic and a synthesis of the evidence provided by these studies to answer the REA question'. For further information see: http://www.civilservice.gov.uk/networks/gsr/resources-and-guidance/rapid-evidence-assessment/what-is

- Because the routine health records held in SAIL are available dating back to 2004 for GP records, 2009 for A&E and 1999 for hospital admissions, linking the Supporting People administrative data to routine health records would allow the study to look back in time in order to examine health service use (and in future potentially other events for additional topics including education and social care) both before and after the Supporting People intervention.
- The fact that an evaluation would need to compare health service use before and after Supporting People intervention was felt to present a challenge for primary research. It would be both difficult and potentially unethical to identify potential Supporting People recipients before they came into contact with Supporting People services in order to interview them. In order to re-interview recipients afterwards particularly in the longer-term the kinds of 'keep in touch' exercises usually implemented in longitudinal studies would be expensive and would be likely to suffer from particularly high rates of attrition in such potentially mobile groups.
- Using data linking, the impact of Supporting People on recipients can potentially be followed up long-term at relatively low additional cost in a way that is not amenable to attrition. Since the datasets held in SAIL include mortality records, losses to follow up by death can also be identified.
- Since Supporting People is designed to support individuals going through some very challenging life events, both response rates to primary research and the reliability of self-reported information about outcomes might be low. Due to these issues, any attempt to deliver a quantitative study as primary research would most likely result, in practice, in the kind of qualitative study that is being recommended as a component of a full evaluation of Supporting People.
- 2.8 Data linking also opens up further lines of enquiry:
 - transitions between Supporting People and other services can be examined and
 the complexity of the 'journeys' of service users can be explored e.g. it may be
 possible to look for patterns of 'crisis' before or around the time of entering
 Supporting People, or for patterns of increased use of more routine health services
 immediately after the intervention followed by decreased use of the NHS over time;
 and
 - the dynamics of Supporting People service use can be explored: identifying how
 many users and what types of service users travel in and out of the service
 over time, including identifying the characteristics of repeat users and examining
 whether, for example, the health service use of repeat users is different to that of
 one-off users.

The Acquisition of Supporting People administrative data for the Feasibility Study

- 2.9 The reason the Supporting People self-reported Outcomes Data may not lend itself to data linking is that the unique reference number for the dataset is unlikely to provide a sufficient matching rate through the current NWIS matching process. Instead of containing the identifiable details required for linking, the Outcomes Data contains a service user reference number in the format 'XXXddmmyyG' where XXX is the first 3 letters of the user's surname, ddmmyy is DoB and G = gender. It is unclear how many records would match reliably using three fields (DoB, gender and first three letters of surname) created using this reference number.
- 2.10 Since the Outcomes Data could not be used for the Feasibility Study, any plans for delivering a quantitative evaluation would be forced to rely on using the routine records relating to the administration of the Supporting People Programme. The Feasibility

Study therefore needed to examine how the Supporting People routine administrative data could be linked together across Local Authorities. Furthermore, it needed to make recommendations for how information about the impact of Supporting People could be evidenced by linking the routine administrative data for Supporting People service users to other routine records.

- 2.11 It should be noted, however, that even if the Supporting People Outcomes Data had been available for analysis, a robust quantitative evaluation would attempt to validate and/or supplement those subjective measures by making comparisons with objective measures derived from routine administrative records. Linking the Outcomes Data to other routine records would also allow triangulation between sources³ in order to understand whether self-reported changes in outcomes are reflected in individuals' use of other services e.g. health services.
- 2.12 The Study invited Supporting People leads from all 22 Local Authorities in Wales to participate.
- 2.13 Information was gathered 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 administrative data to allow it to be anonymously linked to routine health records held about service users, for analysis purposes.
- 2.14 It was agreed with the Supporting People Research and Evaluation Steering Group that although the Project would attempt to acquire data for all Local Authorities in Wales, it would not expect to achieve complete data acquisition within the short timescale available to the feasibility project.
- 2.15 A key requirement was to document and assess the challenges associated with data acquisition in order to quantify the challenge for a full quantitative evaluation of Supporting People.
- 2.16 The anonymisation process involved the use of a 'trusted third party'⁴, the NHS Wales Information Service, (NWIS), who were provided with only the identifiable components of the Supporting People data, in this case the full name, date of birth and address of each service user. When data is linked, the identifiable data can either be provided at individual person level or at address level. The Supporting People identifiable data was provided to NWIS at the person level. When the identifiable information is at the person level, NWIS use it to generate a unique number for each individual, before destroying the identifiable data so that the unique numbers cannot be linked back to the person. Consistent processing by NWIS ensures that data for an individual always generates the same unique person number. In this way, records already held in SAIL relating to the same individual could be linked to the Supporting People data without either individuals or households being identifiable to researchers.
- 2.17 NWIS use the Welsh Demographic Service (WDS) data as the 'population spine' or 'template' for its anonymisation process. The WDS is a database of everyone registered with a GP in Wales from 1994 to the present day.
- 2.18 As noted in Chapter 1, the SAIL infrastructure also supports the Administrative Data Research Centre for Wales. The project was therefore required to seek approval from the ADRN Approvals Panel. A further requirement for all proposals involving the analysis of routine health data within SAIL is to obtain approval from the SAIL

³ In a concept borrowed from navigational techniques, triangulation is where findings from two or more sources are compared with the idea that one can be more confident with a result if different methods lead to the same result.

⁴ A 'trusted third party' is an organisation with secure facilities for matching data.

- Information Governance Review Panel (IGRP). The project was approved by both governance panels without any concerns being raised.
- 2.19 As part of the linking process, the overall number of cases capable of being linked to other records is reported. In order to identify any implications for a full quantitative evaluation, the study sought to examine variations in linking rates by Local Authority. For further information about the linking process, please see Chapter 2 of the Technical Report.
- 2.20 A key challenge for any evaluation of Supporting People using linked data was whether service users could be found in the WDS. Where Supporting People service users may be particularly residentially mobile and to have suffered from periods of homelessness and possibly rough sleeping, they may not have had the opportunity to register with a GP at a particular address, which may mean that they do not appear in the WDS the population spine used by SAIL to link data and therefore their Supporting People data cannot be linked to other routine records. This would mean that the impact of Supporting People on health service use could not be analysed.
- 2.21 The problem of service users not having a WDS record was envisaged to be more of an issue for some service groups than others, with older people in receipt of accommodation-based support and families with young children being the most likely to appear in the WDS and young adults with histories of offending or substance misuse the least likely to appear in the WDS.
- 2.22 Headline linking rates for each dataset are delivered automatically by NWIS as part of the linking process. In order to assess whether linking rates varied by Local Authority or by the characteristics of users, analysis was undertaken to look for any evidence that the cases that were not linked differed in any systematic way from the cases that were linked. Of particular interest was whether a full evaluation would need to be constrained to certain user groups or geographies within Wales. Please see Chapter 4 for the findings from the analysis of linking rates.

The process for making data 'research ready'

- 2.23 It should be noted that routine administrative data is not designed for research purposes, can be complex and is by nature longitudinal. Reconciliation of datasets across sources to create a 'research ready' dataset therefore tends to represent a significant challenge, even where the data relate to a service that is, in practice, delivered identically by a range of providers. With routine administrative data in particular, data collection tends to be driven by the requirements of service delivery so it is possible, and in practice commonly observed, that the same kinds of information will tend to be held in different formats by different service providers.
- 2.24 To simplify the task of reconciling the data, the Study requested from Local Authorities only a small set of core 'golden variables' that contained information of the highest priority in terms of the analysis. This allowed the process of data acquisition to be fully tested and routine data flows to be established as pathfinders for a full quantitative evaluation but would minimise the task of data reconciliation.
- 2.25 In consultation with the Supporting People Research and Evaluation Steering Group, the 'golden variables' identified as the priority areas for which analysis should be attempted:
 - age and gender of Supporting People service user;
 - supporting People service user 'service group' or 'lead need':
 - duration of Supporting People support;

- · complexity of need;
- level of Supporting People support i.e. floating, accommodation-based etc.; and
- (If available) reason for leaving Supporting People.
- 2.26 In practice, not all of the above variables were available from both participating Local Authorities and some presented challenges for analysis (for further discussion, see Chapter 2 of the Technical Report).
- 2.27 In practice, the analysis of health service indicators for the Feasibility Study was therefore completed for the following 'golden variables':
 - age group of Supporting People service user (where numbers allow, in five-year age groups and if not in broader bands of 16-24 years, 25-54 years and 55 years and over);
 - gender of Supporting People service user;
 - supporting People service user 'service group' or 'lead need'; and
 - level of Supporting People support (for Blaenau Gwent only, where data was provided separately for floating support and accommodation-based support).

Initial Exploratory Analysis

- 2.28 Even if Supporting People service users could be found in the WDS, it was by no means certain that they would make use of health services in such a way that they would generate routine health records or, given that records did exist, that sufficient numbers of events would be found to allow a robust analysis of change over time. The ability of the Project to identify and quantify change over time relies on finding sufficient absolute numbers of health service events i.e. interactions with health services before, during and after Supporting People intervention, to test whether those changes are statistically significant.
- 2.29 In order to assess whether sufficient numbers of interactions with health services could be identified, the proportion of service users who had no recorded GP events were analysed for 12 months before and after the Supporting People start date.
- 2.30 Initial, exploratory analysis was also undertaken in order to identify any patterns in the use of Supporting People services, e.g. relating to the level and duration of support, that needed to be considered when completing the analysis of the impact indicators. This analysis included an attempt to identify the proportion of 'out of area' cases, which was of specific interest to the Research and Evaluation Steering Group.

Analysis of the impact of Supporting People on Health Service Use

2.31 Using Supporting People 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 occurred⁵, the number of A&E visits and the number of emergency hospital admissions before and after service users began receiving support from Supporting People.

2.32 A challenge for the Feasibility Study was to try to understand what we should expect the pattern of health service use to look like over time. The Supporting People Programme was developed with the expectation that the support offered would help to prevent homelessness, and also help people maintain their independence and continue to live

⁵ 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.

- in their own home rather than enter long term care. As a result of this primary purpose the Programme also expects to reduce the demand on the NHS and other services.
- 2.33 However, it was theorised that the pattern of health service use might be affected by a variety of factors, including the fact that an increase in health service use following the Supporting People start date may be a positive impact, given that some health conditions may have gone untreated during more chaotic periods of service users' lives. Areas where the expectations were clearer were that the presence of a Supporting People intervention should lead to:
 - more appropriate engagement with primary care rather than ad hoc use of emergency `blue light' services; and
 - fewer reasons for using health services that might be associated with the more chaotic and risky lifestyles that may result in individuals being at risk of homelessness.
- 2.34 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.
- 2.35 Given that the Welsh Government was interested in quantifying the contribution Supporting People makes to the prevention of homelessness, it was considered essential to try to answer the question of whether Supporting People is 'making a difference' i.e. 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. 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 group⁶. The Feasibility Study has proposed a number of potential control groups that could be used in order to demonstrate that any patterns found in the data could potentially be attributed to Supporting People. For further discussion about the potential to create a robust control group, please see Chapter 7.
- 2.36 For this Research Report, the complex analysis necessary to show the margin of error around the estimated rates of health service use is not shown. For further discussion of the margin of error, including examples of analysis conducted showing the margin of error, please see Appendix E of the Technical Report. However, it should be noted that the example charts including the margins of error are presented only to allow an assessment to be made of whether any change over time is statistically significant. The numbers of events in themselves are not subject to a margin of error because they are based on a census of cases and not a survey sample.
- 2.37 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

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⁶ A control group is composed of individuals who do not receive an intervention. They are selected to closely resemble the individuals who do receive the intervention. The analysis compares the intervention group to the control group to determine whether the intervention had an effect. By serving as a comparison group, the analysis can isolate the impact the intervention had.

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.

The Potential to Deliver a Cost Offset Model

- 2.38 As noted in Chapter 1, the Supporting People Programme is designed to prevent problems in the first place or to provide help as early as possible in order to reduce demand on other services such as health and social services. A key requirement for any quantitative evaluation of Supporting People would therefore be to assess whether the demand on other services is reduced in the period after the provision of Supporting People services.
- 2.39 In England and Northern Ireland, a tool developed by Capgemini has proven useful in showing the financial savings made by Supporting People and housing support services both in England as a whole and in the regions and Local Authorities across England⁷. Some Local Authorities in Wales already use the Capgemini tool, demonstrating that it would be feasible to use the tool in Wales. The questions for this Study were:
 - whether a similar tool could be created for Wales using linked data; and
 - whether the use of linked administrative data would allow improved cost offsetting estimates to be provided.
- 2.40 The Study made a brief examination of the data requirements for the Capgemini tool, assessed the extent to which a similar tool could potentially be built into SAIL and made an initial assessment of the extent to which the use of linked routine administrative data might improve the accuracy of the resulting cost offsetting estimates.

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⁷ See http://www.sitra.org/policy-good-practice/supporting-people/valuing-supporting-people-use-of-the-capgeminitool/

3 Findings: The Acquisition of Supporting People Administrative Data

- 3.1 This Chapter summarises the process of data acquisition for the routine administrative data used for the feasibility study, including any associated issues around completeness, quality, processing and reconciliation.
- 3.2 Information gathered from Local Authorities indicated challenges in terms of data quality and data management e.g. inconsistent, incomplete or incorrect recording, duplicate records and data held in multiple systems.
- 3.3 Eleven Local Authorities reported that they held individual level Supporting People routine 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;
 - 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.
- 3.4 Seven Local Authorities reported that they did not hold routine 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.
- 3.5 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 routine administrative data they held for Supporting People.
- 3.6 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 evaluation proceeds.

The Challenges of Acquiring Administrative Data for Supporting People Service Users

Legal Barriers and Associated Issues

- 3.7 SAIL follows the data protection guidance provided by the Information Commissioners Office and operates within the Swansea University Data Protection Policy which is in line with all the relevant UK and EU law. The anonymous nature of data held in SAIL is such that it is not governed by the Data Protection Act (DPA). However, Local Authorities are bound by the DPA and a number of Local Authorities who engaged in the project voiced concerns around the legalities of sharing the data. Although it was explained that the data would be anonymised, these Local Authorities were mainly concerned with the sharing of identifiable data with NWIS as part of the anonymisation process.
- 3.8 A key legal issue for Denbighshire, Ceredigion and Gwynedd (for Gwynedd particularly in relation to service users receiving long-term support) was whether the share was disallowed by their fair processing notices (FPNs). Supporting People service users were/are presented with data protection/disclosure statements when sharing their data

that state the purposes for which their data will be used (see Appendix D of the Technical Report for the FPNs of Denbighshire, Ceredigion and Gwynedd Local Authorities). These Local Authorities reported that they were not able to share personal data as service users had not given informed consent for their data to be released for research or evaluation purposes. All of the examples of FPNs collected as part of this project differ slightly from one another and Local Authorities reported that all providers will use different FPNs on their referral forms; therefore, the scale of the problem could potentially be significant if data are sought from providers.

- 3.9 Issues with FPNs may prohibit sharing unless Local Authorities are persuaded to pursue the public good argument available under the DPA. The project team sought legal advice from the UK Administrative Data Service (ADS) as an independent organisation not directly involved in the project. Potentially, where it can be argued that it would involve a disproportionate effort to seek consent for all service users and that the sharing of the data is to the benefit of the greater public good, data can be shared without the explicit consent of individuals. Two factors are relevant to whether data can legally be shared:
 - The first issue is whether the data provider (in this case the Local Authority) has the power to share the data according to administrative law.
 - The second issue is whether the data share is legal under the Data Protection Act (DPA).

Please see Appendix A for the legal basis for sharing data between Local Authorities and SAIL for research purposes.

- 3.10 The timing of the project was such that a service level agreement (SLA) between NWIS and SAIL was drafted but not yet signed off. Although this issue has not been identified as a barrier to previous SAIL projects, both Caerphilly and Rhondda Cynon Taff sought legal advice on the matter and the preference of both information governance and legal teams was to wait for the SLA to be signed off before they could agree a data disclosure agreement to release the Supporting People data. Both Local Authorities wished to have the activities of both NWIS and SAIL covered in a written agreement for legal reassurance before they were content to proceed with the data share. It is expected that the SLA will be signed by April 2016.
- 3.11 A significant amount of time was involved in negotiating relevant agreements with Local Authorities. The request generally needed to be passed through various team members including information management, legal teams and the appropriate Information Asset Owner or other individual who would be required to sign off an agreement. This caused significant delays.
- 3.12 Ideally, a standard Supporting People FPN should be developed across all Welsh Local Authorities to allow for (anonymised) data sharing for the purposes of research and programme evaluation. As a result of the Project, RCT and Caerphilly have been working together to draft a joint data disclosure agreement which, when finished, could be used by other Local Authorities, particularly those with whom they already work closely.

Consistency and Coverage

3.13 From an initial inspection of the column headings and anonymised data extracts provided by participating Local Authorities, it became clear that there was a lack of consistency across Local Authorities in terms of the Supporting People data that was held. For a more detailed discussion of the issues identified by the Feasibility Study, please see Chapter 4 of the Technical Report. In brief, the main overarching issues were as follows:

- For all Local Authorities able to provide information to the Feasibility Study, the Supporting People routine administrative data was held in a separate system to the data for other services e.g. social care or housing. The Supporting People routine administrative data was also held in different IT systems by different Local Authorities some in multiple systems within a single Local Authority and had been provided from numerous different provider systems so there was inconsistency in content. Even where more than one Local Authority was using the same IT system, there was scope for them to use the system in different ways. In order to provide a complete record, work would therefore be required to collate data across a number of sources e.g. where information about alarm services and/or older people's services may be held elsewhere in the Local Authority system.
- There was some inconsistency between Local Authorities in terms of the information that was collected from providers by Local Authorities: for example, Caerphilly included one column for 'lead need', Blaenau Gwent included 'main need' and 'secondary need', RCT included 'lead need' and 'other need' in one, older database while in new database (introduced in 2013) they included 'lead need' and four columns for 'additional need'; Merthyr had 'lead need' and five columns for 'additional need', whilst ILLY data from Swansea has client E groups.
- There were also known gaps in electronic records, since Local Authorities
 reported that some providers only held records in hard copy and that there were
 circumstances where records were understandably not being kept at all e.g. where a
 list of emergency accommodation was provided to individuals who enquired without
 a record being kept of who it had been given to.
- Local Authority Supporting People representatives also reported that there will be
 incompleteness for some records because the providers have sent incomplete data
 to them. This is because providers are currently collecting the data using a variety
 of methods, including paper forms, and there is no standardisation around what is
 collected.
- There was also **inconsistency** in terms of what information was entered into each field e.g. for the Blaenau Gwent data it became evident that the 'referred by' field had been completed with the provider in some cases and in others contained the name of an individual, presumed to be the case worker.
- Missing or incorrect data: for example, a small number of cases for Blaenau Gwent Local Authority had a missing code for gender or included a 'week of birth' that was assumed to be incorrect. Among the unlinked records for Blaenau Gwent Local Authority, 132 records had a 'week of birth' that was coded as the first week of January 1900. This is likely to mean that the birth date was missing in the original Supporting People record as supplied by Blaenau Gwent Local Authority (or they were born in the first week of January 1900, which was assumed to be incorrect). Some of these 132 records may have been duplicates, so 132 records may relate to fewer than 132 unique individuals. The remainder of the problematic 'week of birth' codes were clearly mistypes of various kinds e.g. seven records with a recorded 'week of birth' in the future and one recorded as '9191' when perhaps it should be 1991 or 1919.
- Data entered correctly but inconsistently: specimen data extracts included, for example, cases where a full stop was added at the end of a 'lead need' category or a capital letter at the beginning of a word, both of which needed to be recoded before data could be reconciled.

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⁸ As discussed in Chapter 2 of the Technical Report, SAIL suppresses full 'date of birth', shortening it to 'Week of birth' because it is less disclosive.

- Free text fields were used in some cases where pre-coded drop-down lists or other standard fields might have been more appropriate: for example, for ethnic origin the following range of codes had been recorded in the Blaenau Gwent data: w, n, NULL, Ww, WHITE BRITISH, U, B, M, NK, Y, WHITE BRITISHY, BWC, F, A, BLACK AFRICAN, C, EG, WB.
- The existing systems did not appear to contain any logic checks to ensure that, for example, dates were feasible e.g. some dates of birth or support start dates were recorded in the future.
- The existence of duplicate records also complicated the analysis, some of which was unavoidable e.g. where service users received services from more than one provider or appeared in more than one year of data (for further discussion, please see Chapter 5); for example, the same service user was, in some cases, recorded with a different ethnic origin or a different gender in different records. One advantage of duplication is that where duplicate records hold different information, we may have more than one chance to link an individual.
- 3.14 Some Local Authorities reported carrying out some level of data cleaning after receiving data from providers. However, even where data is collected using a case management system such as SPRINT, it is still the case that a variety of individuals or organisations may be responsible for inputting the data since, depending on the Local Authority, data may be input by providers or case workers or the Local Authority Supporting People team.
- 3.15 As discussed in greater detail in Chapter 4 of the Technical Report, the introduction of standardised fields combined with the introduction of data entry logic checks would help to avoid some of these problems for the future.
- 3.16 Key issues for data linking was that that not all Local Authorities reported that they held dates of birth (apart from in Outcomes Data) or the postcode of the service user's address in their Supporting People routine administrative data. Rhondda Cynon Taff and Merthyr held addresses without the postcode. Blaenau Gwent did not hold postcodes in their floating support or accommodation-based support databases but fortunately they had the resources to add these manually in order to participate in the Study. Adding postcodes manually was not feasible for Rhondda Cynon Taff and Merthyr as their databases were significantly larger.
- 3.17 One possible solution investigated for the Study was to use software designed to match addresses to postcodes. Two data extracts of addresses from Rhondda Cynon Taff were processed by SAIL giving a success rate of 57% (2004) and 58% (2014) respectively. Unsuccessful matches could be provided back to the Local Authority for manual coding, significantly reducing the task (for further discussion, please see Chapter 4 of the Technical Report).
- 3.18 Given the problems noted above, it would take some resource within Local Authorities to clean, collate and reconcile the data before it could be provided to SAIL. However, for the future a more practical solution would be to 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 for data linkage purposes i.e. full name, data of birth, gender, full address including postcode and, if possible, National Insurance Number.

Acquiring additional administrative data to evidence the impact of Supporting People

3.19 There would be scope, if a full evaluation were to proceed, to evidence the impact of Supporting People on areas beyond health service use by acquiring routine

- administrative data for additional topics e.g. homelessness and housing, social care, crime, labour market participation and/or benefit receipt.
- 3.20 The acquisition of additional datasets would be time-consuming. However, where the full evaluation would be completed at least in part as an ADRN project, the UK ADS would be responsible for negotiating access to any UK-level public sector data from e.g. the Home Office/Ministry of Justice and DWP/HMRC, and the ADRC-W would be responsible for providing the researcher with access to the data.
- 3.21 The acquisition of data held within Local Authorities or Third Sector organisations in Wales would be the responsibility of the Supporting People evaluation project, supported by further data acquisition efforts led by the Welsh Government Programme to Maximise the Use of Existing Data.

Conclusions and Recommendations

Conclusions

- 3.22 Information gathered from Local Authorities indicated significant challenges in terms of data quality and data management e.g. inconsistent, incomplete or incorrect recording, duplicate records and data held in multiple systems.
- 3.23 Whilst challenges exist in terms of acquiring, reconciling and analysing the existing data, assuming the recommendations made below are actioned, indications are that a quantitative evaluation is deliverable, at least for those Local Authorities that hold individual-level data.
- 3.24 Although it would be time-consuming, 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, can be undertaken if a full evaluation proceeds.

Recommendations

- 3.25 Recommendations are made to the Welsh Government Supporting People team to:
 - 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.

- 3.26 For Local Authorities that did not hold individual-level data, options for acquiring data from providers should be explored if a full evaluation proceeds.
- 3.27 For impact indicators relating to topics beyond health e.g. homelessness and housing, social care, crime, labour market participation and/or benefit receipt, acquisition of additional routine records is recommended.
- 3.28 As noted in Chapter 2, there may be value, if a full evaluation proceeds, in trying to triangulate between the Outcomes Data and the objective measures derived from routine administrative records in order to understand whether the any changes in outcomes as recorded in the Outcomes Data are reflected in individuals' use of other services e.g. health services.

4 Findings: Linking Rates and Sample Characteristics

Introduction

- 4.1 The linking rate is defined as the proportion of Supporting People routine administrative records for which a record also existed in the Wales Demographics Service or WDS (the database of everyone registered with a GP in Wales since 1994). As described in more detail in Chapter 2 of the Technical Report, the WDS is the 'population spine' or 'index' database used to link records in SAIL.
- 4.2 The key question to be answered in this Chapter is whether the findings of a full evaluation based on the linked routine administrative records of Supporting People service users would be generalisable to all Supporting People service users in Wales. Whether the findings would be generalisable is dependant on two factors:
 - firstly, whether linking rates are sufficiently high i.e. only a small proportion of records are lost from the analysis due to failure to link; and
 - secondly, whether evidence of any significant bias in linking rates is found in terms
 of the known characteristics of the sample i.e. no Supporting People service user
 subgroup would be relatively less well-represented in the analysis.
- 4.3 It should be noted that the minimum age for receipt of Supporting People services is 16 years. Records for individuals aged less than 16 years were therefore excluded from the analysis on the assumption that they were related to an adult who was included in a separate Supporting People record.
- 4.4 For a more detailed discussion of linking rates and sample characteristics, please see Chapter 5 of the Technical Report.

Findings

- 4.5 For Blaenau Gwent, data was successfully linked for 302 of 364 (or 83%) of recipients of accommodation-based support for 2012-14 and for 1,896 of 2,242 (or 85%) of recipients of floating support for 2003-15 (see Table 5.1, below). Over 90% of the floating support records were for the period 2010-15. Although Blaenau Gwent Local Authority agreed to supply data for older people in receipt of accommodation-based support, the data could not be processed within the limited timescale of the Feasibility Study.
- For Swansea Local Authority, data was successfully linked for over 48,000 out of over 4.6 65,000 Supporting People records provided for the period 2004-15. The overall linking rate across all years was 74% but the data quality and therefore the linking rate was higher for more recent years, with linking rates of over 90% for each year from 2011-12 to the partial year of 2015-16 (see Table 5.3, below). It should be noted that some individuals receiving support from Swansea Local Authority Supporting People had spells of support that spanned two or more years of data; these individuals will therefore appear in the data for two or more of the years reported in Table 5.2, below. So. although over 40,000 records were linked, these related to a total of 13,463 individual service users (table not shown). Given the relatively lower quality of the data for earlier years, it was considered that analysing data for years 2011-12 to 2015-16 would provide the best indication of whether any bias was present in the linked data for Swansea Local Authority and therefore of the feasibility of providing analysis of the impact of the Supporting People Programme. The analysis of the Swansea Local Authority data presented in the remainder of this Chapter and in Chapters 5 and 6 of this Report is therefore based on the data for years 2011-12 to 2015-16, a total of 8,450 individuals.

Table 4.1 Blaenau Gwent Local Authority: linking rate by level of support^a

Level of support	Number of Supporting People records provided	Number records linked to WDS	Linking rate	
floating support	2,242	1,896	85%	
Accommodation-based support	364	302	83%	
Total	2,606	2,198	84%	

^a Although Blaenau Gwent agreed to supply data for older people receiving accommodation-based support, the data could not be processed within the limited timescale of the Feasibility Study.

Table 4.2 Swansea Local Authority: linking rate by year (annual data extract)^a

Year	Number of Supporting People records provided	Number of individuals with a WDS record	Linking rate
2004-05	3,365	1,786	53%
2005-06	4,661	2,710	58%
2006-07	5,206	3,275	63%
2007-08	5,544	3,619	65%
2008-09	5,807	3,945	68%
2009-10	,963	4,174	70%
2010-11	5,696	4,033	71%
2011-12	6,084	5,562	91%
2012-13	6,066	5,564	92%
2013-14	5,520	5,043	91%
2014-15	5,339	4,886	92%
2015-16 ^b	3,992	3,665	92%
Total	65,243	48,262	74%

^a Some individuals had spells of support that spanned two or more years of data; these individuals appear in every year in which they received support.

- 4.7 Linking rates were analysed, where possible, by level of support, by year of data collection, by the gender and age group of the service user, by 'lead need' or 'service group', complexity of need and 'reason for leaving' (see Chapter 5 of the Technical Report). There was little evidence that the cases for which linking was not possible differed in any systematic way from the cases where linking was possible. The exceptions for which the linking rates were relatively lower were for those user groups where contact information would be expected to be less accurate e.g. women experiencing domestic violence and people with a criminal offending history.
- 4.8 Please see Chapter 5 of the Technical Report for a more detailed analysis of linking rates and sample characteristics.
- 4.9 Although ideally the data would be analysed for both Local Authorities for the same time period, for the Feasibility Study it was considered more important to avoid, where possible, the issue of small numbers. Therefore, the analysis of the Blaenau Gwent Local Authority data presented in the remainder of this Chapter and in Chapters 5 and 6 of this Report is based on all available data (i.e. recipients of accommodation-based support for 2012-14 and floating support recipients for 2003-2015) and has not been restricted to later years as for the Swansea Local Authority data.
- 4.10 The Swansea Local Authority Supporting People routine administrative data is complex for a number of reasons:

^b The low linking rate for 2015-16 will require further investigation if a full evaluation proceeds, working with NWIS and Swansea Local Authority.

- Individual service users could appear in multiple years of data with almost identical records apart from the start and end dates. This made it difficult to be absolutely certain that spells of support were unique. In many cases, however, the first such record would tend to contain a start date but no end date and the following year's record would tend to contain no start date or an identical start date, which suggested that support had been continuous. Similarly, where a record had no end date, often an almost identical record in the following or later subsequent year (assuming several in between had no start or end date) would have either no start date or an identical start date but would contain an end date. It was assumed that a missing start date or end date for a particular year indicated that support had begun or ended in, respectively, the previous or the following year. In many cases, spells of support appeared, under this assumption, to last for several years (see further discussion in Chapter 5). This was not unexpected because the Swansea Local Authority Supporting People data included both floating and accommodation-based support.
- Duplication could also occur within the same year, with two or more records relating
 to the same unique individual but to different 'service groups' and often to partly or
 entirely different periods of time. This indicated that the same individual or family
 were receiving multiple services for different reasons or at different times.
- The Swansea data contained a high proportion of records (12%) where the gender
 of the service user was coded as unknown. Duplication could occur where a unique
 individual had one record with the gender coded as unknown and one containing the
 correct gender.
- It should be noted that, unlike for Blaenau Gwent (see below), all Swansea Local Authority Supporting People records appeared to relate to recipients; the data contained no records for people who had been unsuccessful in gaining support.
- 4.11 The Blaenau Gwent Supporting People routine administrative data was similarly complex. Each individual in the Blaenau Gwent data could have more than one Supporting People record, each relating either to spells of support or to occasions when they were unsuccessful in receiving support. As for Swansea, spells of support could include either simultaneous or consecutive spells with the same or with different providers. The Blaenau Gwent definition of 'unsuccessful' appears, from the content of this field, to relate to factors beyond being ineligible or unsuitable for support, including, for example, 'failed to engage'. The fact that people can have more than one record means that a single individual can, for example, be coded as 'unsuccessful' in more than one record (i.e. on more than one occasion), either for the same or for different reasons. It is also possible for individuals to have a 'reason unsuccessful' in one record but a Supporting People start date in another record, indicating that on a different occasion they received support. Figures 4.1 to 4.3 (below) provide example case studies, created using anonymised information drawn from a number of different records and/or individuals in order to illustrate this issue.

Figure 4.1 Blaenau Gwent floating support: Case Study A:

Occasion 1 (i.e. Record 1): in December of 2009, Service User A was referred by the Probation Service to a provider of generic support. The lead need was recorded as 'generic floating support' with a secondary need of 'substance misuse (drugs)'. Service User A was recorded as having been unsuccessful under the code 'failed to engage'.

Occasion 2 (i.e. Record 2): in March of 2012, Service User A was referred by a third sector organisation working in the area of substance misuse to a provider of substance misuse support. The lead need was coded as 'people with substance misuse issues' with a secondary need of generic floating support. Service User A was recorded as having been unsuccessful under the code 'support no longer required'.

Figure 4.2 Blaenau Gwent floating support: Case Study B:

Occasion 1 (i.e. Record 1): in January of 2013, Service User B referred themselves to a provider of generic support. The lead need was recorded as 'generic floating support'; there was no secondary need. Service User B was recorded as having been unsuccessful under the code 'support no longer required'.

Occasion 2 (i.e. Record 2): in March of 2013, Service User B was referred by Local Authority Housing Options to the same provider of generic support. The lead need was recorded as 'generic floating support'; there was no secondary need. Service User B was recorded as having been unsuccessful under the code 'failed to engage'.

Occasion 3 (i.e. Record 3) in September of 2013, Service User B was referred by Local Authority Social Services to the same provider of generic support. The lead need was recorded as 'substance misuse (alcohol)' with a secondary need of 'mental health issues'. Service User B was recorded as having been unsuccessful under the code 'failed to engage'.

Figure 4.3 Blaenau Gwent floating support: Case Study C:

Occasion 1 (i.e. Record 1): in May 2013, Service User C was referred by Local Authority Housing Options to a provider of 'crisis support'. The lead need was recorded as 'families with support needs'; there was no secondary need. Service User C was recorded as having been unsuccessful under the code 'failed to engage'.

Occasion 2 (i.e. Record 2): in February of 2014, Service User C self-referred to the same provider. The lead need was coded as 'women experiencing domestic violence' with a secondary need of 'families with support needs'. Service User C received a spell of support.

Conclusion

- 4.12 Overall, it can be concluded that 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.
- 4.13 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.
- 4.14 Indications are that the findings of an evaluation would be both relatively unbiased and largely generalisable to all Supporting People service users, at least for those Local Authorities that hold individual-level data.

5 Findings: Exploratory Analysis

Introduction

- 5.1 As discussed in Chapter 2, a key concern for any evaluation of Supporting People based on the use of linked routine administrative data was whether, irrespective of whether the records could be linked, sufficient health service events for service users could be found in the routine health records to allow robust indicators to be developed of the impact of Supporting People on health service use. Furthermore, sufficient cases would ideally be available to allow the analysis of change over time. Although the Feasibility Study did not expect to identify change over time for individual service users, it did hope to observe change over time at the level of the Supporting People recipient population and to assess whether, with the greater numbers of records that might be acquired if a full evaluation were to proceed, it might be feasible to examine change over time for subgroups of service users.
- 5.2 In order to examine the extent to which health events were observed for Supporting People service users, the routine administrative Supporting People records linked to the routine health records were analysed to establish the proportion of service users with recorded GP events and to examine any patterns that could be observed with regard to the period before and after the support start date.
- 5.3 The interpretation of any patterns observed was expected to be challenging where for some Supporting People service groups, one might expect an increase in health service use leading up to the support start date, since the support may begin in response to a specific crisis that would appear in the record e.g. a domestic violence-related injury, substance misuse or mental health crisis or for the frail elderly a fall, stroke etc. Whether and how the pattern of health service use would then be expected to change was more uncertain, because:
 - the crises themselves may vary in length from a single day's acute crisis or injury to a longer period of chronic deterioration, just as the period of 'recovery' might vary in length; and
 - an increase in health service use following the Supporting People start date may be a positive impact, given that some health conditions may have gone untreated during more chaotic periods of service users' lives.

The issue of variation in the duration of the support itself and the existence, for some service users, of multiple health crises (even within a single spell of support) and/or multiple spells of support (potentially indicating additional crises) was expected to further complicate this picture.

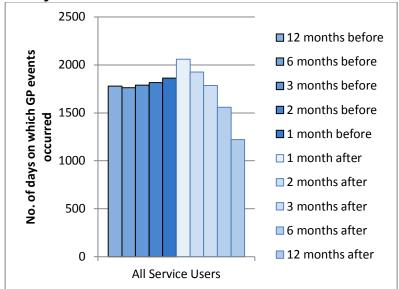
5.4 As demonstrated in Chapter 4, the Supporting People routine administrative data is complex, with unique individuals having multiple records relating to different spells of care or to occasions when they were 'unsuccessful'. This complexity was not unexpected and tends to be a feature of data held purely for administrative purposes as opposed to data collected specifically for research purposes. In order to further explore the complexities of the data, a range of exploratory analyses were completed, the objective of which was to inspect the data and to understand its structure in order to make decisions about how it should be analysed. The exploratory analysis is discussed in greater detail in Chapter 6 of the Technical Report. For the findings of the analysis of the indicators of the impact of Supporting People on health service use, please see Chapter 6 of this Report.

5.5 It should be noted that the question of how any improvement can be attributed specifically to Supporting People can only fully be addressed with the use of a suitable control group. For a discussion of the feasibility of creating a control group, please see Chapter 8.

Findings

- 5.6 Sufficient health service events were identified relating to Supporting People service users to reassure the Research and Evaluation Steering Group that using routine administrative records for Supporting People linked to routine health records was likely to give a realistic picture of the health events of Supporting People service users and allow a robust analysis of change over time. GP events of some kind were found for almost all Swansea Local Authority Supporting People service users in the routine health records only 1% of the Swansea Supporting People service users had no recorded GP events at all in the SAIL system (table not shown).
- 5.7 As we might expect, Supporting People service users were estimated to use GP services around twice as frequently as the general population in the 12 month period before support began.
- 5.8 In order to give an initial indication of the possible impact of Supporting People on health service use, the Research and Evaluation Steering Group decided that the analysis should focus on 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 summarise this information, findings were presented 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.
- 5.9 The initial exploratory analysis looked at all service users receiving floating support within Blaenau Gwent Local Authority and at the number of days when GP Events occurred. Given that, as discussed above, the crisis itself may be of variable duration, the date when support began was included in the analysis. For the Feasibility Study, the day when support began was included in the period '1 month after', which may explain why the numbers of GP events are at their highest in this one-month period.
- 5.10 The analysis shown in Chart 5.1, below, does not attempt to account for the complexities of the duration of support or for the existence of multiple crises or spells of support. The analysis nevertheless demonstrates that, at the level of the whole population of Supporting People service users in this case for Blaenau Gwent floating support there is an observable pattern of a slight increase in events up to the time when Supporting People support began with a decrease in events thereafter (see Chart 5.1, below). The increase was not surprising, given the 'needs' that can bring individuals to Supporting People e.g. domestic violence and substance misuse. The analysis showed that the two-year analytical 'window' did allow a useful comparison to be made of the pattern of health events leading up to and following the start of support. It was therefore decided that, due to the limited timescales of the feasibility study, the analysis would focus on a two-year analytical 'window'. The more complex kinds of analysis that could be undertaken as part of a full quantitative evaluation would be designed to analyse events separately for the periods during and after support was provided and could explore wider 'windows'.

Chart 5.1 Blaenau Gwent Local Authority Supporting People floating support: number of days on which GP events occurred in the months before and after support start date



- 5.11 The initial exploratory analysis also found that a total of 476 Swansea Supporting People service users (4%) and 38 Blaenau Gwent floating support recipients (2%) died during the 12 months after support began. Although within the limited timescales of the feasibility study it was not possible to examine this issue further, if a full evaluation were to proceed, it is recommended that further analysis be completed to examine the causes of these deaths, the key question being whether they were found to occur more, equally or less frequently among the Supporting People service groups than are observed in similar subgroups of the general population e.g. the frail elderly.
- 5.12 Initial exploratory analysis showed that the support provided varied in terms of its duration. The duration of Blaenau Gwent floating support ranged from 10 spells where the support had the same start and end date i.e. lasted a single day, to support of over two years in duration, with 80% of spells lasting 12 months or less (see Table 5.1, below). A further seven spells had a duration of two to three days. The longest spell recorded in the data was for just under nine years.

Table 5.1 Blaenau Gwent Local Authority floating support: duration of support

Duration of support (months) ^a	Number of spells	Percentage of spells	Cumulative
,	·		percentage of spells
Less than 1	138	8%	8%
2 to 3	359	22%	30%
4 to 6	440	27%	57%
7 to 12	390	24%	80%
13 to 24	248	15%	95%
25 or more	83	5%	100%
Total	1,658	100%	

^a Months were calculated as 0-29 days, 30-59 days etc.

5.13 Although the issue of duplication mentioned in Chapter 4 made it difficult to be absolutely certain that spells were unique, it is estimated that 27% of service users in Swansea Local Authority had more than one spell of support from the Supporting People Programme between 2011 and 2015, and an estimated 22% of floating support service users in Blaenau Gwent had more than one spell of support between 2003 and 2015 (see Table 5.2, below).

5.14 For the Feasibility Study analysis, the decision was made to focus on the first spell of support recorded for each service user.

Table 5.2 Number of spells of Supporting People support by Local Authority^a

Number of spells of support	Local Authority			
	Blaenau Gwent floating support (2003-15)	Swansea (2011-15)		
	%	%		
One spell	78	63		
Two spells	15	21		
Three spells	5	8		
More than three spells	2	5		
Total	100	100		

^a Unique individuals can have more than one simultaneous spells of support – this table has eliminated this effect.

- 5.15 Due to the complexities described above (for further discussion, please see Chapter 6 of the Technical Report), it was not possible to develop the complex analysis methods necessary in order to reliably separate the period during which support was being provided from the period after support ended. These more complex kinds of analysis could be undertaken as part of a full quantitative evaluation.
- 5.16 As noted above, the Research and Evaluation Steering Group were interested in examining the issue of 'out of area' cases. Although there are limitations to analysing 'out of area' cases in SAIL (for a detailed discussion of the limitations, please see Chapter 6 of the Technical Report), it is estimated that around 8% of Blaenau Gwent Local Authority Supporting People service users were not registered with a GP at an address within the Blaenau Gwent Local Authority area; the proportion was lower at 3% for Swansea Local Authority (table not shown).
- 5.17 For Swansea Local Authority (but not for Blaenau Gwent), it was possible to analyse the proportion of 'out of area' cases by 'service group' (see Table 5.3, below). 'Substance misuse (drugs)' was the 'service group' for which the greatest proportion of Swansea Local Authority Supporting People service users were registered with a GP outside the Swansea Local Authority area.

Table 5.3 Proportion of Swansea Local Authority Supporting People service users

registered with a GP outside the Swansea Local Authority area

'Service Group'	'In Area'	'Out of Area'	Percentage 'Out of Area'	
	N	N	%	
Substance misuse (drugs)	156	37	24	
Physical/sensory disabilities	243	16	7	
Young people 16-24 years	574	37	6	
Incorrect or missing service group code	787	13	6	
Learning Disabilities	193	9	5	
Refugee status	225	7	3	
Generic floating support	1,835	57	3	
Substance misuse (alcohol)	194	5	3	
Mental health issues	852	20	2	
Families	1,437	32	2	
People aged 55 years and over	4,927	77	2	
Domestic violence	182	2	1	
Total	11,605	312	3	

^a A total of 28 duplicate cases are included in these figures; these are cases where individuals were recorded as having more than one Service Group. 'Service Groups' containing fewer than five service users have been suppressed.

5.18 Further exploratory analysis of the data if a full evaluation proceeds, plus some accompanying qualitative research about the service user journey – particularly exploring the time when support begins - would provide some contextual information about the potential explanations for some of the findings reported above and would help analysts to understand how to analyse and report on the data in the most appropriate manner.

Conclusions and recommendations

- 5.19 In conclusion, the challenges described above would require further examination should a full evaluation proceed so that methods can be developed to take the full complexity of the data into account. However, for the Feasibility Study it has not been possible to develop the complex analysis methods necessary to disentangle these issues in order, for example, to reliably separate the period during which support was being provided from the period after support ended.
- 5.20 On the basis of the exploratory analysis, the following analytical decisions were made:
 - To focus on the simpler distinction between events before and after the support start date.
 - To focus the analysis on a two-year 'window', including the year before service users began receiving support and the year after the Supporting People intervention.
 - To include the start date of support in the analysis and to include it in the period 'after support began'.
 - Not to examine the period 'during support' separately.
 - To seek to examine changes in the reasons for health service use, irrespective of any change in levels of health service use.
- 5.21 For a full quantitative evaluation, when greater numbers of records would be available, we would recommend analysing events separately for service users with different profiles. For example, we recommend undertaking some exploratory segmentation analysis in order to split service users into groups experiencing similar crises and

receiving similar levels and durations of support, so that the following kinds of service users would be analysed together:

- service users with 'acute' crises that consist of relatively few health events over a short period; and
- service users with 'chronic' crises that appear to consist of numerous or increasing events over a longer period.

The 'chronic' and 'acute' groups could then be split into those receiving different levels (floating or accommodation-based) and durations (short-term versus long-term) of support.

- 5.22 We also recommend examining a wider 'window' to see what happens to the impact indicators in the longer-term.
- 5.23 If a full evaluation proceeds, further analysis could also be completed specifically to examine changes in health service use after support ends.

6 Findings: Indicators of the Impact of Supporting People on Health Service Use

Introduction

- 6.1 As noted in Chapter 2, the timescales of the Feasibility Study were ambitious and it was accepted at the outset that not all Local Authorities would be able to provide individual level data within the timescales. As discussed in Chapter 3, various challenges were also encountered in terms of acquiring, reconciling and analysing the existing data. Other data linking projects have taken considerably longer than it has taken here to acquire data and report findings, so achieving so much in so short a timescale should be considered a success.
- 6.2 The findings of the Feasibility Study are nevertheless 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 analysis of the data. More complex kinds of analysis could be undertaken as part of a full quantitative evaluation. Using Supporting People routine administrative data from the Local Authorities who were able to provide data for the Feasibility Study, a small number of key indicators of the impact of Supporting People on health service use were analysed (please see Chapters 3 and 4 of the Technical Report for information about the choice of impact indicators).
- 6.3 The indicators of the impact of Supporting People on health service use for which analysis is presented in this Chapter are:
 - the number of days on which GP events occurred⁹;
 - the number of A&E visits; and
 - the number of emergency hospital admissions.

Each of the indicators listed above was analysed before and after service users began receiving support from Supporting People and were analysed, where available, by gender, five-year age group and 'lead need' or 'Service Group'.

- 6.4 The findings are reported for Blaenau Gwent and Swansea Local Authorities separately. This is because:
 - the Swansea analysis includes data for all levels of support¹⁰, while the Blaenau Gwent analysis is restricted mainly to floating support service users; some analysis has also been possible for a group of accommodation-based support service users from which 'older people' were excluded (as noted above, Blaenau Gwent Local Authority were willing to provide data for older people's accommodation-based support but these records were held separately and could not be provided during the limited timescale of the Feasibility Study);
 - the sets of data for the two Local Authorities relate to different time periods; and
 - the datasets 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.
- 6.5 As discussed in Chapter 3, the analysis presented in this Chapter is based on data for Swansea Local Authority for years 2011-15, where data quality has been demonstrated to be better. For Blaenau Gwent, where numbers were small, the decision was made to

⁹ As noted in Chapter 3, 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.

¹⁰ Floating support and accommodation-based support.

- include all cases that were successfully linked, so the analysis relates to accommodation-based support for 2012-14 and floating support for 2003-15.
- 6.6 For Blaenau Gwent Local Authority, the findings are also reported for floating support service users and accommodation-based support service users separately. This is because the Research and Evaluation Steering Group were interested in seeing whether the indicators varied by level of support¹¹. However, due to small numbers, this decision has led to the majority of the analysis for accommodation-based support service users having to be suppressed due to small numbers.
- 6.7 For Swansea Local Authority, the data provided only allowed for a partial distinction to be made between floating and accommodation-based support¹², so it was not possible to report findings separately by level of support.
- 6.8 As discussed in Chapter 2, the findings are shown without a margin of error. For further discussion of the margin of error, including examples of analysis conducted showing the margin of error, please see Appendix E of the Technical Report.
- 6.9 As discussed in Chapter 2, the Research and Evaluation Steering Group wished to examine whether, irrespective of whether the level of health service use changed, the reasons for health service use changed. This would give an indication of whether health service use became more appropriate or simply associated with less 'crisis-related' conditions after support began. Because these methods were being developing as the Feasibility Study progressed, and the complexity of the routine health records in SAIL meant that the development of each method was extremely very time-consuming, different methods are presented in the following sections for each health service i.e. for the reasons for GP events, A&E visits and emergency hospital admissions.
- 6.10 For GP events, the diagnosis codes and prescribing codes that showed, respectively, the greatest increase and decrease after the Supporting People service start date are reported compared with the top five reasons for attendance in the general population i.e. people of a similar age and gender living in the same local authority. For A&E visits the top five reasons for visiting A&E (IDC10 chapter headings) before and after the Supporting People start date are shown compared with the top five reasons in the general population. For emergency hospital admissions, the top five reasons for emergency admissions are shown for service users compared with a control group; for Swansea Local Authority, the reasons that increased and decreased the most after the start date are also shown.
- 6.11 When interpreting the findings, the reader should bear in mind the limitations to both the data and the analysis discussed in Chapters 2 and 3, and the findings of the exploratory analysis reported in Chapter 5. 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. The following, in particular, should be kept in mind when interpreting the findings:
 - as discussed in Chapter 2, 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.
 - As mentioned in Chapter 2, the comparison of findings for Supporting People service users against a valid control group would provide evidence as to whether the patterns shown in Charts 6.1 to 6.15 (below) can be attributed to the

¹¹ Floating support and accommodation-based support.

¹² Categories of 'service group' included 'generic floating support' but for other service users, the service groups may have included a mixture of floating or accommodation-based support.

Supporting People Programme. For further discussion of the feasibility of creating a valid control group for a full quantitative evaluation project and for some provisional analysis of a potential comparison group, please see Chapter 7.

6.12 The findings for each of the three indicators chosen to demonstrate the impact of Supporting People on health service use are reported in the following sections.

Findings

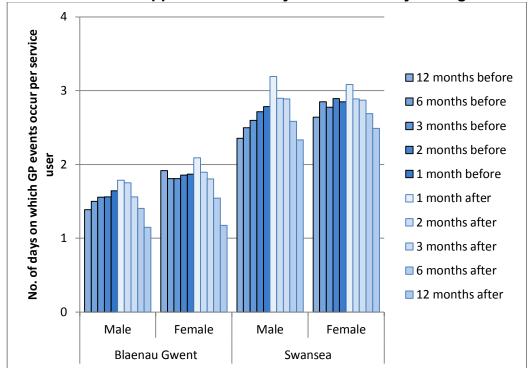
- 6.13 In order to allow valid comparisons to be made between different service user subgroups, the numbers of GP events are expressed as the rate per service user and the numbers of A&E visits and emergency hospital admissions are expressed as the rate per 100 service users.
- 6.14 The number of categories of 'Lead Need' or 'Service Group' for which findings are presented varies by health indicator 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 quantitative evaluation, where datasets for more than one Local Authority could, where appropriate, be combined for analysis purposes.

Number of days on which GP Events occurred

- 6.15 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 related to 63% of Supporting People floating support service users and 70% of accommodation-based support service users for Blaenau Gwent Local Authority, whereas 99% of Supporting People service users for Swansea Local Authority had SAIL GP event data. Efforts by SAIL to acquire data from additional GP practices continue so if a full evaluation were to proceed, the analysis of GP events would be possible for a greater proportion of Supporting People service users. As noted in Chapter 6, the proportion of GP practices in the Blaenau Gwent area that had signed up to provide their events data to SAIL had increased from 46% when the analysis was being completed to around 68% at time of writing.
- 6.16 For many of the Supporting People service user subgroups shown in Charts 6.1 to 6.5, 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.
- 6.17 As discussed above, small numbers mean that the margin of error around the changes over time for the Feasibility Study are relatively wide but where a consistent effect or trend over time is observed are nevertheless worthy of note and suggest some association between the support provided by Supporting People and levels of health service use.
- 6.18 Further analysis would be necessary to establish whether the reduced level of GP use described above was maintained longer-term.
- 6.19 The subgroups of Supporting People service users for which the pattern described above was not seen (see Charts 6.1 to 6.5, below) were as follows:
 - Supporting People floating support service users with the 'lead need' of 'young people aged 16 to 24 years' in Blaenau Gwent Local Authority.

- Supporting People floating support service users aged 60 to 64 years and 85 years and over 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'.
- The majority of five-year age groups for Swansea Local Authority including all five-year age groups 55 years and above.
- 6.20 The difference in rates by Local Authority seen in Chart 6.1 below, may at least 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 all levels of 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 made less use of GP services. Differences in access to GP Out of Hours services may also play a part.
- 6.21 Possible explanations for the higher rate of GP use among older people in Swansea (see Chart 6.3b, below) are that:
 - the Swansea data includes greater numbers of older people than the Blaenau Gwent data (45% of service users are aged 55 years and over for Swansea compared with 25% aged 55 years and over for 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, relatively more older people will be missing 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 55 years and over present to Supporting People, they are coded by default as 'People 55 years and over 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 quantitative evaluation; and
 - the figures are calculated per service user rather than per older person.

Chart 6.1 Number of days on which GP events occurred per service user in the months before and after support start date by Local Authority^a and gender of service user



^a 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 6.2 Blaenau Gwent Local Authority Supporting People floating support: number of days on which GP events occurred per 100 service users in the months before and after support start date by age group of service user

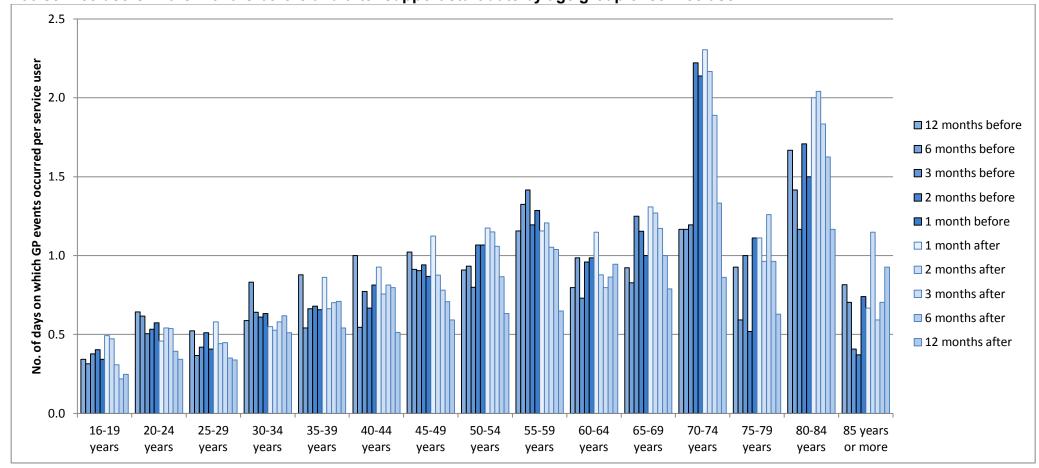


Chart 6.3 Swansea Local Authority: Number of days on which GP events occurred per service user in the months before and after support start date by age group of service user: five-year age groups

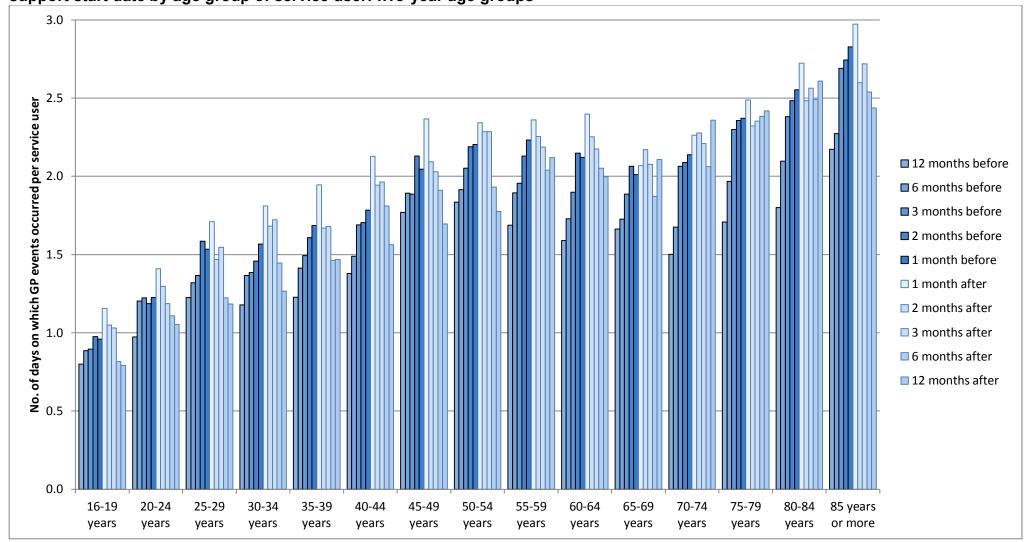
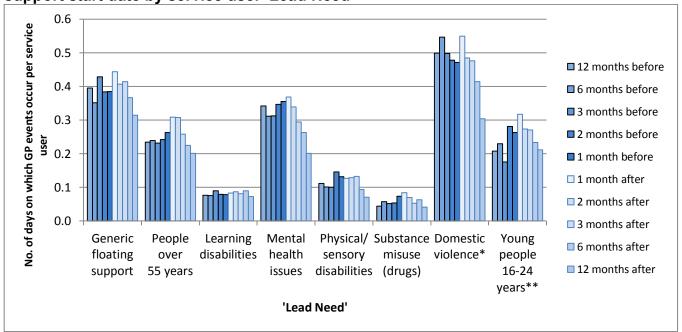
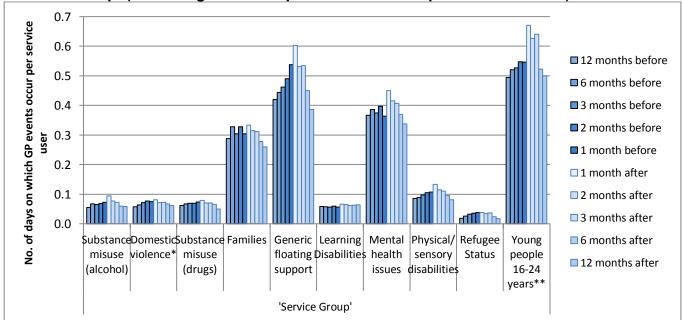


Chart 6.4 Blaenau Gwent Local Authority Supporting People floating support: number of days on which GP events occurred per service user in the months before and after support start date by service user 'Lead Need'



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

Chart 6.5a 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 6.5b)^a



^a 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).

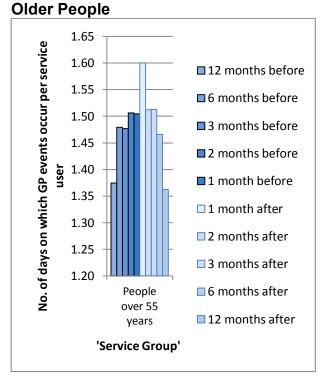
^{*} Figures are for 'women experiencing domestic abuse' so are shown per female service user.

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

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

^{** &#}x27;Vulnerable young people' are defined as those aged 16-24 years; figures are shown per service user aged 16-24 years.

Chart 6.5b 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:



- 6.22 The Research and Evaluation Steering Group wished to examine whether, irrespective of whether the level of health service use changed, the reasons for accessing a particular health service changed. As discussed in Chapter 2, an analysis was therefore undertaken to identify the GP diagnosis codes and prescribing codes that showed, respectively, the greatest increase and decrease during the 12 months after the Supporting People service start date.
- 6.23 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 Tables 6.1 and 6.2 below, should be considered both exploratory and qualitative in nature. For a full evaluation, where records from multiple Local Authorities could be combined for analysis purposes, small numbers would be less of a problem.
- 6.24 It should be noted that the prescribing codes for individual items have been analysed rather than the broader type of item as included in brackets. In other words, one particular antidepressant was the prescribing item that decreased the most after support began. This can only be considered indicative because there are numerous different antidepressant medications and ideally these should all be combined in the analysis. If a full evaluation were to proceed, methods could be developed to report by the broader type of prescribing rather than for individual medications.
- 6.25 For comparison purposes, the top five diagnosis codes and prescribing codes found in the general population (i.e. a control group of individuals matched on age, gender and Local Authority), is also shown. It should be noted that these are shown as totals for the period 2012-14, since there was no single point in time when they began receiving Supporting People services.
- 6.26 As a qualitative exploratory exercise, the analysis has shown that the kinds of diagnosis and prescribing codes that decreased the most after the Supporting People start date were mostly those one would expect to be associated with a crisis, whilst those that increased most are related to matters that might be considered more routine.

6.27 It should also be kept in mind that, as noted above, the Supporting People start date is included in the 'after the start date' period; this may explain why 'assault' appears in the list of diagnosis codes that increased the most after the start date.

Table 6.1 Blaenau Gwent Supporting People floating support: GP diagnosis codes showing the greatest decrease and increase after the Supporting People start date plus the top five GP diagnosis codes for a general population comparison group

Order	Diagnosis code that	Diagnosis code that	Top five diagnosis codes for
(top first)	decreased the most	increased the most	general population
1	Poisoning (can include poisoning by drug overdose)	Benign neoplasm of skin	Upper respiratory infection
2	Anxiety with depression	chronic rhinitis	Chest infection
3	Alcohol dependence syndrome	Migraine	Pain in limb
4	Suicide and self inflicted injury	Acute bronchitis or bronchiolitis	Tonsillitis
5	Upper respiratory infection	Assault	Back pain

Table 6.2 Blaenau Gwent Supporting People floating support: GP prescribing codes showing the greatest decrease and increase after the Supporting People start date plus the top five GP prescribing codes for a general population comparison group

		<u> </u>	
Order (top first)	Prescribing code that decreased the most	Prescribing code that increased the most	Top five prescribing codes for general population
1	Citalopram 20mg tablets (antidepressant)	Tiotropium 18µg inhalation capsules (bronchodilator)	Omeprazole 20mg (for indigestion/gastric reflux)
2	Paracetamol (painkiller)	Metoclopramide 10mg tablets (heartburn)	Simvastatin 40mbg (statin to reduce cholesterol)
3	Tramadol HCL 50mg capsules (painkiller)	Flucloxacillin 250mg capsules (antibiotic)	Bendroflumethiazide 2.5mg (diuretic for high blood pressure)
4	Lactulose 3.35g/5mL solution (laxative)	Prednisolone 5mg tablets (steroid)	Paracetamol 500mg (painkiller)
5	Diazepam 5mg tablets (anxiety disorders)	Promethazine 25mg tablets (allergy treatment)	Ventolin 100 μg Evohaler (asthma)

Accident and Emergency Visits

- 6.28 SAIL contains A&E data for all individuals registered with a GP in Wales.
- 6.29 The analysis has been done based on 'date of arrival'. It should be noted that if a full evaluation project proceeds, 'date of incident', a separate code within the A&E data could also be analysed to establish whether the observed patterns change significantly. The 'date of incident' may be different to the 'date of arrival' if for example, an injured patient for whatever reason does not attend A&E for some time after the injury has occurred.
- 6.30 Two key issues must be kept in mind when interpreting the analysis of A&E visits shown in Charts 6.6 to 6.10 below:
 - some individuals may attend A&E for conditions for which they should consult a GP. If a full evaluation proceeds, further analysis could be completed to examine the reasons why service users are attending A&E in order both to a) focus on reporting conditions that Supporting People is designed to prevent and b) identify whether health service use becomes more appropriate after support is provided; and

- A&E attendance is known to be related to the distance patients need to travel to access their nearest A&E Department¹³. 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 quantitative evaluation would be designed to examine this issue further.
- 6.31 As discussed above, small numbers mean that for the Feasibility Study the margin of error around the differences shown in Charts 6 .6 to 6.10 below, are relatively wide. However where a consistent effect or trend over time is observed, this is nevertheless worthy of note and may suggest some association between the support provided by Supporting People and levels of health service use.
- 6.32 The difference in rates by Local Authority seen in Chart 6.6 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 all levels of support; however, differences in access to GP Out of Hours services may also play a part.
- 6.33 For some of the Supporting People service user subgroups shown in Charts 6 .6 to 6.10 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 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.
- 6.34 Further analysis would be necessary to establish whether the reduced level of A&E use described above was maintained longer-term.
- 6.35 It should be noted that when the data for A&E Visits is analysed by age group and by either 'Lead Need' for Blaenau Gwent or 'Service Group' for Swansea Local Authority, as in Charts 6 .9 and 6.10 below, the numbers of service users or events for some subgroups is relatively small. As discussed above, small numbers mean that the margin of error around the findings for the Feasibility Study are relatively wide but where a consistent effect or trend over time is observed are nevertheless worthy of note and suggest some association between the support provided by Supporting People and levels of health service use.
- 6.36 As discussed in Chapter 2 and above, small numbers would be less of a problem for a full quantitative evaluation, where data for greater numbers of service users would be available for analysis. However, findings where a consistent effect or trend over time is observed are nevertheless worthy of note and suggest some association between the support provided by Supporting People and levels of health service use.
- 6.37 The subgroups of Supporting People service users for which the pattern described above **was seen** (see Charts 6 .6 to 6.10 below) were as follows:
 - Female Supporting People floating support service users in Blaenau Gwent Local Authority.
 - Blaenau Gwent Supporting People floating support service users aged 35 to 39 years.
 - Swansea Supporting People service users aged 16 to 19 years, 25 to 29 years, 40 to 49 years and 65 to 69 years.
 - Blaenau Gwent Supporting People floating support service users with mental health issues or a physical disability.

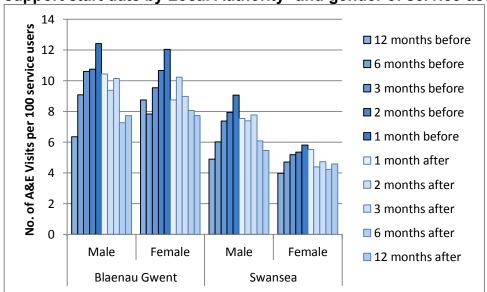
¹³ Lyons R, Lo S, Heaven M, Littlepage B (1995) Injury surveillance in children – usefulness of a centralised database of accident and emergency attendances. Injury Prevention 1995; 1:173-176 doi:10.1136/ip.1.3.173.

 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.

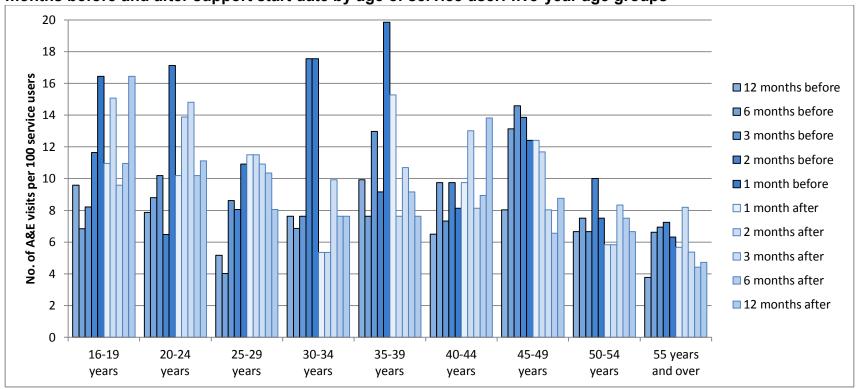
6.38 As noted above, an initial increase in the use of health services may be a positive impact of the support provided by Supporting People. It is also likely that analysing the data separately by whether repeated use has been made of Supporting People services and by duration and intensity of service 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 quantitative evaluation would be designed to examine these issues further.

Chart 6.6 Number of A&E visits per 100 service users in the months before and after support start date by Local Authority^a and gender of service user



^a 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 6.7 Blaenau Gwent Local Authority Supporting People floating support: Number of A&E visits per 100 service users in the months before and after support start date by age of service user: five-year age groups^a



^a Five-year age groups from age 55-59 years and above have been aggregated due to small numbers.

Chart 6.8 Swansea Local Authority: Number of A&E visits per 100 service users in the months before and after support start date by age of service user: five-year age groups

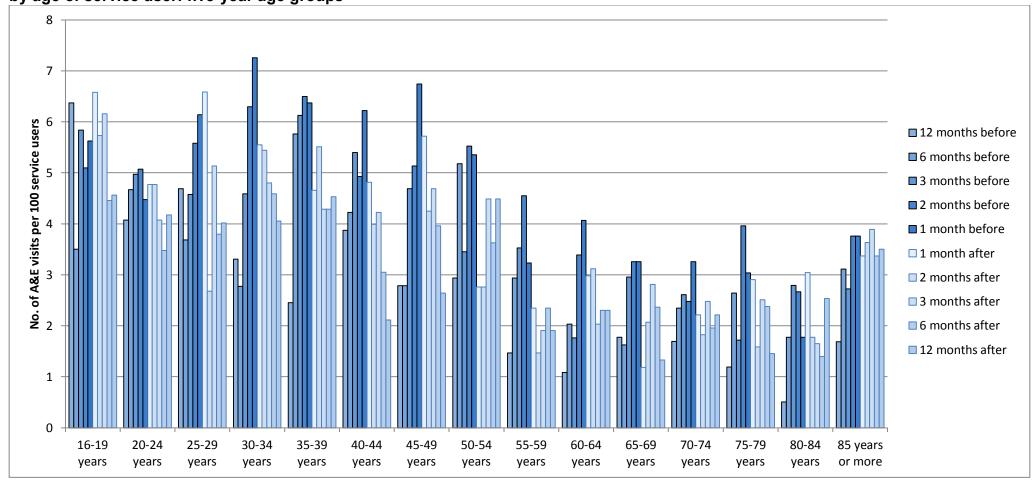
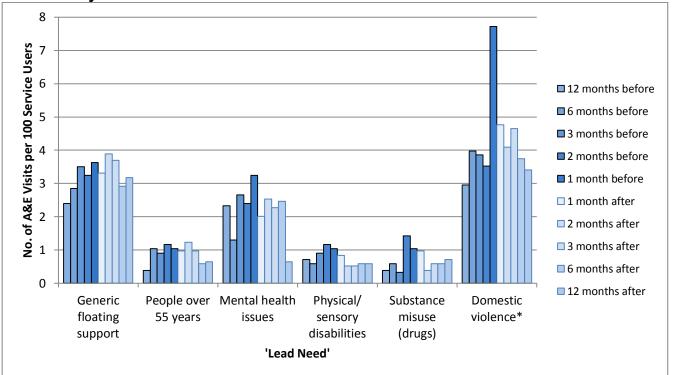


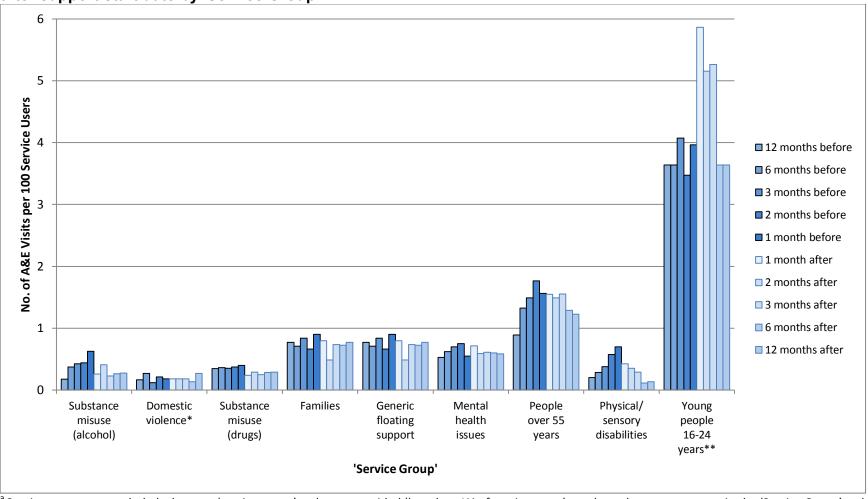
Chart 6.9 Supporting People floating support in Blaenau Gwent Local Authority: number of A&E Visits per 100 service users in the months before and after support start date by service user 'Lead Need'^a



^a 'Lead need' categories containing fewer than five service users have been suppressed e.g. Learning disability, Young people aged 16 to 24 years.

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

Chart 6.10 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'^a



^a 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 for reasons of disclosure control e.g. Learning difficulty, Refugee Status.

^{*} 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.

- 6.39 An analysis of the top five reasons for visiting A&E (IDC10 chapter headings) before and after the Supporting People start date was undertaken to examine whether, irrespective of whether the level of health service use changed, the reasons for health service use changed.
- 6.40 For comparison purposes, the top five diagnosis codes found in the general population (i.e. a control group of individuals matched on age, gender and Local Authority), is also shown. It should be noted that these are shown as totals for the period 2012-14, since there was no single point in time when they began receiving Supporting People services.
- 6.41 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 Tables 6.3 and 6.4 below, should be considered both exploratory and qualitative in nature. For a full evaluation, where records from multiple Local Authorities could be combined for analysis purposes, small numbers would be less of a problem.
- 6.42 As a qualitative, exploratory exercise, the analysis shows the reasons which decreased the most after Blaenau Gwent floating support was provided were gastrointestinal conditions and soft tissue injuries, whilst the reasons that increased the most were psychological/psychiatric conditions and wounds. For Swansea Local Authority, the reasons that decreased the most after the support start date were puncture wounds and 'social problems/homelessness' and the reasons that increased the most were 'ear, nose and throat conditions' and 'burns, scalds and thermal conditions'. Among the reasons that increased the most were, for Blaenau Gwent, 'psychological/psychiatric conditions', 'wound' and for Swansea 'drowning'; it should be kept in mind in interpreting these findings that the day when Supporting People support began is included in the 'after' period.
- 6.43 It is recommended that the data is explored further if a full evaluation project proceeds, possibly combining data from multiple Local Authorities to examine the issues raised above with regard to whether A&E services are being used appropriately and whether conditions purely relating to crisis should be the focus of this more descriptive kind of analysis. Qualitative research might also help to explore the appropriateness of the use of A&E by service users.

Table 6.3 Blaenau Gwent Supporting People floating support: the reasons for visiting A&E that showed the greatest decrease and increase after the Supporting People start

date plus the top five reasons for a general population comparison group^a

Order (top first)	ICD10 code that decreased the most	ICD10 code that increased the most	Top five diagnosis codes for the general population ^a
1	Gastrointestinal conditions	Psychological/psychiatric conditions	Other, mainly not diagnostically classified ^b
2	Soft tissue injury	Wound	Wound
3	Pain	Local infection	Joint injury
4	n/a ^c	Other, mainly not diagnostically classified ^b	Soft tissue injury
5	n/a ^c	n/a ^c	Fracture

^a For this table, the comparator population was Wales, not Blaenau Gwent.

Table 6.4 Swansea Supporting People: the reasons for visiting A&E that showed the greatest decrease and increase after the Supporting People start date plus the top five reasons for a general population comparison group

	·		
Order (top first)	ICD10 code that decreased the most	ICD10 code that increased the most	Top five diagnosis codes for general population ^a
1	Puncture Wounds	Ear, nose and throat conditions	Other, mainly not diagnostically classified ^b
2	Social problems/homelessness	Burns, scolds and thermal conditions	Wound
3	Soft tissue injury	Pain	Joint injury
4	Ophthalmic conditions	Drowning	Soft tissue injury
5	Endocrinological conditions ^c	Neurological conditions	Fracture

^a For this table, the comparator population was Wales, not Blaenau Gwent.

Emergency Hospital Admissions

- 6.44 SAIL contains hospital admissions data for all individuals registered with a GP in Wales.
- 6.45 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. If a full evaluation proceeds, analysis of elective admissions and outpatients' appointments could be presented if required.
- 6.46 It should be noted that when the data for emergency hospital admissions is analysed by 'Lead Need' for Blaenau Gwent and 'Service Group' for Swansea Local Authority, as in Charts 6 .14 and 6.15 below, the numbers of service users or events for some subgroups is relatively small. As discussed in Chapter 2 and above, small numbers would be less of a problem for a full quantitative evaluation, where data for greater numbers of service users would be available for analysis. However, findings where a consistent effect or trend over time is observed are nevertheless worthy of note and suggest some association between the support provided by Supporting People and levels of health service use.

^b This code may contain a variety of problems that are not available in the main classification and can include factors related to social issues, including homelessness.

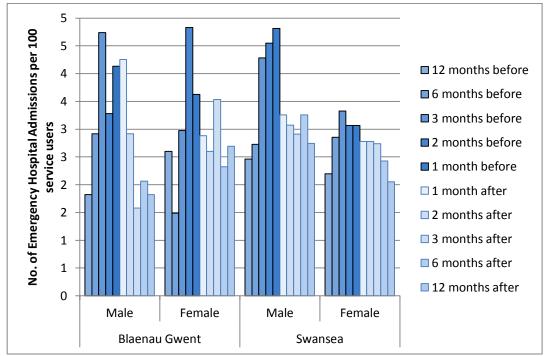
^c Further analysis was not possible due to small numbers of events.

^b This code may contain a variety of problems that are not available in the main classification and can include factors related to social issues, including homelessness.

^c This code includes a range of hormonal conditions, including those known to affect sleep and mood.

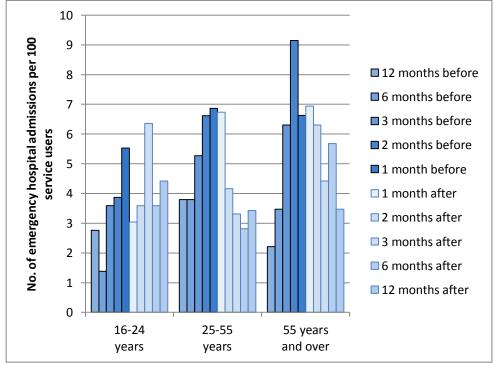
- 6.47 For some of the Supporting People service user subgroups shown in Charts 6 .11 to 6.15 below, a similar pattern can be seen in the numbers of emergency hospital admissions (monthly rate per 100 service user) to those seen for GP events. The monthly rate increases up to and around the point in time when service users began receiving support from Supporting People, followed by a decline which, by 12 months (and in some cases by 6 or even 3 months) after the Supporting People intervention, fell to below the level seen in the 12 months before support began.
- 6.48 Further analysis would be necessary to establish whether the reduced level of emergency hospital admissions described above was maintained longer-term.
- 6.49 The subgroups of Supporting People service users for which the pattern described above was seen (see Charts 6 .11 to 6.15 below) were as follows:
 - Female Supporting People service users in Swansea Local Authority.
 - Blaenau Gwent Supporting People floating support service users aged 25 to 55 years.
 - Swansea Supporting People service users aged 16 to 19 years, 25 to 29 years, 40-54 years and 60 to 64 years.
 - 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.
- 6.50 As discussed above, small numbers mean that for the Feasibility Study the margin of error around the differences shown in Charts 6.11 to 6.15 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.
- 6.51 The difference in rates by Local Authority seen in Chart 6.11 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 all levels of 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.
- 6.52 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 quantitative evaluation would be designed to examine these issues further.

Chart 6.11 Number of emergency hospital admissions per 100 service users in the months before and after support start date by Local Authority^a and gender of service user



^a 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 6.12 Blaenau Gwent Local Authority Supporting People floating support: Number of emergency hospital admissions per 100 service users in the months before and after support start date by age of service user – broad age bands^a



^a Numbers were too small to show five-year age groups.

Chart 6.13 Swansea Local Authority: Number of emergency hospital admissions per 100 service users in the months before and after support start date by age of service user: five-year age group

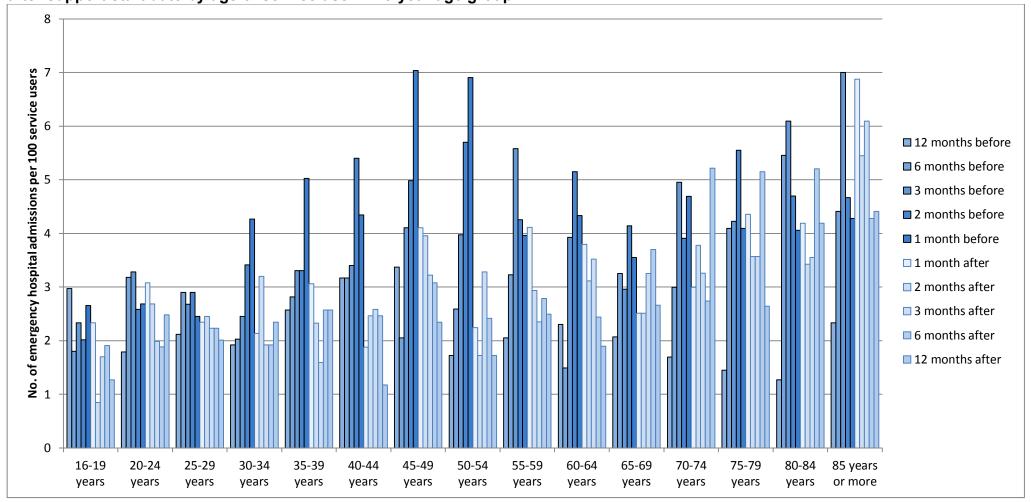
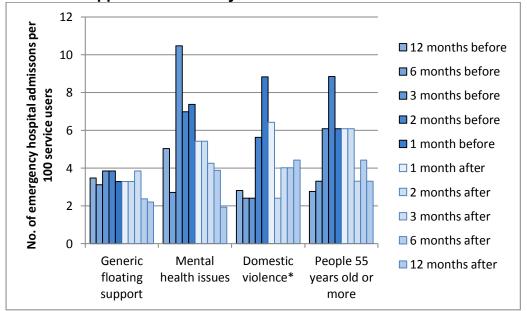


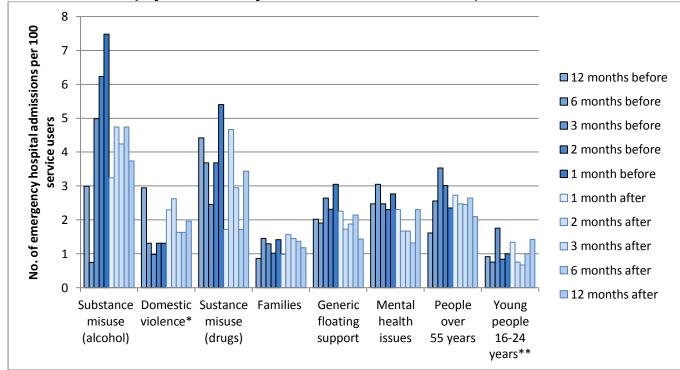
Chart 6.14 Blaenau Gwent Local Authority Supporting People floating support: emergency hospital admissions per 100 service users in the months before and after support start date by service user 'Lead Need'^a



^a '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 6.15a 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 6.15b)^{a,b}



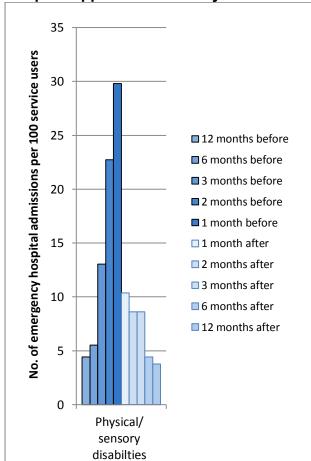
^a Service users were excluded where no 'service group' code was provided (less than 1% of service users) or where there was an error in the service group code (6% of service users).

^b 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.

^{** &#}x27;Vulnerable young people' are defined as those aged 16-24 years; figures are shown per service user aged 16-24 years.

Chart 6.15a 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



- 6.53 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 a control group i.e. 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.
- 6.54 Table 6.5 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.
- 6.55 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 6.6 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 evaluation 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. Bearing this in mind and looking back to the findings about deaths within the Supporting People service user population in the year following the support start date (see Paragraph 6.9 above), if a full evaluation were to proceed, it is recommended that the causes of these deaths are examined.

- 6.56 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 6.6 below; this is because there was only one reason for which emergency hospital admissions increased during the year after first support start date the reason 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.
- 6.57 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 6.6 below, should be considered both **exploratory and qualitative** in nature. For a full evaluation, where records from multiple Local Authorities could be combined for analysis purposes, small numbers would be less of a problem.

Table 6.5 Blaenau Gwent Local Authority: the top five reasons for emergency hospital admissions^a

Order (top first)	Supporting People floating support recipients	The general population ^b
1	Injury and poisoning ^c	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 ^d	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

^a Main reason for emergency admission only; excluding pregnancy and childbirth.

^b For people of a similar age and gender living in the same local authority.

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

^d Full ICD10 text is 'Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified'.

Table 6.6 Swansea Local Authority: the top five 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^a

Order (top first)	Supporting People recipients: ICD10 code that decreased the most	Supporting People recipients: top five ICD10 codes	The general population ^b : top five ICD10 codes
1	Diseases of the circulatory system	Symptoms or signs with no diagnosis classifiable elsewhere ^d	Symptoms or signs with no diagnosis classifiable elsewhere ^d
2	Mental, behavioural and neurodevelopmental disorders ^c	Injury and poisoning ^c	Diseases of the respiratory system
3	Injury and poisoning ^c	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 ^c

^a Main reason for emergency admission only; excluding pregnancy and childbirth.

Conclusion: So, what does all of this mean for the feasibility of a full quantitative evaluation?

- 6.58 As noted above, there are significant challenges in acquiring and preparing the Supporting People administrative data for analysis and in developing analysis methods appropriate to the complexity of the data.
- 6.59 Nevertheless, overall indications are that a quantitative evaluation would be likely to produce statistically robust substantive findings.

^b For people of a similar age and gender living in the same local authority.

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

^d Full ICD10 text is 'Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified'.

7 Findings: The Feasibility of Creating a Control Group

Introduction

- 7.1 As noted in Chapter 2, creating a control group will allow the most credible assessment to be made of the impact of Supporting People. In making recommendations about the feasibility of creating a control group, the researcher took into account the findings of the literature review (see Chapter 3 of the Technical Report) and practical considerations around data availability as well as making an assessment of how truly comparable any particular potential control group might, in practice, be.
- 7.2 The key to identifying a suitable control group is to find a group of individuals in the routine administrative data who share as many of the characteristics of the Supporting People recipients as possible but who have not received Supporting People support.
- 7.3 Given the vulnerable groups involved e.g. people with substance misuse problems, women experiencing domestic violence, and the fact that these individuals are coming to Supporting People at a time when they are at risk of homelessness, for most of the Supporting People service user groups the general population is unlikely to provide a particularly informative control group. Where creating a truly robust, comparable control group may be difficult, a full evaluation study should nevertheless consider undertaking comparative analysis with as many groups of similar individuals as possible in order to assist in interpreting the findings.
- 7.4 A range of options for creating either a control or comparison group are proposed, some of which are likely to result in the creation of a more robust comparison than others. In brief, the options are to compare individuals in receipt of Supporting People with:
 - Supporting People referrals who are 'unsuccessful' (612 records for Blaenau Gwent floating support).
 - Supporting People service users who did not complete the expected period of support i.e. 'failed to engage' and/or 'refused further support' (474 records for Blaenau Gwent floating support).
 - Supporting People service users who received services for a relatively short duration (choice of duration to be proposed as a result of further exploratory analysis).
 - Adult social care service users who have similar 'lead needs' e.g. substance misuse, domestic violence, but are not known to be at risk of homelessness.
 - 'Housing Options'/housing referral service users who have similar needs but do not receive support from Supporting People.
 - The general population with a GP event of 'homelessness' (based on the approximately 65% of GP practices supplying data to SAIL when the analysis was done ¹⁴, this is around 4,000 individuals across Wales, some

¹⁴ Work by SAIL has increased this proportion to around 78% at time of writing and this figure is increasing all the time.

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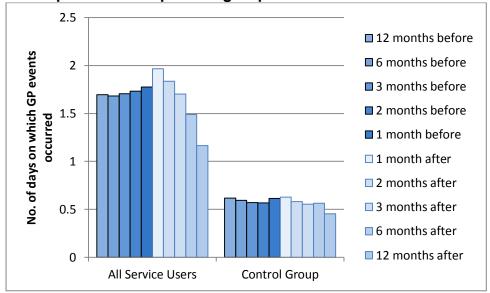
- of whom must be excluded because they also appear in the Supporting People data), matched on geo-demographic characteristics (age, gender and Local Authority) plus propensity to use health services.
- The general population matched on geo-demographic characteristics (age, gender and Local Authority), enhanced with additional datasets to identify service groups e.g. labour market participation, criminal justice etc.
- The general population matched on geo-demographic characteristics (age, gender and Local Authority), and experiencing major life events associated with stress e.g. moving house, bereavement.
- The general population matched on geo-demographic characteristics (age, gender and Local Authority) and with similar propensities for health service use to those in the Supporting People service user group.
- 7.5 Some of the options discussed above require the acquisition of additional datasets, some of which would be acquired by the UK ADS if an ADRN project were completed as part of a full evaluation. Data acquisition from Local Authorities would need to be completed as part of the full evaluation.
- 7.6 Each of the options proposed above will have strengths and weaknesses which would need further exploration if a full evaluation proceeds. For a more detailed discussion of the strengths and weaknesses of the proposed comparison groups, please see Chapter 8 of the Technical Report.
- 7.7 In practice, it is recommended that a full evaluation should attempt to construct comparison groups using as many as possible of the methods proposed and undertake sensitivity analysis to test their suitability before choosing to use one or more in the final analysis.
- 7.8 If a full evaluation proceeds, it is recommended that a parallel qualitative study is undertaken in order to inform the final choice of control or comparison group(s), to inform the analysis and to provide further context when reporting the findings.

Findings of a provisional, purely indicative analysis of a potential comparison group

7.9 Although further exploratory analysis would be required before a genuinely robust comparison could be made, some **provisional**, **purely indicative analysis** is provided in Chart 7.1 below, showing the number of days on which GP events occurred for all Blaenau Gwent floating support service users compared with a comparison group made up of 'unsuccessful' records and records with a 'reason for leaving' of 'failed to engage'. Cases where the 'reason for leaving' was coded as 'refused further support' were excluded from this analysis on the basis that these individuals were assumed to have received a longer period of support than those who 'failed to engage'. For the Feasibility Study, where small numbers were expected to be an issue, all available 'unsuccessful' or 'failed to engage' records were used in this analysis. If a full evaluation project proceeds, it would be recommended that further examination is made of these records in order to, for example, remove individuals who were also successful on an occasion that falls within the two-year analysis 'window' and to exclude individuals who, despite 'leaving', nevertheless received a

- significant period of support (as discussed in Chapter 5, the duration cut-off point should be chosen as a result of further analysis).
- 7.10 The analysis shown in Chart 7.1 below, is based on a comparison group of 572 unique individuals with 623 records. This suggests that there is some overlap between the individuals who are 'unsuccessful' potentially on more than one occasion and successful but 'fail to engage' again, also possibly on more than one occasion. For service user records (including those whose 'reason for leaving' was 'failed to engage'), GP events are reported for the period before and after the support start date. For 'unsuccessful' records, where there is no support start date, GP events are reported before and after the 'declaration date' i.e. the date when the individual signs the referral form.
- 7.11 In interpreting Chart 7.1, it should be noted that the number of days on which GP events occurred are shown per record (i.e. per service user or occasion 'unsuccessful'), so it can be concluded that service users had on average around one 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 comparison group 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.
- 7.12 Setting aside the level of GP events, the pattern of use leading up to the Supporting People support date was similar in both groups, with a relatively small increase in events between two months before and one month before and with the use of primary care peaking during the first month after (which includes the support start date for service users). For those receiving support from Supporting People, the pattern shows:
 - greater use of GPs in the period immediately after support began than in the comparison group; this may suggest that Supporting People was helping service users to make more appropriate use of health services, which at the point of crisis means seeking treatment; and
 - greater decline in use between the period of one 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 however, it must be kept in mind that the reduction may to some extent be greater for service users than the comparison group because, as mentioned above, the service user group may be made up of higher risk individuals.
- 7.13 If a full evaluation proceeds, it is recommended as suggested above, that further investigation is undertaken to explore the data as well as some qualitative research to learn more about the extent to which the above explanations are likely, in practice, to explain the differences observed in Chart 7.1. The acquisition of data from additional Local Authorities would provide greater numbers of records for analysis, which may allow the use of more specific categories of controls to be explored.

Chart 7.1 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^a – all service users compared with a potential comparison group^b



^a 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'.

Conclusions and recommendations

- 7.14 A range of options for creating control or comparison groups are proposed, some of which are likely to result in the creation of a more robust comparison than others and some of which will require the acquisition of additional datasets.
- 7.15 If a full evaluation proceeds, it is recommended that a parallel qualitative study is undertaken in order to inform the final choice of control or comparison group(s), to inform the analysis and to provide further explanations for the kinds of patterns seen as a result of the provisional, purely indicative analysis provided above.
- 7.16 In practice, it is recommended that a full evaluation should attempt to construct control and/or comparison groups using as many as possible of the methods proposed and undertake sensitivity analysis to test their suitability before choosing to use one or more in the final analysis.

^b The comparison group 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'.

8 Findings: The Potential to Deliver a Cost Offset Model

Introduction

- 8.1 As noted in Chapter 3, the Supporting People Research and Evaluation Steering Group requested that an element of the Feasibility Study should be to assess the feasibility of creating a similar model for Wales to the Capgemini Cost Offset Model in use in England and Northern Ireland and that have already been applied by some Local Authorities or Regional Collaborative Committees in Wales e.g. the Gwent Regional Collaborative Committee.
- 8.2 The Capgemini Model assesses the financial costs and benefits of the Supporting People Programme. The Model compares the cost of the current services provided to service users with the cost of a range of potential 'adverse events' that might occur to clients if Supporting People services were not available.
- 8.3 The Model allows the user to apply a set of estimates at the national level to each user group at the Local Authority level. Where available, estimates calculated at a level below the national level e.g. Local Authority level or provider level estimates, can be substituted.
- 8.4 Reports using the Model acknowledge that the Supporting People Programme also provides many other, un-costed benefits like improving health and reducing social exclusion or antisocial behaviour. Other tools, like the self-reported Outcomes Data, are seen as helping to measure these other benefits.
- 8.5 The question the Research and Evaluation Steering Group asked was whether a cost offset model like Capgemini could be designed in such a way that the routine Supporting People data flowing into SAIL to inform a full evaluation study could also flow into the model, so that once it was built, it would require minimal input to amend and re-run the model at the required intervals. This approach was seen as having the potential to reduce programme evaluation costs over time by reducing or eliminating the need to commission repeated modelling.
- 8.6 It should be noted that the work to create the cost offset model would need to be commissioned by Welsh Government as a separate strand of the full evaluation. This would mean that the specification for the model would ideally need to be phrased in relatively broad terms, outlining the deliverables that are envisaged but not providing an exhaustive description of the expected methods or approach, leaving this for potential bidders to suggest as part of the commissioning process. This would give contractors both some flexibility in how they proposed approaching the task and the ability to demonstrate their technical skill in proposing high quality, innovative solutions.
- 8.7 For the Feasibility Study, therefore, all that was required was to summarise in brief the requirements for the Cappemini tool and to examine the extent to which it would be possible to build a similar tool into SAIL. The findings are summarised in brief below. Please see Chapter 9 of the Technical Report for a more detailed discussion of the issues.

Findings

- 8.8 At a minimum, a cost offset model could be applied to all individual Supporting People service users for whom data is provided to SAIL. This would allow the estimated net benefits to be reported split by Local Authority, service user group or by any other available characteristic of service users or of the programme e.g. 'lead need', scheme or geography; of service users or schemes e.g. 'lead need'.
- 8.9 With further development work, the potential exists to:
 - with input from Supporting People leads, automatically calculate the costs of delivering Supporting People support packages for each individual service user based on the individual-level information provided to SAIL about support packages, duration of support etc;
 - for 'adverse health events', calculate the numbers and costs of events that occur both for Supporting People service users and for any chosen control group(s);
 - over time, the project could seek to acquire additional routine
 administrative datasets in order to estimate the numbers of a range of
 additional 'adverse events' and either to apply high level cost estimates
 similar to those included in the Capgemini model or seek to develop more
 refined cost estimates based on additional data. For example, data from
 the Home Office/Ministry of Justice about antisocial behaviour events for
 Supporting People service users could be added into the model, allowing
 specific incidents of antisocial behaviour to be costed both before and after
 the Supporting People intervention;
 - by refining the cost of adverse events, provide an improved calculation of the net 'benefit' of the Supporting People Programme; and
 - if the 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.
- 8.10 It should be noted that the use of linked routine administrative records would allow the following to be explored in addition:
 - the cost of some of the un-costed 'benefits' mentioned above, including 'improving health'; and
 - if required, monitor the changes in costs and benefits over time i.e. over the long-term.

Conclusions and recommendations

- 8.11 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.
- 8.12 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 group(s).
- 8.13 If additional routine administrative data is acquired, more refined estimates could be developed for adverse events of other kinds e.g. antisocial behaviour.
- 8.14 By refining the cost of adverse events, an improved calculation of the net 'benefit' of the Supporting People Programme can be provided.
- 8.15 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.
- 8.16 The use of linked routine administrative records would allow the following to be explored in addition:
 - the cost of some of the un-costed 'benefits' mentioned above, including 'improving health'; and
 - if required, monitor the changes in costs and benefits over time i.e. over the long-term.
- 8.17 It is therefore recommended that if a full quantitative evaluation proceeds, Welsh Government should consider commissioning in parallel, the development of a cost offset model using linked routine administrative data.

9 Conclusions and recommendations: Is a full quantitative evaluation using linked data feasible?

9.1 This Chapter focuses purely on the conclusions and recommendations of this Study with regard to the feasibility of delivering a full quantitative evaluation of the Supporting People Programme using linked routine administrative data. The conclusions and recommendations about ways to improve the quality of the Supporting People routine administrative data are provided in Chapter 3 and recommendations for additional development work or for the more complex analysis methods that could be undertaken if a full evaluation proceeds, can be found within the individual findings chapters (please see Chapters 3 to 8).

Conclusions

- 9.2 Although significant challenges exist in terms of acquiring, reconciling and analysing the existing data, assuming the recommendations made below are actioned, indications are that a quantitative evaluation is deliverable, at least for those Local Authorities that hold individual-level data.
- 9.3 Although it would be time-consuming, 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, can be undertaken if a full evaluation proceeds.
- 9.4 Indications are that the findings of an evaluation would be both relatively unbiased and largely generalisable to all Supporting People service users, at least for those Local Authorities that hold individual-level data.
- 9.5 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.
- 9.6 The analysis reported in the Feasibility Study suggests that a quantitative evaluation based on linked routine administrative data 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.
- 9.7 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.

- 9.8 If a full evaluation proceeds, a parallel qualitative study would help to inform the final choice of control group(s), to inform the analysis and to provide further explanations for the observed patterns of health service use.
- 9.9 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 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.

The use of linked routine administrative records would allow, in addition, the exploration of the cost of some of the 'benefits' un-costed 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.

Recommendations

- 9.10 Welsh Government should provide funding for a full quantitative evaluation of the Supporting People Programme using linked routine administrative data.
- 9.11 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 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.
- 9.12 For Local Authorities that do not hold individual-level data, options for acquiring data from providers must be explored.
- 9.13 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.
- 9.14 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 group(s), to inform the analysis and to provide further explanations for the observed patterns of health service use.
- 9.15 It is recommended that the Research and Evaluation Steering Group continue to provide oversight and advice to the project, reviewing membership as necessary.

Appendix A the legal basis for sharing data between Local Authorities and SAIL for research purposes

- 1. Two factors are relevant to whether data can legally be shared:
 - The first issue is whether the data provider (in this case the Local Authority)
 has the power to share the data according to administrative law (the laws
 governing public sector organisations).
 - The second issue is whether the data share is legal under the Data Protection Act 1998 (DPA).
- The general implied power for local authorities in Wales to share data according to administrative law is found in s. 2 of the Local Government Act 2000 (the Localism Act 2011 repeals this only in relation to England – not Wales) which states:
 - (1) Every local authority are to have power to do anything which they consider is likely to achieve any one or more of the following objects
 - (a) the promotion or improvement of the economic well-being of their area;
 - (b) the promotion or improvement of the social well-being of their area; and
 - (c) the promotion or improvement of the environmental well-being of their area.
 - (2) The power under subsection (1) may be exercised in relation to or for the benefit of —
 - (a) the whole or any part of a local authority's area; or
 - (b) all or any persons resident or present in a local authority's area.
- 3. In addition to this power to share, local authorities must also be compliant with the DPA provisions and the Human Rights Act. Data can be shared legally in accordance with the following DPA provisions:

Schedule 2 conditions for the processing of personal data:

- 2(5) The processing is necessary—
- (d) For the exercise of any other functions of a public nature exercised in the public interest by any person.
- 2(6)(1) The processing is necessary for the purposes of legitimate interests pursued by the data controller or by the third party or parties to whom the data are disclosed, except where the processing is unwarranted in any particular case by reason of prejudice to the rights and freedoms or legitimate interests of the data subject.

Schedule 3 conditions for the processing of sensitive personal data:

3(10) - engaging Sensitive Data Order No 417 (2000):

- 9. The processing—
- (a) is in the substantial public interest;
- (b) is necessary for research purposes (which expression shall have the same meaning as in section 33 of the Act);
- (c) does not support measures or decisions with respect to any particular data subject otherwise than with the explicit consent of that data subject; and
- (d) does not cause, nor is likely to cause, substantial damage or substantial distress to the data subject or any other person.

Appendix B Summary of Data Acquisition Challenges by Local Authority

Table A1 Data acquisition: Position of each LA

Local Authority	Detailed data acquisition progress and position going forward
BG	Data acquired for feasibility project for floating support and accommodation-
	based support. Data for Older persons more time-consuming to extract;
	however, anticipated to be achievable if full project goes ahead.
Swansea	Data from ILLY system acquired for feasibility project (covering all types of
	support). SPRINT data from Tenancy Support Unit to follow if full evaluation
	project goes ahead (SPRINT data covers most floating support schemes).
RCT, Merthyr	Lack of post codes in data held up acquisition process but anticipated that this
	could be resolved for a full evaluation project. RCT and Merthyr legal teams
	preferred to wait for a Service Level Agreement to be signed off between SAIL
	and NWIS before they proceeded to share any data. This is in progress and
	anticipated to be in place within the next few months.
Caerphilly	Legal team preferred to wait for a Service Level Agreement to be signed off
	between SAIL and NWIS before they proceeded to share any data. This is in
NDT	progress and anticipated to be in place within the next few months.
NPT	Hold limited historical data on some users. Due to changes in systems used to
	hold data and type of data collected, SP team anticipated that it would take some considerable work and assistance from their IT team, to extract and collate
	data. There is potential to revisit data acquisition if full evaluation evaluation is
	commissioned.
Conwy, Newport	Not progressed sufficiently in time for feasibility. More information is required
convy, nonpon	regarding data held at LA level. LA legal position in relation to sharing the data
	still to be ascertained.
Ceredigion	Team did not believe they could legally share data as data sharing protocols
•	only cover SP team and providers. 'Release of information' forms only cover the
	sharing of SP user's information with D.E.S.H., Housing Benefits, Department of
	Work and Pensions, including Jobcentre Plus, Department of Social Services,
	Mental Health Services, Tai Ceredigion, Mid Wales Housing Association, Police,
D 111 11	Probation.
Denbighshire	Stated that service users are informed that their personal data would not be
	passed onto any third parties and believed it would therefore be 'unfair' to share
	data and doing so would risk breaching principle 1 of the Data Protection Act
Gwynedd	(fair and lawful). Reported issues with data sharing due to the lack of informed consent from
Gwyriedd	short- term service users and due to a statement on the Exchange of Information
	Consent Form for long-term users which states service user information will not
	be shared with organisations other than the SP and housing benefit sections of
	the council.
Bridgend,	Data not held at the individual level – these LAs reported that they only hold the
Carmarthenshire,	SP Outcomes Data which contains unique identifier rather than full identifiable
Monmouthshire,	details.
Pembrokeshire,	
Powys, Torfaen,	
Wrexham	
Cardiff	Declined to take part due to lack of resources
Vale of Glamorgan	Underwent a restructure in April 2015 and declined to take part due to present
Δ 1 .	lack of capacity in the team.
Anglesey	Level of data unknown due to lack of response to feasibility project.
Flintshire	Due to long-term sickness of a key staff member, information could not be
	provide about the level of data held.