



Individual Placement and Support Programme - Economic Impact Assessment

Scottish Association for Mental Health

11 October 2017

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1 Facts and figures¹

Mental health problems are wide-ranging and impact employment

1 in 6 adults in Scotland reported symptoms of mental ill health between 2012 and 2015

20,900 admissions reported in psychiatric specialties in Scotland in 2014/15



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72.9%

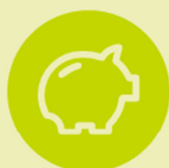
the average employment rate in Scotland in 2016



39%

the number of people with mental ill health condition who are in employment; the **lowest** employment rate of all people with disabilities

Mental ill health represents a cost to society as whole



£10.7bn estimated total cost of mental health in Scotland in 2009/2010

Of which **£1.44 billion** relates to worklessness among people with mental health (**13%** of total costs)

42% people claiming health-related benefits do so for mental health reasons



Resulting in a social security spending in Scotland for these individuals of **£800 m**

Different programmes support individuals with mental ill health problems to achieve and sustain employment

Work choice

IPS

EmployAble

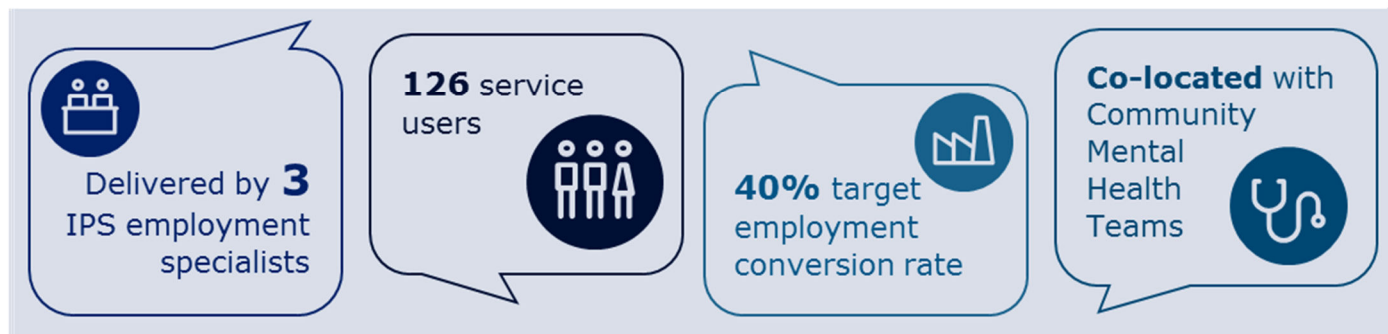
Individual Placement and Support (IPS)

- Supports people with **severe and enduring mental health** to secure and sustain **competitive employment**
- Tailored to their specific needs
- Co-located with Community Mental Health Teams
- Better employment outcomes than other schemes

¹ Sources relating to this section are presented in subsequent sections within the report.

Key facts regarding the IPS service provided by SAMH in Glasgow in 2016

SAMH also provides IPS in Inverclyde, West Dunbartonshire, and North Lanarkshire. However, the economic impact assessment undertaken in this report focuses on the Glasgow service only



The IPS service provided by SAMH delivers wide benefits

Health and social benefits



40%-60% reduction in CPN appointments in year one after securing employment



Increase in the users' self-confidence in their ability to work

Greater work experience, which can be beneficial to users to re-secure employment in the future



A reduction of **3 to 6** psychiatry appointments in year one following employment

A better sense of **social inclusion** and integration to the community



Financial benefits

The IPS is likely to impact three groups of stakeholders:



Service users

Through a potential increase in individual earnings



Government

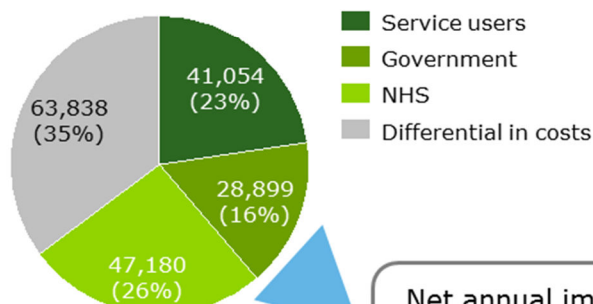
Through a reduction of benefit claims



NHS

Through reduced demand of healthcare services

The net impact of the IPS compared to counterfactual is split as (£):



Net annual impact of **£180,970**
(**£1,436** per user)

"Without the help of IPS and my psychologist I don't think I would have been ready for employment. IPS has really helped me find a suitable job that I love and enjoy."

SAMH IPS user quote

2 Executive Summary




Improving employment outcomes for individuals with mental ill health has been recognised as a positive impact on individuals' wellbeing, as well as being financially beneficial for society in general.² However employment rates for those with mental health conditions in Scotland remain low, estimated to be 39% in 2016.³

In response to this, a number of health and care organisations are offering services to support individuals with mental ill health back into employment. The Scottish Association for Mental Health (SAMH) has been commissioned to provide the Individual and Placement Support (IPS) to support individuals with severe and enduring mental health conditions to secure and sustain paid employment.

This report presents findings from undertaking an economic impact assessment of the IPS service provided by SAMH for the calendar year 2016. To undertake the assessment, outcomes under two scenarios are considered:





- **IPS scenario.** Service users are supported into employment by IPS employment specialists. The IPS service is adapted to the needs of people with severe or enduring mental health conditions to deliver employment outcomes; and
- **Alternative scenario.** Service users have access to traditional vocational schemes to support them into employment. Under this scenario, assumptions are developed to account for the relatively lower employment outcomes (compared to the IPS).

Focus is placed on estimating the impact, in both the IPS scenario and the Alternative scenario, for three key stakeholders:

	Service users	Estimating the impact for service users, who could benefit from increased earnings through improved employment outcomes
	Scottish Government	Where applicable, estimating the financial benefits for the government through increased tax receipts and reduced benefit payments. ⁴
	NHS	Understanding the financial impact for the NHS, based on a reduced demand for healthcare services.

The components of the economic impact assessment for the three stakeholders are presented below.

Figure 1. Components of the economic impact assessment

Service users	Government	NHS	Costs
 <p>Additional earnings:</p> <p>Hourly wage x Hours worked per week x Number of weeks employment sustained =</p> <p>Benefits lost and taxes paid</p>	 <p>Benefit savings, tax receipts:</p> <p>Reduction in benefit claims per week x Number of weeks employment sustained =</p> <p>+ Taxes paid on annual income</p>	 <p>Reduced appointments:</p> <p>Reduction in Community Nurse Practitioner or Psychiatry appointments</p> <p>Based on annual reduction and average staffing costs of each appointment</p>	 <p>Service cost:</p> <p>Total cost of providing the service in 2016</p>

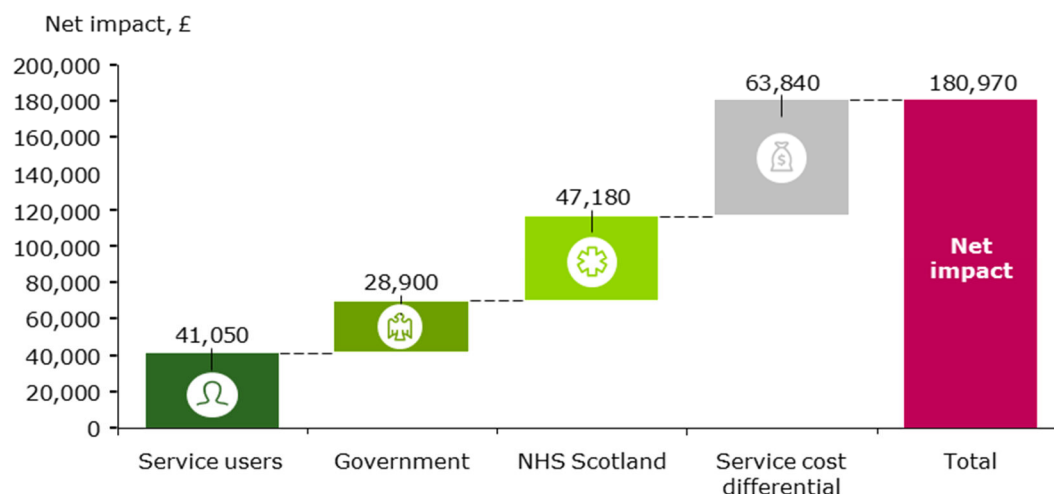
² National Mental Health Development Unit, 2010, *Factfile 1: Mental health and employment*

³ Annual Population Survey (January to December 2016), Scottish Government

⁴ Due to the variation in benefits claimed by users, only changes in claims for Employment and Support Allowance (ESA) benefits are included in the estimation.

The net impact derived from estimating the outcomes in each of the two scenarios (IPS less Alternative) suggests that the IPS service provided by SAMH has an estimated net economic impact of c.£180,970 for the year 2016 – or £1,400 per user.

Figure 2. Net impact of the IPS programme⁵



Source: Deloitte analysis

The key differences between the two scenarios and drivers of the estimated impact of IPS are found to be:

- **Employment outcomes.** Alternative services are less tailored to the specific needs of the users, as such there are a lower number of service users found to secure employment. Accounting for this, benefits across all three stakeholder groups are estimated to be lower in the Alternative scenario compared to the IPS. The greater number of service users securing employment in the IPS is estimated to contribute a net benefit of c.£41,050. Similarly, comparatively positive outcomes for the Government and the NHS drive an estimated net impact of c.£28,900 and c.£47,180 respectively.
- **Cost of provision.** The cost of providing the IPS service is estimated to be 55% less than the Alternative. Consequently, this results in an estimated c.£63,840 contribution to the net impact.

Recognising the data quality and assumptions employed in the estimation, sensitivity analysis has been undertaken to capture the uncertainty surrounding the main inputs. The range of the estimated net impact is found to be between c.£120,600 to c.£234,700 per year.

A number of benefits recognised in the literature and through engagement are highlighted but not included in this quantitative assessment as data was not available. These range from a potential increase in the users' self-confidence in their ability to work to a better sense of social inclusion. Furthermore, the assessment does not attempt to quantify potential future benefits of the IPS such as re-securing employment after having lost a first position and so is likely to underestimate the total impact. The support provided through the IPS programme (with interview practices, CV profiling etc.) is likely to have more long-term effects and increase the users' chance to secure employment again in the future as they would be more prepared for the job market.

Details of the data, methodology and a full breakdown of the results are presented in this report.

⁵ The service cost differential relates to the difference in the cost of providing the IPS service compared to providing traditional vocational services as presented in the Alternative scenario.

3 Introduction

This report estimates the economic impact of the Individual Placement and Support service (IPS), commissioned by the Scottish Association for Mental Health (SAMH) in Scotland for 2016.

3.1 Context and background

Mental health in Scotland

Mental ill health is estimated to impact a large proportion of the population, with one in six adults reporting symptoms of mental health conditions in Scotland between 2012 and 2015⁶. There are a variety of illnesses impacting people, ranging from depression or anxiety to more complex personality disorders such as schizophrenia. Regardless of the severity or persistence of symptoms, numerous studies have outlined that suffering from mental health impacts the daily life of the persons concerned, including impairing individuals ability to work. As well as having an impact on the individual, there is a wider financial impact to society. The Mental Health Foundation estimates that the total cost (including human, health, social care and output losses costs) of mental health in Scotland in 2009/2010 was reaching £10.7 billion, an increase of 25% in five years.⁷

In this context, improving mental health has been identified by the Scottish Government as a one of its priorities.⁸

Mental health and employment

Individuals with mental ill health conditions are found to have lower employment rates than the national average. In 2016, the Scottish employment rate was 72.9%. In contrast, 39% of people with long-term mental health conditions in Scotland are in employment.⁹

Across the United Kingdom, 1.3 million of people with severe and enduring mental health problems are out of employment or on benefits.¹⁰ Mental disorders have become the most common reason for claiming health-related unemployment benefits, with 42% of people claiming such benefits doing so for mental health reason.¹¹ Combined with the lost opportunity of having a greater number of people in the workforce, this represents a cost to the government and the wider society.

This discrepancy cannot be explained by the lack of motivation or willingness to work. The Royal College of Psychiatry reports that "90% of workless people who use mental health services wish to work"¹². Further, employment has been shown to be beneficial for people with enduring mental health problems. The Royal College of Psychiatry has highlighted that "for people without work, reemployment leads to improvement in health and well-being when further unemployment leads to deterioration."¹³ As such, improving the employability of people with mental health conditions is seen as a way of aiding their recovery. This could have a beneficial impact of helping alleviate symptoms as well as providing wider financial benefits to the system.

In this context, health and care providers are looking to support people in securing employment through the provision of tailored services.

The IPS (Individual Placement and Support) service

The IPS service provides support to those with severe or enduring mental health condition to achieve and sustain paid employment. The IPS differs from other programmes in that it recognises the desire and ability of people with

⁶ Mental Health Foundation, *Mental Health in Scotland: Fundamental Facts 2016*

⁷ Mental Health Foundation, *ibid.*

⁸ Scottish Government website on mental health: <http://www.gov.scot/Topics/Health/Services/Mental-Health>, visited on 27/02/2017

⁹ Annual Population Survey (January to December 2016), Scottish Government

¹⁰ Sainsbury's Centre for Mental Health, 2011, *ibid.*

¹¹ Sainsbury's Centre for Mental Health, 2011, *ibid.*

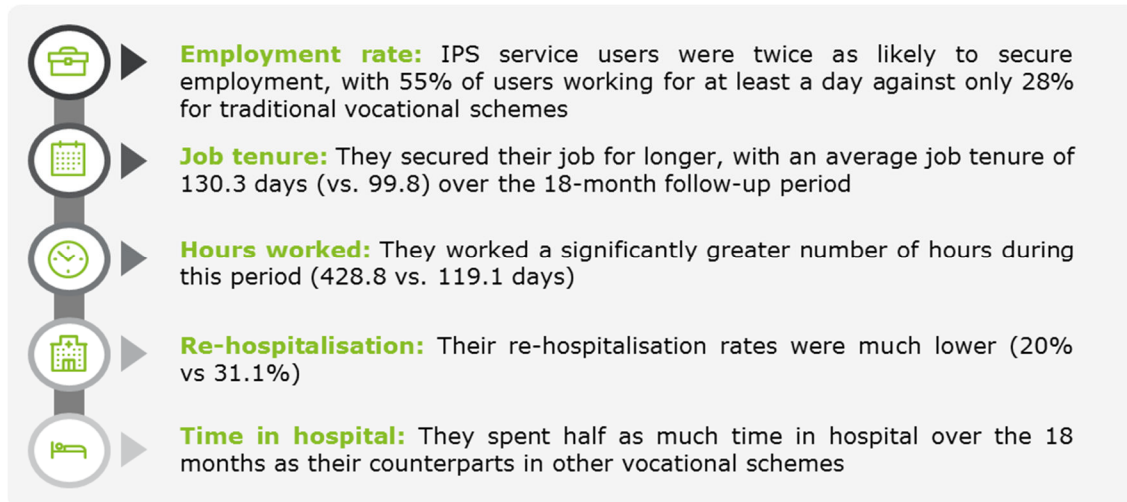
¹² Royal College of Psychiatry, 2008, *ibid.*

¹³ Royal College of Psychiatry, 2008, *Mental Health and Work*

severe and enduring mental health conditions to work. Its core principles are based on the idea that these individuals can find suitable competitive employment.

The IPS model is a well-recognised approach of supported employment. Evidence suggests that the IPS has better employment outcomes than other vocational schemes. These are outlined below.

A European-wide study, the EQOLISE trial¹⁴, which aggregated results of IPS services across six European countries (including the United Kingdom), concluded that:



Similar employment outcomes have been found in UK-only studies. Based on a study of vocational services in South West London, Rinaldi and Perkins have found evidence that IPS service users had 68% more chance to end up in open employment at the end of the six-month follow-up period than their counter-parts in traditional schemes (38% against 12%).¹⁵

The IPS programme provided by SAMH

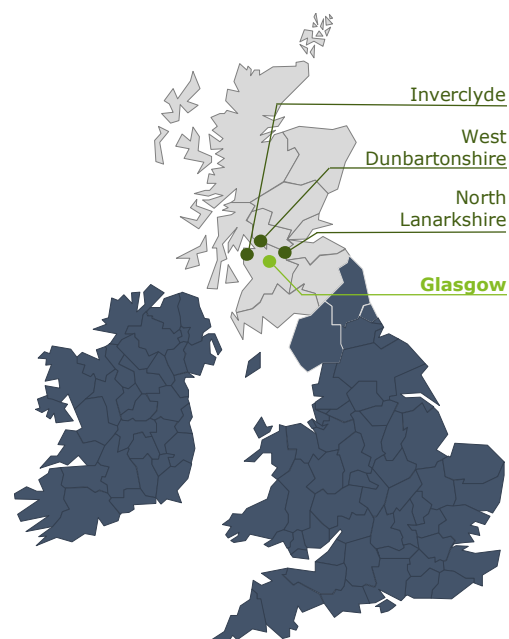
The Scottish Association for Mental Health (SAMH) has been providing Individual Placement and Support (IPS) services in Glasgow, Inverclyde, West Dunbartonshire and North Lanarkshire. The estimations undertaken in this report are based on data from the Glasgow service only. In 2016, it supported 126 individuals, 41 of which ended up securing employment.

Each IPS specialist has a caseload of at least 20 clients. Clients engage with employment specialists who supports them on a regular one-to-one basis. The IPS service is focused on supporting service users through a number of ways both pre-employment and once in work.

The average time for services users to secure employment is estimated to be between three to six months¹⁶. Following that, employment specialists continue to offer support to both service users and their employers for as long as requested.

The IPS service is co-located with the Community Mental Health Teams (CMHT) and clients are referred by the CMHT members. This supports greater coordination between the health and employment teams, helping drive wider benefits for service users.

Figure 3. IPS locations



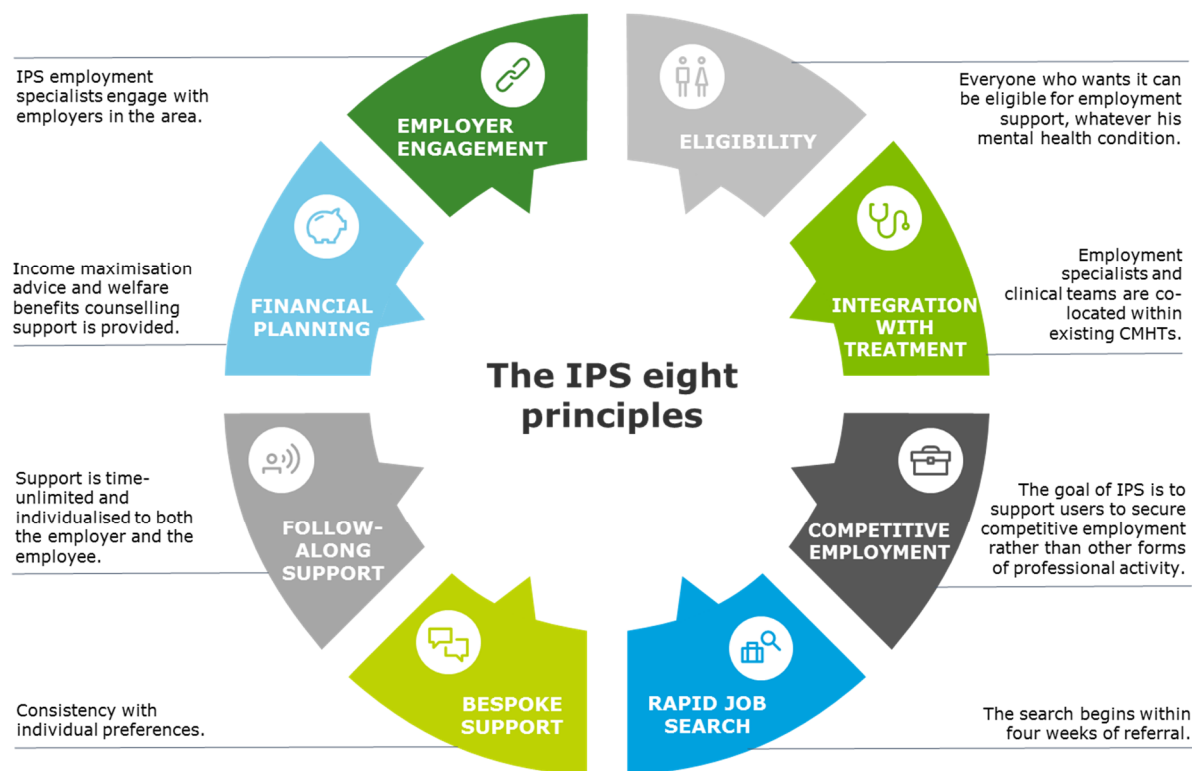
¹⁴ Burns et al., 2007, *The effectiveness of supported employment for people with severe mental illness: A randomised controlled trial*

¹⁵ Rinaldi and Perkins, 2007, *Implementing evidence-based supported employment*, Psychiatric Bulletin, 31

¹⁶ Based on information received from with IPS specialists (February 2017)

IPS services are reviewed against a fidelity scale of eight principles. The eight principles are at the core of the IPS model and are designed to support the scheme in achieving their employment outcomes. Following commissioning of a Fidelity Review, SAMH's IPS service is rated as "good" on the fidelity scale.¹⁷

Figure 4. The eight principles of IPS programmes¹⁸



A case study highlighting the service users experience in engaging with SAMH, and some of the outcomes observed is presented in the boxed item below.

"Without the help of SAMH and my psychologist, I don't think I would have been ready for employment [...]."

SAMH IPS user

¹⁷ SAMH Annual review 2015-2016, https://www.samh.org.uk/documents/annual_review_final_copy.pdf

¹⁸ Sainsbury's Centre for Mental Health, 2011, *ibid*.

SAMH case study - IPS impact for Ann*



User details

- *Referral method:* Referred by CPN
- *Diagnosis:* Depression, as a result of personal trauma experienced in life.



Background

Ann is a 35 year old woman who had very little experience of paid employment. From a young age she had been a carer for her elderly ill grandparent and her only previous paid employment had been for 6 months, 4 years ago. Since completing her college course she had been active in a number of services and volunteered in various places.



IPS impact

Through the completion of a vocational profile, the SAMH IPS Specialist was able to highlight the many skills she had and identify the type of work she would be happy doing. They worked on putting together a CV and identified two jobs that she wanted to apply for, one as a Support Worker and one as a Care Assistant in a Care Home. She was successful in gaining interviews for both of these posts and they worked on interview techniques before attending.



Outcomes

Ann did very well at both interviews and was immediately offered a trial with the Care Home, which she started, resulting in being offered the post on a permanent contract. At the same time the other company got back to offer her the post of Support Worker. As she had started with the Care Home she decided to keep that post, but accepted an offer to do the Support Worker as bank staff.

Her IPS specialist had concerns at this stage that she could be taking on too much; however following discussion with her CPN they agreed that she was capable of managing this and being active was something she thrived on. The outcome is that things are working well for her and she has now been disengaged from her CMHT. Her IPS specialist has continued to keep in touch with Ann while she was settling into work. However as she requires little support, they have agreed that she can now be exited from IPS.

* Not real name

Source: SAMH case study

3.2 The report

This report estimates the direct economic impacts of the IPS service for agreed stakeholders and metrics.

The three main stakeholders considered are:

- **Service users:** benefits from improved employment outcomes;
- **Government:** reduced benefit payments and increased tax revenues associated with some employment outcomes (competitive employment); and
- **NHS:** reduced demand for some NHS services as a result of improved mental health linked to employment.

The report is structured as follow:

- Section 4 provides a summary of the approach undertaken to estimate the economic impact of IPS;
- Section 5 summarises the results of this economic impact assessment;
- Section 6 lists some of the qualitative benefits delivered by the IPS; and
- The full list of assumptions and further details on quantification are provided in the appendices.

3.3 Limitations

The estimates presented should be viewed in the context of the following limitations:

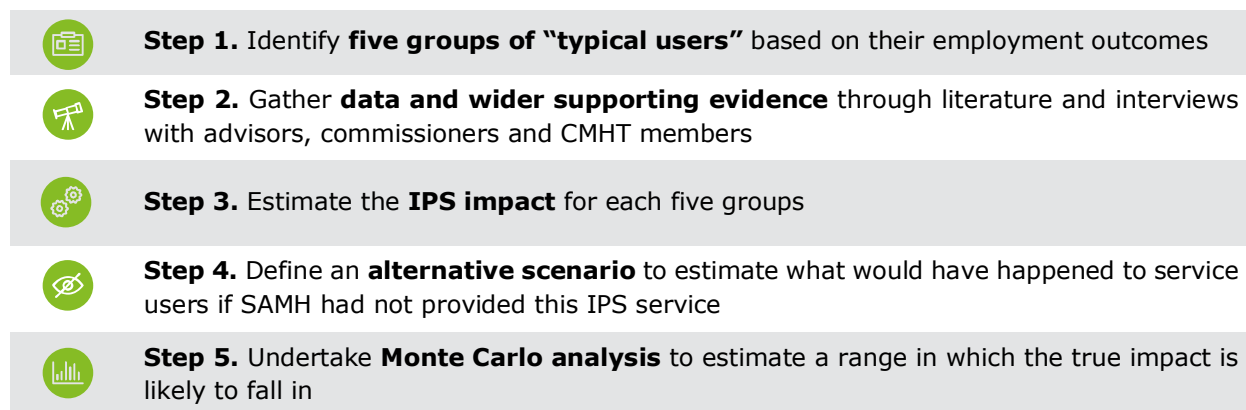
- **Timeline.** This assessment has been realised within a fixed time period, therefore impacting the scope and granularity of analysis;
- **Data.** The data available for the estimation was limited. As such, a series of assumptions derived from the literature and agreed with IPS advisors have been employed. Given some assumptions are based on literature, they may not fully capture the current situation of the IPS service provided by SAMH;
- **Sample size.** The sample size used for the analysis was 126 users in Glasgow for the calendar year 2016. This may not be representative of the programme across all years and other locations. Further analysis of the programme with a larger sample size (across a greater time period) should be undertaken to capture the economic impact of the IPS more accurately;
- **Top-down analysis.** A series of simplifying assumptions have been required to estimate the potential economic impact of the IPS. Detailed bottom-up studies should be undertaken to support this analysis;
- **Assumptions relevance.** Some assumptions drawn from the literature had not taken place in Scotland and might not reflect the IPS outcomes;
- **Selection bias.** Individuals referred to IPS have expressed their willingness to work. As a result, there may be a selection bias with IPS users being only individuals who have the motivation to find employment. However, this is assumed to be the case in the Alternative scenario also;
- **Quantifying benefits.** Many benefits cannot be quantified, as some improvements in health condition, self-esteem or sense of social inclusion are hard to measure. These benefits are therefore not included in the quantified analysis and are only flagged when relevant. As a result, the overall quantified economic impact will not include these benefits and the study could underestimate the economic and social value associated with the IPS; and
- **Future benefits.** Possible long-term or prolonged effects of the IPS on service users are not included. This study did not seek to model the probability and associated benefits of re-securing employment once the job recorded by SAMH has been lost. As such this adopts a conservative approach which doesn't consider potential future benefits and could underestimate the total benefits associated with the provision of the IPS service.

4 Approach

4.1 Overall approach

A five-step approach has been undertaken to estimate the economic impact of providing the IPS services to people with severe and enduring mental health conditions. The approach compares outcomes under the IPS scenario to an alternative scenario where the IPS had not been provided and patients would have been supported by traditional vocational services not as well tailored to their needs.

Figure 5. Five-step approach



The IPS service is likely to impact three groups of stakeholders in varying ways. The impact on these three groups is presented in the figure below.

Figure 6. Benefit groups

	Service users	The IPS services could help users directly by supporting them in securing employment, which may result in increased earnings.
	Scottish Government	The IPS may have some indirect impact on the government finances. Indeed increased employment may increase tax payments and reduce benefit payments. Due to the variation in benefits claimed by users, only changes in claims for Employment and Support Allowance (ESA) benefits are included in the estimation.
	NHS	The IPS may also indirectly impact the NHS by reducing the demand for healthcare services due to health improvements, ultimately saving money to the NHS. Employment has been proven beneficial for the health and well-being of people with mental ill health.

As part of the assessment, the identified benefits for the above three groups have been quantified. Although there may be further indirect benefits as a result of the IPS service (e.g. social impact of additional consumption induced from increased earnings; the increased self-esteem and sense of integration etc.), these will not be quantified due to it not being directly linked to financial outcomes.

4.2 Detailed methodology

Step 1 Identify five groups of 'typical users'

The economic impact is estimated for five case studies which consider groupings of service users based on their employment outcomes. In developing the case studies, the following factors were considered:

- The **overall financial impact**: the case study groups should be aligned to the main objective of the assessment (i.e. the group should support the estimation of financial impacts, rather than health or social outcomes for example);
- **Sample size**: the size of each group should support robust estimations;
- **Differential across groups**: to support the development of estimates which depict differences in outcomes across the user groups;
- **Consistency within groups**: consistency of outputs within each group in terms of the financial impact being representative for all within the group; and
- **Assumptions**: considering the number and type of assumptions that would need to be agreed to undertake the estimation.

Following consideration of the above factors and agreeing with SAMH, the following groups of typical service users were agreed:

Table 1. Group description

Group	Secured employment	Nature of employment	Sustained employment for longer than three months	Group size
Group 1	✓	Permitted	✗	N = 6
Group 2	✓	Permitted	✓	N = 11
Group 3	✓	Competitive	✗	N = 7
Group 4	✓	Competitive	✓	N = 17
Group 5	✗	✗	✗	N = 85

Source: Data provided by SAMH

Data regarding the number of users included in each of the defined groups is based on the outcomes recorded by SAMH for each user over the course of the calendar year 2016.

Step 2 Data and wider supporting evidence

Data for the study was obtained from various sources:

- The primary source of data regarding the IPS service was directly provided by SAMH;
- Further data was provided following discussions with employment specialists and other individuals involved in the IPS programme (CMHT members, commissioners etc.); and
- Along with this, assumptions were developed to fill data gaps (based on literature and agreed with SAMH).

The annual cost of providing the IPS service has been provided by SAMH. This is used to develop the cost per user and applied in the estimation of the net economic impact of the service.

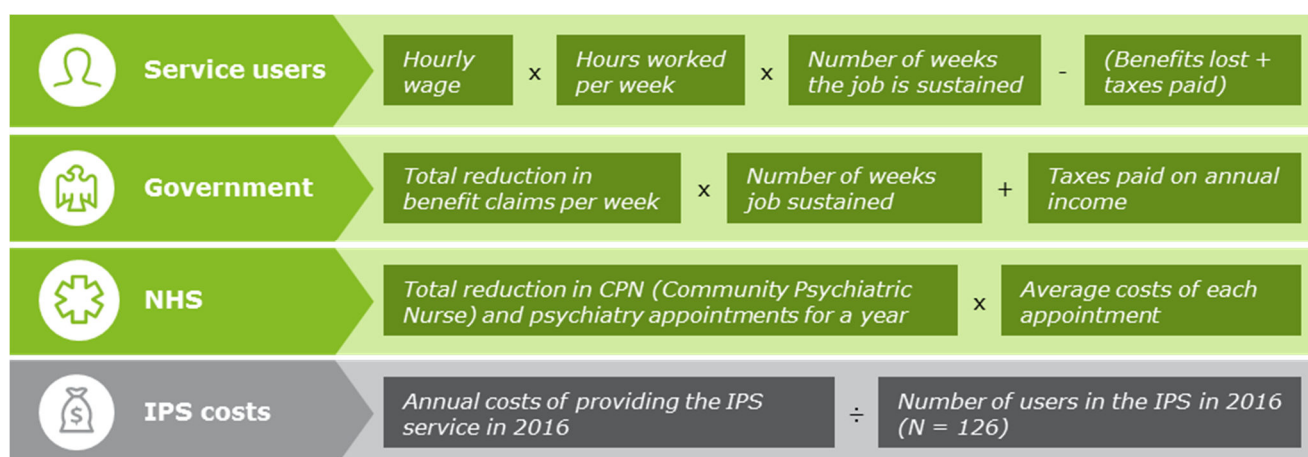
The benefits estimated for service users relate to the sustainment of employment for three months (i.e. aligned to the groups developed). Further, data is recorded by SAMH regarding sustainment for a period of up to six months. As such, the economic impact assessment considers the benefits for service users and the government over this time period. This is a conservative approach, as it does not consider the reemployment of service users in other jobs over the calendar year period.

Further details on the data and sources is provided in Appendix A.

Step 3 IPS impact

For the user in each group, the impact on the three stakeholders' groups (service users, government and NHS) and the costs of providing the IPS service to that user are estimated. The estimation approach is presented in the figure below.

Figure 7. Estimation of the impact per user



In order to estimate the impact per user, the benefits for the service user, the government and the NHS are seen in the context of the cost of providing the IPS service. The user impact was grossed to the total group level by considering the number of individuals in each group.

Assumptions regarding each variable agreed with SAMH in the estimation can be found in Appendix A.

Step 4 Alternative scenario

In estimating the economic impact, a hypothetical scenario without an IPS service has been developed. This supports an understanding of the outcomes in a scenario where SAMH does not provide the IPS service.

Under the Alternative scenario it is assumed that users would have access to other vocational schemes to support them to find employment. However, as reported in literature, these services are not as well tailored to their specific needs and subsequently not as effective in delivering positive outcomes¹⁹. To account for this difference in outcomes, in developing the Alternative scenario, a redistribution of users across groups is undertaken to account for a lower number of people expected to secure employment. In particular, the unemployed group (Group 5) has 105 users compared to 85 in the IPS scenario. Along with this, it is assumed that the cost of providing the service for the Alternative scenario is c.55% greater than the IPS.²⁰

To support the estimation of the total net economic impact, the IPS impact (estimated in Step 4) is compared to the Alternative impact (estimated in Step 3). This is presented in the figure below.

Figure 8. Estimation of the net economic impact



Step 5 Monte Carlo analysis

Given the uncertainty associated with the assumptions-driven approach, a statistical approach was undertaken to determine a range in which the overall economic impact could fall in.

In this regard, Monte Carlo analysis was employed to account for the uncertainty around key data inputs (wage, length of job sustainment etc.) in each of the five case studies.

Further details on the approach to undertake Monte Carlo analysis is presented in Appendix B.

¹⁹ The EQOLISE trial, reported in Burns et al. (2007), highlights a difference in employment outcomes of c.50% between IPS and other traditional vocational schemes. Reports from the Sainsbury's Centre for Mental Health (e.g. *Briefing 47: Doing what works*, 2011) and academic literature (e.g. Rinaldi and Perkins, 2007, *Implementing evidence-based supported employment*, Psychiatric Bulletin, 31) highlight the effectiveness of IPS services compared to vocational schemes in supporting individuals into employment. All assumptions made in estimating the impact have been agreed with SAMH. Further detail on assumptions and their sources are presented in the Appendix A.

²⁰ Knapp et al., 2013, *Supported Employment: cost-effectiveness across six European countries*, World Psychiatry, 12. Assumption agreed with SAMH.

5 Summary results

5.1 Summary impact

This section presents the summary results of the aggregated three steps outlined above. As highlighted, the total 'IPS impact' is estimated based on undertaking group level analysis (for the five groups defined and presented in Section 4.2). The estimates relating to the group level analysis, which drives the 'IPS impact', are presented in Section 5.2.

The net impact of the IPS service is estimated by considering the following three steps.

Figure 9. Estimated impacts

Scenario	Estimated impact	Description
01 IPS IMPACT	£ 123, 940	The total impact of the IPS service (derived as total benefits less costs). This impact is driven by an estimation at a group level and then grossed up to derive the total impact. Group level analysis is presented below.
	-	
02 ALTERNATIVE IMPACT	- £ 57, 030	The total impact under the alternative scenario, i.e. the situation if SAMH had not provided the IPS.
	=	
03 NET IMPACT	£ 180, 970	The net impact of the IPS service is estimated. This is derived through estimating the difference between the 'IPS impact' and 'Alternative impact' to understand the additional value of the IPS.

Source: Deloitte analysis

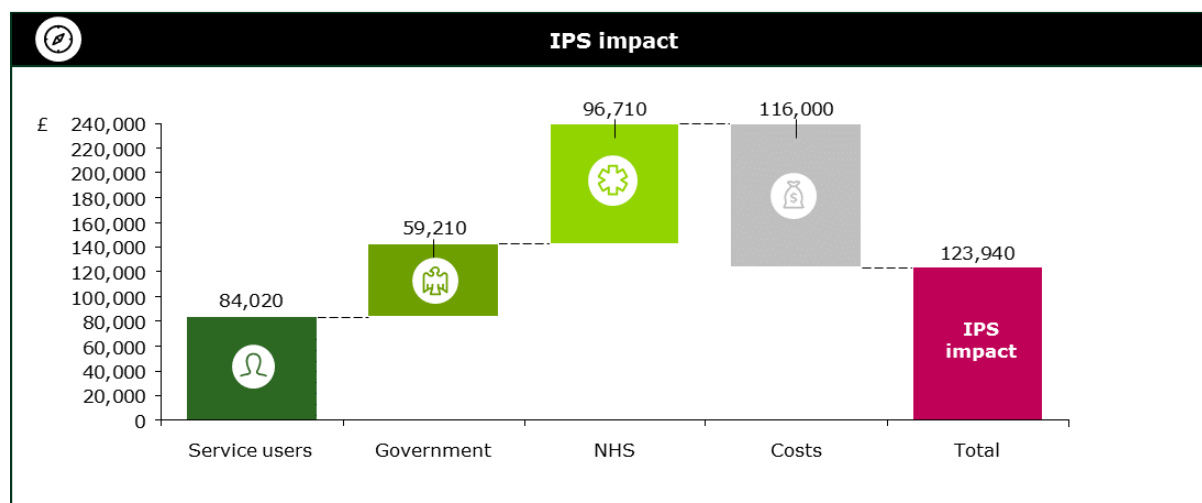
IPS impact

The IPS impact is estimated through considering both benefits across the three stakeholder groups as well the cost of providing the service.

Service user benefits, relating to increased earnings, contribute c.£84,020 of the total IPS impact. The positive impact attributed to the Government, as a result in the reduction in benefits claimed, is estimated to be c.£59,210. The largest contributor to the IPS impact relates to the impact of a reduced number of CPN and psychiatrist appointments as a result of the employment, estimated to be c.£96,710.

Considering the c.£116,000 cost of providing the service results in the estimated total IPS impact of c.£123,940. This relates to an estimated return on investment (ROI) of 107%.

Figure 10. IPS impact



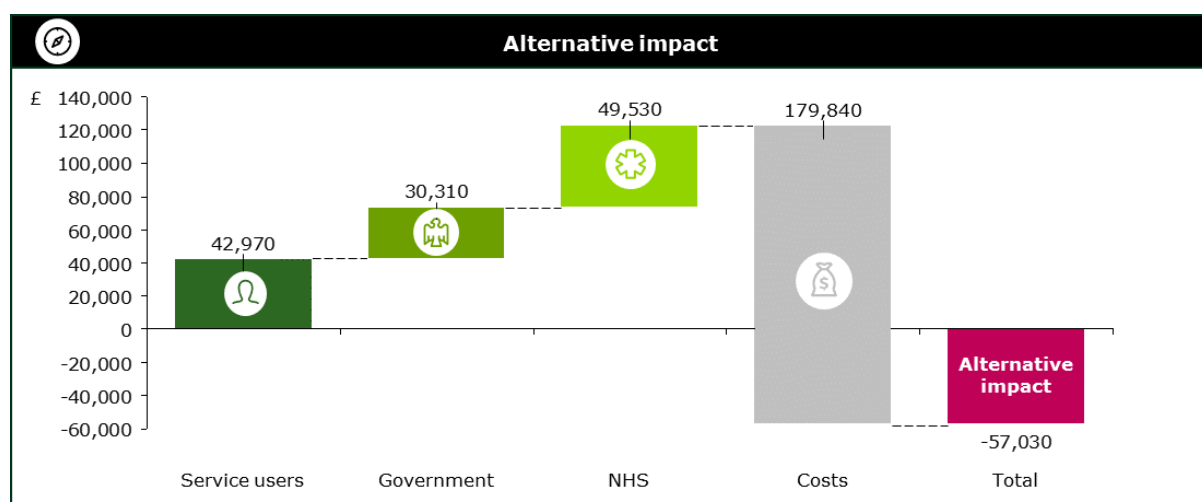
Source: Deloitte analysis

Sensitivity analysis has been undertaken regarding the inputs which drive this estimation, this suggests the average IPS impact is estimated to be c.£112,830. The approach to the sensitivity analysis is presented in more detail in Appendix B.

Alternative impact

The total Alternative impact, considering both benefits across the three stakeholder groups as well the cost of providing the service, is estimated to be c.-£57,030. This relates to an estimated return on investment (ROI) of -32%.

Figure 11. Alternative impact



Source: Deloitte analysis

Sensitivity analysis has been undertaken regarding the inputs which drive this estimation, this suggests the average IPS impact is estimated to be c.-£62,580. The approach to the sensitivity analysis is presented in more detail in Appendix B.

Net impact

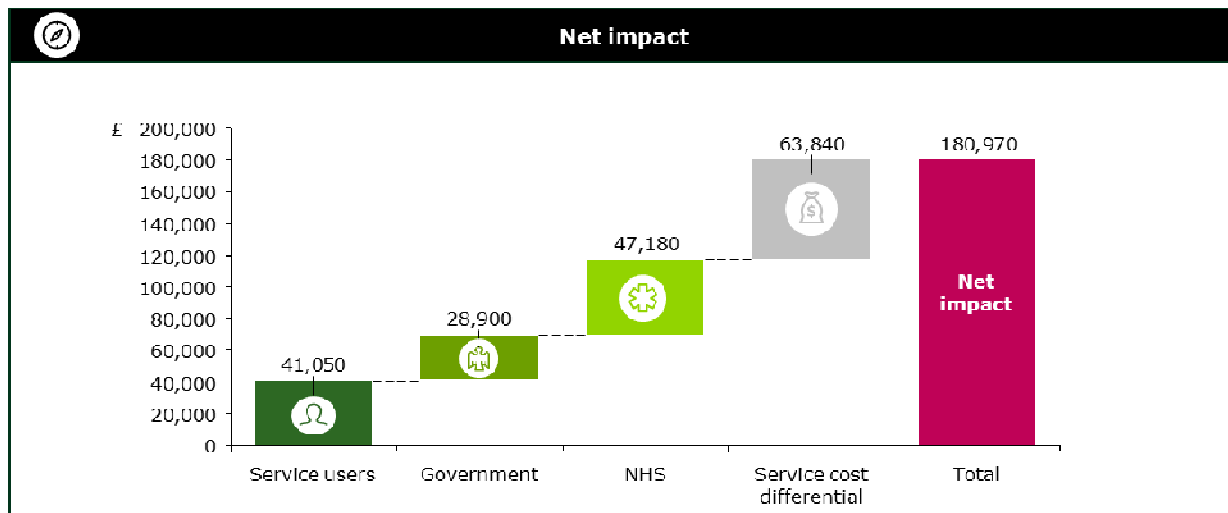
As outlined above, the Net impact is estimated as the difference between the IPS impact and Alternative impact scenarios. The total Net impact is estimated to be c.£180,970.

Given the uncertainty around the inputs, sensitivity analysis has been undertaken. Considering the fluctuations estimated in the sensitivity analysis, the average IPS impact is estimated to be c.£176,215.

As depicted in the figure below, the main drivers of difference in the estimated impact between the IPS and Alternative scenario are:

- **Employment outcomes.** Alternative services are less tailored to the specific needs of the users, as such there are a lower number of service users found to secure employment. Accounting for this, benefits across all three stakeholder groups are estimated to be lower in the Alternative scenario compared to the IPS; and
- **Cost differential.** The cost of providing the Alternative services is estimated to be 55% greater than the IPS. As such, this has a greater negative contribution to the overall impact of the scenario.

Figure 12. Net impact



Source: Deloitte analysis

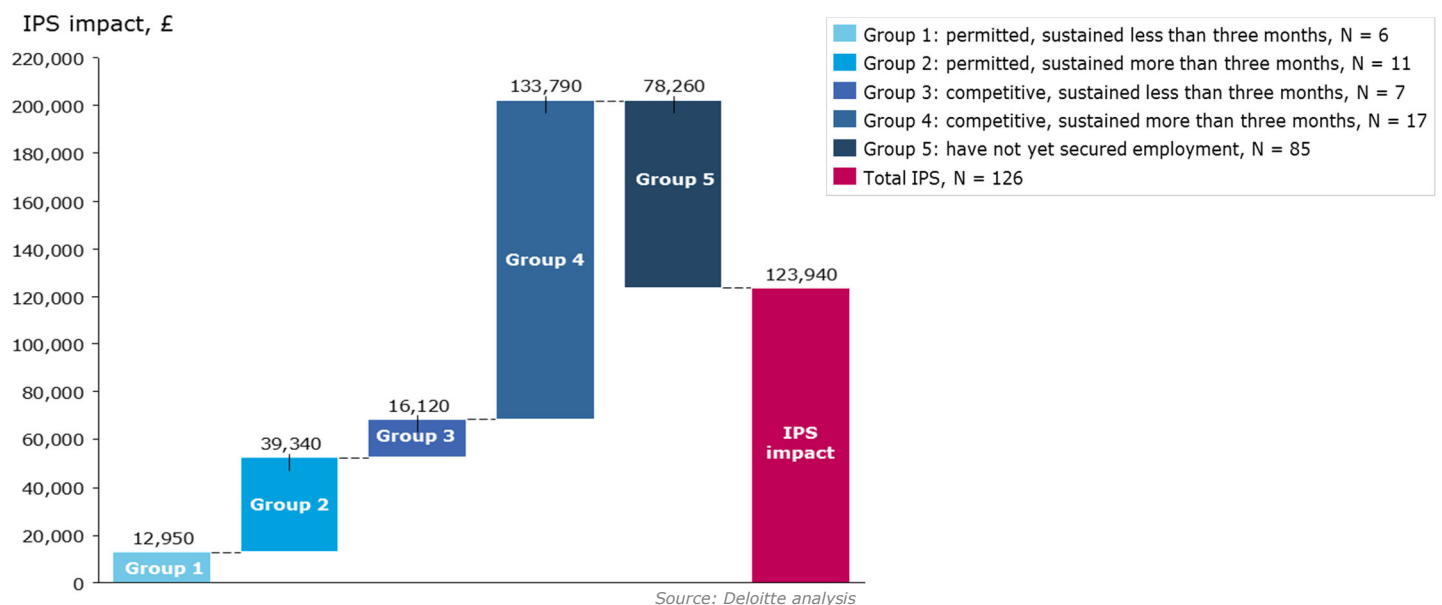
5.2 IPS impact – Group breakdown

IPS impact – group breakdown

As outlined above, the 'IPS impact' is estimated based on undertaking group level analysis. This supports the identification and capture of the varying employment outcomes for service users. Further details on the quantification and sensitivity analysis for each group are provided in Appendix C.

The figure below presents the estimated breakdown of the IPS impact at a group level. As presented in Section 5.1, the IPS has an estimated positive impact of c.£123,940.

Figure 13. Summarised total IPS impact, broken down by group



Source: Deloitte analysis

Group 4 is estimated to be the greatest contributor to the positive impact. This is due to both the size of its impact per user (£7,870 compared to an average of c.£2,850 across the 'employed outcome' groups) and the number of users in the group (17 compared to an average of 8 across the 'employed outcome' groups).

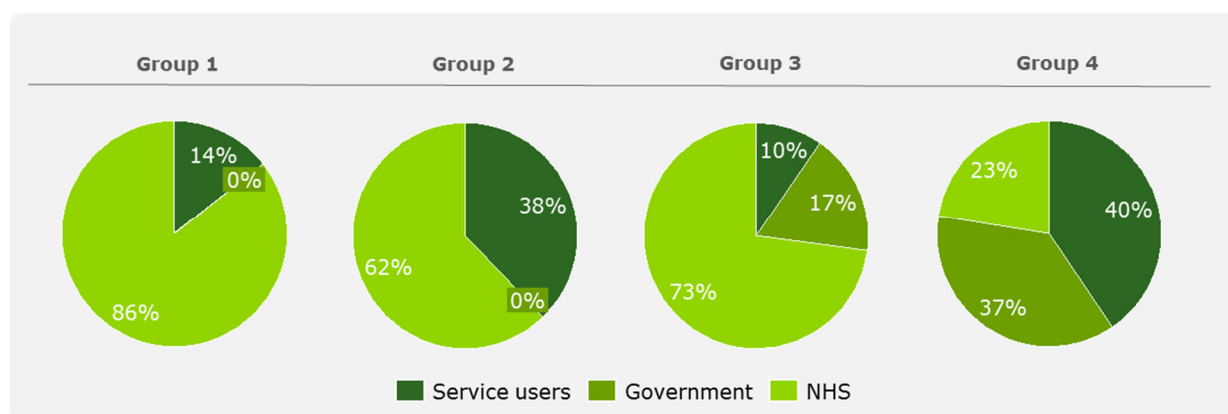
As agreed with SAMH, benefits are not estimated for the unemployed group (Group 5). This is due to there being no data or evidence highlighting quantifiable benefits aligned to the three stakeholders. As a result, only the cost of providing the service to these users has been included in the analysis.

However, it is likely that the IPS benefits these users, notably through the increase in their chances to secure employment in the future. Other benefits, such as better sense of social inclusion or some improvements in their health condition, have been discussed with employment specialists. A list of qualitative benefits associated with this user group is provided in Section 6.

Benefits contribution by stakeholder

For the groups that secured employment, benefits are found to arise from the additional earnings of service users, the savings to the government and the savings to the NHS.

Figure 14. Benefits per stakeholder for each group



Source: Deloitte analysis

Generally the NHS is estimated to be largest driver of the total benefits, however for Group 4 this is mitigated by the increased employment outcomes and subsequently greater benefits estimated for service users.

Users in Group 1 and 2 have secured permitted employment (work less than 16 hours a week) and as such may keep claiming their benefits. Hence, no savings to the Government is expected for users in these two groups. However, users in Group 3 and 4, who secured competitive employment, cannot claim Employment and Support Allowance (ESA), resulting in savings to the Government. Further reduction in benefit claims (e.g. housing benefits) may be expected but are not modelled in this estimation due to the high variability between users.

6 Qualitative impact

As evidenced in literature and found through discussion with stakeholders²¹, the IPS delivers a number of other qualitative benefits. A non-exhaustive list of benefits is presented below.

Employed users (Groups 1 to 4)

For the individuals who secured employment, these benefits could include:

- An increase in the users' **self-confidence in their ability to work**;
- An increased sense of **social inclusion** and "worthiness";
- **Stability**. This is especially true for users who sustained their job for longer period of time (Groups 2 and 4);
- **Overall health improvements** (not only mental), due to potentially greater physical activity (to go to work) or a possibly better lifestyle marked by greater regularity. It has been shown that unemployed people tend to consult their GPs more often than the average population²²;
- A **greater work experience**. This is especially relevant for groups of users who did not sustain their employment and might want to search for further employment in the future and for users in group 1 who have been unemployed for a longer period of time. Going back to work, even for a short period of time, can be beneficial for their search.

"I have found the IPS service to be a very worthwhile and positive experience. I am now in employment for the first time in 7 years under the permitted work rules and my confidence and self-esteem have been boosted tremendously, thanks to IPS."

SAMH IPS user

Unemployed users (Group 5)

For individuals who have not yet secured employment, no benefits have been quantified). However, even if their situation has not changed, there might be some benefits in their participation to the IPS programme.

These benefits could include:

- Better **confidence in their chances to secure employment**;
- Better **communication skills** due to interview practices provided by employment specialists;
- **Experience** which can be valuable in future interviews, such as volunteering or education. The IPS programme aims at placing individuals before training them, however, it supports users in giving time to volunteering work or undertaking education while unemployed to better prepare them to the job market;
- A sense of **social inclusion**, which may arise from both the participation to volunteering or education programmes; and
- Some **improvements in mental health** due to the above mentioned increase in self-confidence and sense of integration. A potential reduction in demand of healthcare services, as little as it may be, would still translate into savings for the NHS.

"SAMH has made a difference to my life and given me hope to get back to employment."

SAMH IPS user

²¹ Based on information received from with IPS specialists (February 2017)

²² National Mental Health Development Unit, 2010, *Factfile 1: Mental health and employment*

SAMH case study - IPS impact for David*



User details

- *Referral method:* Referred by the Work Development Coordinator
- *Diagnosis:* Schizoaffective Disorder



Background

David is married and has young children and he felt work was really important to him in order to support his family. David had left his previous employment as a support worker due to health reasons and being unable to cope. He wanted to explore other options in the labour market and gain a more suitable job.



IPS impact

David had worries over his benefits and general financial situation and his IPS Specialist's first task was to get a better off in work calculation done for him.

His IPS specialist completed a vocational profile with David and they explored potential job opportunities. David identified that he wanted to continue in a role that involved working with people and he stated that his ideal job would be working in a hospital with the NHS. Together, they identified a post as a Health Care Assistant with the NHS, which suited David's skills and experience. They worked on an application and David was successful in gaining an interview. He was unsuccessful with that post, but received excellent feedback and advised that he should reapply should a similar post become available. In the meantime they submitted an application for a sheltered housing supervisor with a local authority and he was successful in gaining this position.



Outcomes

His IPS specialist is currently providing in work support to David and while he is happy with the post he has, he continues to look for a suitable post with the NHS. They have recently identified such a post and David has submitted an application for which he feels would be his ideal job.

* Not real name

Source: SAMH case study

Appendix A

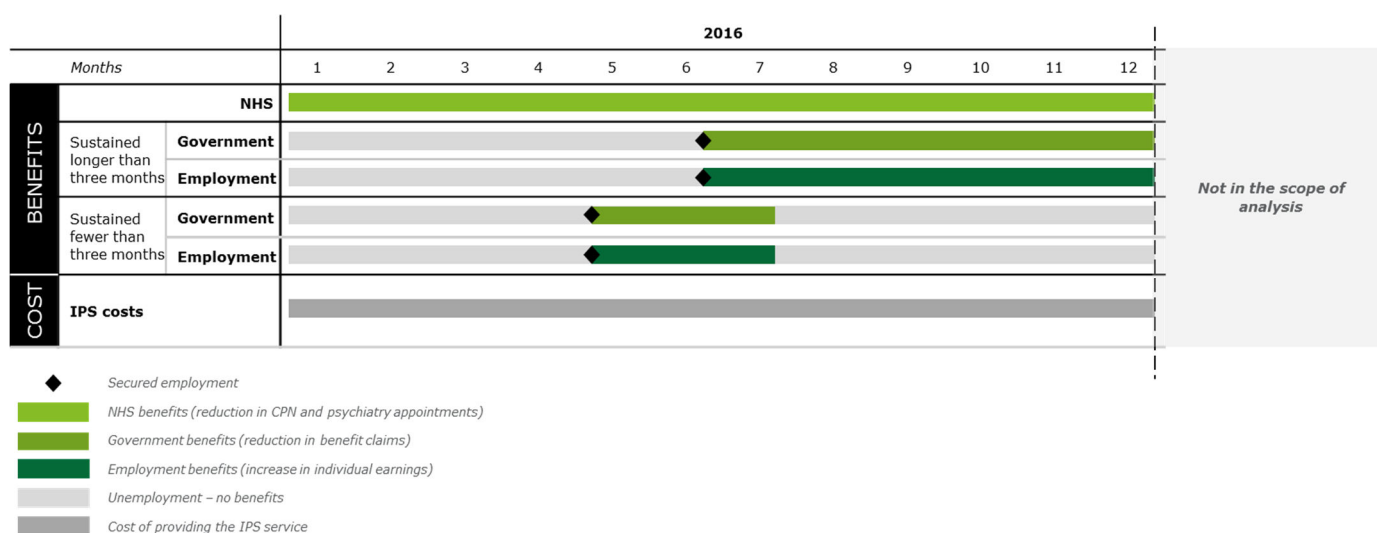
The full list of data and assumptions used in estimating the economic impact of the service is presented below.

Estimation time period

Data regarding the number of users included in each of the defined groups is based on the outcomes recorded by SAMH for each user over the course of the calendar year 2016.

The benefits estimated for service users relate to the sustainment of employment for three months (i.e. aligned to the groups developed). Further, data is recorded by SAMH regarding sustainment for a period of up to six months. As such, the economic impact assessment considers the benefits for service users and the government over this time period. This is a conservative approach, as it does not consider the reemployment of service users in other jobs over the calendar year period.

The annual cost of providing the IPS service has been provided by SAMH. This is used to develop the cost per user and applied in the estimation of the net economic impact of the service.



Data source

Data used in the estimation of the economic impact of the IPS has been gathered from different sources, presented in the table below.

Table 2. Sources for variables used in the estimation

Variable	Group	Source	Notes
Length of employment	1-4	Assumptions agreed with SAMH	Only thresholds was available for 3 and 6-month sustainment
Hours worked per week	1-4	IPS data request	Provided average, minimum, maximum
Hourly wage	1-4	IPS data request	Provided average, minimum, maximum
Benefits per week	3-4	https://www.gov.uk/employment-support-allowance/what-youll-get	Users who secured competitive employment only lose ESA
Income tax rate	1-4	https://www.gov.uk/income-tax-rates/current-rates-and-allowances	
Number of CPN appointments	1-5	IPS data request	Provided average, minimum, maximum

Cost of CPN and psychiatry appointments	1-5	The Network Final IPS report (2016) ²³	Based on 2015 PSSRU unit costs and assumptions of 1-hour contact and travel
Reduction in CPN appointments	1-4	The Network Final IPS report (2016) ²⁴ and discussions with SAMH	Used the % difference. The 61.5% in the report has been considered as the high estimate. A range of 40% to 60% has been agreed on.
Reduction in psychiatry appointments	1-4	The Network Final IPS report (2016) ²⁵ and discussions with SAMH	The reduction in 3 appointments has been considered as a low estimate. A range of 3 to 6 has been agreed on.
Unit costs of providing IPS	1-5	IPS data request	Computed as the total 2016 costs divided by the number of users in 2016

Table 3. Sources for assumptions to estimate the Alternative scenario

Variable	Group	Source	Notes
Unit costs of providing non-IPS services	1-5	Knapp et al. (2013) ²⁶ , agreed with SAMH	Computed from the % difference between IPS and non-IPS, applied to IPS current annual unit costs
Employment rate of non-IPS scenario	1-5	Burns et al. (2007), EQOLISE trial, agreed with SAMH	Computed from the % difference in employment outcomes between IPS and non-IPS, applied to IPS current employment rate

Assumptions

Where data was not available, assumptions, based on evidence from the literature and discussions with SAMH, were applied.

All assumptions have been tested with employment specialists and CMHT members in contact with IPS users, to ensure these reflect the current situation of IPS service users.

Table 4. Underlying assumptions

Area	Variable	Assumptions agreed with SAMH
Employment outcomes	Job sustainment for people who did not sustain three months	<ul style="list-style-type: none"> • Clients tend to lose their job in the earlier stage of the 3 months rather than in the later stage • Estimate sustainment of 4-5 weeks for Groups 1 and 3
	Job sustainment for people who sustained three months	<ul style="list-style-type: none"> • An average of 22 weeks for users in Group 2 has been assumed • An average of 25 weeks for users in Group 4 has been assumed, due to a greater number of users securing employment for more than six months in this group compared to Group 2
	Range of job sustainment	<ul style="list-style-type: none"> • +/- 15% compared to average
Government benefits	Reduction in benefits	<ul style="list-style-type: none"> • A reduction in claims for Employment and Support Allowance (ESA) modelled only due to variability of claims made by users for other benefits (e.g. JSA, Housing benefits) • Groups 1 and 2 (permitted employment) do not lose any benefits • Groups 3 and 4 (competitive) lose ESA, for a total of £125.05 per week (£109.30 for the support group category and enhanced disability premium of £15.75)
Health outcomes	Reduction in CPN appointments	<ul style="list-style-type: none"> • An average reduction of 50% (range of 40% to 60%) in CPN appointments per year, as agreed with SAMH and based on the Network Final IPS report (2016)²⁷

²³ McQueen J., 2016, *Occupational Therapy led Individual Placement and Support: The Network Service Renfrewshire*, NHS Greater Glasgow and Clyde <http://www.renfrewshireadp.co.uk/advice-support/network-service.aspx>

²⁴ McQueen J., 2016, *ibid.*

²⁵ McQueen J., 2016, *ibid.*

²⁶ Knapp et al., 2013, *Supported Employment: cost-effectiveness across six European countries*, World Psychiatry, 12

²⁷ McQueen J., 2016, *ibid.*

Alternative scenario		<ul style="list-style-type: none"> • Due to lack of data, assumed range and average for Group 3 estimated as the average of other groups
	Reduction in psychiatry appointments	<ul style="list-style-type: none"> • An average reduction of 4.5 appointments, reduction of 3 to 6 psychiatry appointments per year, as agreed with SAMH and initially based on the Network Final IPS report (2016)²⁸
	Employment rate	<ul style="list-style-type: none"> • A difference of c.50% between employment rates of IPS compared to the alternative scenario, based on results from the EQOLISE trial²⁹ and agreed with SAMH
	Difference in costs	<ul style="list-style-type: none"> • The provision of non-IPS schemes is assumed to cost c.55% more than the IPS service, based on Knapp et al. (2013)³⁰ and agreed with SAMH

²⁸ McQueen J., 2016, *ibid.*

²⁹ Burns et al., 2007, *ibid.*

³⁰ Knapp et al., 2013, *ibid.*

Appendix B

Details regarding the quantification of the Alternative scenario and wider sensitivity analysis undertaken is presented below.

Elaboration of the alternative scenario

The alternative scenario has been derived by re-distributing users across groups to account for the extra efficiency of IPS programmes compared to more traditional vocational schemes which are not tailored to the specific needs of people with severe or enduring mental health conditions.

This re-distribution is undertaken based on the following:

1. An employment rate of c. 15% in the non-IPS scenario has been assumed to determine the number of employed/unemployed in the non-IPS scenario. This is based on the EQOLISE paper³¹, which finds a difference in employment outcomes of c.50% between IPS and non-IPS schemes.
2. Next, the total employed are apportioned to the remaining four groups (sustainment and permitted/competitive employment) based on the current splits.
3. Following this, the same assumptions on wages, government benefits or NHS savings are assumed to apply.

Sensitivity analysis

Given the uncertainty associated with the data provided, a statistical approach was undertaken to determine a range in which the overall economic impact is likely to fall in.

In this regard, Monte Carlo analysis was employed to account for the uncertainty around the different inputs in each of the five case studies. The approach is discussed in the Green Book (HM Treasury, 2003)³² as a key tool in economic impact analysis where uncertainty exists in the underlying assumptions or modelling.

Where ranges regarding inputs (for example hourly wage, length of job sustainment) have been provided by SAMH, sensitivity analysis has been undertaken to understand the estimated variance in the IPS scenario. No sensitivity has been applied to the assumptions underlying the construction of the Alternative scenario, which is derived from literature (see Table 3 above for sources) and held constant throughout the analysis.

The simulations are undertaken using Oracle Crystal Ball, an application suite for predictive analytics, simulation, forecasting and optimization.

Monte Carlo simulations allocate a distribution to each key parameter where uncertainty exists. At each trial, a number is randomly generated from this distribution and calculations made using this number. By doing this simulation over a thousand times, Crystal Ball displays a chart that shows the range of possible outcomes with the associated probability of it occurring. This approach supports the modelling of the impact of simultaneous uncertainty in multiple inputs.

To undertake the sensitivity analysis, each uncertain parameter has been assumed to follow a certain probability distribution. Due to the lack of available data, the triangular distribution has been used as it requires very few inputs. Only the minimum, maximum and likeliest values are needed. The exact distribution for each variable is presented in the table below.

Table 5. Probability distribution for Monte Carlo analysis

Variable	Group	Distribution*	Comment
Length of employment	1	Triangular(3.8; 4.5; 5.2)	Range was computed as +/- 15% to average
	2	Triangular(18.7; 22; 25.3)	Range was computed as +/- 15% to average
	3	Triangular(3.8; 4.5; 5.2)	Range was computed as +/- 15% to average

³¹ Burns et al. (2007), *ibid.*

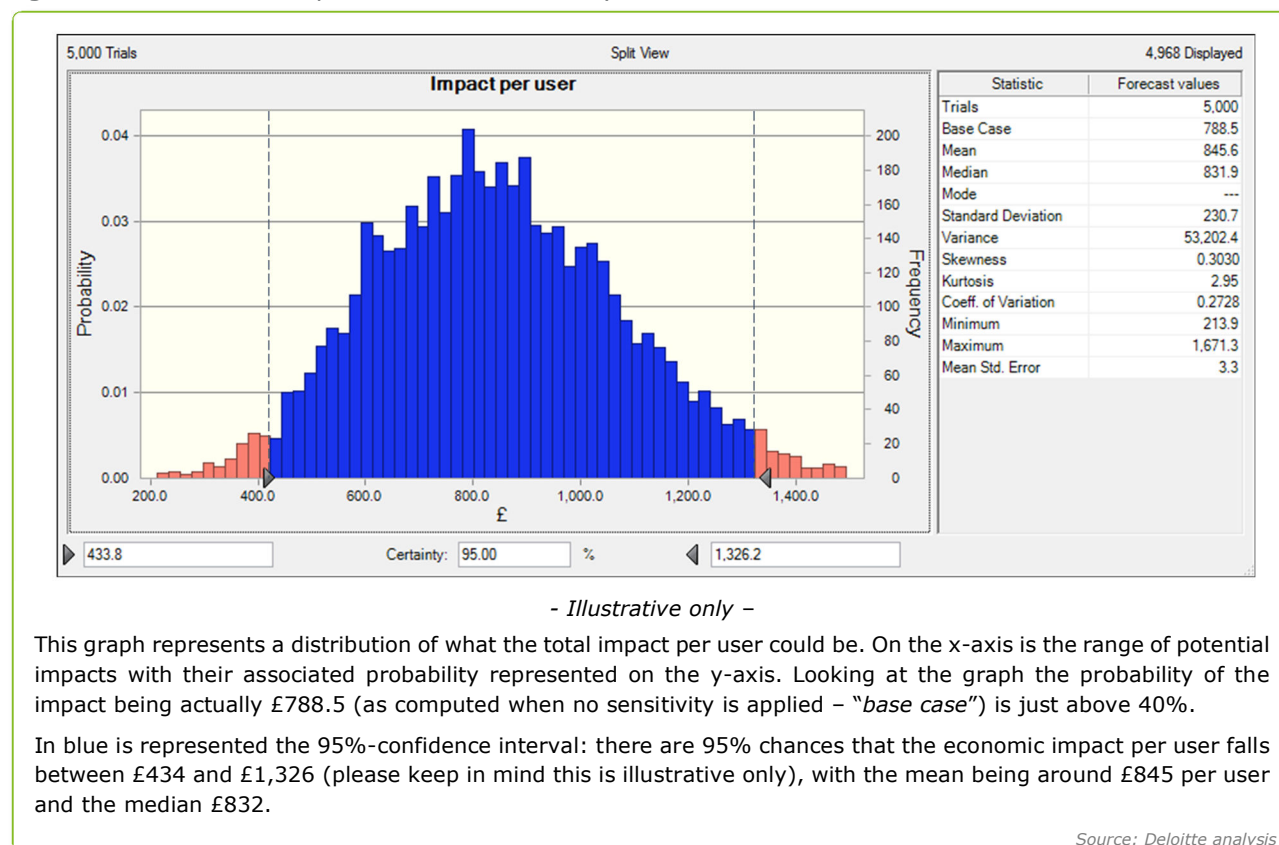
³² HM Treasury, 2003, *The Green Book – Appraisal and Evaluation in Central Government.*

Hours worked per week	4	Triangular(22.1; 26; 29.9)	Range was computed as +/- 15% to average
	1	Triangular(10; 13; 15)	
	2	Triangular(5; 10; 15)	
	3	Triangular(16; 27; 40)	
	4	Triangular(16; 27; 37.5)	
Hourly wage	1	Triangular(7.2; 7.6; 9.5)	No range available
	2	Triangular(7.2; 7.7; 10)	
	3	n/a	
	4	Triangular(7.2; 9.7; 10)	
Number of CPN appointments	1	Triangular(0.3; 2.8; 4.3)	Parameters were computed as the average of the other groups due to lack of data (agreed with SAMH to be representative)
	2	Triangular(0.3; 3.0; 4.3)	
	3	Triangular(0.3; 2.5; 4.3)	
	4	Triangular(0.3; 2.0; 4.3)	
	5	Triangular(0.3; 2.0; 4.3)	
Reduction in CPN appointments	1-4	Triangular(40%; 50%; 60%)	Range of 40% to 60% based on discussions with SAMH. 50% taken as middle value
Reduction in psychiatry appointments	1-4	Triangular(3; 4.5; 6)	Range of 3 to 6 appointments based on discussion with SAMH. 4.5 taken as middle value.

*For the triangular distribution, parameters are (minimum; likeliest; maximum).

The figure below provides an example of what the output of a Monte-Carlo simulation may look like.

Figure 15. Illustrative output of Monte-Carlo analysis

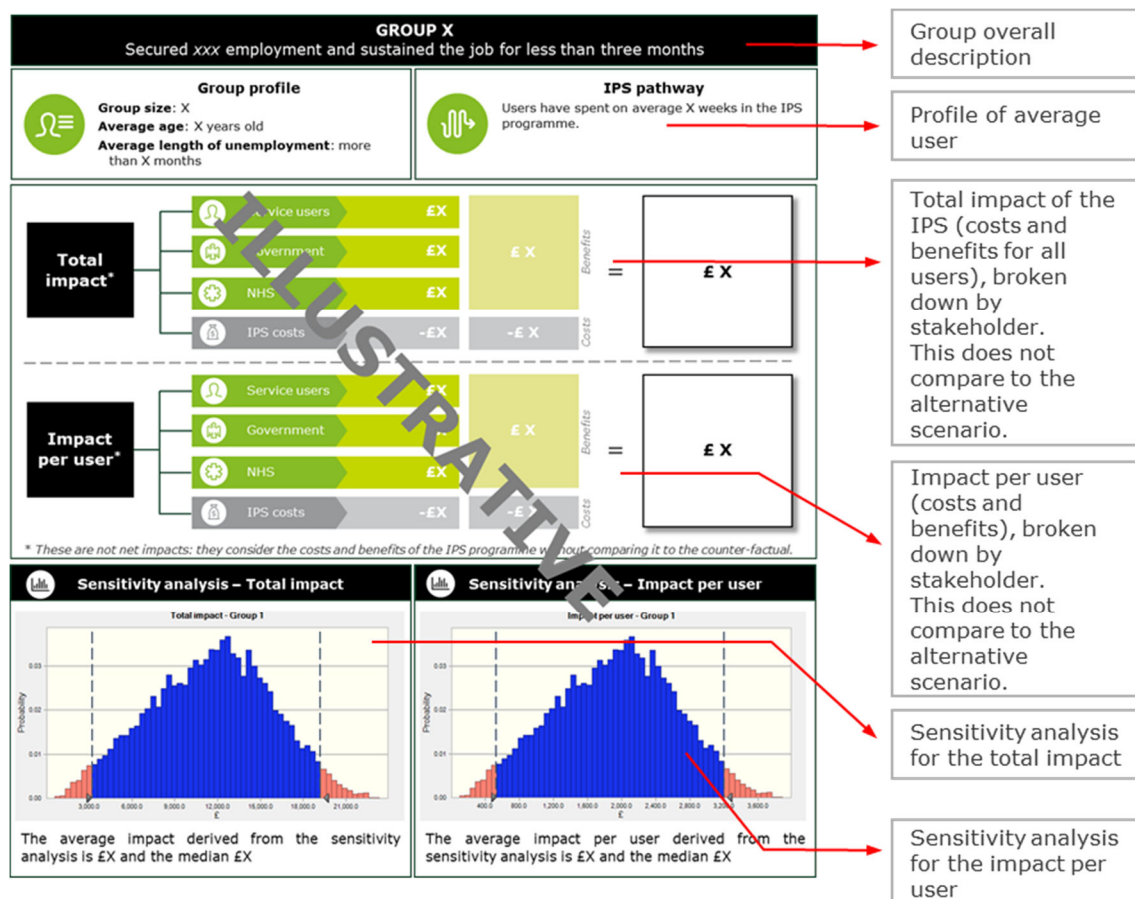


Source: Deloitte analysis

Appendix C

The detailed estimated impact for each user group is presented in this appendix. Results are first summarised as shown in the figure below.

Figure 16. Dashboard of case study



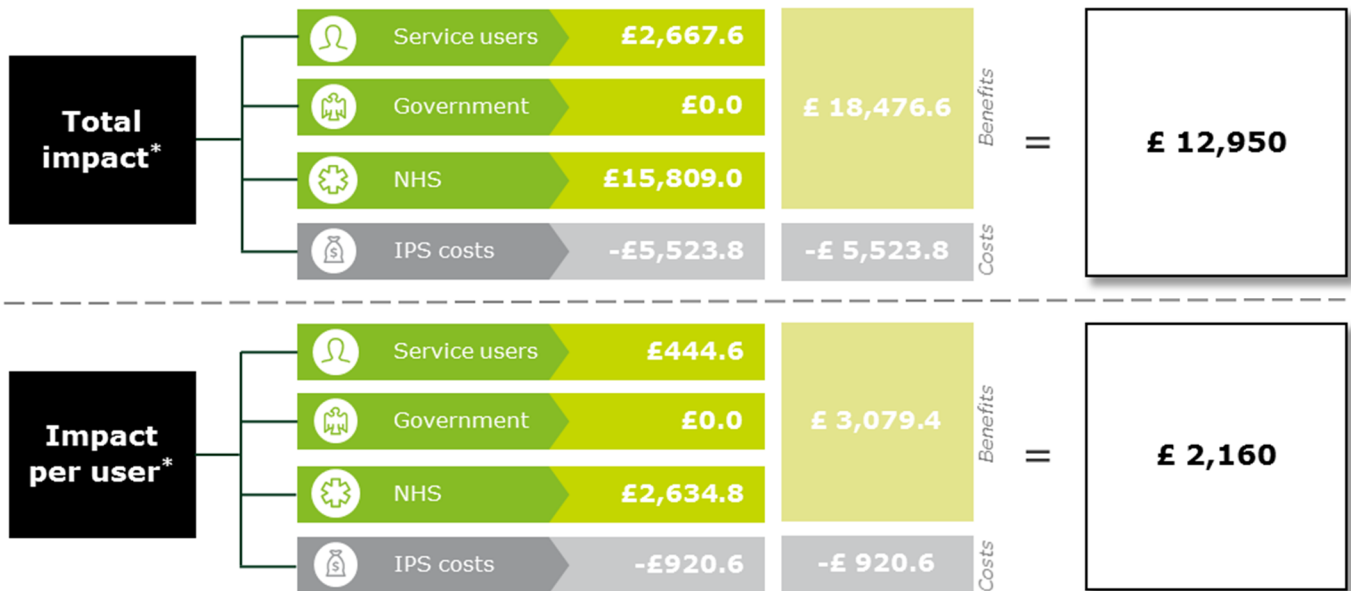
No sensitivity analysis has been undertaken for Group 5, as benefits have only been qualitatively flagged and have not been included in the model, due to the lack of data and evidence.

GROUP 1

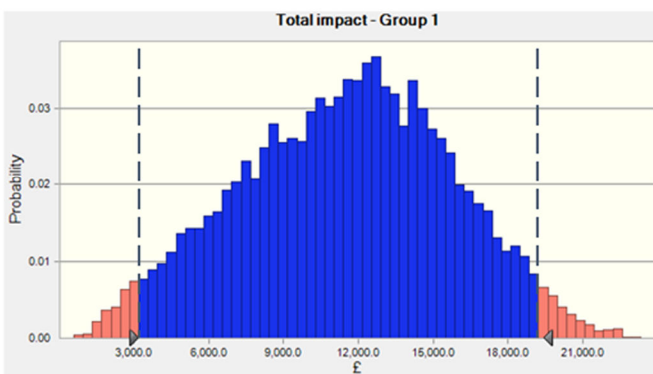
Secured permitted employment and sustained the job for less than three months

**Group profile****Group size:** 6**Average age:** 33 years old**Average length of unemployment:** more than 36 months**IPS pathway**

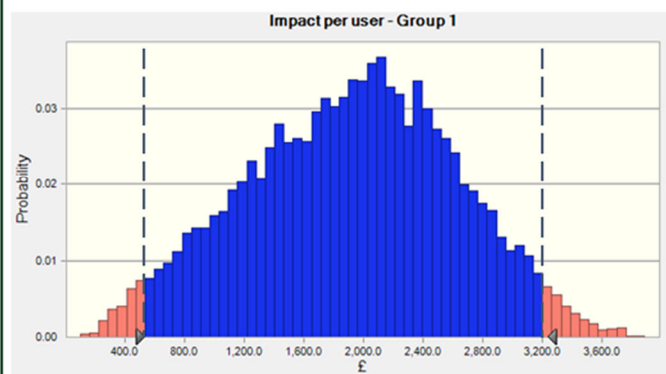
Users have spent on average 52 weeks in the IPS programme.



* These are not net impacts: they consider the costs and benefits of the IPS programme without comparing it to the alternative.

**Sensitivity analysis – Total impact**

The average impact derived from the sensitivity analysis is £11,518 and the median £11,722

**Sensitivity analysis – Impact per user**

The average impact per user derived from the sensitivity analysis is £1,920 and the median £1,954

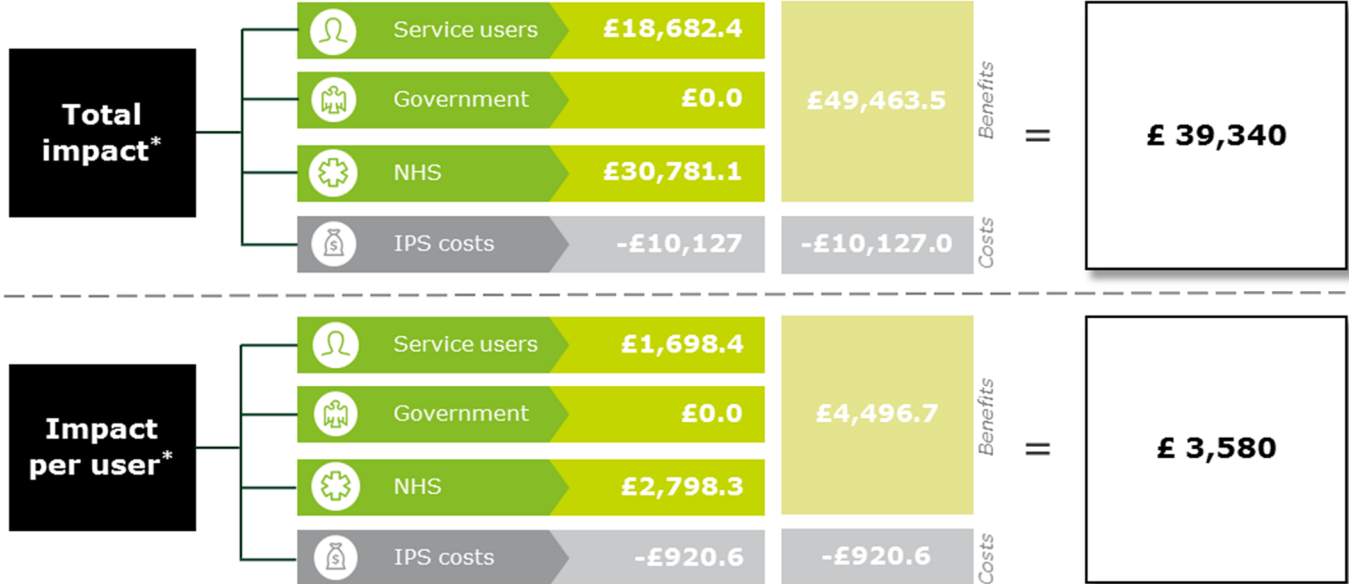
Source: Deloitte analysis

GROUP 2

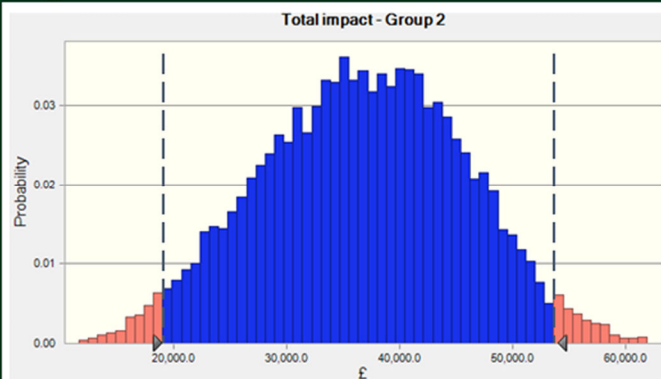
Secured permitted employment and sustained the job for more than three months

**Group profile****Group size:** 11**Average age:** 41 years old**Average length of unemployment:** 7 to 12 months**IPS pathway**

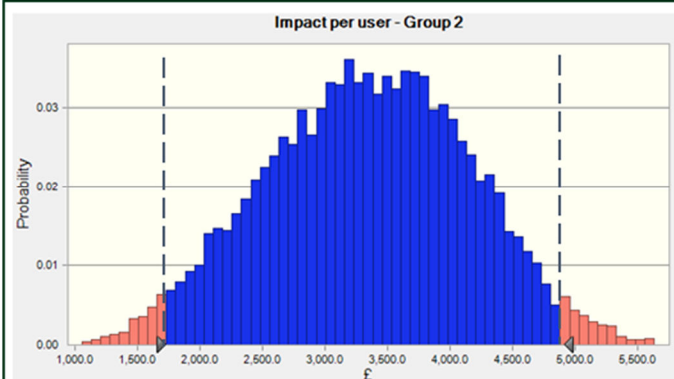
Users have spent on average 89 weeks in the IPS programme.



* These impacts are not net impacts: they consider the effect of the IPS programme without comparing it to the alternative.

**Sensitivity analysis – Total impact**

The average impact derived from the sensitivity analysis is £36,760 and the median £36,918

**Sensitivity analysis – Impact per user**

The average impact per user derived from the sensitivity analysis is £3,342 and the median £3,356

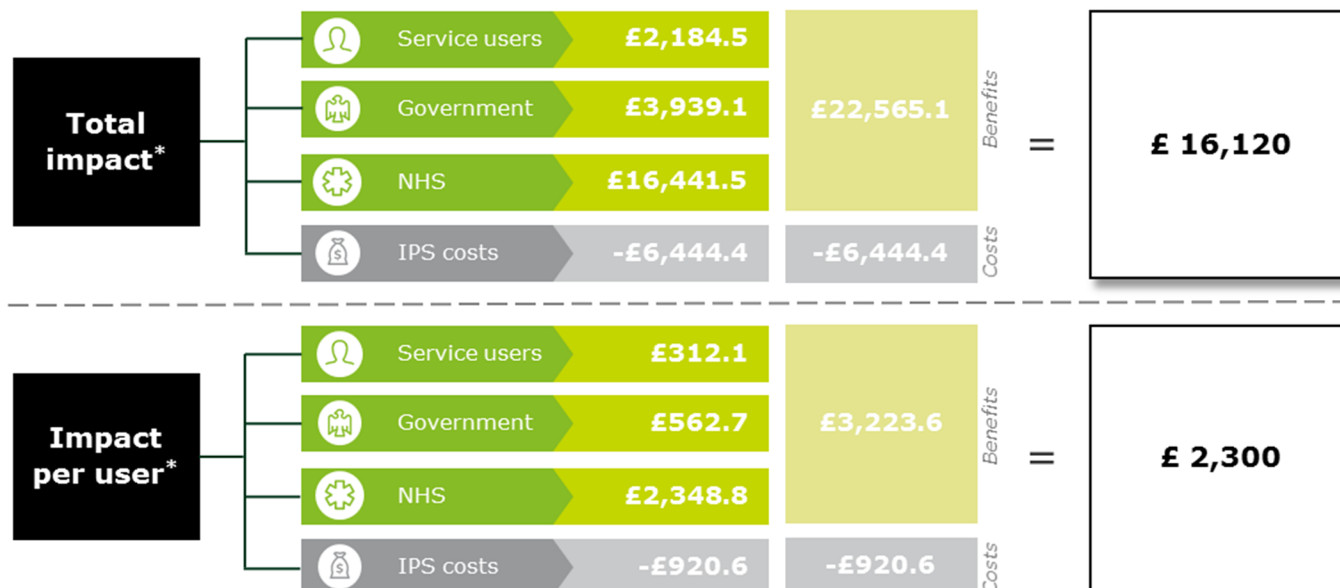
Source: Deloitte analysis

GROUP 3

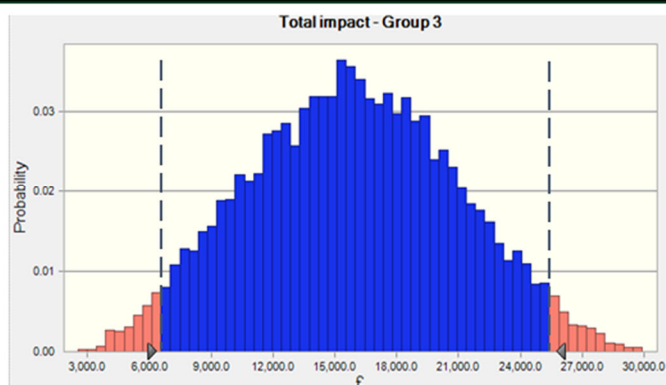
Secured competitive employment and sustained the job for less than three months

**Group profile****Group size:** 7**Average age:** 34 years old**Average length of unemployment:** 13 to 24 months**IPS pathway**

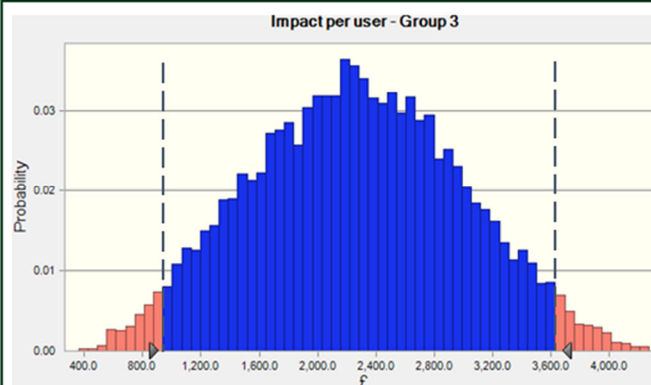
Users have spent on average 22 weeks in the IPS programme.



* These impacts are not net impacts: they consider the effect of the IPS programme without comparing it to the alternative.

**Sensitivity analysis – Total impact**

The average impact derived from the sensitivity analysis is £15,864 and the median £15,820

**Sensitivity analysis – Impact per user**

The average impact per user derived from the sensitivity analysis is £2,266 and the median £2,260

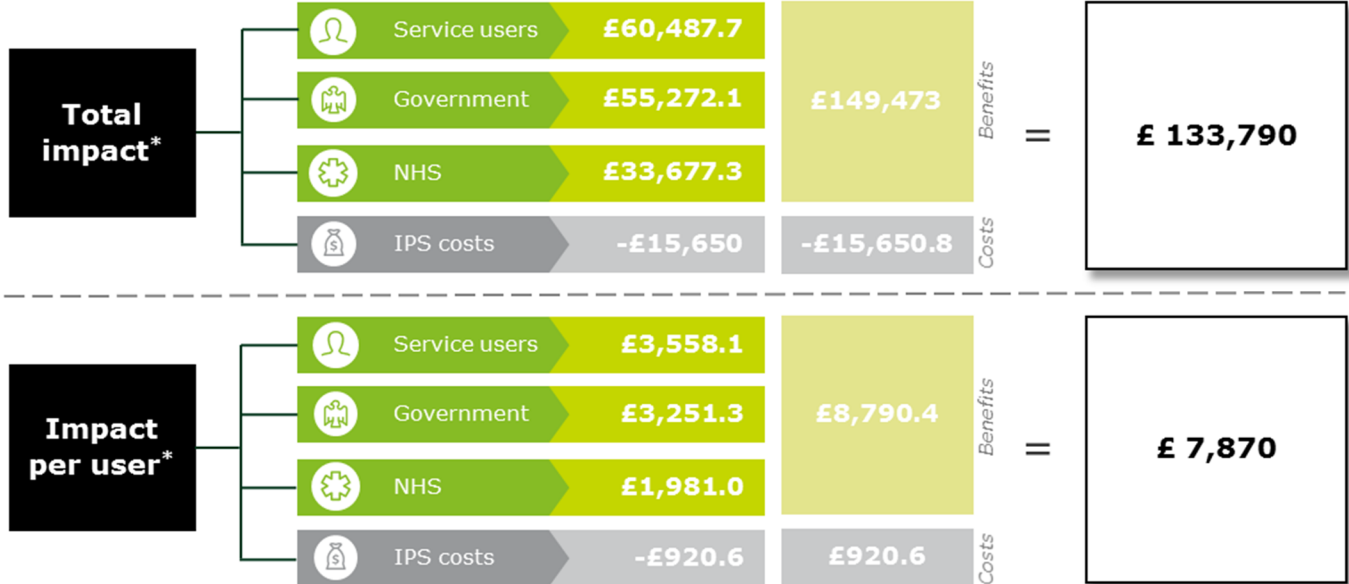
Source: Deloitte analysis

GROUP 4

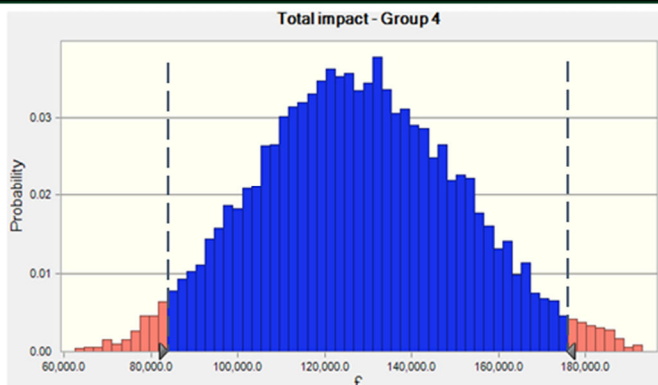
Secured competitive employment and sustained the job for more than three months

**Group profile****Group size:** 17**Average age:** 34 years old**Average length of unemployment:** 13 to 24 months**IPS pathway**

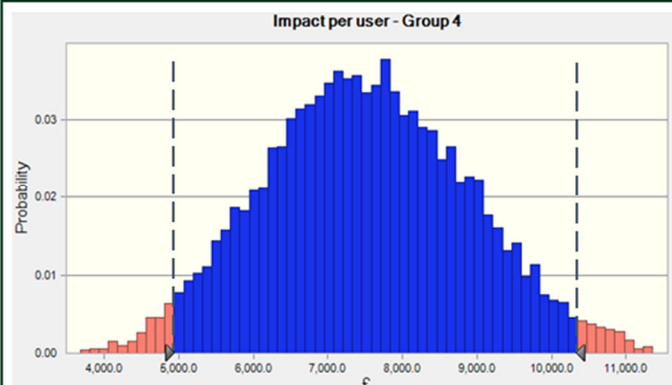
Users have spent on average 67 weeks in the IPS programme.



* These impacts are not net impacts: they consider the effect of the IPS programme without comparing it to the alternative.

**Sensitivity analysis – Total impact**

The average impact derived from the sensitivity analysis is £127,794 and the median £127,230

**Sensitivity analysis – Impact per user**

The average impact per user derived from the sensitivity analysis is £7,517 and the median £7,484

Source: Deloitte analysis



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