Making the case for integrating mental and physical health care

An analysis of the physical health of people who use mental health services: life expectancy, acute service use and the potential for improving quality and using resources more efficiently.

NHS
Midlands and Lancashire
Commissioning Support Unit

Contents

The Strategy Unit.

Foreword

In recent years we have become increasingly aware of the complex and interdependent relationship between mental and physical ill health. We also know how the story has sadly tended to unfold for the vast number of people with both mental and physical health needs: significantly poorer health outcomes; starkly higher premature mortality rates and lower life expectancy; greatly increased use of in-hospital and emergency resources.

But there is building momentum and palpable energy across the country to do things differently and better – to shift this narrative. "The Five Year Forward View for Mental Health" (FYFV, NHS England, 2016) identified 'An integrated mental health and physical health approach' as one of its three priorities.

As well as the undeniable moral imperative to plan for and provide better care for patients with multiple serious needs, there is an established and growing evidence base as to what interventions work in increasing the quality and effectiveness of care. These range from innovative models of primary care, improving access to physical health checks and interventions for people with serious mental illnesses to offering talking therapies to people with long-term physical health conditions.

The step-change that is increasingly being articulated in local and national strategies is about doing the right thing for patients earlier by working proactively and preventatively where possible, moving away from the archaic and unhelpful view of mind and body as separate entities.

The Strategy Unit.

Foreword cont.

The wide consensus to move towards integrated, place-based, multi-disciplinary community teams can provide a vehicle for that if done effectively and collaboratively. There is a real opportunity that, in doing so, we can reduce demand for hospital care in acute settings as well as improvements in patient experiences and outcomes.

This analysis was developed working with the Black Country STP as a pilot and then commissioned by NHS England for the other 43 STPs.

The material in the pack is intended to help your STP in developing your understanding of the local levels of health inequalities for people using specialist mental health services and ultimately the case for change for providing a better integrated mental and physical health care offer.

Specifically, this information should support STPs in working through the investment case and the required scale of provision for the key Five Year Forward View for Mental Health deliverables intended to deliver a more integrated physical and mental health service, namely: Integrated IAPT services; liaison mental health services; physical health checks and treatment for people with severe mental illness (SMI)

We hope you find the analysis both compelling and useful and that it adds to local resolve to take action.

Peter Spilsbury
Director, The Strategy Unit

Introduction and context

"The Five Year Forward View for Mental Health" (FYFV, NHS England, 2016) identified three key priorities:

- A 7 day NHS – right care, right time, right quality
- **An integrated mental health and physical health approach**
- Promoting good mental health and preventing poor mental health

To support STPs in responding to the second of those priorities, this report provides information about the physical health and associated health care utilisation of mental health service users in your STP area.

Specifically, this information should support STPs in working through the investment case and the required scale of provision for the following three key Five Year Forward View for Mental Health deliverables, intended to deliver a more integrated physical and mental health service:

- Integrated IAPT services
- Liaison mental health services
- Physical health checks and treatment for people with severe mental illness (SMI)

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A guide to this report

The
Strategy
Unit.

A guide to this report

The remainder of the report contains three analytical chapters, each providing an insight into the physical health of mental health service users, bespoke to your STP.

Chapter 1 focuses on the difference in life expectancy between mental health service users and the rest of the population in the STP area, how this has changed over time and how it compares with other areas.

Chapter 2 compares **acute hospital utilisation** for mental health service users and the rest of the population in the STP area. Data is provided for inpatient, outpatient, accident and emergency and diagnostic services.

Chapter 3 identifies specific opportunities to improve mental health services through reinvesting resources tied up in potentially avoidable **acute health care utilisation** by mental health service users.

Each chapter describes the **methods** used, **presents the data** for your particular STP in a variety of formats, **makes comparisons** with similar areas and the country as a whole and draws out some **key observations** for the STP to consider.

A guide to this report

Additional appendices provide other relevant information on;

- a summary of the evidence of the links between physical health and mental health and evidence-based interventions to improve the physical health of mental health service users.

- a summary of key measures for the five 'nearest neighbour' STP areas for further benchmarking and identification of opportunities to share best practice as well as the **methods and variables used** to derive the similarity of those areas.

- a summary of key measures (where possible) for the constituent CCG areas within your STP to support more local planning and discussion.

We appreciate this is a long document. To aid with navigation, we have linked the main contents page to each individual section so if you are viewing this on a computer you can skip through the report by clicking the various headers.

To return to the contents page simply click on the number of the page you are currently on.

What this report does and doesn't do

This report, bespoke to your STP, represents a significant step forward in locally specific quantitative analysis of the physical health of people in contact with **specialist mental health services**. It utilises millions of records linked at a patient level to measure effects rather than estimate them. It seeks to **quantify life expectancy**, causes of mortality, **patterns of acute hospital utilisation** and **opportunities to make changes** that through savings can allow investment in improved services. It is intended to further make the case for integrating our responses to physical and mental health.

Like any serious analytical project however, there are many things that necessarily caveat the findings…decisions about method and scope; availability and reliability of data. For example, for the purposes of this project it has not been possible to include data on service utilisation within primary care, public health funded services or social care.

Furthermore, the data analysis report, of necessity, has had to define the 'mental health service user' population as those who feature in the national minimum datasets for **specialist mental health care**. Of course we know that everyone has mental health, and that there are many people not in contact with specialist mental health services with mental health needs. Any mentions of the broader 'mental health service user population' or 'mental health cohort' in this report, refer to the above definition and should be taken to mean all persons in contact with **specialist** mental health services as captured by Mental Health Minimum Data Sets (MHMDS). The remainder of the population we have therefore referred to as the 'non-mental health service users group'.

From an analytical perspective, understanding needs that aren't captured through systematically coded records is of course a major challenge and the report hasn't sought to address that. The same coding issues have also led to us being more limited in our selection of mental health sub groups than some would like …..but data quality in the MHMDS and small number effects made going further impractical at this stage.

What this report does and doesn't do

What it does

- Aims to set out a compelling case for change and for collective prioritisation of the gap between the physical health of those using mental health services and the rest of the population.

- Provides data-linked intelligence on the physical health challenges facing people with mental health conditions.

- Gives insight to STPs on how their mental health service users are using acute hospital services.

- Groups service users into several high level sub-groups (cohorts) that could benefit from targeted interventions.

- Identifies some areas of hospital care that, if targeted, may improve patient outcomes and commissioning budgets.

- Provides a summary of effective interventions for improving the physical health of specialist mental health service users.

- Provide a platform for clinical engagement on integration in STPs.

What it doesn't do

- Tell the whole story…it is a significant piece of analysis but it has limitations; some by design, some because of data availability. We have tried to be very clear about such limitations.

- Include insight into Children and Young People (CYP), those with substance misuse or utilisation of Primary Care services – national datasets don't permit this currently.

- Tell STPs what to put into their plan submissions.

- Tell STPs what to specify for follow-up deep-dive analysis to support local decision making.

- Provide a detailed analysis of mental and physical health care pathways, in that it does not include data on primary care, social care or CYP services.

- Model the likely health improvements or economic impacts of implementing a range of interventions.

Opportunities for future (analytical) work

- Link with Primary Care long-term conditions data

- Detailed analysis of other specified sub-groups not covered e.g. CAMHS, substance misuse

- Link with IAPT data

- Describe mental health service utilisation and pathways experienced by service users

- Identify the sub-acute mental health population and opportunities for early interventions

- Modelling of demand for dementia and older people's mental health services

How to use this report…next steps

In places that have received versions of this analysis early, extensive, sometimes passionate debates have been stimulated by the findings. There are so many further questions that people would like to ask…..some of these we have already been able to incorporate into the report you have here, but some could only be addressed through further large scale analytical projects or indeed through research. Some will need local pilot studies; some will become more accessible as new data sets become available or existing ones are expanded.

The table above summarises what the report does and doesn't do. It also sets out some further work that might follow on, perhaps through further national projects.

But don't let the acknowledged limitations in the analysis and the desire to answer more detailed questions divert you from the big messages in this report and the case already made for this being a focus for local action.

We would invite all recipients of the report to use the contact details for the Strategy Unit at the back of the report to feed back the further questions/analysis that you would like to see (or that you now plan to undertake locally).

High-level summary of analytical approach

The approach used throughout the three main chapters of this report is grounded in data linkage, with analytical techniques applied to aggregated linked records.

There were five base datasets used to extract the information we needed for this report:

1. Mental Health Minimum Datasets (MHMDS) 2006/07 to 2014/15 – to identify mental health service users and to assign to sub-groups of that population.

2. Hospital Episode Statistics (HES) 2012/13 to 2014/15 made up of accident & emergency, inpatient and outpatient tables – to identify acute encounters from the above mental health service users and supplement assignment to sub-groups of the population.

3. ONS death registration records 2006/07 to 2014/15 – to identify patients who have died and from what cause.

4. Diagnostic and Imaging Dataset (DIDS) 2012/13 to 2014/15 – to identify diagnostic tests undertaken on mental health service users and others.

5. Bridging file – this contains the unique ID from the MHMDS and the corresponding HES ID that is contained in the other 3 sets of tables enabling us to link datasets anonymously at an individual level.

Supplementary data on organisational codes, geographical lookups, deprivation and populations are also used during the processing to:

- assign patients to STPs based on their GP/commissioner of registration or place of residence

- derive indicators of socio-economic status

- derive population denominators / populations at risk in order to calculate various measures

The flowchart below represents a simplified visual description of how the data was linked for this project to facilitate the analysis:
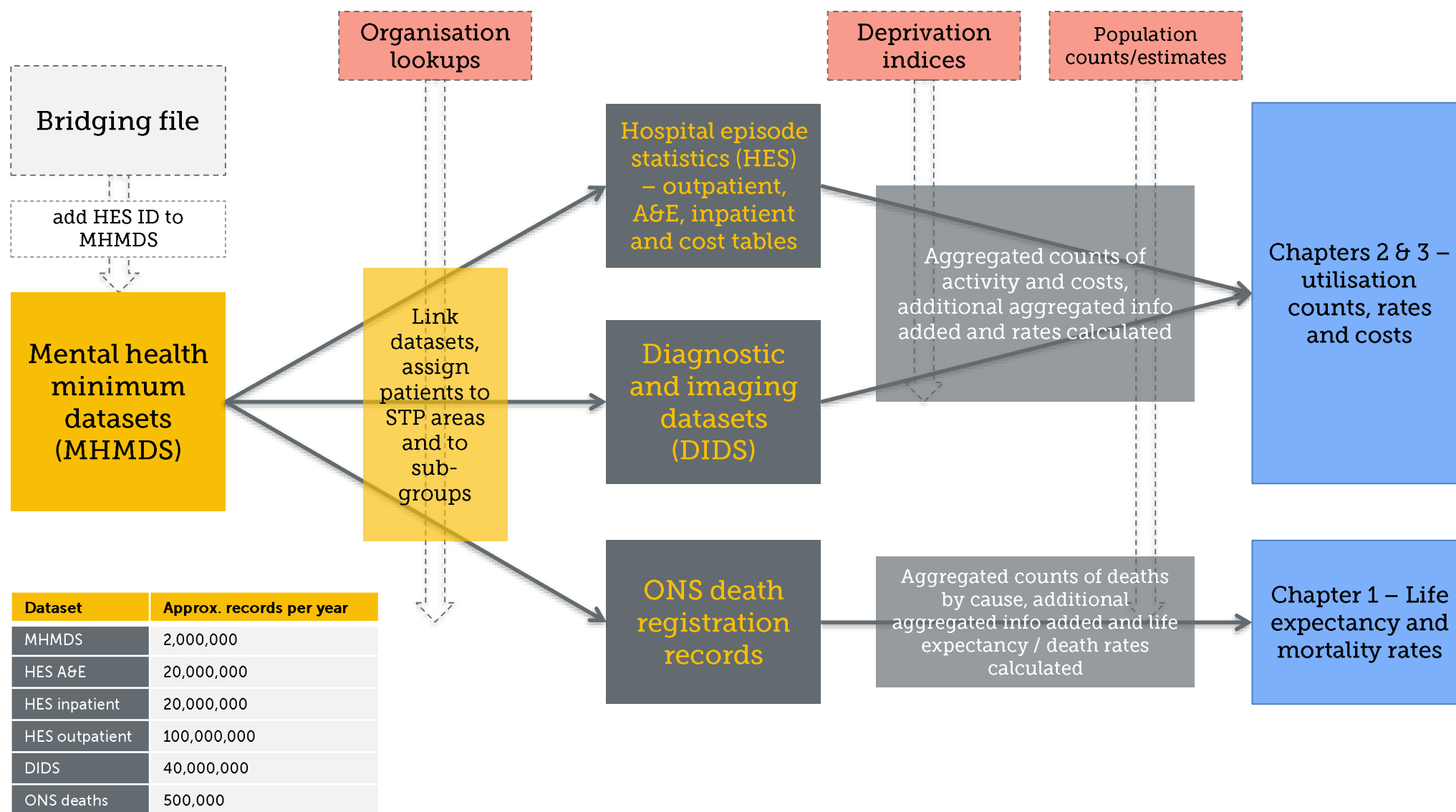
Dataset	Approx. records per year
MHMDS	2,000,000
HES A&E	20,000,000
HES inpatient	20,000,000
HES outpatient	100,000,000
DIDS	40,000,000
ONS deaths	500,000

Chapter 1

The life expectancy of mental health service users

The Strategy Unit.

Background and introduction

There is a clear evidence base to show that life expectancy, and patterns of cause-specific mortality are markedly different for those in contact with mental health services in England (see appendix 1)

However, no systematic local quantified evidence has previously existed on which to base either medium or long-term strategic plans.

With the increased emphasis on mental health within the 5 Year Forward View, and the development of Sustainability and Transformation Plans (STP), there is a need for health and care economies to understand better the physical health needs of mental health patients (and vice versa) and to recognise opportunities for integrated commissioning / interventions between mental health and physical health care.

This chapter aims to address that local knowledge gap and provide STP areas with the information to answer the following:

- How does life expectancy vary in our area between those using mental health services and the rest of the population?

- How does that compare to similar areas across the country?

- Is the pattern consistent across different causes of mortality and what mental health / physical health interactions might we prioritise if we are to tackle the life expectancy gap?

- Can variances be explained?

Methods [1]

Statistical approach:

The Chiang II method for calculating period life expectancy (Chiang CL, 1968) has been used for this analysis.

Abridged life tables are used alongside age and gender-specific mortality to determine the life expectancy for any given age group. For interpretive purposes, the life expectancies quoted are suggestive of longevity that assumes the current mortality patterns persist over time.

This method is used by ONS for nationally published life expectancy statistics and has proved to be stable for low numbers (Eayres D & Williams ES, 2004), which may occur in some age groups for STP-level mental health patients and deaths.

The analysis of life expectancy for mental health patients in Nordic countries (Wahlbeck, et al. 2011) - a key reference point for this analysis of English patients - uses a similar but slightly different method.

The population at risk in that study was patients discharged from psychiatric inpatient care only, rather than the whole mental health population. Additionally researchers used the Weisler method for Life Expectancy calculation using single-year life tables and across 5-year cohorts.

Patients with a primary diagnosis of dementia were excluded in their study. We have retained them however, as the clustering and diagnosis codes in the MHMDS datasets do not support accurate identification of specific conditions, particularly in earlier years of the use of MHMDS.

Methods [2]

As our definition of the mental health service user is much broader than the Nordic study, it is expected that the differences in life expectancy to the wider population may not be as marked; although our comparison to the non-mental health population rather than the general population (which includes mental health) may offset some of that difference.

Data sources:

The population at risk is identified in this study from national coverage (England) Mental Health Minimum Data Sets (MHMDS) between 2006/07 and 2014/15. From September 2014, this included coverage of those patients managed within learning disabilities services.

The deaths are taken from ONS death registrations data for the same period and are linked via the pseudonymised HES ID as supplied by the Information Centre (now NHS Digital).

For national-level analysis, mid-year population estimates are used to determine the non-mental health service user population at risk (by deduction). For STP level analysis, aggregated GP registered populations are used for non-mental health service user population at risk.

Financial year cohorts have been retained to maximise the number of data points in trends and to simplify the data management of vast datasets.

Methods [3]

Cohort determination :

Anyone appearing in Mental Health Minimum Datasets (MHMDS) is deemed to be a mental health service user. This covers patients with a variety of conditions and disorders and at various stages of assessment, severity and treatment. Patients may be counted more than once in the denominator population as the 'population at risk' is aggregated across the 3-year pooled period. **More detail on how we have defined sub-groups of the mental health service user population can be found in Chapter 2.**

The above denominators are subtracted from the relevant total population figures to determine the 'non-mental health' service user population at risk.

Any distinct individuals in contact with mental health services across the 3-year period that appear in the death registrations database for the same period are considered numerators for the purpose of life expectancy calculations.

The total deaths minus the above are considered the non-mental health numerators for life expectancy calculations.

Life expectancies for your STP area [1]

Life expectancy at birth in years | mental health and non-mental health populations | 2012/13 to 2014/15 pooled
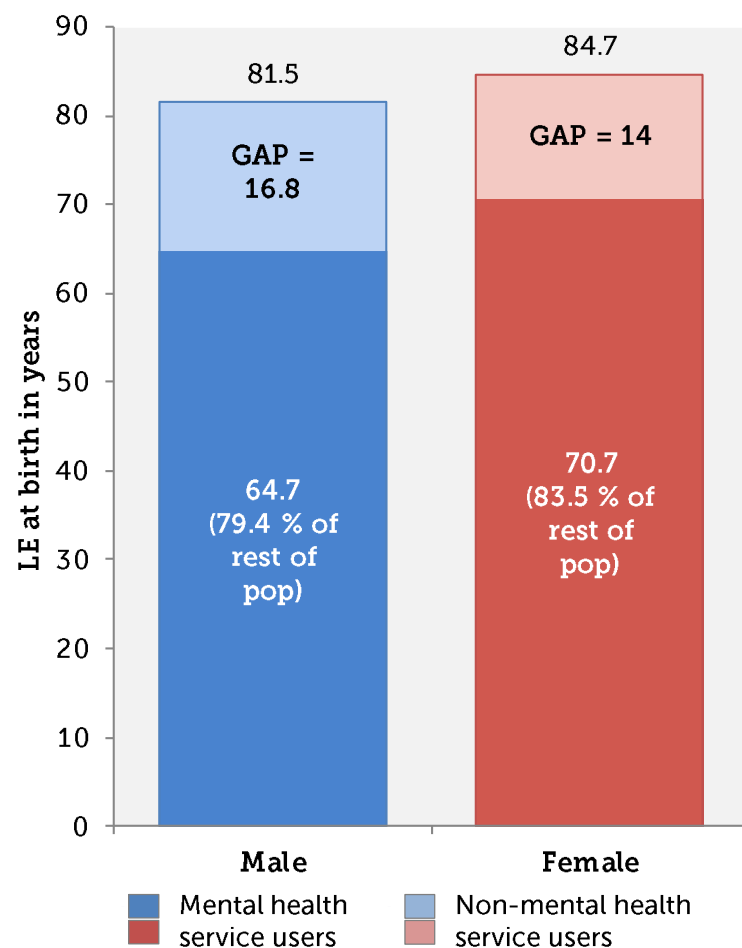
Life expectancy at birth | **MALES** | All mental health service users
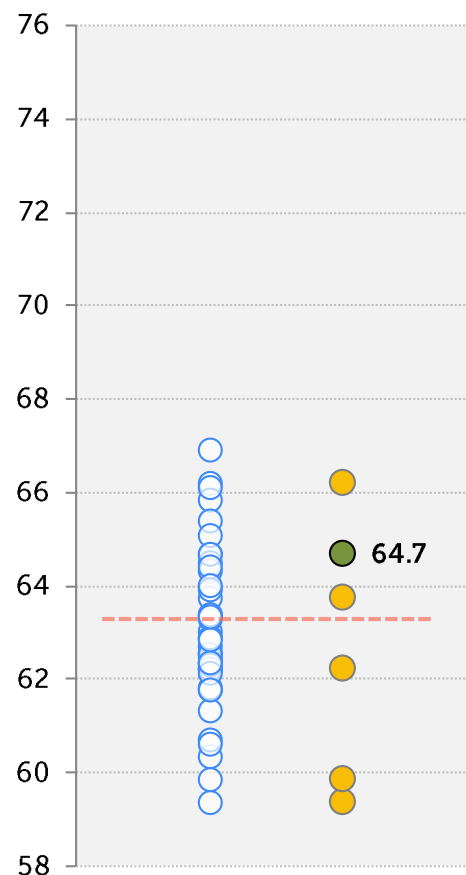
Life expectancy at birth | **FEMALES** | All mental health service users
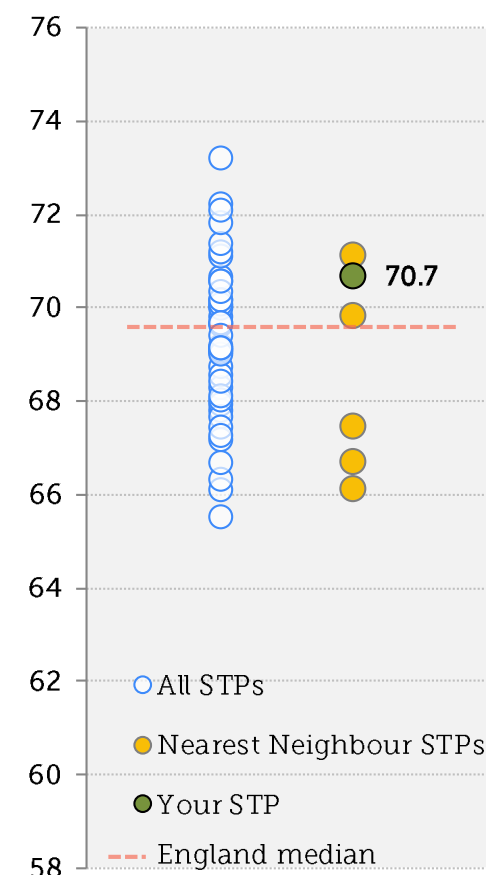
On average, men and women in contact with mental health services have a life expectancy 16.8 and 14 years less than the rest of the STP population respectively. Figures for men and women are fairly high compared to 'similar' areas.

Life expectancies for your STP area [2]

Life expectancy at age 65 in years | mental health and non-mental health populations | 2012/13 to 2014/15 pooled
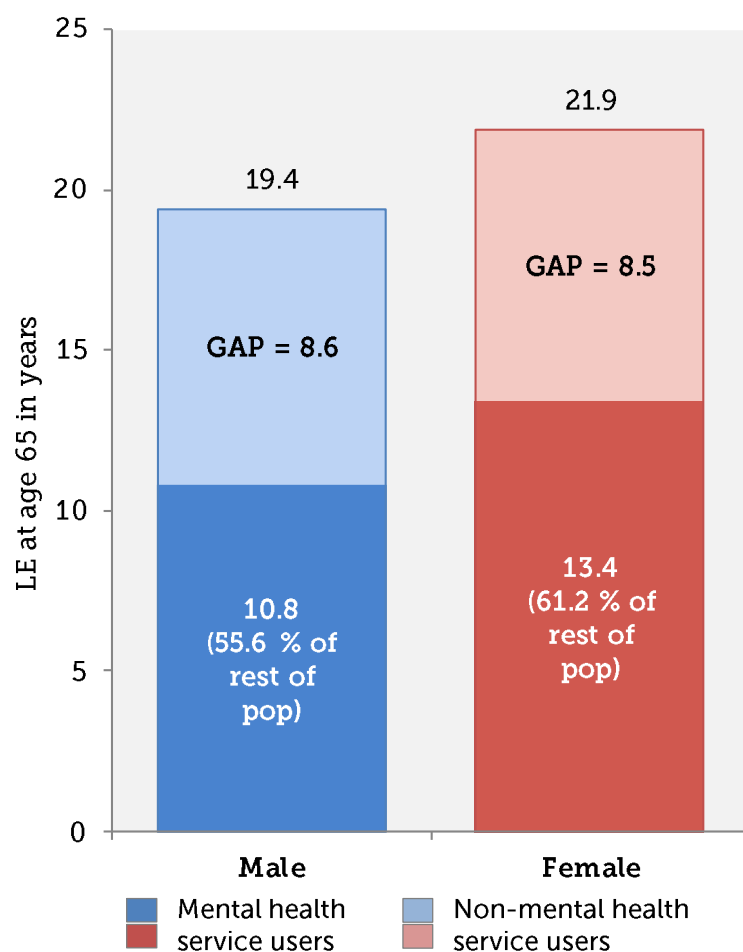
The inequality gap persists and indeed widens as people age.

At 65 years of age, given current mortality patterns, men in contact with mental health services are likely to live on average another 10.8 years –just over half that of the rest of the population.

For females of that age in contact with services the life expectancy on average would be 13.4 years – around 60% that of the rest of the population.

NB. For presentational purposes, life expectancies have been rounded to 1 decimal place, however % calculations use unrounded figures so may not reconcile.

Life expectancy trends for your STP area

Life Expectancy at Birth for Mental Health and Non-Mental Health cohorts | **MALES** | 3-year pooled periods 2006/07 to 2014/15
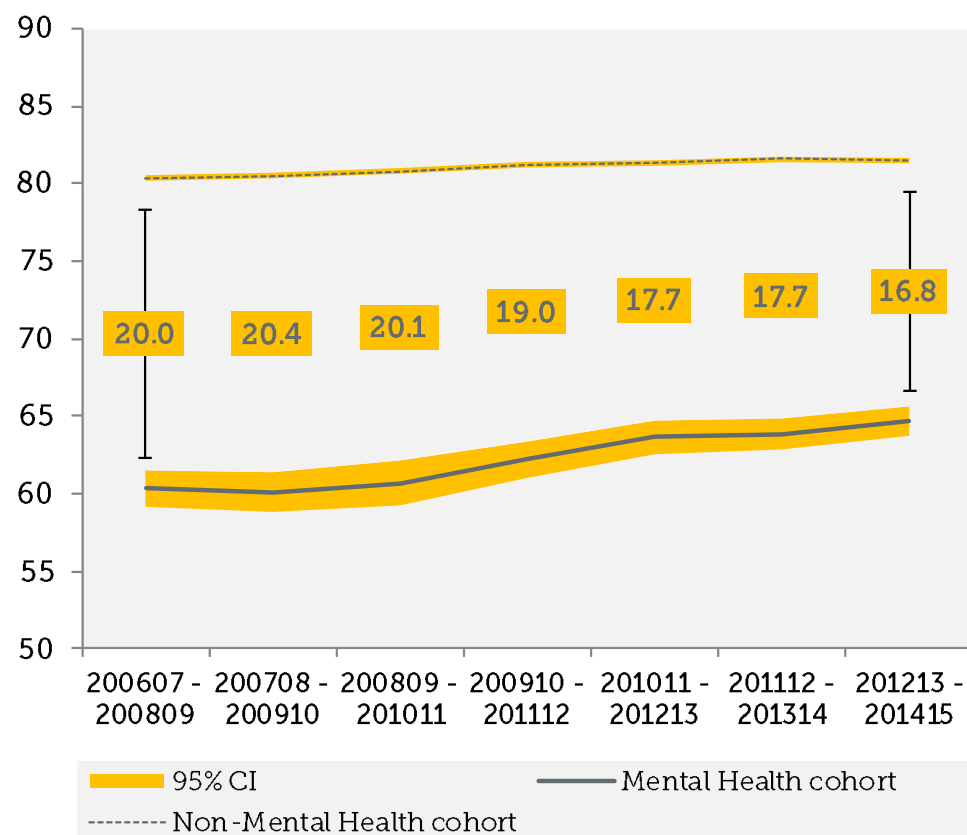
Life Expectancy at Birth for Mental Health and Non-Mental Health cohorts | **FEMALES** | 3-year pooled periods 2006/07 to 2014/15
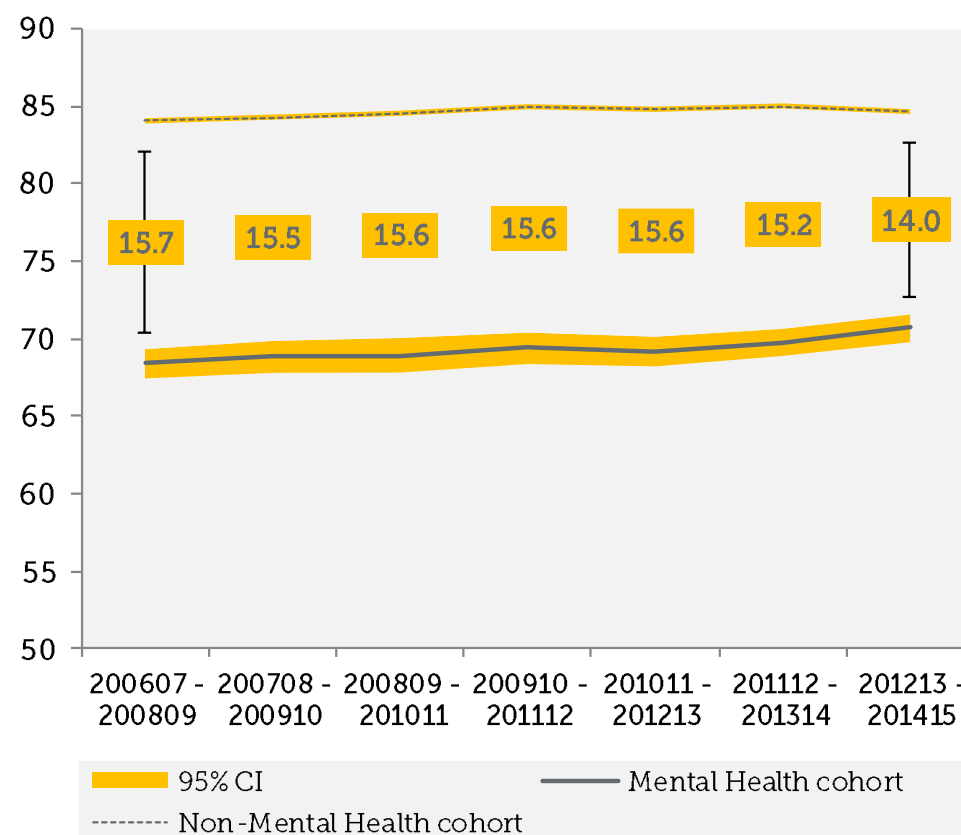
Life expectancy for both men and women in contact with mental health services has increased in the STP over time (significantly in males), and at a faster rate than the rest of the population. The inequality gap as such, appears to be reducing.

To try and understand the degree of variation in life expectancy gap exhibited across STPs, we have looked at the linear association between life expectancy in mental health and non-mental health service user groups. This analysis shows little correlation.

Whilst some of this may be an artefact of the data, this implies that factors usually associated with life-expectancy (lifestyle, socio-economic deprivation, educational attainment, geography) are either interacting differently for mental health service users or there are other systematic factors at play, such as the variation in provision of mental health services. This appears an important finding. It suggests that changing the way services are provided has real potential to achieve impact and that differences aren't all about social function out with service control.

Correlation between Life Expectancy in Mental Health and non Mental Health populations by English STP | Males and Females | 3-year pooled period 1st April 2012 to 31st March 2015
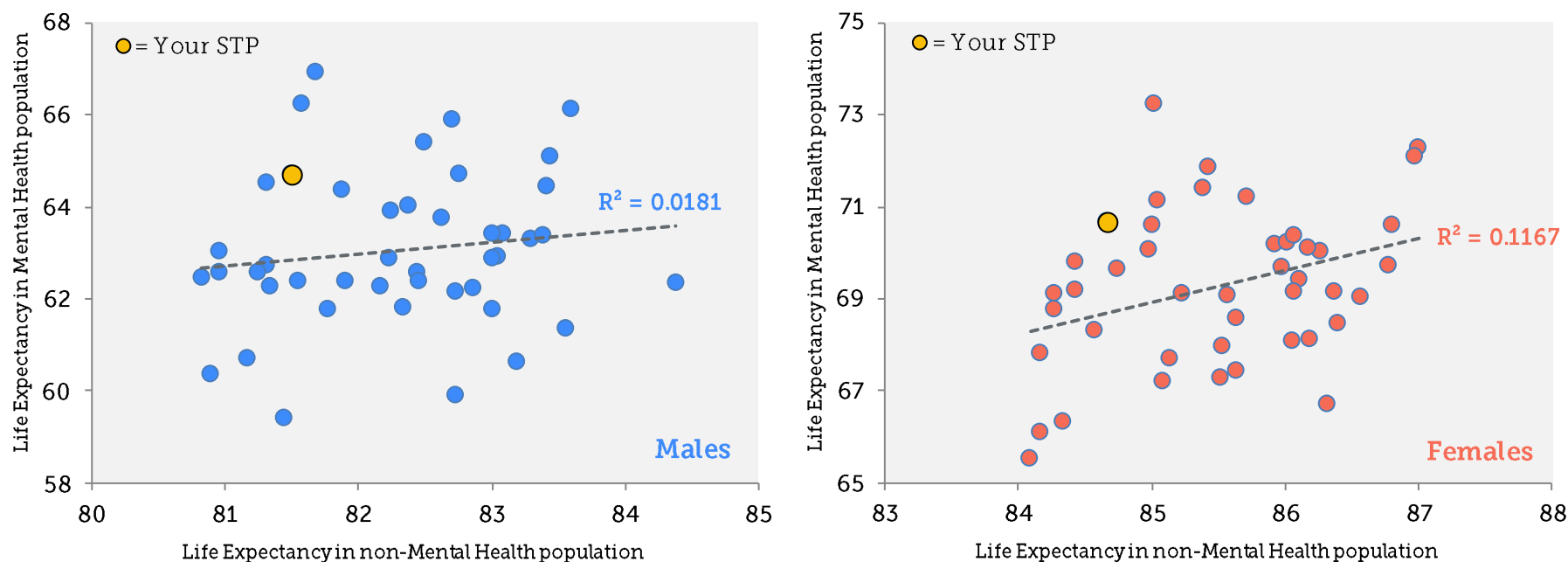
Comparison with other findings

For assurance, we have compared the findings in this report to previous studies internationally including the large Nordic study by Wahlbeck et al (2011) – summary details are provided in appendix 1.

Overall the broad scale of life expectancy findings are similar across the various studies despite some important methodological refinements and classifications of the mental health population. It is reassuring from a methodological perspective that the inequalities identified in this report broadly reflect what other similar analysis have suggested.

Causes of death in mental health service users

Previous work has highlighted the difference in mortality rates by cause of death between 'mental health' and 'non-mental health' populations and some of the factors associated with them (Prior P, Hassall C & Cross KW, 1996), (Appleby L et al, 2000), (Russ TC et al, 2012).

By calculating directly standardised mortality rates (Eayres D, 2008) for our mental health service user 'cohort', we can compare the relative risk of death with the non-mental health service populace, suggesting areas to focus on for prevention and other health improvement interventions in a mental health setting.

Rate calculations exclude numerators and denominators below 15 years of age due to low recording in mental health datasets of this age group.

Using the underlying cause of death field, as described by the Office for National Statistics, men experience higher mortality rates than women for the three largest killers – cancer, circulatory and respiratory disease.

Women in contact with mental health services experience higher mortality than men for genitourinary disease, mental disorders themselves (presumably a larger cohort of Dementia patients) and for causes not elsewhere classified.

Causes of death for your STP area [1]

Directly Standardised Mortality Rate* per 100,000 population over 15yrs | mental health and non-mental health cohorts | by gender and cause of death | 2012/13 to 2014/15 pooled
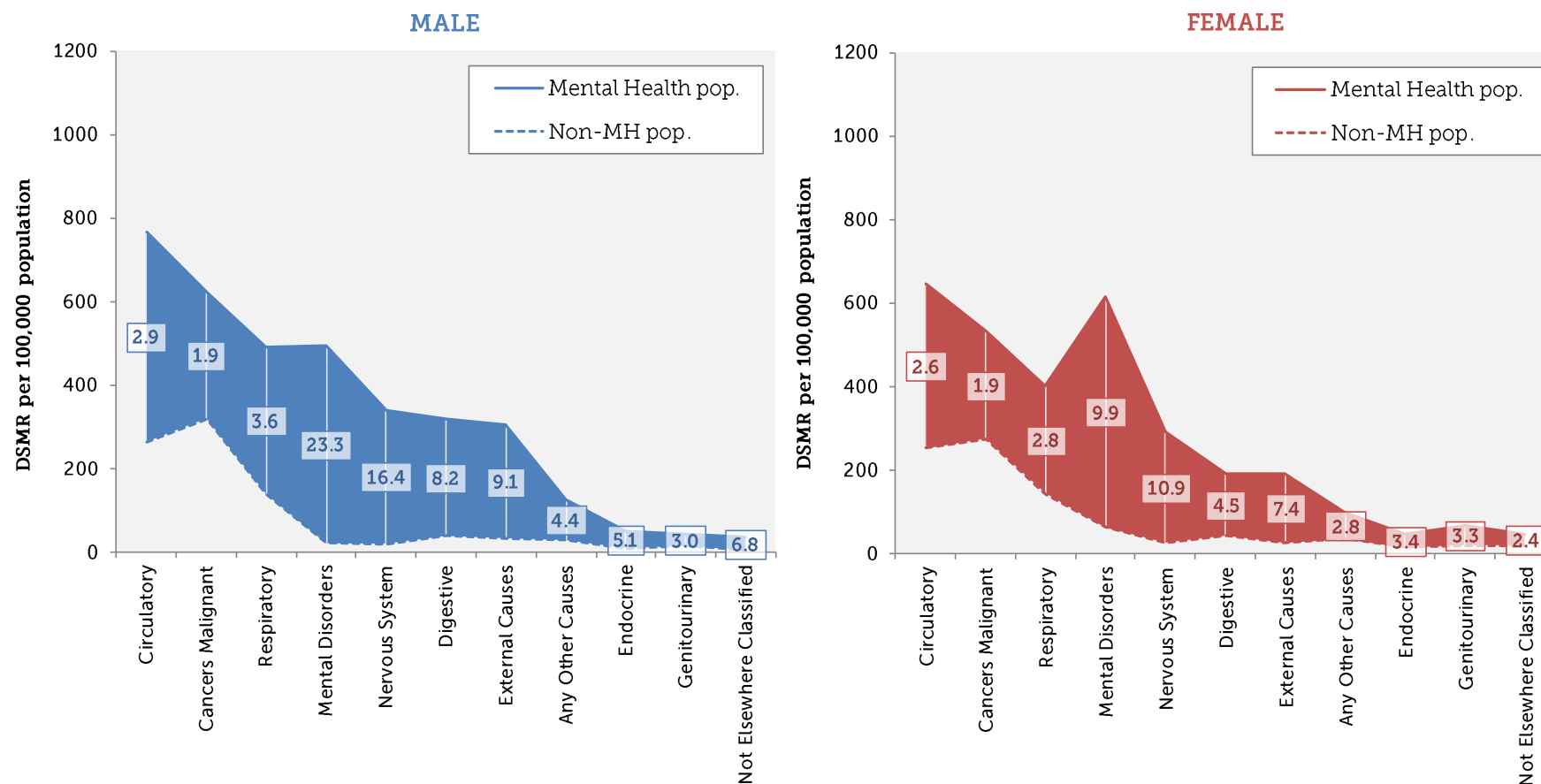
* Rates standardised using the total England reference population normalised to 100,000. Source, ONS mid-year population estimated, 2012-2014 pooled.

NB. The values across the middle of the chart indicate the rate ratio of mortality rates between mental health service users and the rest of the population e.g. DSMR for circulatory disease is 2.9 times higher in the male mental health service user population.

Causes of death for your STP area [2]
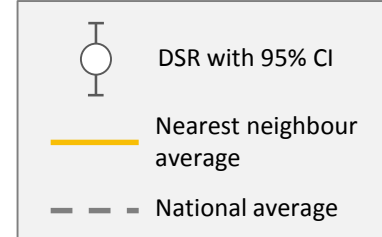
This section compares the directly standardised rates (DSR) for the top five volume (physical) causes of death with your nearest neighbour (NN) STPs, their average and the national average. Your nearest neighbour STPs are shown in order of similarity below and more detail on the methods used to derive them can be found in appendix 2. *The most common causes of death nationally (2015 registrations) are listed for information.*

Your STP area	Nearest neighbour 1	Nearest neighbour 2	Nearest neighbour 3	Nearest neighbour 4	Nearest neighbour 5
Staffordshire	Derbyshire	Coast Humber and Vale	Suffolk and North East Essex	Shropshire and Telford and Wrekin	Durham Darlington and Tees Hambleton Richmondshire and Whitby

MALE　　　　　　　　　　**FEMALE**

Circulatory diseases (ICD10, I00-I99)

Most common causes:

- IHD
- Cerebrovascular disease
- Acute myocardial infarction
- Stroke

Causes of death for your STP area [3]

Legend:
- DSR with 95% CI
- Nearest neighbour average
- National average

MALE   **FEMALE**
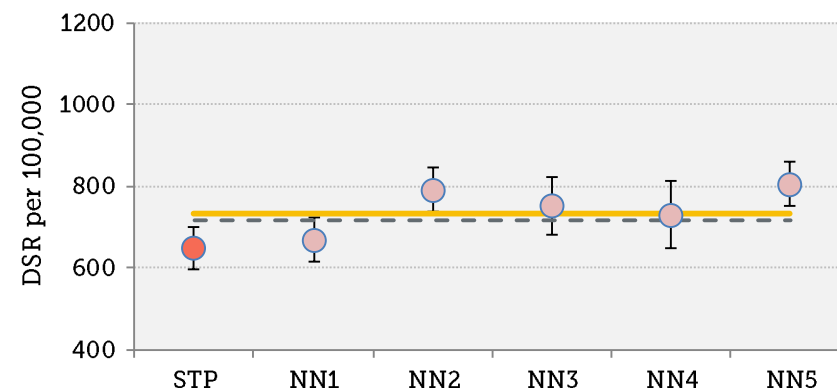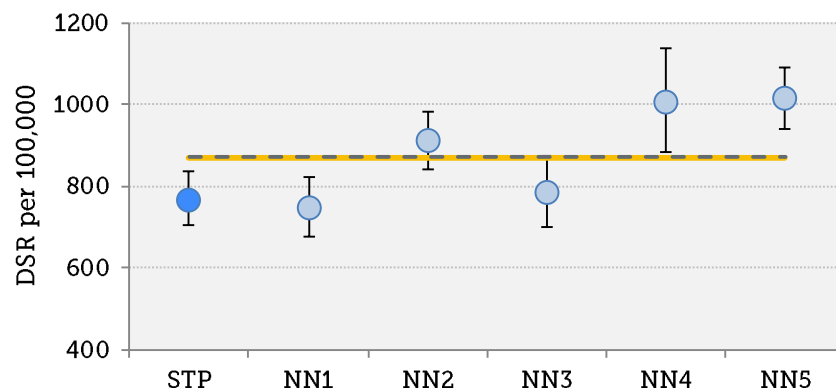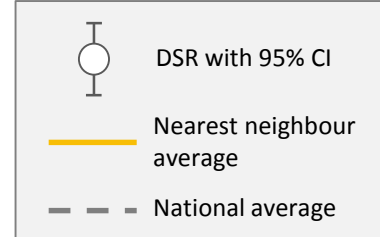
Most common causes:

- Lung cancer
- Breast cancer
- Prostate cancer
- Colorectal cancers

Cancers, Malignant (ICD10, C00-C97)
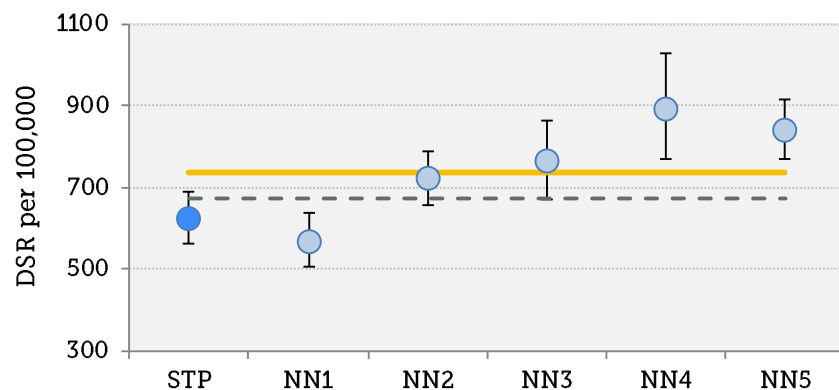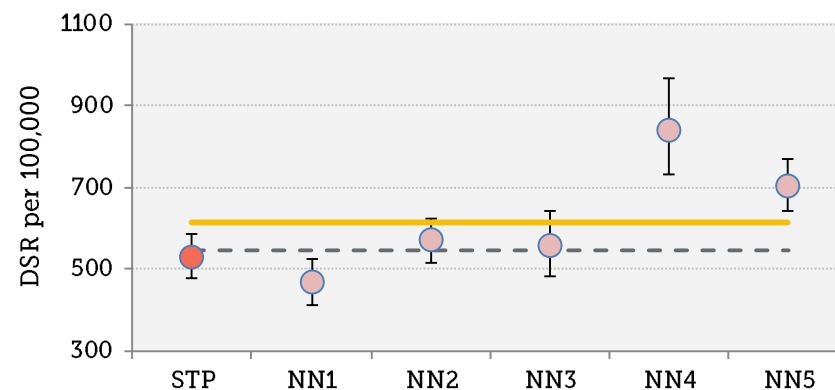
Most common causes:

- Pneumonia
- Bronchitis, emphysema and COPD
- Asthma
- Influenza

Respiratory diseases (ICD10, J00-J99)
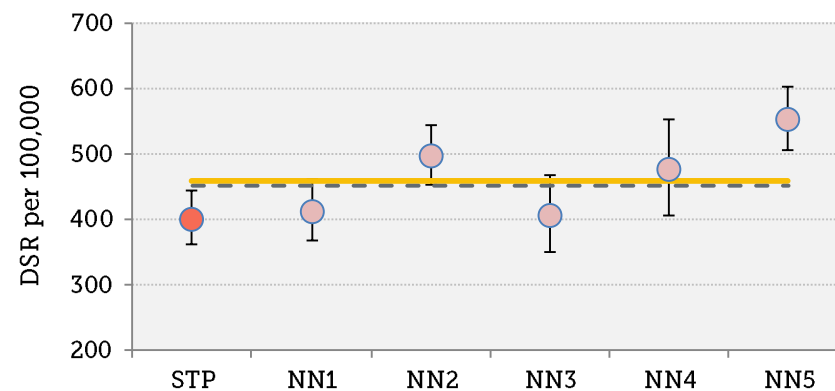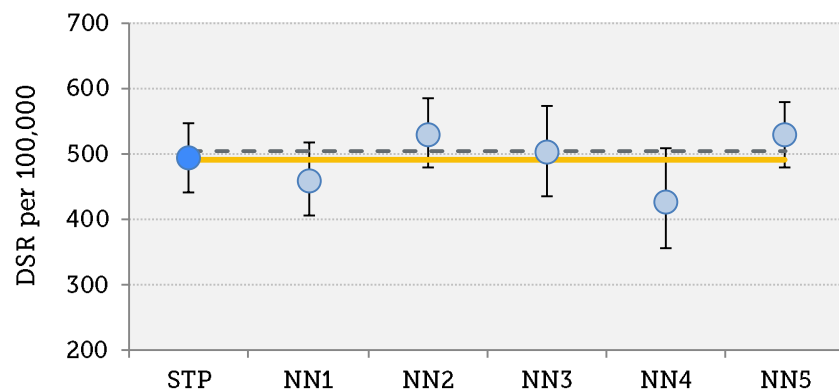
Causes of death for your STP area [4]
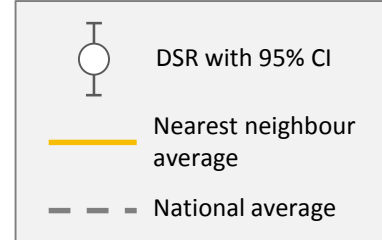
Most common causes:

- Liver disease
- Gastric ulcers
- Intestinal diseases

MALE

FEMALE

Digestive diseases (ICD10, K00-K93)
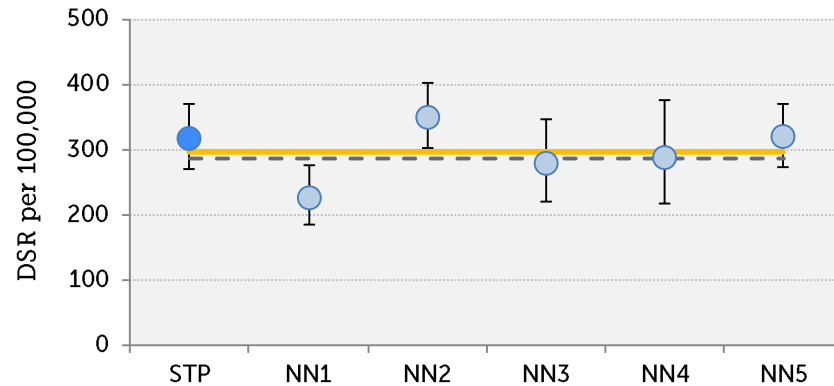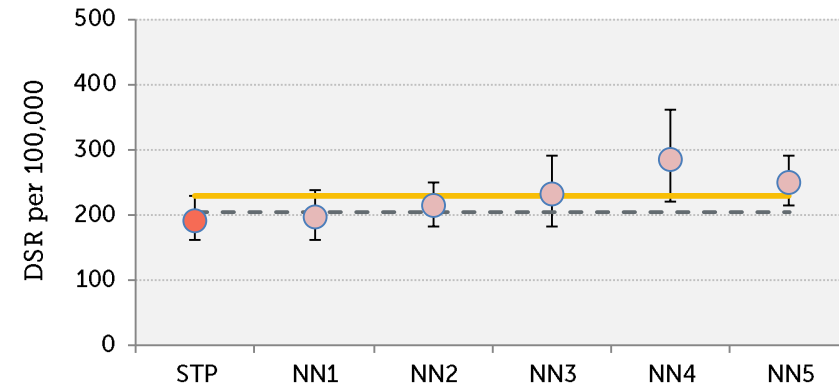
Most common causes:

- Diabetes mellitus

Endocrine and Metabolic diseases (ICD10, E00-E90)
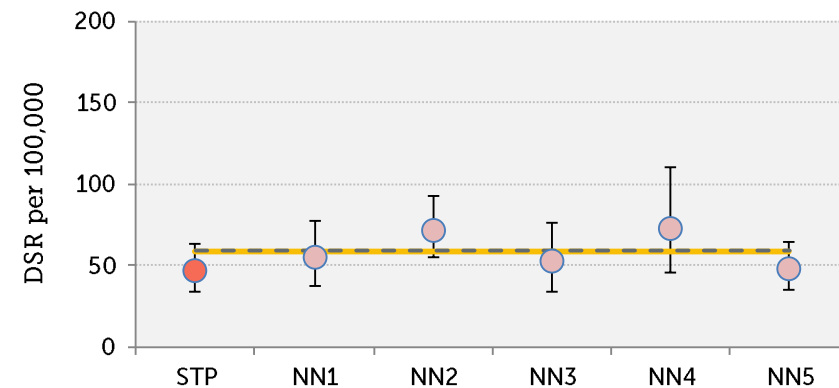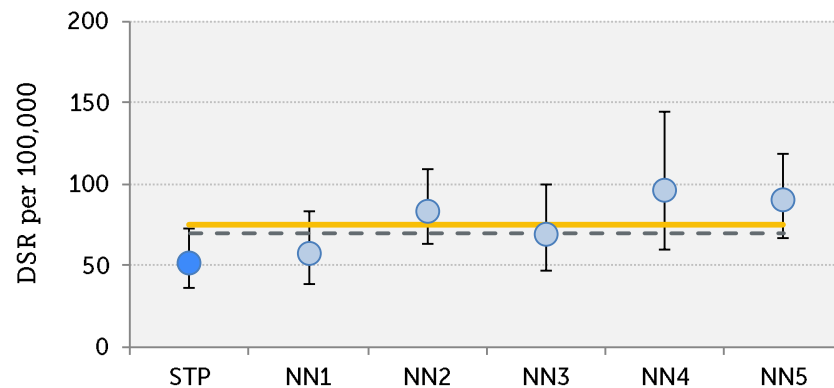
Key findings for your STP
Life Expectancy

There are several important observations about life expectancy at birth for mental health service users over the last 9 years;

- There is a current gap of around 17 years for men and 14 years for women between those who use mental health services and those that don't across your population – around 15-20% LESS in terms of years lived. This is lower than the national gap (19 and 16 years respectively).

- The difference is more marked in older mental health service users – those aged 65 are likely to only have just over half the remaining life expectancy of the population not in contact with mental health services.

- Life expectancies for both the male and female mental health service user populations have risen at a higher rate over this study period than the non-mental health service user population.

- The gap between men and women is much larger for the mental health service users than the general population – consistently around 7 years difference compared to around 4 for the rest of the population.

Key findings for your STP
Causes of death

- Mental health service users are around 2-3 times more likely to die of cancer, circulatory or respiratory disease than the rest of the population.

- For both men and women across the STP, the mortality rates are generally low compared to other similar STP areas for the five most common causes of death.

- Excluding mental disorders and diseases of the nervous system, the highest **relative** rates of death in mental health service users compared to the rest of the population, are due to external causes (9.1 times higher in males and 7.4 in females) - this includes injuries and burns, substance misuse, hypothermia and suicides. Please see ICD-10 chapters XIX and XX, S00-T98 and V01-Y98 for more information: http://apps.who.int/classifications/icd10/browse/2015/en

- As far as physical causes of death, the highest relative burden for both male and female mental health service users occurs in digestive disease (8.2 and 4.5 times higher) and endocrine and metabolic (5.1 and 3.4 times higher) although absolute numbers are quite small for these causes of death.

- With the exception of genitourinary disease, mortality rates in male mental health service users are higher than that of females for all causes. There is evidence nationally of inequalities of access to health and care service for mental health patients in general (Lawrence D & Kisely S, 2010), (Emerson E & Baines S, 2010).

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Chapter 2

Acute hospital utilisation by mental health service users

The Strategy Unit

Background and introduction

This chapter aims to provide intelligence relating to the utilisation of the acute sector by adult mental health service users.

It can be difficult to explore this issue operationally due to services for mental and physical health often not being linked – a result of different data capture systems and processes. We have tackled this by linking national MHMDS and HES datasets at patient level.

The analysis should help to answer questions such as:
- What is the scale and cost of mental health services users' acute utilisation?
- How much more do mental health service users utilise acute health care than the rest of the population?
- In which sub-groups of the mental health service user population is the effect most marked and how do their unit costs differ?

For this purpose, patients appearing in the Mental Health Minimum Datasets (MHMDS) have been categorised into 'cohorts' based on their type of illness and then their profiles, needs and utilisation explored. It is acknowledged that some people with common and sub-acute mental health conditions are not captured in the MHMDS therefore will be counted within the non-mental health service user population in this analysis.

A more detailed technical description of how service users have been allocated to each sub-group will be published along with other support material on the reports website should local areas want to explore this further themselves.

Methods [1]

Data sources:

This analysis was conducted using hospital episode statistics (HES) data sets for mental health activity, inpatient admissions, outpatient appointments, A&E attendances, diagnostic imaging exams (such as radiology, CT and MRI etc. for the purpose of accurate diagnosis) and payment by results (PbR) spells.

The purpose was to construct a master patient index categorising each patient into either a mental health cohort (if they had a contact recorded in the mental health data set) or physical health cohort (if they had contact only recorded in the acute sector) and then analyse the service utilisation and costs associated with each of these cohorts.

Anyone not found in any of the data sets was deemed to be well, therefore this cohort is the remainder of the population when those in the mental and physical health cohorts have been accounted for.

Cohort determination:

Anyone appearing in the mental health minimum data set (MHMDS) is deemed, in this analysis, to be in one of the following five mental health cohorts:

- Cognitive impairment including dementia
- Psychoses
- Personality disorders
- Common and other mental health conditions
- Mental health conditions, unassigned

The cohorts are assigned based on a mixture of the mental health clusters as described in the Department of Health's Mental Health Clustering Tool (MHCT) (see appendix 1) and clinical coding from inpatient and outpatient data HES data sets.

This results in nearly 80% of mental health patients within England being assigned to a defined cohort. The remainder were designated the unassigned group.

Methods [2]

Limitations:

Data quality

There are approximately 5% of mental health patients nationally whose utilisation is missing. This is as a result of a missing data linking key used between the MHMDS and the acute sector data. Furthermore, some of the data items used in the analyses have the following blank/unknown rates;

Age	2%
Gender	2%
Deprivation	3%
STP	1%

The omission from MHMDS (as at 2014/15) of both substance misuse services and CAMHS services, mean it is not possible in this report to identify certain sub-groups of interest.

Costing:

The costing of acute activity within this chapter is taken from several of the aforementioned data sources, hospital episode statistics (HES), payment by results (PbR) spells and NHS reference costs.

For inpatient costs these are first taken from PbR spells, a national data set created using monthly snapshots of secondary users service (SUS) data, constructed into hospital spells with national PbR tariff applied. Then, in the case of spells outside PbR tariff the following healthcare resource groups (HRGs) are costed using NHS national reference cost data.

- WD22Z – All Patients >19 years and <69 years with a Mental Health Primary Diagnosis [treated by a Non-Specialist]
- WD11Z – All Patients >69 years with a Mental Health Primary Diagnosis [treated by a Non-Specialist]

Methods [3]

Costing cont.

Any remaining PbR spells outside PbR tariff are excluded from calculation of average costs.

For outpatient and A&E costs, these are calculated through application of PbR tariffs to the HES national extracts.

Modelling future demand for Dementia services:

Recently, the Strategy Unit undertook an in-depth modelling exercise across the West Midlands to better understand the likely demand for dementia services in the future.

This involved developing a cohort simulation markov model using evidence-based inputs on incidence, prevalence, death rates and diagnosis patterns applied to local populations to estimate the likely numbers of dementia patients by severity, those yet to be diagnosed and those in residential care homes.

To discuss the application of this approach in your area, please use the contact details provided at the back of the report.

Cohort characteristics for your STP [1]

Age and gender profiles

	No. of People		Age (mean)	Gender Proportions	
				Female	Male
All Mental Health Cohorts	83,996	9%	51	56%	44%
Cognitive impairment including dementia	18,440	2%	81	60%	40%
Psychoses	17,456	2%	47	55%	45%
Personality disorders	1,409	0%	36	58%	42%
Common and other mental health conditions	23,357	2%	42	58%	42%
Mental health conditions, unassignable	23,334	2%	42	55%	45%
All Non Mental Health Cohorts	855,636	91%	47	50%	50%
Physical health needs	393,683	42%	51	54%	46%
Well population	461,953	49%	44	46%	54%
	939,632				

All Mental Health Cohorts (Female / Male)

All Non Mental Health Cohorts (Female / Male)

Within Staffordshire STP 9% of the population have been identified as being in contact with specialist mental health services.

The average age of these patients was 51, the same as the physical health cohort. However, within the individual mental health cohorts, mean age varies - from 36 for those with personality disorders, to 81 for those with cognitive impairment including dementia.
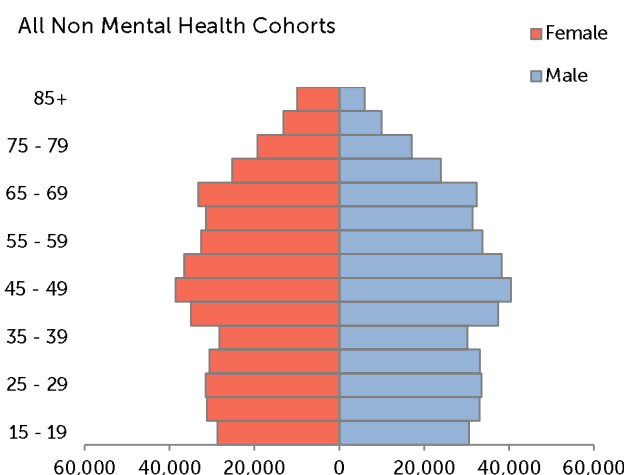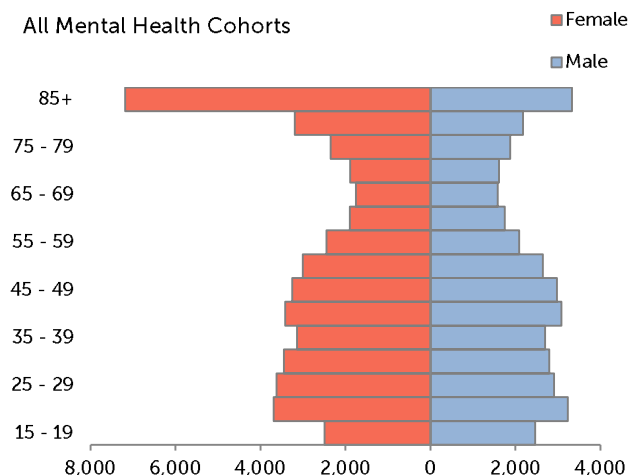
Overall, 56% of the mental health cohorts were female compared to 50% for non-mental health cohorts.

Cohort characteristics for your STP [2]

Within the two summary groups the constituent cohorts can differ significantly. Here the age and gender profiles are presented for each cohort individually.

Personality Disorders

Non-mental health cohorts

Physical Health Needs

Well Population

Mental health cohorts

Cognitive Impairment

Psychoses
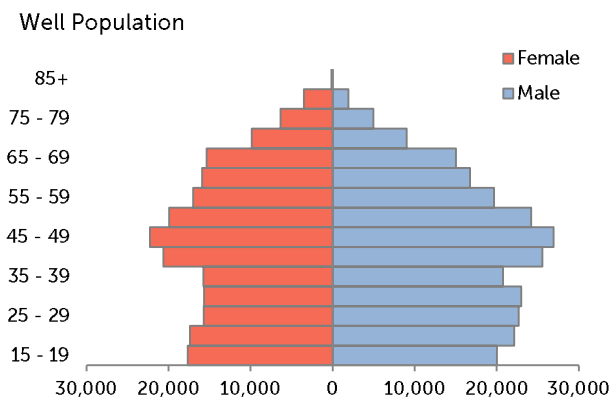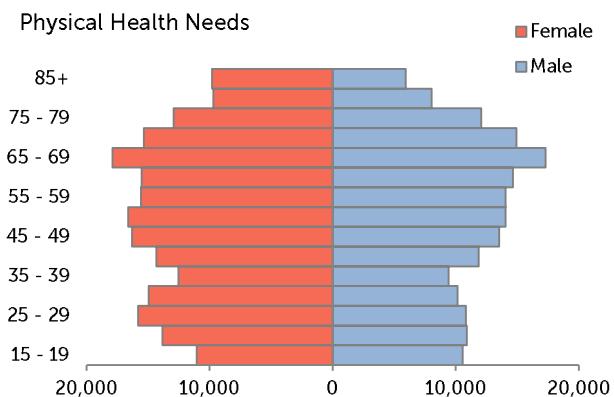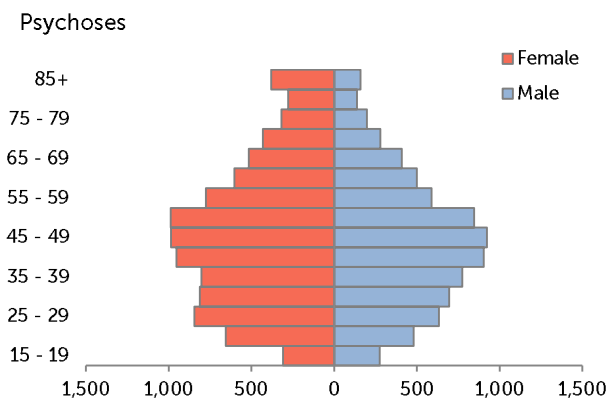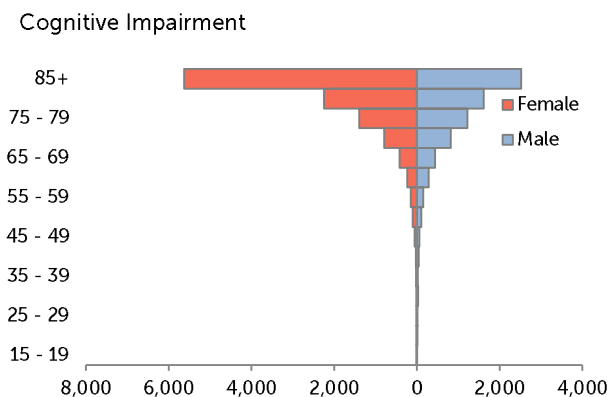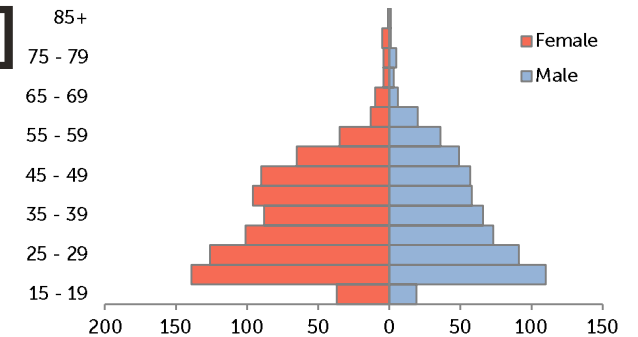
Common
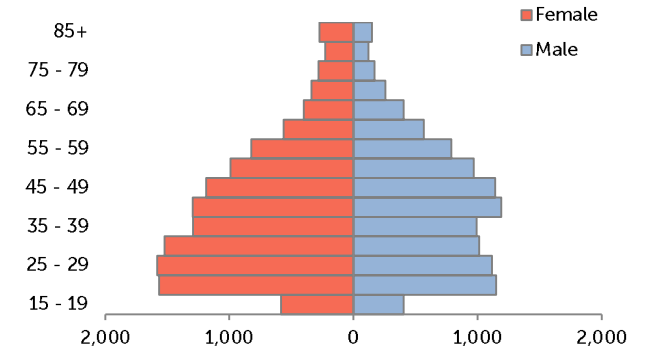
Unassigned
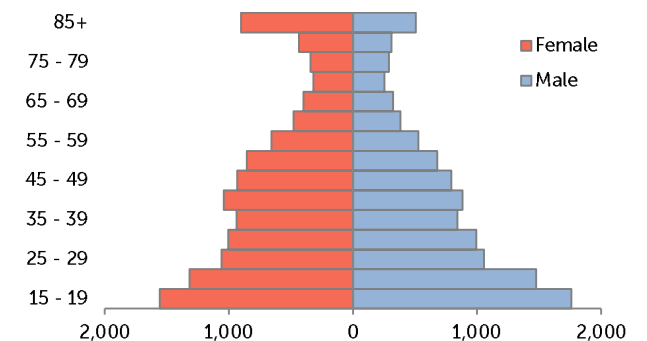
Cohort characteristics for your STP [3]

Deprivation profiles

	No. of People		% in most deprived quintile	% in least deprived quintile
All Mental Health Cohorts	83,996	9%	24%	13%
- Cognitive impairment including dementia	18,440	2%	20%	12%
- Psychoses	17,456	2%	31%	10%
- Personality disorders	1,409	0%	35%	8%
- Common and other mental health conditions	23,357	2%	26%	13%
- Mental health conditions, unassignable	23,334	2%	20%	18%
All Non Mental Health Cohorts	855,636	91%	18%	19%
- Physical health needs	393,683	42%	18%	17%
- Well population	461,953	49%	17%	20%
	939,632			

All Mental Health Cohorts

All Non Mental Health Cohorts

Within Staffordshire STP 24% of mental health patients live in the most deprived quintile (two most deprived deciles combined).

For non-mental health patients this is lower with 18% of patients living within the most deprived quintile.

Of the individual cohorts, patients with personality disorders are most likely to live in the most deprived quintile (35%) closely followed by the psychoses cohort (31%).

Cohort characteristics for your STP [4]

Here the deprivation profiles by decile are presented for each cohort individually.

Personality Disorders

Non-mental health cohorts

Physical Health Needs
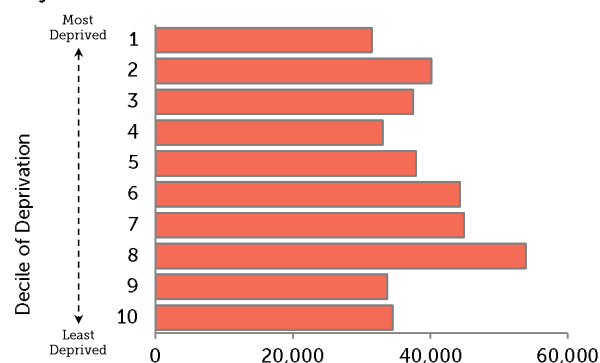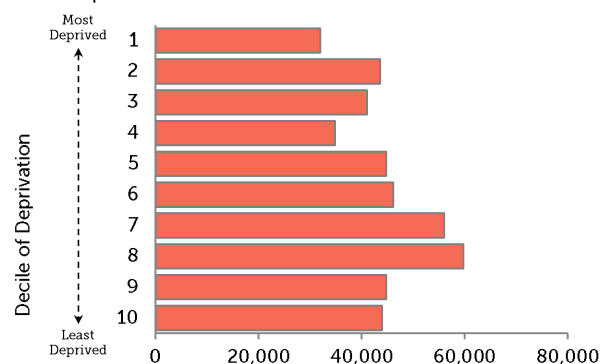
Well Population

Mental health cohorts

Cognitive Impairment
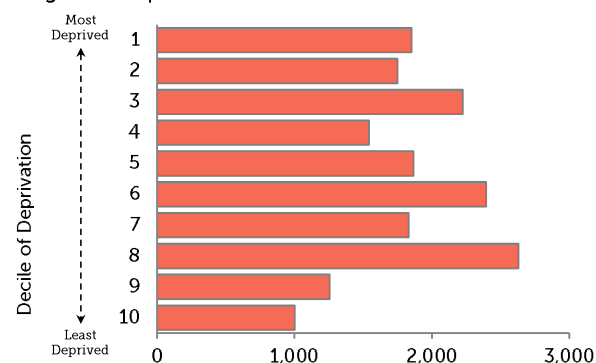
Psychoses
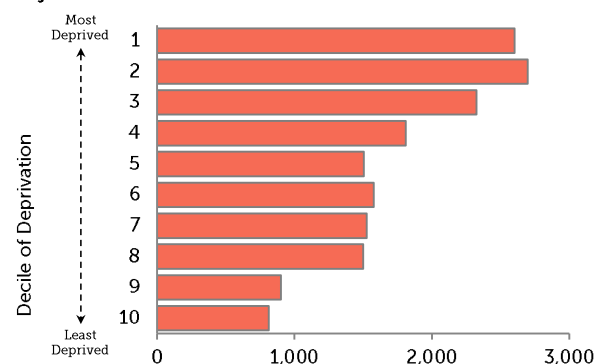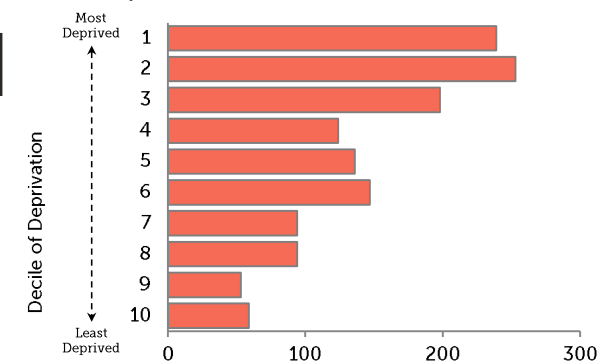
Common
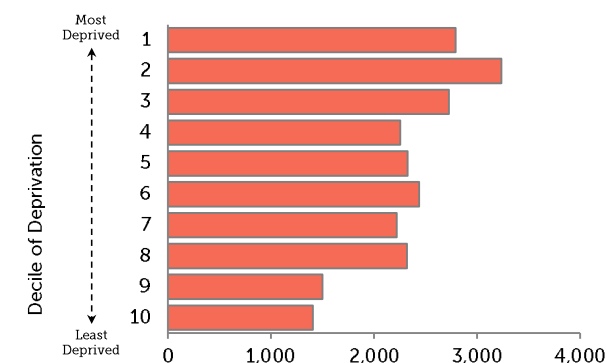
Unassigned
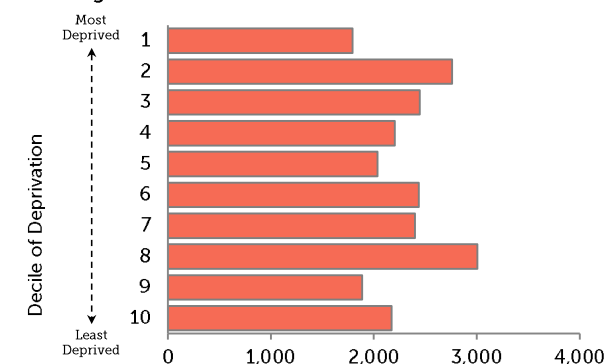
Utilisation in your STP
Accident & Emergency*

The mental health services population (9% of total population) utilise 22% of A&E attendances. Average costs per attendance are highest for patients with cognitive impairment including dementia (£115) and lowest for patients with unassignable mental health conditions (£91).

Accident & Emergency

	Activity (attendances)				Cost (£1,000s)		
	Total	% share	Crude Rate (per 1,000 population)	Standardised Rate (per 1,000 population)	Total	% share	Average
All Mental Health Cohorts	61,671	22%	734	721	£6,182	23%	£100
- Cognitive impairment including dementia	14,901	5%	808	676	£1,717	6%	£115
- Psychoses	18,677	7%	1,070	1,083	£1,856	7%	£99
- Personality disorders	3,444	1%	2,444	2,789	£324	1%	£94
- Common and other mental health conditions	14,110	5%	604	623	£1,327	5%	£94
- Mental health conditions, unassignable	10,539	4%	452	421	£958	4%	£91
All Non Mental Health Cohorts	221,832	78%	259	266	£20,435	77%	£92
- Physical health needs	221,832	78%	563	592	£20,435	77%	£92
- Well population	0	0%	0	0	£0	0%	£0

Rates of A&E attendance are shown as crude rates and also as age-sex standardised rates in the table (standardised rates are shown on the chart to the right). It can be seen that although several of the mental health cohorts have higher rates than the physical health cohort, rates are particularly high for personality disorders.

Age-Gender Standardised Rate per 1,000 Population
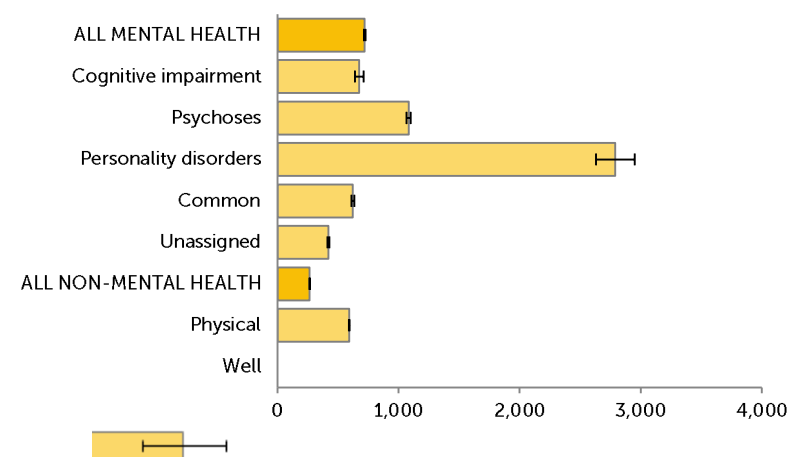
* A&E activity excludes any walk-in centre activity

Utilisation in your STP
Emergency admissions

The mental health services population (9% of total population) utilise 28% of emergency admissions. Overall average costs per admission are slightly higher for mental health patients than for non-mental health patients but the average varies between individual cohorts.

Emergency Admissions

	Activity (admissions)				Cost (£1,000s)			Lengths of Stay (days)		
	Total	% share	Crude Rate (per 1,000 population)	Standardised Rate (per 1,000 population)	Total	% share	Average	Avg. Total Stay	Avg. Excess Bed Days	Avg. Critical Care
All Mental Health Cohorts	29,366	28%	350	307	£55,007	29%	£2,361	8.2	1.2	0.2
Cognitive impairment including dementia	11,594	11%	629	370	£28,565	15%	£2,894	10.9	1.6	0.1
Psychoses	8,523	8%	488	502	£12,018	6%	£1,875	5.6	0.8	0.3
Personality disorders	780	1%	554	687	£532	0%	£1,042	3.0	0.3	0.2
Common and other mental health conditions	5,297	5%	227	273	£7,973	4%	£1,995	5.9	0.8	0.3
Mental health conditions, unassignable	3,172	3%	136	140	£5,919	3%	£2,361	8.9	1.6	0.2
All Non Mental Health Cohorts	77,068	72%	90	97	£135,083	71%	£2,243	6.0	0.6	0.2
Physical health needs	77,068	72%	196	177	£135,083	71%	£2,243	6.0	0.6	0.2
Well population	0	0%	0	0	£0	0%	£0	0.0	0.0	0.0

Rates of emergency admissions are shown as crude rates and also as age-sex standardised rates in the table (standardised rates shown on the chart to the right). It can be seen that these are higher for mental health cohorts than for the physical health cohort, except in the unassigned cohort.

Age-Gender Standardised Rate per 1,000 Population
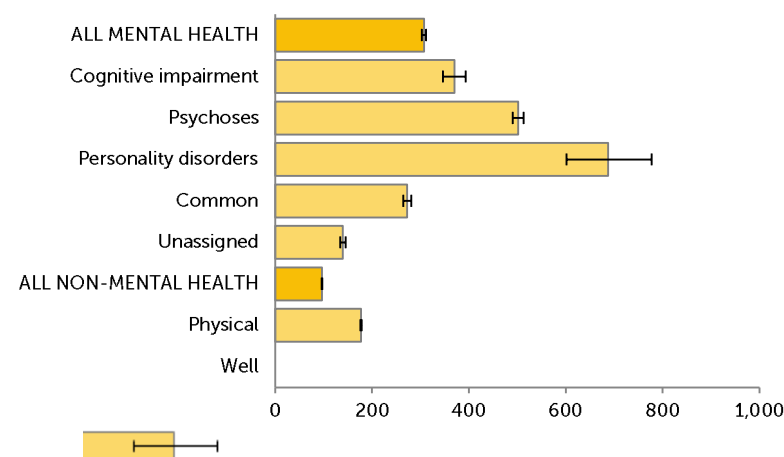
Utilisation in your STP
Elective (overnight) admissions

The mental health services population (9% of total population) utilise 12% of elective (overnight) admissions. Average costs per admission are higher for mental health service users than for non-mental health service users.

| | Elective Admissions (overnight) | | | | | | | | | |
| | Activity (admissions) | | | | Cost (£1,000s) | | | Lengths of Stay (days) | | |
	Total	% share	Crude Rate (per 1,000 population)	Standardised Rate (per 1,000 population)	Total	% share	Average	Avg. Total Stay	Avg. Excess Bed Days	Avg. Critical Care
All Mental Health Cohorts	3,959	12%	47	47	£11,816	13%	£3,255	11.2	3.8	0.3
Cognitive impairment including dementia	1,168	4%	63	43	£3,747	4%	£3,375	19.8	6.8	0.1
Psychoses	1,208	4%	69	70	£3,623	4%	£3,291	7.2	2.4	0.3
Personality disorders	44	0%	31	64	£77	0%	£2,086	3.1	0.8	0.3
Common and other mental health conditions	813	3%	35	43	£2,175	2%	£3,008	6.4	1.9	0.3
Mental health conditions, unassignable	726	2%	31	39	£2,194	2%	£3,330	9.2	3.3	0.4
All Non Mental Health Cohorts	28,317	88%	33	34	£79,551	87%	£3,132	3.9	0.8	0.3
Physical health needs	28,317	88%	72	65	£79,551	87%	£3,132	3.9	0.8	0.3
Well population	0	0%	0	0	£0	0%	£0	0.0	0.0	0.0

Rates of elective admissions are shown as crude rates and also as age-sex standardised rates in the table (standardised rates shown on the chart to the right). It can be seen that rates are similar between several cohorts. Overall, rates for the physical health cohort are higher than that for all mental health cohorts combined.

Age-Gender Standardised Rate per 1,000 Population
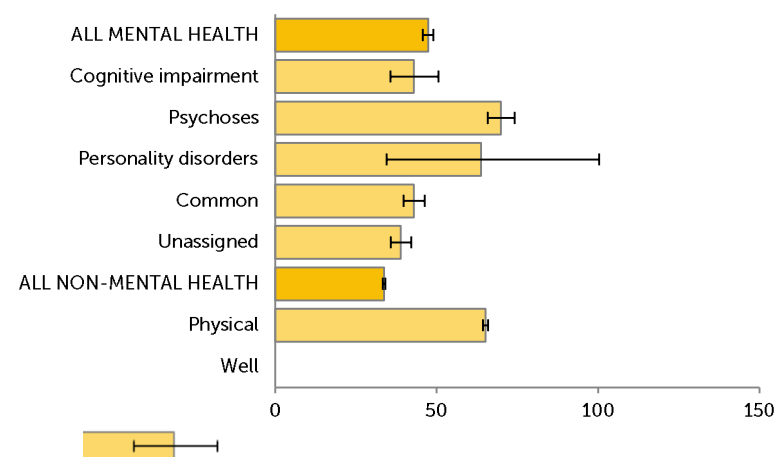
Utilisation in your STP
Daycase admissions*

The mental health service user population (9% of total population) utilise 10% of daycase admissions. Average costs are slightly higher for mental health patients than for non-mental health patients.

	Daycase Admissions						
	Activity (admissions)				Cost (£1,000s)		
	Total	% share	Crude Rate (per 1,000 population)	Standardised Rate (per 1,000 population)	Total	% share	Average
All Mental Health Cohorts	13,851	10%	165	185	£2,106	9%	£729
- Cognitive impairment including dementia	2,641	2%	143	161	£306	1%	£671
- Psychoses	4,212	3%	241	238	£656	3%	£758
- Personality disorders	186	0%	132	175	£32	0%	£770
- Common and other mental health conditions	3,844	3%	165	190	£605	3%	£750
- Mental health conditions, unassignable	2,968	2%	127	163	£507	2%	£705
All Non Mental Health Cohorts	128,092	90%	150	151	£21,144	91%	£717
- Physical health needs	128,092	90%	325	301	£21,144	91%	£717
- Well population	0	0%	0	0	£0	0%	£0

Rates of daycase admissions are shown as crude rates and also as age-sex standardised rates in the table (standardised rates shown on the chart to the right). It can be seen that these are lower for all mental health cohorts than for the physical health cohort.

Age-Gender Standardised Rate per 1,000 Population
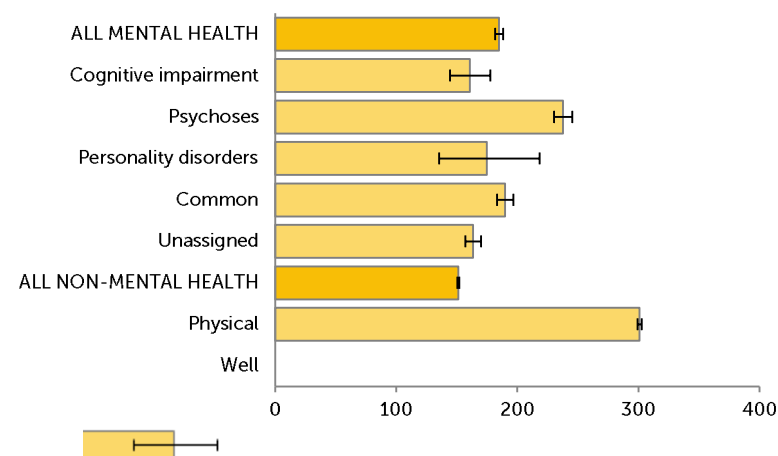
* Daycase admissions exclude any regular day or night activity

Utilisation in your STP
Outpatients

The mental health service user population (9% of total population) utilise 11% of outpatient attendances. Rates where a patient did not attend (DNA) are nearly twice as high for mental health service users than the rest of the population.

| | Outpatient Attendances | | | | | | | |
| | Activity (attendances) | | | | Cost (£1,000s) | | | DNA Rate |
	Total	% share	Crude Rate (per 1,000 population)	Standardised Rate (per 1,000 population)	Total	% share	Average	
All Mental Health Cohorts	188,768	11%	2,247	2,373	£12,496	11%	£66	12.2%
Cognitive impairment including dementia	39,250	2%	2,129	2,238	£2,701	2%	£69	10.4%
Psychoses	47,861	3%	2,742	2,706	£3,285	3%	£69	14.4%
Personality disorders	9,364	1%	6,646	9,160	£529	0%	£57	13.4%
Common and other mental health conditions	47,628	3%	2,039	2,219	£3,047	3%	£64	12.7%
Mental health conditions, unassignable	44,665	3%	1,914	2,226	£2,934	3%	£66	10.5%
All Non Mental Health Cohorts	1,462,194	89%	1,709	1,740	£103,725	89%	£71	6.4%
Physical health needs	1,462,194	89%	3,714	3,475	£103,725	89%	£71	6.4%
Well population	0	0%	0	0	£0	0%	£0	0.0%

Rates of outpatient appointments are shown as crude rates and also as age-sex standardised rates in the table (standardised rates shown on the chart to the right). It can be seen that rates are highest in the personality disorders cohort. The remaining mental health cohorts are generally lower than the physical health cohort.

Age-Gender Standardised Rate per 1,000 Population
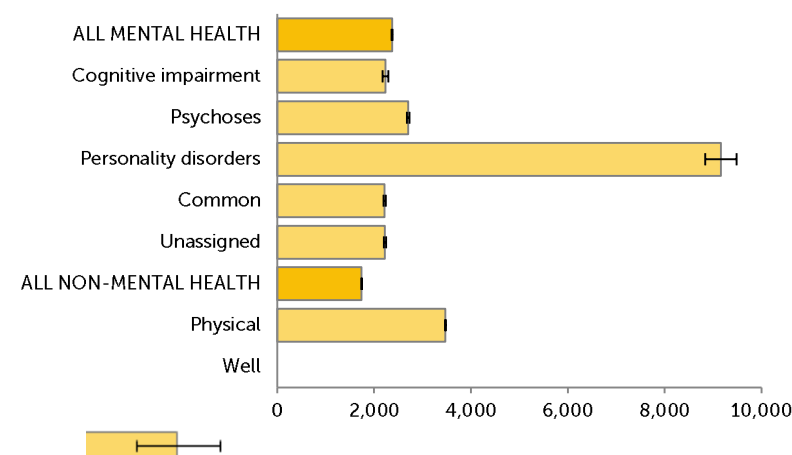
Utilisation in your STP
Diagnostic imaging*

The mental health service user population, comprising 9% of the total population, utilise 16% of all diagnostic exams.

	Diagnostic Imaging			
	Activity (exams)			
	Total	% share	Crude Rate (per 1,000 population)	Standardised Rate (per 1,000 population)
All Mental Health Cohorts	127,301	16%	1,516	1,481
- Cognitive impairment including dementia	39,793	5%	2,158	1,622
- Psychoses	11,196	1%	641	661
- Personality disorders	7,235	1%	5,135	7,613
- Common and other mental health conditions	46,523	6%	1,992	2,351
- Mental health conditions, unassignable	22,554	3%	967	1,071
All Non Mental Health Cohorts	681,947	84%	797	816
- Physical health needs	681,947	84%	1,732	1,699
- Well population	0	0%	0	0

Rates of diagnostic exams are shown as crude rates and also as age-sex standardised rates in the table (standardised rates shown on the chart to the right). It can be seen that rates are highest for personality disorders. There is a high degree of variation between cohorts in this area.

Age-Gender Standardised Rate per 1,000 Population
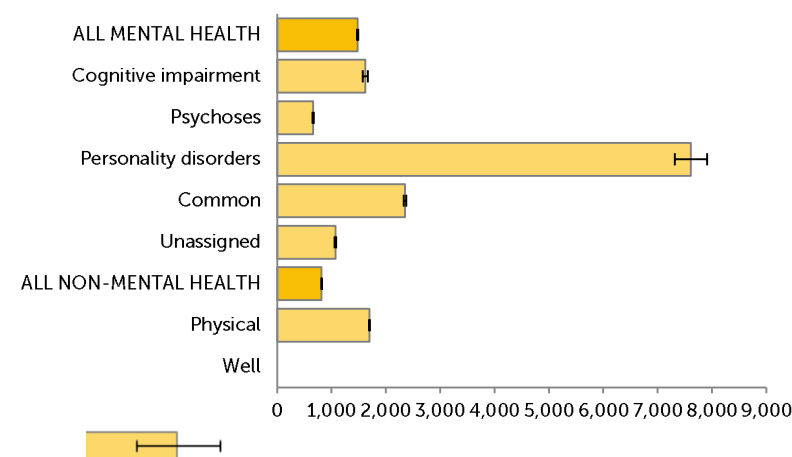
* Any endoscopy exams are excluded from diagnostic imaging activity

Key findings for your STP
Acute utilisation

- After adjusting for the age-sex profile, mental health service users attend accident and emergency services nearly 3 times as often as the rest of the population.

- Rates of emergency hospital admissions are more than 3 times higher amongst mental health service users than the rest of the population.

- Approximately 25% of all A&E attendances and emergency admissions can be attributed to mental health service users - who only make up 9% of the overall population.

- Rates of elective admissions, day cases and outpatient appointments are only slightly higher for those with mental health issues than for those without. Use of diagnostic imaging tests however is nearly twice as high for mental health service users.

- Outpatient DNA rates run at twice as high for mental health service users than for other patients.

Chapter 3

Saving or reinvestment opportunities from reducing acute hospital utilisation

Background and introduction

This chapter aims to provide intelligence relating to specific opportunities to reduce the acute healthcare utilisation of mental health service users across your STP.

Rather than focusing on hospital utilisation rates as a whole, the chapter shows utilisation rates for those subsets of hospital activity which may be amenable to commissioner based QIPP schemes in non-elective admissions and A&E. The report compares the rates in in mental health service users with the rates in non-mental health service users, and also to the England average for each mental health cohort.

We aim to answer the following questions;

- How much does the STP spend on activity of this type?

- After taking account of the demographic profile, do the patients from this STP use more activity of this type than the England average?

- After taking account of the demographic profile, do the STP mental health service users use more activity of this type than the rest of the population?

We recommend that this information should be reviewed in conjunction with a wider planning process, to which it contributes a useful and robust framework on which local commissioners can base their strategic planning.

Methods

Data sources:

This analysis was conducted using the patient index created in Chapter 2 to categorise each patient into either a mental health cohort (if they had a contact recorded in the mental health data set) or non mental health cohort (those without a contact). We then utilised further data from hospital episode statistics (HES) data sets for inpatient admissions, A&E attendances, payment by results (PbR) spells and also used 14/15 national reference costs.

Costing and Potential Savings:

A&E data was costed by HRG using 14/15 tariff and market forces factors. Inpatient data was costed by linkage to payment by results (PbR) spells. Remaining uncosted activity was not evenly distributed between activity subsets, instead estimated costs were produced in order of preference by assuming PbR tariff, 14/15 national reference costs or average cost

of the activity subsets, so that no inpatient activity remained uncosted.

An expected spend for the mental health service users was calculated based on the age-sex strata spend rates of the rest of the population. If the all ages expected was less than costed, the difference was included in the potential savings.

Standardised rates:

Where references are made to a standardised rate, direct age-sex standardisation (DSR) has been applied using the epitools package in R. The England Population[1] has been used as the standard population, with an upper age group of 85 plus (65 plus for personality disorders, 15 to 39 has been aggregated for cognitive impairment). The subject populations used in these DSRs are the cohort populations estimated in Chapter 2 for the STP.

[1] Data source: HSCIC - GP registered populations as at October 2014, aggregated to CCG/STP and England

Subsets of activity amenable to change:

The opportunities are identified using a set of algorithms that have been developed over several years by the Strategy Unit, drawing on published research, grey literature and bespoke modelling exercises conducted for commissioner business cases.

QIPP programmes and initiatives of course cover the entire healthcare system, whereas this analysis draws upon only acute inpatient and A&E activity. There may be additional opportunities which have not been included in this analysis such as; alcohol or end of life care or across outpatients, primary care, mental health, community health, out-of-hours services and with Local Authority colleagues that need to be explored in the broader STP prioritisation process.

The indicators reviewed in this report are predominantly related to the productivity stream (reducing activity and therefore expenditure).

Other projects that relate to quality improvement, system and IT innovation and the prevention of future ill-health should also be given due consideration. These programmes may also carry intended / unintended and direct / indirect cost benefits.

This analysis only considers commissioning expenditure on acute activity. Although some savings may be realisable in these areas, this should be balanced against the investment requirements, the shifts in demand across the system and the opportunity costs of other intervention options.

The Strategy Unit's 'QIPP opportunity pack', of which the analysis presented in this report is a subset (looking at 12 opportunities out of a total of 21 opportunities in the full report), can be produced for any CCG / STP in the country. Interest in these packs can be relayed via the contact details at the end of the report.

List of sub-sets of activity considered in this chapter

A&E	
Low cost attendances – referred to GP or discharged	Conveyed by ambulance, no investigation, no treatment, discharged
Patients who leave before being seen	Frequent attenders

Acute Inpatient Spells	
Ambulatory care sensitive (Chronic, acute or vaccine preventable conditions)	Medically unexplained symptoms
Medicines related (Explicit or Implicit; NSAIDs, Anti-Diabetics, Benzodiazepines, Diuretics)	Frail Elderly patients that could be managed in non-acute settings (Usually or occasionally managed elsewhere)
Smoking related (Largely or somewhat attributable)	Self Harm
Obesity related (Largely, somewhat or marginally attributable)	Admissions via A&E with primary mental health diagnosis

Summary of potential savings for your STP

Staffordshire STP could potentially save up to £1.7m in A&E attendances and up to £32.9m in inpatient care, by reducing mental health service users hospital activity to the same current levels of the rest of the population, in subgroups which may be amenable to change.

Summary of Opportunity Group Potential Reductions in Staffordshire STP			
	Potential Reduction (If Mental Health Service users have the same rates as Non-Mental Health)		Savings as % of 14/15 Spend on Opportunity Group
	Activity	Spend	
A&E Opportunity Groups	17,990	£1.7m	18%
Conveyed by ambulance, no investigation, no treatment, discharged	350	£21k	33%
Frequent attenders	11,960	£1.2m	24%
Patients who leave before being seen	2,070	£158k	29%
Low cost attendances – referred to GP or discharged	7,780	£560k	10%
Correction for sub group overlap	-4,170	-£ 291 K	24%
Acute Inpatient Opportunity Groups	16,150	£32.9m	29%
Ambulatory care sensitive	3,780	£8.0m	17%
Medicines related	720	£2.2m	24%
Smoking related	120	£280k	2%
Obesity related	880	£1.3m	5%
Medically unexplained symptoms	570	£789k	14%
Frail Elderly patients that could be managed in non-acute settings	1,930	£6.1m	24%
Self Harm	2,060	£1.2m	81%
Admissions via A&E with primary mental health diagnosis	14,620	£31.4m	53%
Correction for sub group overlap	-8,530	-£ 18,408 K	32%

[Note] Total potential savings are not directly summed because individual spells can be in multiple subsets of activity, e.g. a frail elderly patient that could be managed in non-acute settings can also be an admission via A&E with a primary mental health diagnosis. The total potential savings for all subgroups will therefore be less than the sum of the potential savings for each subgroup in the following tables. Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Potential savings by opportunity subgroup and mental health cohort

Staffordshire STP,
Potential Reductions in STP Spend (£1,000's)
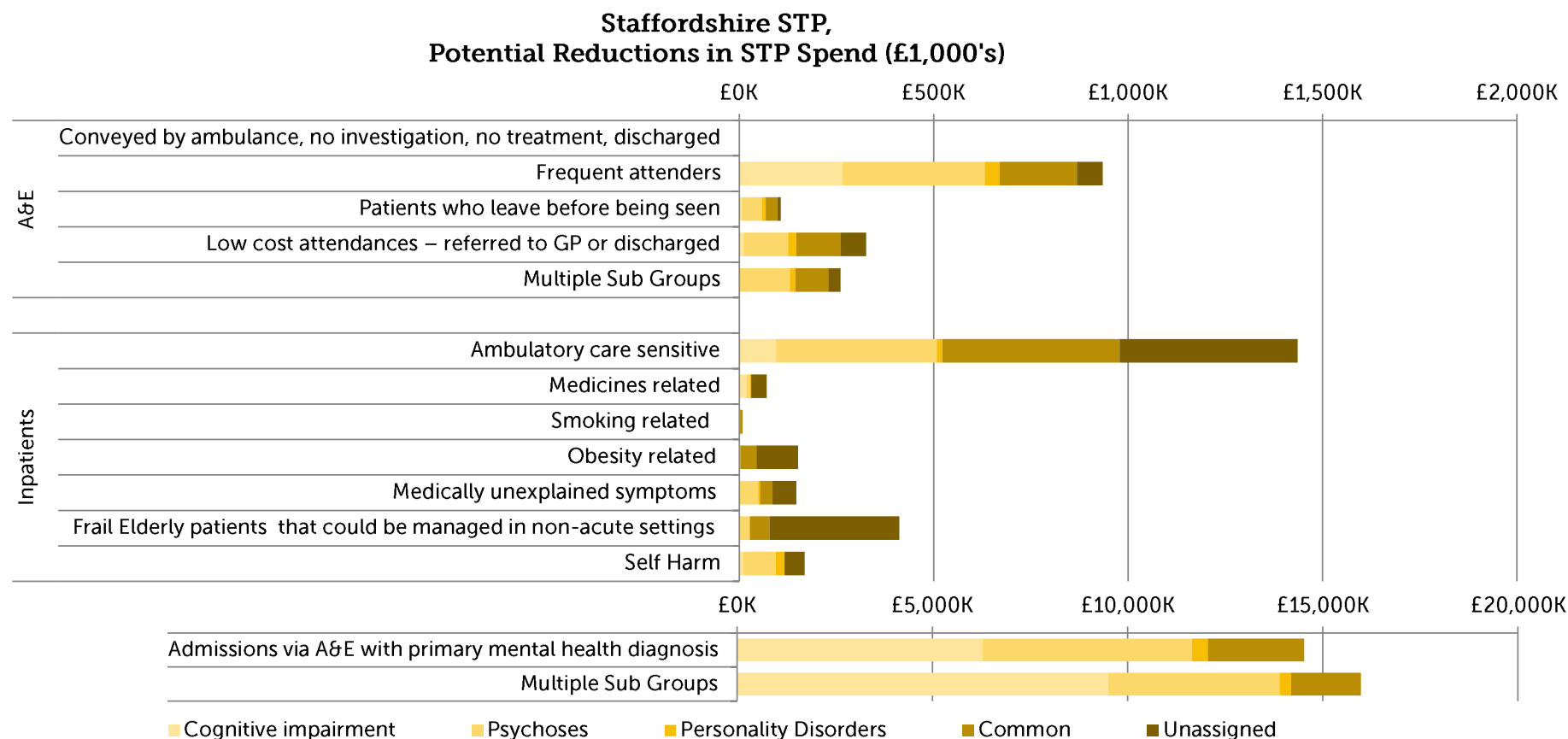
[Note] Individual spells can be in multiple subsets of activity, e.g. a frail elderly patient that could be managed in non-acute settings can also be an admission via A&E with a primary mental health diagnosis, in these instances they have been counted in the Multiple Sub Groups category.

Potential savings by mental health cohort

Up to 16% of the spend on A&E attendances and 19% of spend on admissions for the sub-sets of activity looked at in this report could be saved if the rates of mental health service users were the same as the rest of the population (which may include people with sub-acute mental health disorders).

Greatest potential reductions in A&E attendances are in patients with psychoses, which would be a saving of £662k. Whilst the greatest potential admissions reduction is for service users with psychoses, the greatest potential savings (£15.9m) were found for the cognitive impairment including dementia sub-group. Reducing both psychoses and cognitive impairment including dementia service user attendances for these admissions avoidance opportunities could save as much as £26.2m.

Summary of Mental Health Cohorts Potential Reductions in Staffordshire STP						
	A&E			Inpatients		
	Potential Reduction (If Mental Health Service users have the same rates as Non-Mental Health)		Savings as % of 14/15 Spend on Opportunity Groups	Potential Reduction (If Mental Health Service users have the same rates as Non-Mental Health)		Savings as % of 14/15 Spend on Opportunity Groups
Patient Cohort	Attendances	Savings		Admissions	Savings	
ALL MENTAL HEALTH	17,990	£1.7m	16%	16,150	£32.9m	19%
Cognitive impairment	2,630	£282k	3%	5,380	£15.9m	9%
Psychoses	7,220	£662k	6%	6,700	£10.3m	6%
Personality Disorders	970	£83k	1%	770	£743k	0%
Common	4,960	£426k	4%	2,830	£4.8m	3%
Unassigned	2,200	£174k	2%	460	£1.1m	1%

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Ambulance conveyed to A&E but discharged following no investigation and no treatment

This set of activity identifies attendances of those patients that were conveyed to an A&E department via Ambulance, but were subsequently discharged with no follow up following no investigation and no treatment.

Given 999 and NHS 111 triage pathways, this kind of activity may also be prevalent in those attending without mental health disorders, although our outputs suggest this is minimal.

Ambulance conveyed to A&E but discharged following no investigation and no treatment

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users. If rates of mental health service users could be reduced to those of the rest of the population, attendances could be reduced by 350 attendances a year and up to £21k could be saved.

		Staffordshire STP						
		Ambulance conveyed to A&E but discharged following no investigation and no treatment						
			Standardised Attendance Rate			Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)
Patient Cohort	Attendances 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Spend 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Attendances	Savings
ALL MENTAL HEALTH	430	Lower	Higher	£25k	Lower	Higher	350	£21k
Cognitive impairment	90	Similar	Higher	£5k	Higher	Higher	60	£4k
Psychoses	160	Lower	Higher	£9k	Lower	Higher	150	£9k
Personality Disorders	30	Similar	Higher	£2k	Similar	Higher	30	£2k
Common	100	Lower	Higher	£6k	Lower	Higher	80	£5k
Unassigned	60	Similar	Higher	£4k	Similar	Higher	40	£2k
ALL NON-MENTAL HEALTH	640	Lower	-	£37k	Lower	-	-	-
ALL	1,070	Lower	Higher	£63k	Lower	Higher	350	£21k

Standardised Attendances per 1,000
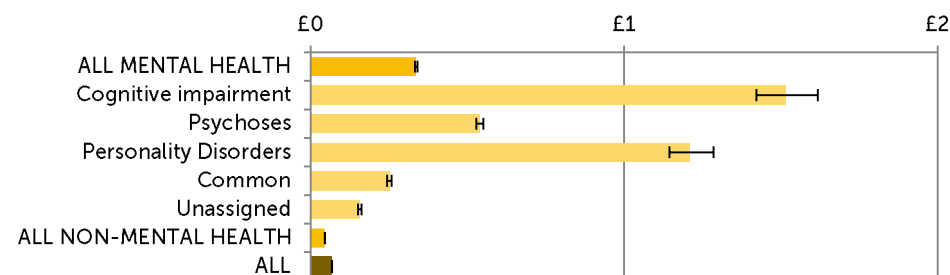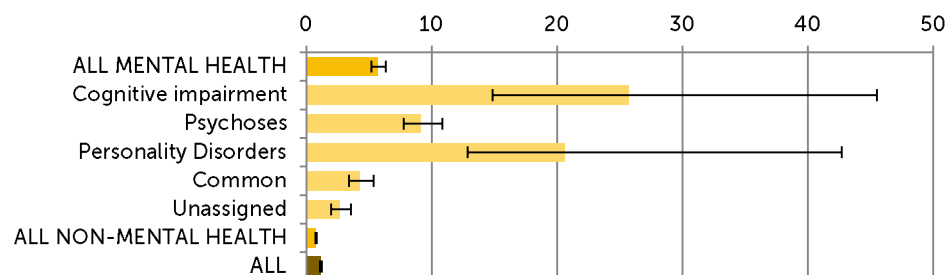
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

A&E Frequent attenders

This set of activity identifies attendances of those patients that attended the same A&E department at least 3 times in the year. Case management may be able to reduce the attendance rate of these patients.

A&E frequent attenders

The STP standardised attendance rate for this type of activity is similar to the England average whilst the standardised spend rate is lower. Rates are higher overall for mental health service users compared to non-service users. If rates of mental health service users could be reduced to those of the rest of the population, attendances could be reduced by 11,960 attendances a year and up to £1.2m could be saved.

Staffordshire STP A&E frequent attenders								
Patient Cohort	Attendances 2014/15	Standardised Attendance Rate		Spend 2014/15	Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
		Compared to England Patient Cohorts	Compared to Non Mental Health		Compared to England Patient Cohorts	Compared to Non Mental Health	Attendances	Savings
ALL MENTAL HEALTH	17,000	Similar	Higher	£1.7m	Lower	Higher	11,960	£1.2m
Cognitive impairment	4,660	Higher	Higher	£549k	Higher	Higher	2,400	£287k
Psychoses	5,660	Higher	Higher	£558k	Higher	Higher	4,970	£491k
Personality Disorders	610	Similar	Higher	£56k	Lower	Higher	560	£51k
Common	3,840	Lower	Higher	£362k	Lower	Higher	2,940	£279k
Unassigned	2,240	Similar	Higher	£207k	Lower	Higher	1,090	£97k
ALL NON-MENTAL HEALTH	34,080	Lower	-	£3.2m	Lower	-	-	-
ALL	51,080	Higher	Higher	£5.0m	Lower	Higher	11,960	£1.2m

Standardised Attendances per 1,000
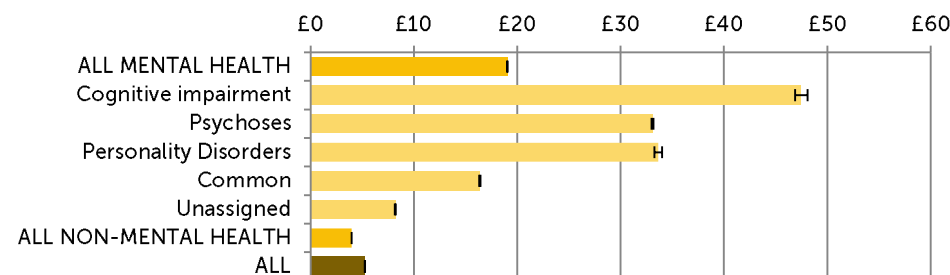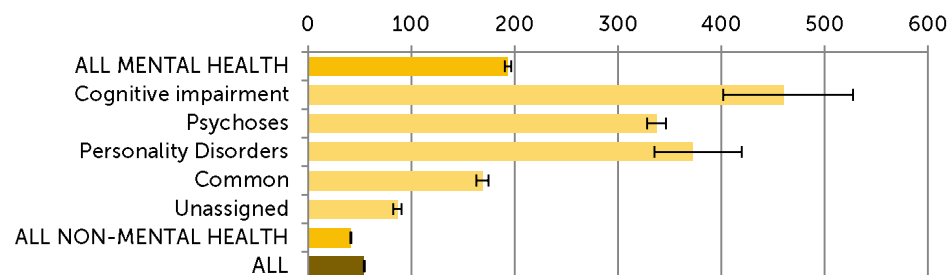
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Patients who leave A&E before being seen

A small percentage of patients leave A&E departments before being seen. The number of patients who leave before being seen increases with waiting times. The commissioner still incurs the hospital costs for administering these patients on attendance.

Patients who leave A&E before being seen

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users but particularly for patients with personality disorders. If rates of mental health service users could be reduced to those of the rest of the population, attendances could be reduced by 2,070 attendances a year and up to £158k could be saved; approximately half from patients with psychoses.

		Standardised Attendance Rate			Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
Patient Cohort	Attendances 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Spend 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Attendances	Savings
ALL MENTAL HEALTH	2,530	Lower	Higher	£192k	Lower	Higher	2,070	£158k
Cognitive impairment	150	Similar	Higher	£12k	Higher	Higher	110	£9k
Psychoses	1,160	Similar	Higher	£87k	Lower	Higher	1,060	£80k
Personality Disorders	180	Similar	Higher	£14k	Lower	Higher	170	£13k
Common	730	Lower	Higher	£56k	Lower	Higher	570	£44k
Unassigned	320	Lower	Higher	£24k	Lower	Higher	160	£12k
ALL NON-MENTAL HEALTH	4,770	Lower	-	£358k	Lower	-	-	-
ALL	7,300	Similar	Higher	£550k	Lower	Higher	2,070	£158k

Staffordshire STP — Patients who leave A&E before being seen

Standardised Attendances per 1,000

Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Low cost A&E attendances - referred to GP or discharged

This set identifies attendances where no or low cost investigations or treatments were carried out and the patients was discharged or referred back to their GP.

Primary care and community service may be able to provide a lower cost alternative to some of these attendances.

Low cost A&E attendances - referred to GP or discharged

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users. If rates of mental health service users could be reduced to those of the rest of the population, attendances could be reduced by 7,780 attendances a year and up to £560k could be saved.

| Patient Cohort | Attendances 2014/15 | Standardised Attendance Rate | | Spend 2014/15 | Standardised Spend Rate | | Potential Reduction (If same rates as Non-Mental Health) | |
		Compared to England Patient Cohorts	Compared to Non Mental Health		Compared to England Patient Cohorts	Compared to Non Mental Health	Attendances	Savings
ALL MENTAL HEALTH	14,890	Lower	Higher	£1.1m	Lower	Higher	7,780	£560k
Cognitive impairment	1,730	Similar	Higher	£129k	Lower	Higher	400	£33k
Psychoses	4,350	Similar	Higher	£314k	Lower	Higher	2,930	£216k
Personality Disorders	570	Similar	Higher	£41k	Lower	Higher	430	£32k
Common	4,680	Similar	Higher	£325k	Lower	Higher	2,620	£183k
Unassigned	3,560	Similar	Higher	£244k	Lower	Higher	1,400	£95k
ALL NON-MENTAL HEALTH	69,810	Similar	-	£4.8m	Lower	-	-	-
ALL	84,700	Higher	Higher	£5.9m	Lower	Higher	7,780	£560k

Staffordshire STP — Low cost A&E attendances – referred to GP or discharged

Standardised Attendances per 1,000

Standardised Spend per Head of Population
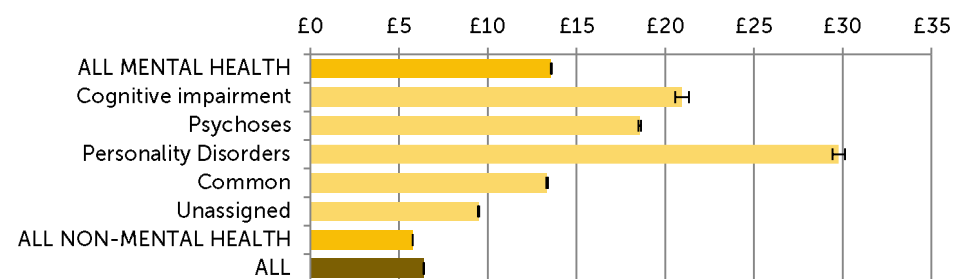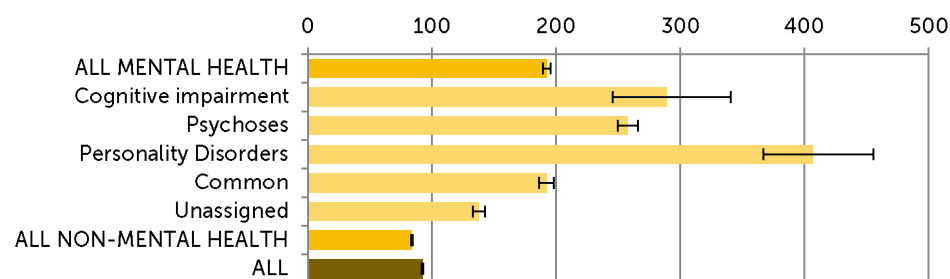
[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Ambulatory care sensitive conditions

These admissions can potentially be avoided with improved primary or community health care services such as screening, immunisation and health monitoring. For those with long-term conditions (LTC), integrated psychological therapies may help reduce admissions.

The algorithm identifies these admissions using a basket of ICD10 and OPCS4 codes.

These admissions have been grouped from 19 individual conditions in to three high-level groups;

- vaccine preventable conditions
- chronic conditions
- acute conditions

	Vaccine preventable
1.	Influenza and Pneumonia
2.	Other vaccine-preventable
	Chronic
3.	Asthma
4.	Congestive heart failure
5.	Diabetes complications
6.	Chronic obstructive pulmonary disease
7.	Angina
8.	Iron-deficiency anaemia
9.	Hypertension
10.	Nutritional deficiencies
	Acute
11.	Dehydration and gastroenteritis
12.	Pyelonephritis
13.	Perforated/bleeding ulcer
14.	Cellulitis
15.	Pelvic inflammatory disease
16.	Ear, nose and throat infections
17.	Dental conditions
18.	Convulsions and epilepsy
19.	Gangrene

Ambulatory care sensitive conditions
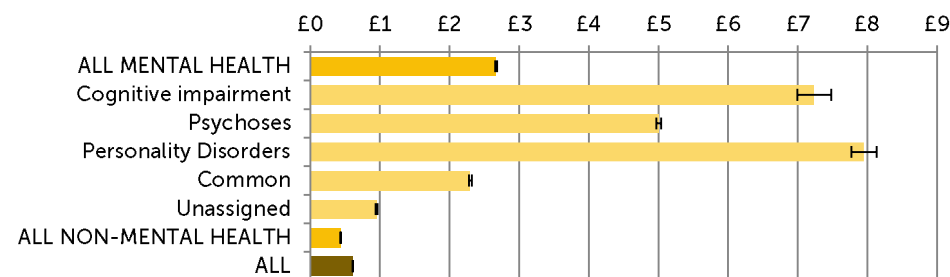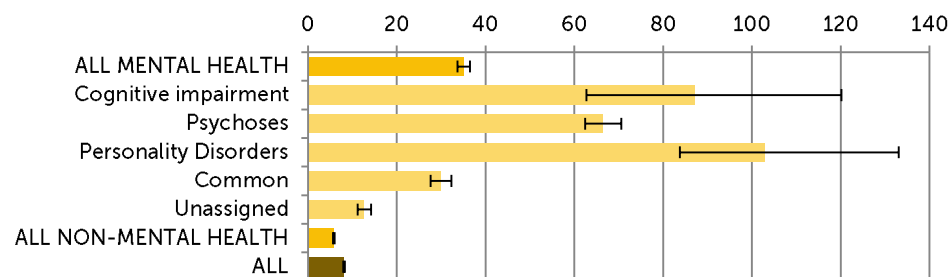
The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 3,780 admissions a year and up to £8.0m could be saved. 41.3% of the reduction in admissions and 33.9% of the reduction in cost is from reducing chronic asthma admissions.

Staffordshire STP Ambulatory care sensitive conditions								
		Standardised Admission Rate			Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
Patient Cohort	Admissions 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Spend 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	6,230	Lower	Higher	£14.2m	Lower	Higher	3,780	£8.0m
Cognitive impairment	2,310	Similar	Higher	£6.4m	Lower	Higher	810	£2.3m
Psychoses	1,970	Similar	Higher	£3.7m	Higher	Higher	1,780	£3.2m
Personality Disorders	150	Similar	Higher	£169k	Lower	Higher	140	£163k
Common	1,190	Lower	Higher	£2.4m	Lower	Higher	900	£1.8m
Unassigned	620	Similar	Higher	£1.5m	Higher	Higher	150	£496k
ALL NON-MENTAL HEALTH	15,430	Lower	-	£33.6m	Lower	-	-	-
ALL	21,670	Similar	Higher	£47.8m	Lower	Higher	3,780	£8.0m

Standardised Admissions per 1,000
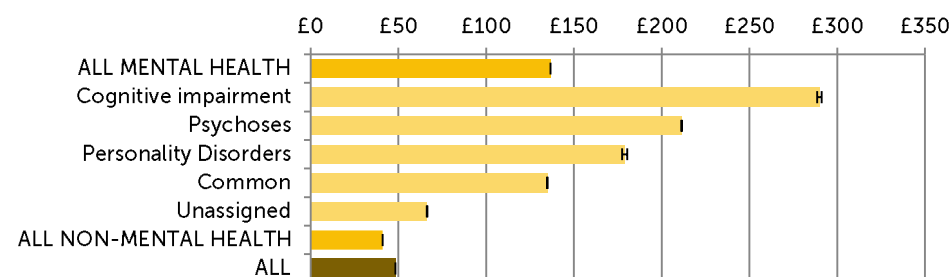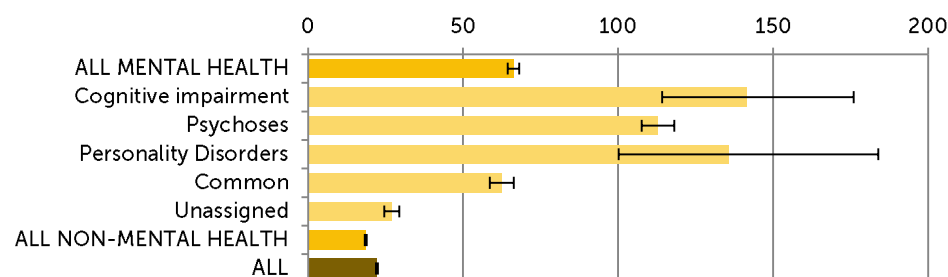
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Medicines related

'There are several ways in which use of medicines can lead to harm. First, even correctly prescribed and correctly used medicines can harm through side-effects or unanticipated allergic reactions, ranging from minor to potentially fatal. Second, errors may occur at any step between prescribing and administering a drug: prescribing errors, dispensing errors, monitoring errors and administration errors all have potential to cause harm which may be sufficient to warrant hospitalisation. Finally, harm may arise through incorrect use, or non-use, by the patient.' (Reynolds et al., 2014)

They may be prevented with better self management on the patients' part or improved medicines management.

The algorithm identifies five subgroups from two groups of medicines related admissions;
- explicitly coded
- implicitly coded
    - NSAIDs
    - Anti-Diabetics
    - Benzodiazepines
    - Diuretics

Explicitly coded admissions are based on the presence of one of a number of specific medicines related cause codes (Y40-Y57).

The implicitly coded admissions identify episodes with indirect evidence of an adverse reaction to, or poor management of, a particular subgroup of medicines.

These are identified using specific combinations of primary and secondary diagnoses. The primary diagnoses indicate a possible adverse reaction from medication used to treat a secondary diagnosis.

Type of medication	Secondary diagnosis required
NSAIDs	Rheumatoid arthritis
Anti-diabetics	Diabetes
Benzodiazepines	Mental health problems
Diuretics	Hypertension

Medicines related

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users with the exception of patients with unassigned mental health conditions. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 720 admissions a year and up to £2.2m could be saved; mostly from patients with cognitive impairment including dementia.

Staffordshire STP Medicines related								
		Standardised Admission Rate			Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
Patient Cohort	Admissions 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Spend 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	1,290	Lower	Higher	£3.5m	Lower	Higher	720	£2.2m
Cognitive impairment	770	Similar	Higher	£2.4m	Lower	Higher	390	£1.5m
Psychoses	270	Similar	Higher	£596k	Higher	Higher	220	£479k
Personality Disorders	20	Similar	Higher	£13k	Lower	Higher	10	£10k
Common	140	Lower	Higher	£345k	Lower	Higher	90	£238k
Unassigned	90	Similar	Similar	£178k	Lower	Higher	-	-
ALL NON-MENTAL HEALTH	2,590	Similar	-	£5.5m	Lower	-	-	-
ALL	3,870	Similar	Higher	£9.1m	Lower	Higher	720	£2.2m

Standardised Admissions per 1,000
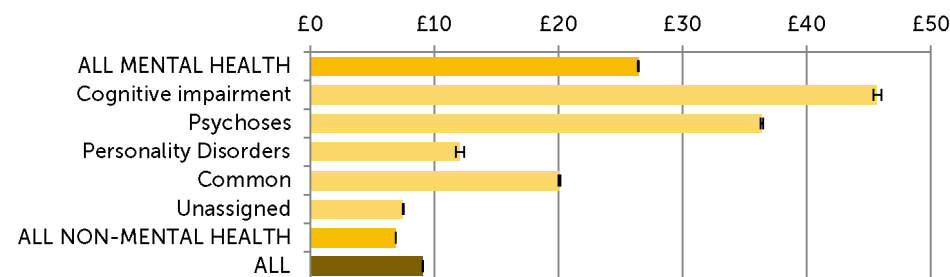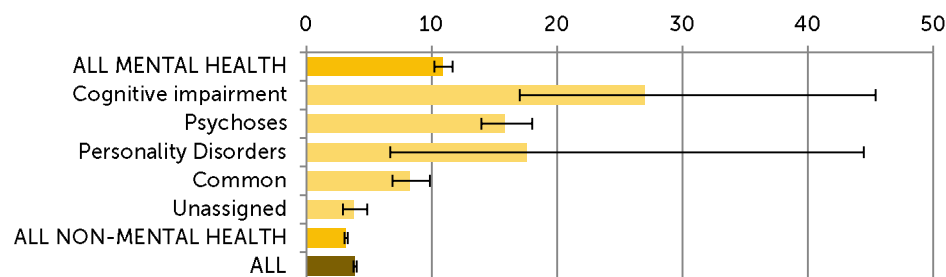
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Obesity related

Obese patients are more likely to suffer from an illness and those illnesses can place significant demand on NHS resources. With greater investment in lifestyle management services and health promotion, the prevalence of obesity can potentially be reduced.

The "Tackling Obesity in England" report (National Audit Office, 2001) suggests that there are a number of hospital admissions that are attributable to obesity.

These admissions have been broken into three groups;
- wholly/largely attributable (50%-100%)*,
- somewhat attributable (10%-50%)*
- marginally attributable (<10%)* to obesity.

* Note that our algorithm identifies all admissions that may be attributable.

Obesity related

The STP standardised attendance rate for this type of activity is similar to the England average whilst the standardised spend rate is higher. Rates are higher overall for mental health service users compared to non-service users. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 120 admissions a year and up to £280k could be saved; mostly from patients with psychoses.

Patient Cohort	Admissions 2014/15	Standardised Admission Rate		Spend 2014/15	Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
		Compared to England Patient Cohorts	Compared to Non Mental Health		Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	580	Similar	Higher	£1.6m	Higher	Higher	120	£280k
Cognitive impairment	240	Similar	Similar	£714k	Higher	Higher	-	-
Psychoses	140	Similar	Higher	£375k	Higher	Higher	70	£182k
Personality Disorders	10	Similar	Higher	£13k	Similar	Higher	10	£6k
Common	110	Similar	Higher	£292k	Lower	Higher	40	£93k
Unassigned	70	Similar	Similar	£195k	Lower	Lower	-	-
ALL NON-MENTAL HEALTH	3,330	Higher	-	£9.9m	Higher	-	-	-
ALL	3,900	Higher	Similar	£11.5m	Higher	Lower	120	£280k

Staffordshire STP — Obesity related
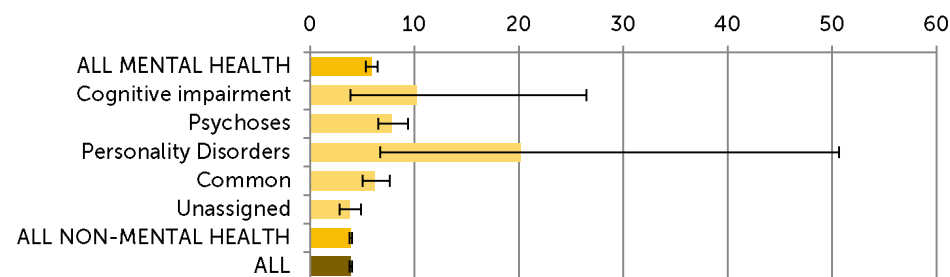
Standardised Admissions per 1,000

Standardised Spend per Head of Population
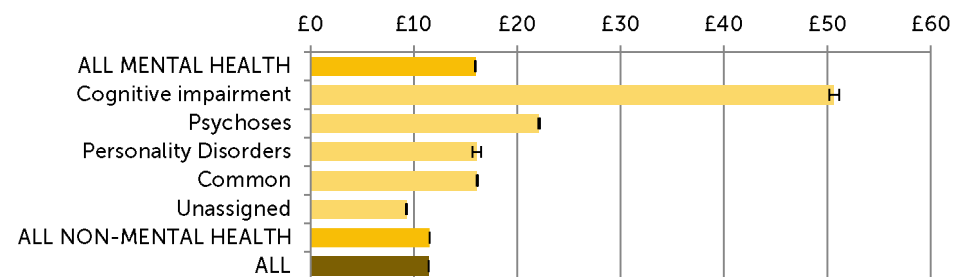
[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Smoking related

Research conducted by the West Midlands Public Health Group (Modelling the economic impact of tobacco control measures in the West Midlands, 2004) suggests that there are a number of hospital admissions that are attributable to smoking.

By placing more emphasis on smoking cessation services, some of the admissions related to these conditions could be avoided.

These admissions have been broken into two groups;

- wholly/largely attributable (50%-100%)*, and

- somewhat attributable (25%-50%)* to smoking.

* Note that our algorithm identifies all admissions that may be attributable.

Smoking related

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 880 admissions a year and up to £1.3m could be saved; mostly from patients with psychoses.

Staffordshire STP Smoking related								
		Standardised Admission Rate			Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
Patient Cohort	Admissions 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Spend 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	2,510	Lower	Higher	£5.2m	Lower	Higher	880	£1.3m
Cognitive impairment	950	Similar	Higher	£2.5m	Higher	Higher	-	-
Psychoses	690	Similar	Higher	£1.2m	Higher	Higher	500	£786k
Personality Disorders	70	Higher	Higher	£79k	Higher	Higher	60	£68k
Common	480	Similar	Higher	£786k	Lower	Higher	280	£411k
Unassigned	330	Higher	Higher	£704k	Higher	Higher	40	£65k
ALL NON-MENTAL HEALTH	9,550	Lower	-	£19.0m	Lower	-	-	-
ALL	12,060	Similar	Higher	£24.2m	Lower	Higher	880	£1.3m

Standardised Admissions per 1,000
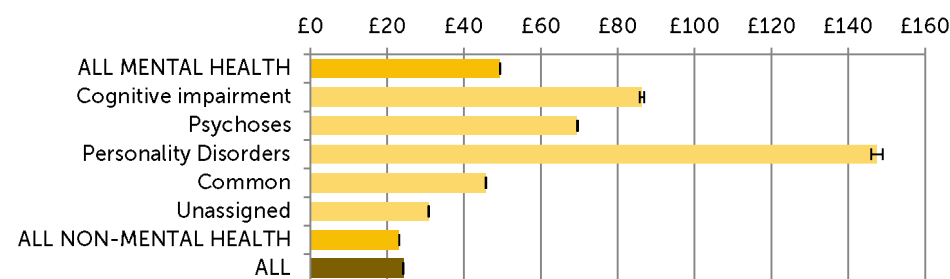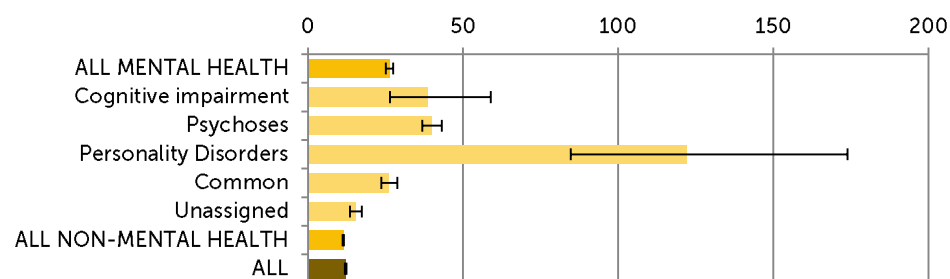
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Medically unexplained symptoms

There are occasions where patients are admitted to hospital with symptoms that cannot be medically explained, such as headaches, insomnia, palpitations etc.

These patients may derive greater benefit from integrated psychological therapies, health psychology or planned liaison care rather than an acute hospital admission.

This report identifies these patients using a basket of International Classification of Disease Codes (ICD10 codes) as defined by NHS South Central.

Medically unexplained symptoms

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users but particularly for patients with personality disorders. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 570 admissions a year and up to £789k could be saved.

Patient Cohort	Admissions 2014/15	Standardised Admission Rate		Spend 2014/15	Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
Staffordshire STP **Medically unexplained symptoms**								
		Compared to England Patient Cohorts	Compared to Non Mental Health		Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	1,200	Lower	Higher	£1.5m	Lower	Higher	570	£789k
Cognitive impairment	370	Similar	Higher	£608k	Lower	Higher	60	£217k
Psychoses	390	Similar	Higher	£408k	Lower	Higher	300	£321k
Personality Disorders	60	Higher	Higher	£55k	Higher	Higher	50	£50k
Common	240	Lower	Higher	£229k	Lower	Higher	140	£132k
Unassigned	140	Similar	Higher	£196k	Higher	Higher	20	£68k
ALL NON-MENTAL HEALTH	4,260	Lower	-	£4.2m	Lower	-	-	-
ALL	**5,460**	**Lower**	**Higher**	**£5.7m**	**Lower**	**Higher**	**570**	**£789k**

Standardised Admissions per 1,000
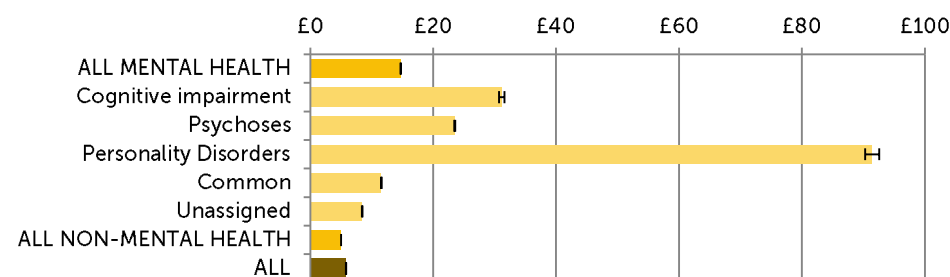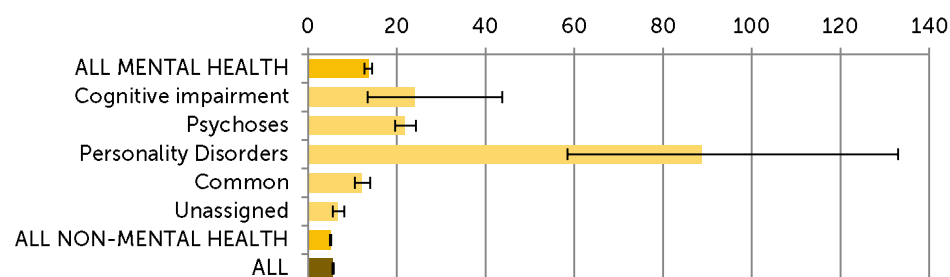
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Frail elderly

This set of activity includes admissions for people over the age of 75 who have a primary diagnosis that for a fit and healthy person would not normally require an acute hospital admission. Effective nursing home care or case management may reduce some of this acute activity.

The algorithms break these admissions down in to two separate categories;

- Those which **usually** have the potential to be treated in a non-Acute setting, and;
- Those which **occasionally** have the potential to be treated in a non-Acute setting

Frail elderly

The STP standardised attendance and spend rates for this type of activity are higher than the England average. Rates are higher overall for mental health service users compared to non-service users with the exception of patients with personality disorders. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 1,930 admissions a year and up to £6.1m could be saved; mostly from patients with cognitive impairment including dementia.

Staffordshire STP Frail elderly								
		Standardised Admission Rate			Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
Patient Cohort	Admissions 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Spend 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	4,230	Higher	Higher	£11.7m	Higher	Higher	1,930	£6.1m
Cognitive impairment	3,300	Higher	Higher	£9.4m	Higher	Higher	1,580	£5.2m
Psychoses	330	Higher	Higher	£850k	Higher	Higher	180	£515k
Personality Disorders	0	Similar	Similar	£5k	Lower	Higher	0	£2k
Common	230	Higher	Higher	£521k	Higher	Higher	110	£249k
Unassigned	370	Higher	Higher	£988k	Higher	Higher	50	£229k
ALL NON-MENTAL HEALTH	5,890	Higher	-	£13.7m	Higher	-	-	-
ALL	10,120	Higher	Higher	£25.4m	Higher	Higher	1,930	£6.1m

Standardised Admissions per 1,000

Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Self harm related

Emergency admissions to hospital following para-suicide or acts of self-harm may be prevented with public health prevention initiatives in schools and workplaces, and enhanced criminal justice system (CJS) responses to domestic and alcohol-related violence.

The algorithms used here identify those admissions with an ICD-10 cause code relating to intentional self harm/poisoning – X60 – X84.

Self harm related

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 2,060 admissions a year and up to £1.2m could be saved; mostly from patients with psychoses.

Staffordshire STP Self harm related								
Patient Cohort	Admissions 2014/15	Standardised Admission Rate		Spend 2014/15	Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
		Compared to England Patient Cohorts	Compared to Non Mental Health		Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	2,100	Lower	Higher	£1.2m	Lower	Higher	2,060	£1.2m
Cognitive impairment	60	Similar	Higher	£60k	Higher	Higher	50	£58k
Psychoses	1,220	Higher	Higher	£750k	Lower	Higher	1,210	£746k
Personality Disorders	300	Higher	Higher	£145k	Lower	Higher	300	£145k
Common	380	Lower	Higher	£170k	Lower	Higher	370	£164k
Unassigned	140	Similar	Higher	£60k	Lower	Higher	130	£49k
ALL NON-MENTAL HEALTH	400	Higher	-	£250k	Higher	-	-	-
ALL	**2,500**	**Higher**	**Higher**	**£1.4m**	**Higher**	**Higher**	**2,060**	**£1.2m**

Standardised Admissions per 1,000
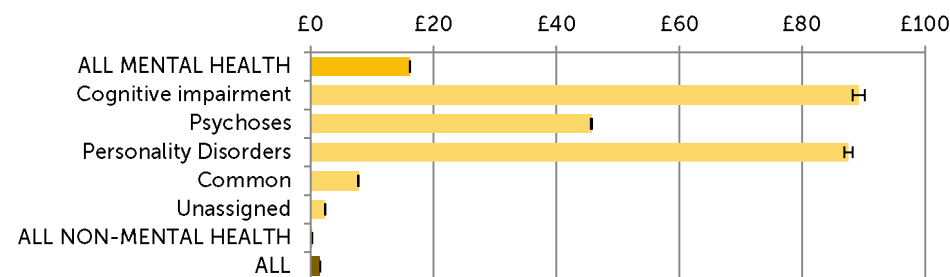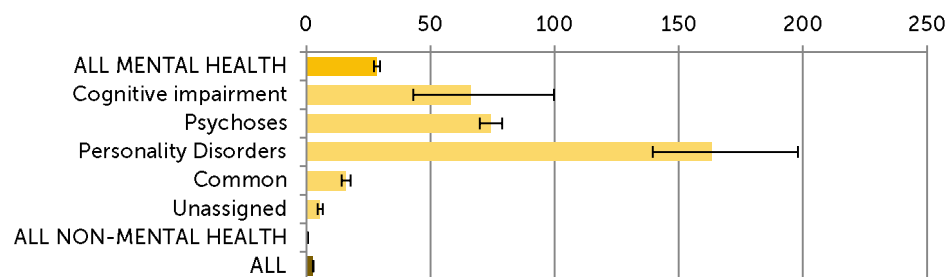
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Admissions via A&E with a primary mental health diagnosis

This set of activity identifies patients that might benefit from a liaison mental health service (sometimes known as RAID).

These services aim to identify patients who present at A&E who have mental health and/or drug and alcohol related problems which can be better dealt with in the community without admission to an acute inpatient bed. This could include patients that are known or unknown to specialist mental health services.

This set includes patients with a primary diagnosis in ICD10 chapter F who were admitted from A&E and did not undergo a procedure.

The Strategy Unit undertook an economic evaluation of the implementation of the RAID service across Birmingham and Solihull in 2012 which, alongside ongoing monitoring, concluded that the services were and remain cost-effective in terms of hospital admission avoidance and reduced length of stay with a significant return on investment [3].

[3] Rapid Assessment Interface and Discharge (RAID) liaison. An economic evaluation of the Birmingham and Solihull roll-out. Wyatt S, October 2012.
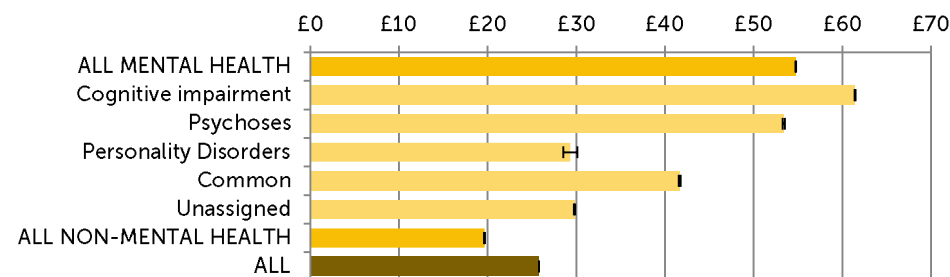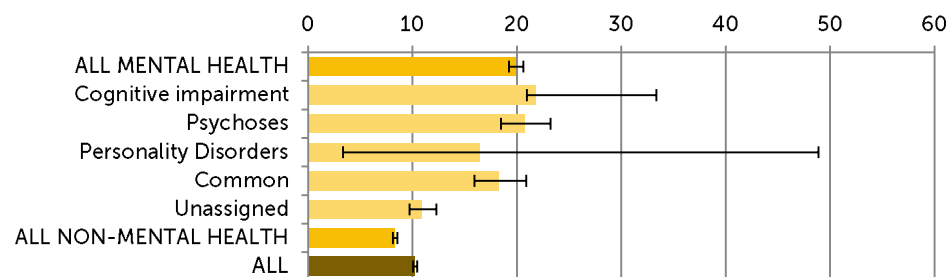
Admissions via A&E with a primary mental health diagnosis

The STP standardised attendance and spend rates for this type of activity are lower than the England average. Rates are higher overall for mental health service users compared to non-service users with the exception of patients with unassigned mental health conditions. If rates of mental health service users could be reduced to those of the rest of the population, admissions could be reduced by 14,620 admissions a year and up to £31.4m could be saved; approximately half from patients with cognitive impairment including dementia.

Staffordshire STP Admissions via A&E with a primary mental health diagnosis								
		Standardised Admission Rate			Standardised Spend Rate		Potential Reduction (If same rates as Non-Mental Health)	
Patient Cohort	Admissions 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Spend 2014/15	Compared to England Patient Cohorts	Compared to Non Mental Health	Admissions	Savings
ALL MENTAL HEALTH	16,090	Lower	Higher	£35.2m	Lower	Higher	14,620	£31.4m
Cognitive impairment	6,770	Lower	Higher	£19.9m	Lower	Higher	5,810	£17.1m
Psychoses	6,230	Similar	Higher	£10.0m	Lower	Higher	6,000	£9.5m
Personality Disorders	660	Higher	Higher	£692k	Higher	Higher	640	£670k
Common	2,430	Lower	Higher	£4.6m	Lower	Higher	2,170	£4.1m
Unassigned	0	Similar	Lower	–	Lower	Lower	–	–
ALL NON-MENTAL HEALTH	10,990	Lower	–	£23.9m	Lower	–	–	–
ALL	27,080	Lower	Higher	£59.1m	Lower	Higher	14,620	£31.4m

Standardised Admisisons per 1,000
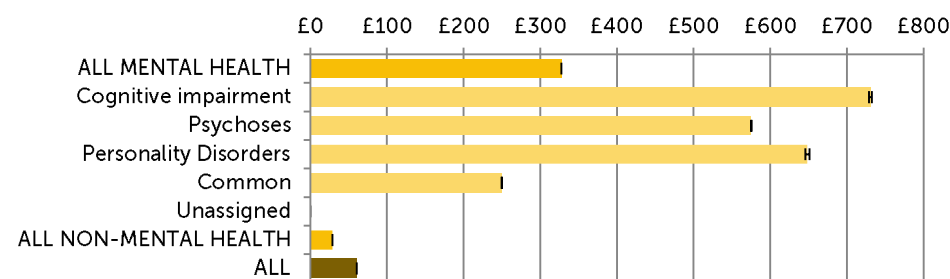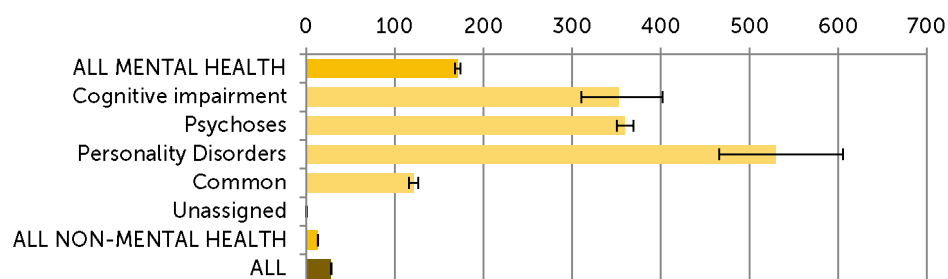
Standardised Spend per Head of Population

[Note] Activity numbers have been rounded to the nearest 10, savings have been rounded to the nearest £1,000.

Key Findings for your STP
Saving and reinvestment opportunities

The STP could potentially save up to £1.7m in A&E attendances and up to £32.9m in inpatient care, by reducing mental health service user acute hospital activity, in subgroups which may be amenable to change, to the same levels as the rest of the population.

- These potentially avoidable hospital admissions represent an opportunity cost. Targeted investment in evidence-based interventions could release acute hospital costs whilst improving the physical health of mental health service users.

- In practice, reducing acute healthcare utilisation of mental health service users to that of the rest of the population may not be wholly attainable. We recommend seeking clinical advice in the local context as to what is realistically achievable for each condition.

- Compared to England, the STP overall has higher activity for the following activity sub-groups:
    Frequent A&E attenders, low cost A&E attendances – referred to GP or discharged, smoking related admissions, obesity related admissions, frail elderly patients that could be managed in non-acute settings and patients admitted for self harm.

Key Findings for your STP
Saving and reinvestment opportunities

- The overall mental health service user population had higher utilisation for each opportunity than the rest of the population.

- Greatest potential reductions in A&E attendances are in patients with psychoses, which would be a saving of £662k. Whilst the greatest potential admissions reduction is for service users with psychoses, the greatest potential savings (£15.9m) were found for the cognitive impairment including dementia sub-group.

- Reducing both psychoses and cognitive impairment including dementia service user attendances for these admissions avoidance opportunities could save as much as £26.2m.

- The largest single potential saving (£31.4m) for an opportunity group is estimated to come from reducing admissions of those attending A&E with a primary diagnosis of mental health. The extension, or introduction if absent, of liaison mental health services (i.e. RAID) may impact on multiple opportunities – e.g. reducing admissions for mental health issues, self-harm and medicines adherence.

Appendix 1

The links between mental health and physical health: a summary of the evidence

Introduction

This rapid evidence review focuses on the links between mental health and physical health.

The review summarises national policy and provides an overview of current issues in the links between physical and mental health and highlights relevant guidance.

Also examined are approaches highlighted by the literature on addressing mental and physical health issues.

Methodology

The following sources were searched (February 2017):

- Medline
- PsycINFO
- Cochrane Library
- Centre for Reviews and Dissemination
- NIHR
- NHS Evidence
- The Kings Fund
- Nuffield Trust
- NHS England
- Health Foundation
- Royal Colleges
- National Institute for Health and Care Excellence

Searches were limited from 2010-2017 and to reviews. In the absence of reviews in a topic area other types of studies have been included.

Summary of evidence

✔	**Evidence base suggests maybe effective:** • Psychiatric liaison • Collaborative care - serve mental illness, intensive Case Management (ICM) (caseload of <20) reduces hospitalisation; elements of case management include self-management & MDT working. • Lifestyle interventions which are longer duration, frequent contact and multi-components.
?	**Evidence base remains uncertain:** • Integrated care – to date most care studied has not been within fully integrated care systems. • Interventions to reduce substance abuse in those with SMI • Exercise interventions in those with SMI • Self-management

Key:

Evidence base suggests maybe effective demonstrated by more than one systematic review/literature synthesis/trial.

Evidence base remains uncertain demonstrated by either mixed results reported in more than one systematic review or absence of research in this area.

National Policy

In 2016 the Mental Health Taskforce developed The *Five Year Forward View for Mental Health* (NHS England 2016). The strategy covers care and support for all ages, aiming to improve mental health outcomes across the health and care system, in partnership with the health arm's length bodies.

A 7 day NHS – right care, right time, right quality

An integrated mental and physical health approach

Promoting good mental health and preventing poor mental health
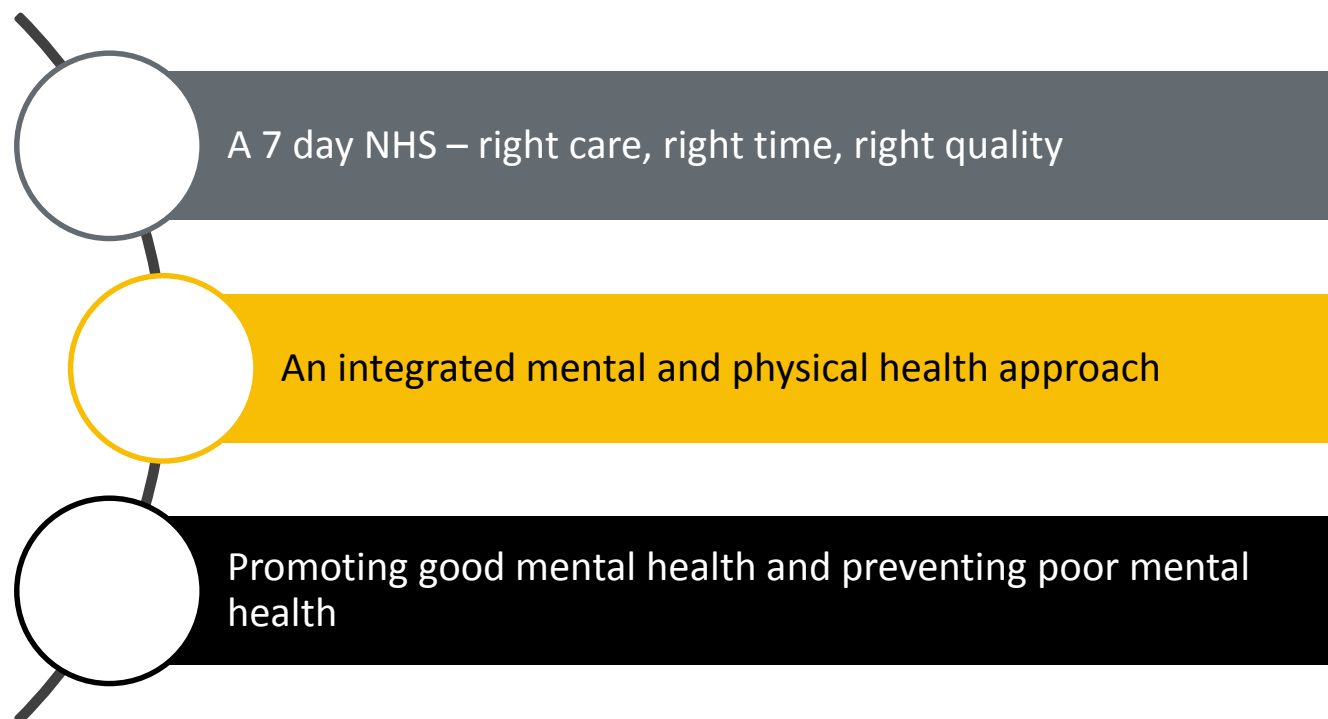
"We must provide equal status to mental and physical health, equal status to mental health staff and equal funding for mental health services as part of a triple approach to improve mental health care – a fresh mindset for mental health within the NHS and beyond."

(*Five Year Forward View for Mental Health,* NHS England, 2016).

Background and Context [1]

Mortality Gap

The literature highlights a higher mortality rate for mental health services users compared to the general population and shorter life expectancies in those with serious mental illness.

For the period 2010-11 the mortality rate was **4,008 per 100,000** (83,390 deaths in total) for mental health services users in England, compared to the general population rate of **1,122 per 100,000**. (Health and Social Care Information Centre's (HSCIC) Mental Health Minimum Dataset (MHMDS) for 2010-11).

Life Expectancy

Estimates of life expectancy vary within the literature but all studies point to shorter life expectancies in those with serious mental illness compared to the general population.

Life expectancy in those with serious mental disorders and major disorders; all disorders were associated with substantially lower life expectancy: 8.0 to 14.6 life years lost for men and 9.8 to 17.5 life years lost for women (Chang et al. 2011).

Men with mental disorders lived 20 years less, and women 15 years less, than the general population, (Wahlbeck, et al. 2011). The gap in males reported in Denmark, Finland and Sweden ranged from 17-20 years and in women 12-14 years.

Various gaps have been cited in recent studies into life expectancy of mental health patients ranging from 10 to 20 years (Chesney E, Goodwin GM & Fazel S, 2014). The more extreme gaps tend to be in studies based on life expectancy of people with a severe mental health diagnosis i.e. schizophrenia (Laursen TM, 2012), (Chang et al. 2011), rather than a more generalised population of people with any mental health disorder.

Background and Context [2]

Two systematic reviews have examined the impact that dementia has on physical health.

A systematic review of population studies (Rao et al. 2015) reported higher mortality rates in dementia patients (15.3% compared to 8.7% in non-dementia cases).

Hopkinson et al. (2016) found that those with dementia were diagnosed at a later stage, received less treatment, were more likely to experience complications from treatment and have poor survival rates.

Those with mental health problems had 3.2 times more A&E attendances and 4.9 times more emergency inpatient admissions than those without mental health issues.

The majority of emergency inpatient activity was related to physical health. Only one fifth of activity was related to support a patient's mental health.

The most deprived people with mental ill health visited A&E 1.8 times more than the least deprived and had 1.5 times more emergency inpatient admissions.

Those with mental ill health had 3.6 times more potentially preventable emergency admissions than those without mental ill health

Health service utilisation

A systematic review by Twomey et al. (2015) identified the following variables associated with increased health service utilisation in those with mental illness.

- a marital status of divorced, separated or
- widowed;
- non-white ethnicity;
- high previous health service utilization;
- comorbidity (both mental and physical);
- personality disorder.

Explaining the link between mental and physical health

Emerging from the literature are a number of factors which help to explain the link between poor physical health outcomes and mental health, highlighted below:

High prevalence of long-term conditions in those with severe mental illness for all conditions (Reilly et al. 2015).
For example, Ringen et al. (2014) examined cardiovascular disease mortality in schizophrenia and identified a number of factors to explain these increasing including:

Substance abuse – high prevalence of substance abuse in schizophrenia contributing to lower psychosocial functioning higher risk of exacerbations, or relapses and may also have direct adverse or somatic effects

High prevalence of long-term conditions in those with serious mental illness

Medication side effects; poor lifestyle behaviours contribute to poor physical health in those with serious mental illness

Social Deprivation

Increased risk of mental health issues in those with long-term conditions

Difficulties in accessing care
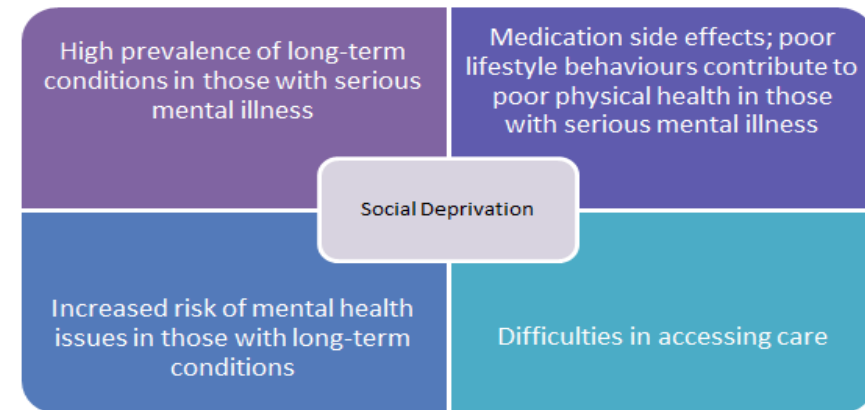
Physical activity – lower physical activity levels than recommended weekly physical activity estimated to 26% in people with schizophrenia compared with 34% of the general population meeting activity targets.

Side effects of medication - weight gain metabolic disturbances, such as diabetes and slow blood sugar uptake

Tobacco smoking – three times more prevalent in people with schizophrenia than in the general population.

Explaining the link between mental and physical health

Increased risk of mental health conditions in patients with long-term conditions

It has been estimated that between 12 per cent and 18 per cent of all NHS expenditure on long-term conditions could be linked to poor mental health (Naylor et al. 2012).

Those with long-term conditions are two to three times more likely to experience a mental health condition than the general population, especially mood disorders (Naylor et al. 2016).

An increased prevalence of depression has been reported in diabetes, stroke (Burton et al. 2015), and chronic obstructive pulmonary disease depression (Blakemore et al. 2014).

An increased risk of dementia in those with type 2 diabetes has been highlighted (Chatterjee et al 2016, Ojo and Brooke 2015) along with positive association between obesity in mid-life and later dementia risk (Pedditizi et al 2016).

Explaining the link between mental and physical health

Social deprivation

The impact that social deprivation can impact on mental and physical health has been discussed widely within the literature. The Marmot review in 2010 (Marmot, 2010) highlighted the issue of people living in deprived areas experiencing a greater number of physical and mental health problems, therefore requiring more health care management and support than those in more affluent areas.

Barnet et al. (2013) found that the presence of a mental health disorder increased as the number of physical morbidities increased and was much greater in those living in deprived areas.

Martin et al. (2014) assessed the impact of socioeconomic deprivation on rate and cause of death in severe mental illness patients in Scotland found differences in the cause of death due to socioeconomic status:

- For those living in the most deprived quintile, higher drug-related deaths occurred in those with SMI compared to local Glasgow and wider Scottish population rates (12.3% vs. 5.9).

- The proportion of suicides was significantly higher in those with SMI living in the more affluent quintiles relative to Glasgow and Scotland (54.6% vs. 5.8%).

A study by McAneney et al. (2015) exploring the individual and social factors impacting on well-being found 'social connections' were most important for mental well-being.

Guidelines [1]

The National Institute of Clinical Excellence (NICE) have developed a series of quality standards relating to service user experiences in mental health services including the importance of shared decision making; continuity of care and access to services.

Guidance	Key points
NICE (2016) Transition between inpatient mental health settings and community and care home settings [NG53]	• Mental health services should work with primary care, local authorities and third sector organisations to ensure that people with mental health problems in transition have equal access to services. • At admission, a senior health care professional should discuss all medication and care needs with the person being admitted. This should include: physical health care needs. • For people being discharged from hospital, consider a group-based, peer-delivered self-management training programme as part of recovery planning • Consider providing peer support to people with more than 1 previous hospital admission.
NICE (2015) Psychosis and schizophrenia in adults' NICE quality standard [QS80]	• Adults with psychosis or schizophrenia have specific comprehensive physical health assessments. • Adults with psychosis or schizophrenia are offered combined healthy eating and physical activity programme and help to stop smoking.
NICE (2014) Psychosis and schizophrenia in adults: prevention and management	• People with psychosis or schizophrenia, especially those taking antipsychotics, should be offered a combined healthy eating and physical activity programme by their mental health care provider. • Routinely monitor weight, and cardiovascular and metabolic indicators of morbidity in people with psychosis and schizophrenia. • Offer people with psychosis or schizophrenia who smoke help to stop smoking.
NICE (2013) Dementia: independence and wellbeing NICE quality standard [QS30]	• People with dementia are enabled, with the involvement of their carers to access services that help maintain their physical and mental health and wellbeing.
NICE (2013) Self Harm, NICE quality standard [QS34]	• Quality standard focuses on the importance of people treated with dignity and respect with people receiving the monitoring they need while in the health care setting, as well as continuing support from a health professional. People receiving continuing support for self-harm should also have a collaboratively developed risk management plan. Other key points include: • have self-harmed have an initial assessment of physical health, mental state, safeguarding concerns, social circumstances and risks of repetition or suicide • receive a comprehensive psychosocial assessment, access to psychological interventions specifically structured for people who self-harm.

Guidelines [2]

Guidance	Key points
NICE (2011) Service user experience in adult mental health services NICE quality standard [QS14]	• The importance of shared decision making; continuity of care and access to services is highlighted. • Patients using community mental health services should be supported by staff from a single multidisciplinary community team, familiar to them and with whom they have a continuous relationship.
NICE (2011) Depression in adults NICE quality standard [QS8]	• Those with moderate depression and a chronic physical health problem receive an appropriate high-intensity psychological intervention. • People with severe depression and a chronic physical health problem receive a combination of antidepressant medication and individual cognitive behavioural therapy. • People with moderate to severe depression and a chronic physical health problem with associated functional impairment, whose symptoms are not responding to initial interventions, receive collaborative care.
NICE (2011) Self harm in over 8s – longer term management [CG133]	• Integrated and comprehensive psychosocial assessment of needs and risks to understand and engage people who self-harm and to initiate a therapeutic relationship. • Discuss, agree and document the aims of longer-term treatment in the care plan with the person who self-harms • Interventions for self-harm • Consider offering 3 to 12 sessions of a psychological intervention that is specifically structured for people who self-harm, with the aim of reducing • Drug treatment as a specific intervention to reduce self-harm should not be offered.
NICE (2009) Depression in adults with a chronic physical health problem: recognition and management.[CG91].	• This guideline covers identifying, treating and managing depression in people aged 18 and over who also have a chronic physical health problem such as cancer, heart disease or diabetes. • For patients with persistent sub-threshold depressive symptoms or mild to moderate depression and a chronic physical health problem, and for patients with sub-threshold depressive symptoms patients can be offered: • A structured group physical activity programme; a group-based peer support (self-help) programme or individual guided self-help based on the principles of cognitive behavioural therapy (CBT) or computerised cognitive behavioural therapy (CCBT). • For moderate depression patients should be offered a choice of high-intensity psychological interventions including group-based CBT or individual CBT for patients who decline group-based CBT

Guidelines [3]

Guidance	Key points
NICE (2009) Self-harm in over 8s: short-term management and prevention of recurrence [CG16]	• This guideline covers the short-term management and prevention of self-harm in people aged 8 and over, regardless of whether accompanied by mental illness. It covers the first 48 hours following an act of self-harm, it does not address the longer-term psychiatric care of people who self-harm. • All people who have self-harmed should be offered a preliminary psychosocial assessment at triage (or at the initial assessment in primary or community settings) following an act of self-harm. • treatment for the physical consequences of self-harm, regardless of their willingness to accept psychosocial assessment or psychiatric treatment. • Clinical and non-clinical staff who have contact with people who self-harm in any setting should be provided with appropriate training to equip them to understand and care for people who have self-harmed

Review of empirical evidence

The Strategy Unit.

Organisation and delivery of care

The Royal College of Psychiatrists (2014), examines why parity between mental and physical health does not currently exist and how it might be achieved in practice. The authors make a number of recommendations:

Leadership:
- All local councils should have a lead councillor for mental health in recognition of the need for all local authority activities and commissioning to take full account of mental and physical health and their social determinants.
- All providers of specialist mental health services should have someone at board level who leads for physical health.
- All providers of physical health care should have a board member who leads for mental health.

Parity of outcomes:
- Among people with mental health problems. Commissioners should require smoking cessation services to include a focus on smokers with mental health problems.

Parity and integrated care :
- Commissioners need to regard liaison services as an absolute necessity rather than as an optional luxury.
- NHS and social care commissioners should commission liaison psychiatry and liaison physician services to drive a whole-person, integrated approach to health care in acute, secure, primary care and community settings, for all ages, including multidisciplinary paediatric liaison services for children both in and out of hospital.

Organisation and delivery of care

The Royal College of Psychiatrists (2016) recently published report sets out a number of recommendations, including the formation of a national steering group enabling key areas of physical health to be addressed and monitored at a national level. For specific groups the report recommends:

	Recommendations
Commissioners	Commissioners should set clear expectations for the provision of physical health services in mental health care settings; Require mental health care services to have a named individual with responsibility for quality improvement for physical health care services.
All providers of health services used by people with SMI	"Develop a physical health strategy that is appropriate for people with SMI that has been approved by the board of the acute hospital, mental health service, general medical practice or GP federation, and undertake to review this strategy annually appoint a lead clinician as a board member with responsibility for the implementation of physical health strategy."
Acute services providers	Ensure liaison psychiatry services are available in acute hospitals to support inpatients with SMI

Organisation and delivery of care
Psychiatric liaison

"By 2020/21 no acute hospital should be without all-age mental health liaison services in emergency departments and inpatient wards, and at least 50 per cent of acute hospitals should be meeting the 'core 24' service standard as a minimum." NHS England (2016)

Liaison psychiatry sometimes referred to as Psychological Medicine ,"is the medical specialty concerned with the care of people presenting with both mental and physical health symptoms" (Sharpe 2014). Reported outcomes of liaison psychiatry services include:

Grassi et al. (2015) reported improved outcomes for psychiatrist liaison in terms of reduced hospital stays, reduced self-harm and suicide, improved morbidity and mortality, medical adherence, and engagement.

Wood and Wand (2014) reported that consultation-liaison psychiatry services are cost-effective and reduce length of stay when involved early and that referrers follow certain recommendations.

The Royal College of Psychiatrists published a *Framework for Routine Outcome Measurement in Liaison Psychiatry"* (Trigwell et al. 2015), with the inclusion of specified measures for all services to use. The Royal College recommend that the framework is adopted across all liaison psychiatry services in the NHS to enable consistency of data collection and the effective reporting of outcomes.

Decreased length of stay	Reduction in psychological stress
Improved patient and dementia care	Enhanced knowledge & skills of hospital staff
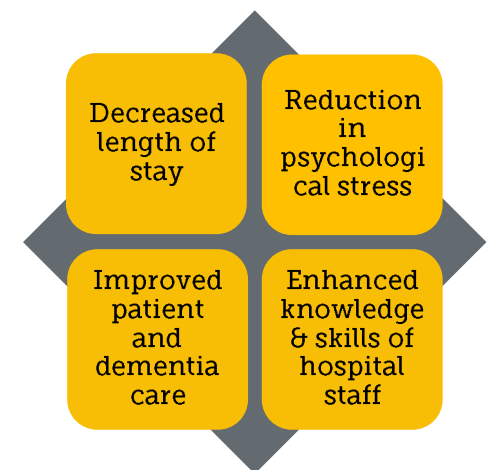
Organisation and delivery of care
Psychiatric liaison

The National Confidential Enquiry into Patient Outcome and Deaths (2017) reviewed 552 cases of patients presenting to general hospitals with a physical health issue/s and who also had a significant mental health problem.

The authors reported improvements in quality of care and Psychiatric Liaison Accreditation Network (PLAN) accredited liaison psychiatry team with quality of mental health care demonstrated in:

- **59.8%** (58/97) of hospitals with a PLAN accredited liaison psychiatry team;
- **46.1%** (97/210) of cases with non- PLAN accredited liaison psychiatry team;
- **40.8%** (20/49) of cases from hospitals with no liaison psychiatry team.

The review highlighted a number of issues around the need to improve diagnostic coding of mental health conditions. Specifically, the need to improve record sharing between mental health trusts and general hospitals was highlighted, with the reviewers recommending that at minimum patients should not be transferred between the different hospitals without copies of all relevant notes accompanying the patient and the importance of integrating psychiatric liaison services :

"In order to overcome the divide between mental and physical health care, liaison psychiatry services should be fully integrated into general hospitals. The structure and staffing of the liaison psychiatry service should be based on the clinical demand both within working hours and out-of-hours so that they can participate as part of the multidisciplinary team."

Organisation and delivery of care
Psychiatric liaison, case studies

Rapid, Assessment, Interface and Discharge (RAID) (Birmingham and Solihull Mental Health NHS Foundation Trust)

This service is available 24/7 to all people aged over 16 within the hospital and includes drug/alcohol service. There is a target time of one hour to assess referred patients who present to the emergency department and 24 hours for seeing referred patients on the wards.

The service also provides formal teaching and informal training on mental health difficulties to acute staff in the hospital. The cost of the service is around £1.4 million a year for a hospital of circa 600 beds, and generates incremental benefits in terms of reduced bed use valued at £3.55 million a year. There is a benefit cost ratio of more than 4:1.

(Aitken, et al. 2014)

Hull Royal Infirmary and Castle Hill Hospital

This service operates seven days a week from 8am to 10pm. The service includes a multidisciplinary team including a range of professionals who focus on people who deliberately self-harm and/or who have mental health problems within the acute care pathway.

The service has no age restrictions for people who have self-harmed.
General liaison psychiatry for people aged 18 – 65.

The service also plays part in management of patients with long-term conditions.

(Aitken, et al. 2014)

Organisation and delivery of care
Alcohol care teams

"Alcohol care teams coordinate policies of care across acute departments, including accident and emergency (A&E). They provide access to brief interventions and appropriate services within 24 hours of the detection of alcohol-related problems."

(The British Society of Gastroenterology and the Royal Bolton Hospital NHS Foundation Trust, 2016)

A survey by Public Health England (2014) of 144 of the 191 district general hospitals found at least 139 (73%) offer some level of specialist alcohol service. Services are diverse, but fall into three broad categories:

- multi-disciplinary alcohol care teams
- in-reach alcohol care teams
- high impact user services

Public Health England (2014) suggests services should be able to provide:
- case identification/identification and brief advice (IBA)
- comprehensive alcohol use assessment
- contribution to nursing and medical care planning
- psychotherapeutic interventions
- medically assisted alcohol withdrawal management
- planning of safe discharge, including referral to community services

Evaluations of Alcohol Care Teams indicate that return on investment from effective alcohol care teams can be between £3.50 and £3.85 per £1.00 invested. Assertive outreach services that aim to reduce hospital admission and A&E attendance among those who use them frequently can deliver a return of £1.86 per £1.00 invested (Public Health England 2014).

Organisation and delivery of care
Alcohol care teams, case studies

Alcohol specialist nurse service in - Queen Alexandra Hospital, Portsmouth.

The Queen Alexandra Hospital Alcohol specialist nurse service includes 6 alcohol specialist nurses, and 1 administrator. There are also 4 liver specialist nurses to provide a joint alcohol and liver disease service.

In 2012/13, this service saved NHS Portsmouth 1071 bed days and NHS Hampshire 952 bed days.

A universal alcohol screening programme has been introduced. Over a 3 year period, screening was conducted using a modified electronic version of the Paddington Alcohol Test, for more than 50,000 patients. The test was performed by general, rather than specialist alcohol nurses or doctors.

The Royal Bolton Hospital

The Royal Bolton Hospital collaborative care for alcohol-related liver disease and harm is a multidisciplinary team, including: Consultant Gastroenterologists, a Hepatologist, Alcohol Specialist Nurses (ASNs) and the Rapid Assessment, Interface and Discharge (RAID) Liaison Psychiatry Team provide joint, comprehensive alcohol and liver disease inpatient and outpatient care. The 7-day service cost is £165,000 annually, saving 2000 bed days (current tariff is £318 per day) and £636,000 (£471,000 net) annually, and liberating 4-6 hospital beds. Readmission rates have been reduced by 3%, compared with an increase across the region.

An AUDIT C Alcohol Questionnaire has been introduced across the trust. All elective and non-elective patients are routinely asked about their alcohol consumption, helping to identify dependent, harmful and hazardous drinkers. After 12 months of the 7-day service, there was a 63% increase in referrals and more than 600 health care staff were trained in identifying alcohol problems and delivering brief advice. The specialist nurses have also trained and established a network of 50 trust alcohol link workers and run an alcohol and liver disease course for staff.

Organisation and delivery of care
Integrated Care

Integrated care "can be defined as an approach that seeks to improve the quality of care for individual patients, service users and carers by ensuring that services are well co-ordinated around their needs".

This involves "overcoming barriers between primary and secondary care, physical and mental health, and health and social care to provide the right care at the right time in the right place", (Goodwin et al (2012).

Crossing Boundaries. Improving Integrated Care for People with Mental Health Problems (Mental Health Foundation, 2013) sets out a number of factors needed for the delivery of high quality integrated care including:

- Information sharing systems

- Shared protocols

- Joint funding and commissioning

- Colocation of services

- Multidisciplinary teams

- Liaison services

- Navigators

- Research

- Reduction of stigma.

Organisation and delivery of care
Integrated care

The delivery of integrated care has been highlighted as an approach to improve the care needs of those experiencing physical and mental health issues but to date most interventions were moderately integrated (Bradford et al. 2013).

A prospective cohort study (Killaspy et al. 2016) of 50 units examined clinical outcomes and costs of rehabilitation services for 329 patients with complex psychosis. The authors reported:

- A positive association between successful discharge and recovery orientated practice;
- 14 % (1 in 7) of patients whom staff considered ready for discharge could not leave the unit because no suitable community accommodation was available.

A number of facilitators have been identified to successfully deliver integrated care including:

Integrated information systems

Multidisciplinary team working

Shared protocols, joint action plans & decision support tools

Staff training
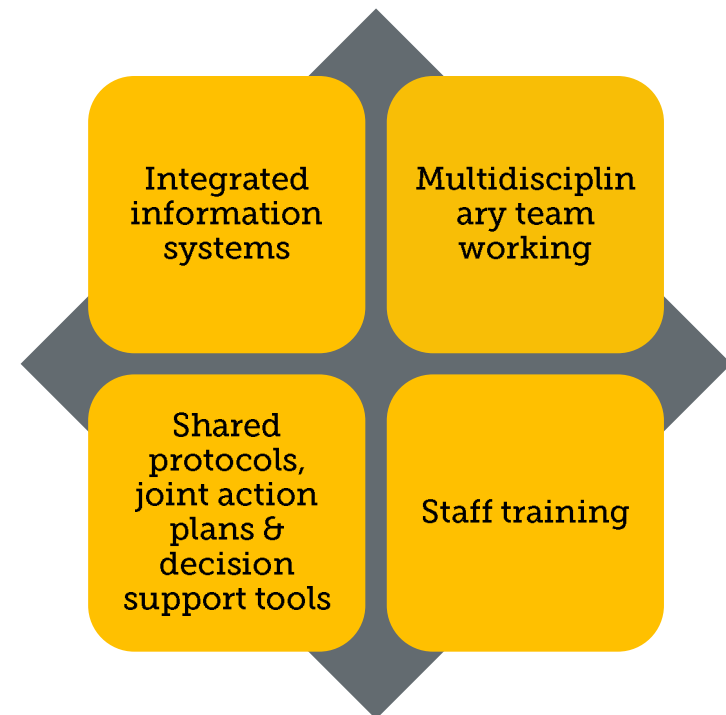
Organisation and delivery of care
Integrated care, case studies

North West London Integrated Care Pilot

An integrated care pilot in North West London is a partnership between five local authorities, two major acute trusts, two community trusts, two mental health trusts, two third

sector organisations and over 100 general practices, focusing on the integrated management of diabetes and people over the age of 75.

An evaluation of the programme by the Nuffield Trust (Wistow et al, 2015) found the programme was well resourced through funding from the pooled budgets of the North West London Collaboration of Clinical Commissioning Groups. This has enabled significant investments in co-design and planning, before developing pilot schemes. Several national barriers were identified by the authors to slowing the progress of the programme including:

- difficulties obtaining data-sharing agreements;
- clarifying and establishing the necessary information governance arrangements;
- separate payment systems and governance structures between sectors;
- and organisational fragmentation.

Combining IAPT and liaison psychiatry in Cambridge

Liaison psychiatry run by primary care as part of the IAPT provision.

Pennine Musculoskeletal Partnership Integrated Clinical Assessment and Treatment Service, Oldham

Community-based outpatient clinic led by two GPs. For patients with a range of rheumatological and orthopaedic conditions. Community based with a multidisciplinary team with both physical and psychiatric expertise. Service users receive specialist liaison psychiatric assessment and a detailed management plan.

Aitken, et al. (2014)

Organisation and delivery of care
Collaborative care

Collaborative care has been widely researched as an approach to the management of those with mental health issues.

Collaborative care has been found to be effective in adults with depression and anxiety disorders with improvement in outcomes including medication use, mental health quality of life, and patient satisfaction, although there was less evidence of benefit in physical quality of life (Archer et al, 2012, Coventry et al, 2014, Thota et al, 2012).

In those with severe mental illness, Intensive Case Management (ICM) (caseload of <20) has shown to reduce hospitalisation and increase retention in care (Dieterich et al. 2010).

Elements of collaborative care include: patient self-management support; enhanced multidisciplinary team work (Miller et al. 2013; Smith et al. 2012).

Little consideration has been given to the impact of socioeconomic deprivation on the effectiveness of collaborative care (Smith et al. 2012).

Organisation and delivery of care
Self-management

Self-management support has been associated with small but significant improvements in health outcomes (Panagioti et al. 2014), with a trend towards improved prescribing and drug adherence and has also found to be effective in improving self-efficacy and subjective health status in those with long term conditions (Coulter et al. 2015).

A recent Cochrane review (McBain et al. 2016) examining self management interventions for type 2 diabetes in adults with severe mental illness found an absence of evidence if the effectiveness of self-management strategies specifically tailored to meet the needs of those with severe mental illness.

Challenges encountered by patients in self-management have been identified by Liddy et al (2014) and include:

Screening/health checks

"By 2020/21, at least 280,000 people living with severe mental health problems should have their physical health needs met. They should be offered screening and secondary prevention reflecting their higher risk of poor physical health. This will reduce the health inequalities gap."
(NHS England, 2016).

Though guidance recommends that annual health checks for those with mental health issues the evidence suggests that those experiencing mental illness are not routinely offered health checks.

Lack et al. (2015) examined notes for 113 mentally ill patients. The authors reported that the mean number of contacts with outpatient services in the 12 months before was 6.9 but documented evidence of physical-health monitoring was seen in only 29 of the 113 patients.

Barnes et al. (2015) examined 21 - 32 mental health trusts who participated in an audit-based, quality improvement programme (QIP) from 2006-2012. The aim of the programme was to increase the frequency and quality of screening for the metabolic syndrome in people prescribed continuing antipsychotic medication. Barriers to screening identified by the authors included:

- uncertainty who was responsible for physical health screening (GP or psychiatric team):
- a lack of confidence in the interpretation of abnormal screening results and limited access to basic equipment such as a tape measure and weighing scales.
- clinicians maybe target patients for the assessment of metabolic side effects rather than routinely screen all patients.

Screening/health checks – case studies

The Northampton Physical Health and Wellbeing Project

This project has trained practice nurses from six primary care centres in Northampton, how to deliver health checks for patients with severe mental illness. All of the patients reported that they had started to make changes to their lifestyle since the health check.

Recommendations include: training for practice nurses to provide physical health checks for people with severe mental illness should emphasise the patients' views of what will make health checks effective (Hardy et al. 2012).

Physical health check protocol for patients with mental health problems in Bradford and Airedale

This programme offers those with a serious mental illness a regular physical health check. The checks follow a protocol using a digital template and are designed to pick up any emerging health problems and help the patient respond to them. The implementation of the physical health check protocol was facilitated by the creation of a digital template. All of the practices involved have received a training and engagement programme (Naylor et al. 2016).

Screening/health checks – case studies

Australian quality improvement collaborative to improve physical health checks in adults with schizophrenia (Plever et al. 2016) in Queensland Health, with 16 adult Mental Health Service Organisations (MHSOs).

A series of forums took place with clinical staff from all sites featuring expert speakers and service improvement presentations.

Results

From January 2012 to December 2014 patients receiving a 6 monthly health assessment increased from 12% to 58% of patients.

Key enablers:

- regular and meaningful communication of clinically relevant information;
- support for clinicians to network and share experiences;
- opportunity for professionals to collaboratively set targets to drive ongoing improvement and engagement.

Self-harm [1]

A systematic review (Chan et al. 2016) of risk factors to predict suicide following self-harm found a number of risk factors for suicide risk including: previous episodes of self-harm; physical health problems; suicidal intent and being male.

Geulayov, et al. (2015) examined data trends in non-fatal self-harm and its management in England during the 13-year period, 2000–2012 in individuals over 15 years of age presenting to five general hospitals in three cities (Oxford, Manchester and Derby). The authors reported between 2000 - 2012:

- 84,378 self-harm episodes (58.6% by females), involving 47,048 persons;
- Rates of self-harm were strongly correlated with suicide rates in England in males and females;
- Over 75% of self-harm episodes were due to self-poisoning;
- A little over 30% of the patients were receiving some form of psychiatric care at the time of presentation.

Psychosocial assessment by specialist mental health staff occurred in 53.2% of episodes.

Self-harm [2]

Examining data from the from the Multicentre Study of Self-harm in England, Townsend et al. (2016) investigated life problems associated with self-harm and their relationship to patient and clinical characteristics, including age, gender, repeat self-harm and employment status. The authors reported the following:

- **57%** were female and with a mean age of 33.1 years

- **92.6%** were identified as having at least one contributing life problem.

The most frequently reported problems at first episode of self-harm within the study period were:

- relationship difficulties (especially with partners).

- Mental health issues and problems with alcohol (especially in those aged 35-54 years, and those who repeated self-harm).

- Those who repeated self-harm were more likely to report problems with housing, mental health and dealing with the consequences of abuse.

Self-harm [3]

Kapur et al. (2013) investigated the relationship between four aspects of management (psychosocial assessment, medical admission, psychiatric admission, referral for specialist mental health follow up) and repetition of self-harm within 12 months at three centres in England (Oxford, Derby and Manchester). The authors reported:

- The provision of a psychosocial assessment by mental health staff – was associated with a 40% lower risk of repetition following self-harm in two of the three study centres.
- Psychosocial assessment might have the least impact on those from the most deprived areas.
- Those individuals who had self-harmed in the most deprived areas were the least likely to be in current psychiatric treatment.
- Psychological therapies shown to be associated with a reduced risk of repetition after self-harm are not widely available in most services.

A Cochrane systematic review (Hawton et al. 2016) examining psychosocial interventions for self-harm reported CBT-based psychological therapy can result in fewer individuals repeating self-harm.

Dialectical behaviour therapy for people with multiple episodes of Self-harm/probable personality disorder may lead to a reduction in frequency of Self-harm, but this finding was based on low quality evidence.

 The authors reported case management and remote contact interventions did not appear to have any benefits in terms of reducing repetition of Self-harm.

Lifestyle interventions [1]

The evidence base examining the effectiveness of interventions to improve lifestyle behaviours is an emerging one with research focused on those experiencing severe mental health issues.

Evidence to support the delivery of lifestyle interventions is mixed but interventions aimed at improving diet or exercise combined with cognitive behavioural therapy did show reductions in interventions in weight and improved physical health.

Successful programmes employed multiple components, personalisation, longer duration, more frequent contact, and trained treatment providers (Ward et al 2015; Hjorth et al. 2014; Cabassa et al. 2010).

A meta-review of health interventions to reduce risk of mortality in people with SMI (Baxter, et al. 2016) highlighted the following:

- Antipsychotic and antidepressant medications had some protective effect on mortality, subject to treatment adherence.
- Integrative community care programmes may reduce physical morbidity and excess deaths, but the effective ingredients are unknown.
- Interventions to improve unhealthy lifestyles and risky behaviours can improve risk factor profiles, but longer follow-up is needed.

Lifestyle interventions [2]

A literature review by Roberts et al. (2011) identified incentives and barriers for lifestyle interventions for those with severe mental illness identifying the following themes:

Barriers to the successful delivery of lifestyle intervention include:

- negative perceptions of people with severe mental illnesses amongst some health professionals;
- difficulties accessing GP and community-based services and;
- a lack of awareness of increased cardiovascular risk in people with severe mental illnesses by some health professionals. (Burton at al. 2015)

Identified facilitators included:

- involving supportive family, carers and friends;
- improving patient engagement with services;
- continuity of care;
- providing positive feedback in consultations and goal setting, (Burton at al. 2015).

Barriers:
Illness symptoms;
Treatment effects;
Lack of support;
Negative staff attitudes

Incentives:
Symptom reduction;
Peer and staff support;
Participation of staff;
Knowledge and personal attributes
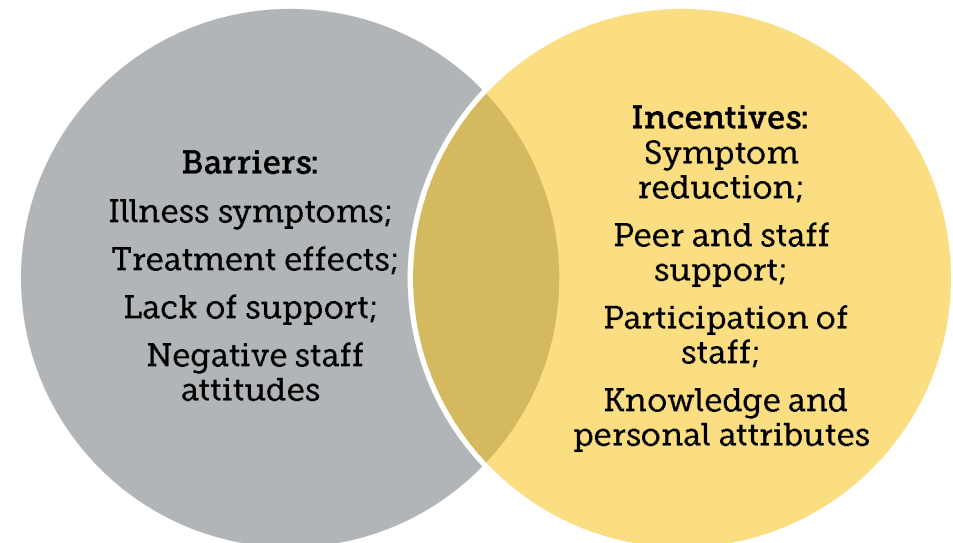
Lifestyle interventions
Diet and Obesity

A systematic review (Bonfioli et al. 2012) of weight management lifestyle intervention in psychosis found a 0.98 kg/m^2 reduction in the mean Body Mass Index of psychotic subjects. Notably, prevention studies with individual psychological educational programmes that include diet and/or physical activity seem to have the highest impact.

There is currently a lack of RCTs examining the effectiveness of dietary advice for people with schizophrenia (Pearsall et al. 2016).

Cimo et al. (2012) identified effective lifestyle interventions that enhance quality care in individuals who are suffering from type II diabetes and schizophrenia or other schizoaffective disorders. Successful interventions were those which included both dietary advice and physical activity.

Case study

A pilot study of the Diabetes Prevention Program on weight loss for adults at community mental health centres.

An evaluation of the Diabetes Prevention Program (DPP) implemented by community mental health centre (CMHC) clinicians to reduce weight for individuals with serious mental illnesses found that in participants who undertook the 16 week programme were nearly three times more likely to lose at least 5% of body weight (Srebnik et al. 2015).

Lifestyle interventions
Smoking Cessation

A review by Stubbs et al. (2015) found there was no consistent data to suggest that pharmacological interventions increase adverse events.

The authors noted that behavioural and psychosocial interventions also demonstrated potential to support smoking cessation in those with mental illness, especially when combined with pharmacotherapy.

A qualitative study (Rae et al. 2015) examining the factors affecting smoking cessation efforts of people with severe mental illness in a trial reported the following:

- Nicotine replacement therapy offered to those with severe mental illness in the intervention was considered very helpful by those offered it. Other participants desired access to non−nicotine replacement therapy aids, such as electronic cigarettes, or medications available in pill form (e.g., varenicline and bupropion) because these were considered more effective, trustworthy, and easier to take by those in the study.
- Patients appreciated that peer group support meetings increased accountability and offered the opportunity to voice concerns, ask questions, and learn from others.
- Participants consistently reported that they smoked in an attempt to ease their symptoms of mental illness. Periods of worsened mental illness were perceived to have caused increases in smoking.

Lifestyle interventions
Exercise and substance misuse

Exercise

A meta-analysis on the effectiveness of exercise therapy in adults with serious mental illness (Pearsall, et al. 2014) found exercise programmes had a modest beneficial effect on levels of exercise activity but did not lead to an improvement in body mass index, negative or positive symptoms of schizophrenia, or the individual's quality of life.

A systematic review (Dauwan, et al. 2016) of exercise interventions for those with schizophrenia found beneficial effects on quality of life and depressive symptoms. Interventions included supervised group exercise programs of at least 30min/day, 3 times per week for minimally 12 weeks.

The authors reported a need for future studies to be of longer duration.

Substance misuse

The type of mental illness, substance use, setting and standard care make it difficult to conclude which are the most effective intervention in reducing substance abuse in those with mental health issues.

There is some evidence pointing to motivational interviewing and compulsory community treatment as possible successful approaches (Kisely and Campbell 2014; Hunt et al. 2013).

Peer support [1]

The role of peer support to aid recovery; support self-management and promote lifestyle interventions is highlighted within the literature. The Mental Health Foundation (2015) defines peer support as the "help and support that people with lived experience of a mental illness or a learning disability are able to give one another".

A review of the literature (Repper and Carter, 2010) exploring the benefits and challenges presented in the employment of peer support workers identified various benefits of peer support including:

Benefits for the system: Increased communication; reduced workload for staff.

Benefits for Peer Support Workers: Aiding continuing recovery

Benefits for those receiving peer support included: Social Support and Social Functioning; Empathy and Acceptance; Reduced Stigma
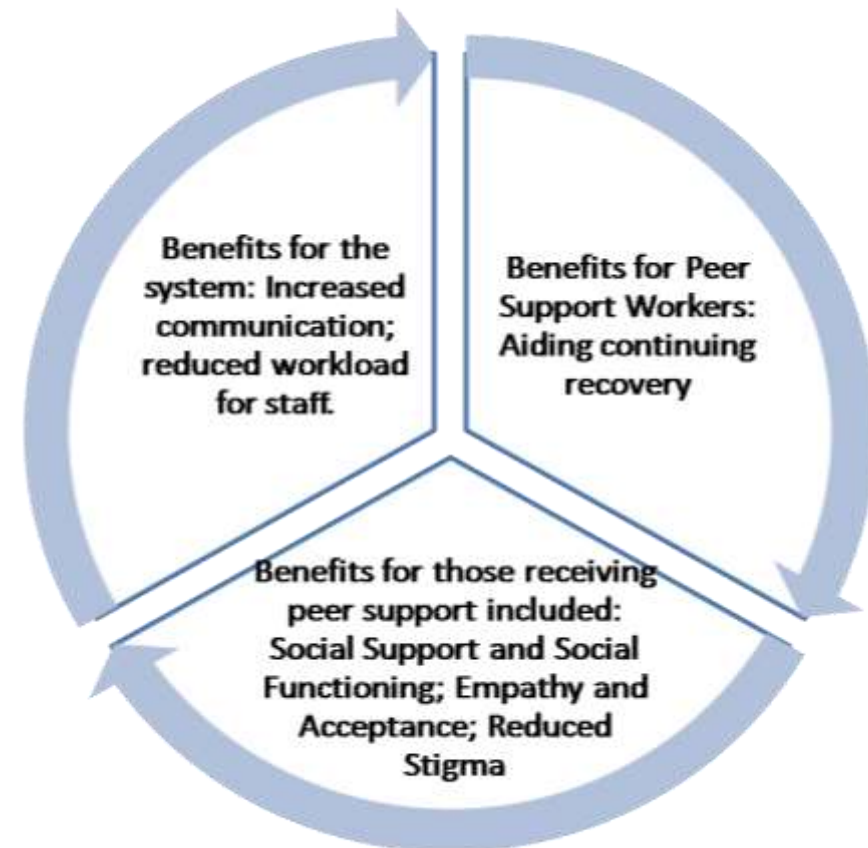
Peer support [2]

A review (Repper and Carter, 2010) identified various issues to consider when implementing and adopting peer support including:

- training programmes need to be introduced to staff in local mental health service with a focus on the evidence base behind recovery and peer support;

- a standardised role description is essential but this needs to be sufficiently flexible to enable peer support workers to develop their role;

- peer support workers should draw on their own experiences of recovery;

- recruitment of people who have first-hand experience of mental health problems;

- a standardised training programme is required to train peer support workers in the fundamental skills required for their position;

- supervision is available to the peer support workers, both clinical from team leaders and with other peer support workers;

- at least two peer support workers should be employed in each team/service to reduce the; risk of isolation and coercion to other mental health agendas.

Appendix 2

STP summary indicators and nearest neighbour comparators

Identifying 'nearest neighbours' for each STP

In order to make meaningful judgements about the relative difference between health, utilisation and other outcomes for any given area, comparison with like areas should be used (rather than a national reference point)

The key indicators we have used in determining which STPs have the most alike population to yours are;

1. Average overall index score of multiple deprivation scores
2. Average health domain scores
3. Resident population size
4. Average population density (people per km^2)
5. Ratio of resident population size to GP registered population size
6. Proportion of the population aged under 5, 5-14, 15-24 and 75+
7. Percentage of Black origin
8. Percentage of Asian origin

Pythagoras formula measures the distance between two points. Using the same principle, the distance function calculates the Euclidean distance between two STP over the 8 indicators.

$$d(a,b) = \sqrt{(a_1 - b_1)^2 + \left(a_2 - b_2\right)^2 + \cdots + (a_8 - b_8)^2}$$

To prevent bias in the calculation of the distance function, each indicator will be standardised.

If the indicators were not standardised then those with large values would dominate the calculation of the distance function.

A z score calculates how many standard deviations an STP is away from the mean. This approach has been used to standardise each of the indicators before being used to calculate the Euclidean distance between any two STPs.

$$z = \frac{X - \mu}{\sigma}$$

Your nearest neighbours

The five most similar STP areas to yours, according to the above variables, in order of 'likeness' are;

1	Derbyshire
2	Coast Humber & Vale
3	Suffolk & North East Essex
4	Shropshire & Telford & Wrekin
5	Durham Darlington & Tees Hambleton Richmondshire & Whitby

When planning a response to the issues identified in this report, it may be worthwhile to consider what programmes and plans these other areas are putting into place to integrate physical and mental health, or indeed what they have implemented successfully in the past should their outcomes be markedly better than yours.

STP comparison for key indicators

| Indicator | Your STP : Staffordshire | | Nearest Neighbours | | | | | | | | | |
| | | | Derbyshire | | Coast Humber & Vale | | Suffolk & North East Essex | | Shropshire & Telford & Wrekin | | Durham Darlington & Tees Hambleton Richmondshire & Whitby | |
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Life expectancy at birth | Mental Health	64.7	70.7	66.2	71.1	62.3	69.8	63.8	67.5	59.9	66.7	59.4	66.1
Life expectancy at birth | Non-Mental Health	81.5	84.7	81.6	85.1	81.3	84.4	82.6	85.6	82.7	86.3	81.4	84.2
Life expectancy gap | absolute	16.8	14.0	15.4	13.9	19.1	14.6	18.9	18.2	22.8	19.6	22.0	18.0
Life expectancy gap | relative (%)	26.0%	19.8%	23.2%	19.6%	30.6%	20.9%	29.6%	27.0%	38.1%	29.4%	37.1%	27.3%
Mortality DSR per 100,000 | Circulatory	768	646	746	668	911	791	785	751	1,005	728	1,014	805
Mortality DSR per 100,000 | Cancers	623	531	567	468	721	570	763	560	892	842	841	704
Mortality DSR per 100,000 | Respiratory	492	401	459	412	530	496	501	406	426	475	528	553
Mortality DSR per 100,000 | Digestive	318	192	227	196	349	215	278	232	288	286	319	251
Mortality DSR per 100,000 | Endocrine & Metabolic	52	47	57	55	84	72	70	53	96	73	90	48
Acute Utilisation DSR | Accident & Emergency	721		513		742		760		641		798	
Acute Utilisation DSR | Non-Elective Inpatient	307		329		269		331		300		375	
Acute Utilisation DSR | Elective Inpatient	47		39		56		45		41		50	
Acute Utilisation DSR | Day Case	185		164		187		180		167		204	
Acute Utilisation DSR | Outpatient	2,373		1,785		1,935		3,818		2,474		2,140	
Acute Utilisation DSR | Diagnostics	1,481		1,295		1,182		1,536		1,313		1,644	
Potential for reducing activity | A&E	17990 (17.7 %)		6910 (11.3 %)		20310 (14.2 %)		9610 (12.9 %)		4430 (11.7 %)		16970 (14.7 %)	
Potential for reducing costs (£ 000's) | A&E	1653 (16.3 %)		694 (9.3 %)		1788 (13.5 %)		942 (11.6 %)		412 (10.4 %)		1612 (13.6 %)	
Potential for reducing activity | Inpatient	16150 (28.6 %)		14440 (24.8 %)		18190 (25.3 %)		11400 (24.1 %)		5370 (26.4 %)		20650 (26.9 %)	
Potential for reducing costs (£ 000's) | Inpatient	32889 (29.2 %)		28558 (26 %)		36040 (27 %)		24614 (24.5 %)		12035 (24.8 %)		40937 (26.6 %)	

Appendix 3

CCG summary indicators

The small number of service users at CCG level in certain cohorts and age groups preclude detailed analysis (or at least the interpretation of them) at that level for many of the measures in this report.

However; in order to facilitate more local planning and/or place-based discussion within STP work programmes, we have extracted the following relevant information from both our data and other external sources for your constituent CCGs.

- Numbers of patients in each MH cohort
- Numbers of patients on Primary Care mental health registers
- Crude utilisation rates for mental health service users across key points of delivery
- Crude mortality rates for mental health service users for most common diseases

The CCGs contained within your STP area footprint are;

CCG Code	CCG Name
04Y	Cannock Chase
05D	East Staffordshire
05G	North Staffordshire
05Q	SE Staffs & Seisdon Peninsula
05V	Stafford & Surrounds
05W	Stoke On Trent

For more information on a wide array of mental health and population indicators at CCG level please visit the Mental Health, Dementia and Neurology Intelligence Network here;

https://fingertips.phe.org.uk/profile-group/mental-health

Key indicators for CCGs

Indicator	Cannock Chase	East Staffordshire	North Staffordshire	SE Staffs & Seisdon Peninsula	Stafford & Surrounds	Stoke On Trent
Mental Health service users | Total	9,305	12,755	13,806	18,568	9,138	18,428
Mental Health service users | Cognitive Impairment	1,833	1,710	4,287	2,865	1,885	5,152
Mental Health service users | Severe and Other Psychosis	1,854	2,124	3,277	3,352	1,905	4,544
Mental Health service users | Personality Disorders	187	134	236	290	163	379
Mental Health service users | Common and Non-Psychotic	2,635	2,998	3,791	5,792	2,491	5,313
Mental Health service users | Unassigned	2,796	5,789	2,215	6,269	2,694	3,040
Patients on QOF register | Dementia	1,064	1,061	2,100	1,713	1,209	2,482
Patients on QOF register | Mental Health	850	847	1,683	1,464	974	2,648
Patients on QOF register | Depression	10,459	7,994	16,190	14,460	9,212	24,939
Patients on QOF register | Learning Disabilities	649	678	893	945	464	1,808
Acute utilisation cost per 1,000 | Accident & Emergency	£78,515	£65,010	£73,759	£71,765	£72,199	£82,409
Acute utilisation cost per 1,000 | Non-Elective Inpatient	£791,244	£642,762	£1,071,141	£652,409	£901,286	£986,180
Acute utilisation cost per 1,000 | Elective Inpatient	£103,845	£86,743	£258,170	£87,743	£142,353	£231,481
Acute utilisation cost per 1,000 | Day Case	£130,335	£100,688	£138,749	£104,311	£134,180	£138,463
Acute utilisation cost per 1,000 | Outpatient	£165,444	£132,782	£146,766	£152,691	£174,994	£147,381
Mortality Rate per 100,000 | Circulatory	85.0	98.9	87.0	87.1	99.9	75.6
Mortality Rate per 100,000 | Cancers	55.5	48.6	60.2	44.1	66.9	65.2
Mortality Rate per 100,000 | Respiratory	57.3	41.5	76.1	41.3	41.1	54.0
Mortality Rate per 100,000 | All causes	411.7	371.0	474.9	352.7	401.3	372.2

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Appendix 4

Methods for allocation to mental health service user sub-groups

Introduction

There are 6 data driven algorithms used to determine the appropriate mental health cohort allocation of service users.

These are a mixture of clinical judgements, such as an assignment to PbR cluster or clinical diagnoses recorded, and other administrative codes e.g. treatment specialties or type of mental health episode found in the mental health and acute data sets.

These are applied in the following order:

1. ICD-10 diagnosis codes found in Mental Health datasets
2. PbR cluster codes found in Mental Health 'episodes' of care tables
3. PbR cluster codes found in Mental Health 'events' tables
4. Types of care episode provided in Mental Health datasets
5. ICD-10 diagnosis codes found in linked inpatient datasets
6. Mental Health specialty treatment codes found in linked outpatient datasets

Where different algorithms assign patients to more than 1 cohort, the most chronic is retained e.g. Psychosis patient with an acute inpatient episode citing depression as diagnosis is retained within the Psychosis cluster.

The following hierarchy is used after all 6 algorithms have run to assign patients to a single cluster:

Cohort 1 – Cognitive Impairment including dementia

Cohort 2 – Psychoses

Cohort 3 – Personality Disorders

Cohort 4 – Common and other mental health conditions

Cohort 5 – Mental health with no diagnosis

Additionally, as part of the wider analytical work and for comparison, 2 further cohorts are specified;

Cohort 6 – Physical health needs with no mental health diagnosis (patients not recorded in MHMDS but encountering physical health services)

Cohort 7 – The 'well' population (remainder of total population after removal of the above 6 cohorts)

Algorithm 1

Algorithm 1 uses the most recent primary and secondary MH diagnosis codes from MHMDS records to assign patients on the following basis:

ICD-10 Code/Description	
F00	Dementia in Alzheimer disease
F01	Vascular dementia
F02	Dementia in other diseases
F03	Unspecified dementia
F04	Organic amnesic syndrome
F05	Delirium
F06-F07	Other disorders due to brain damage, dysfunction or physical disease
F09	Unspecified organic or symptomatic mental disorder
G30	Alzheimer disease
G311	Senile degeneration of brain

Cohort 1: Cognitive Impairment / Dementia

ICD-10 Code/Description	
F20-F29	Schizophrenia, schizotypal and delusional disorders
F30-F31	Mania and Bipolar Affective Disorders
F323*	Major depressive disorder, severe with psychotic features
F324*	Major depressive disorder, in partial remission
F329*	Major depressive disorder, unspecified
F333*	Major depressive disorder, recurrent, severe with psychotic symptoms
F3341*	Major depressive disorder, recurrent, in partial remission
F338*	Other recurrent depressive disorders
F339*	Major depressive disorder, recurrent, unspecified

Cohort 2: Psychoses

ICD-10 Code/Description	
F60-F69	Disorders of adult personality and behaviour

Cohort 3: Personality Disorders

ICD-10 Code/Description	
F10-F19	Mental and behavioural disorders due to psychoactive substance use
F32-F33*	Depressive disorders
F34, F38, F39	Mood [affective] disorders
F40-F48	Neurotic, stress-related and somatoform disorders
F50-F59	Behavioural syndromes assoc. with physiological disturbances & physical factors
F70-F79	Mental retardation
F80-F89	Disorders of psychological development
F90-F98	Behavioural and emotional disorders

* Some of the F32-F33 codes are assigned to psychosis – see Cohort 2.

Cohort 4: Common / other mental health conditions

ICD-10 Code/Description	
F99	Unspecified mental disorder

Cohort 5: Mental Health, no specific diagnosis

Algorithms 2 & 3

Algorithm 2 uses the PbR cluster assigned in 'Episodes' table and algorithm 3 from 'Event' tables in the Mental Health Minimum Dataset (MHMDS) on the following basis:

Clusters 18-21	Clusters 10-17	Cluster 8	Clusters 1-7	Cluster 0
Cohort 1: Cognitive Impairment / Dementia	Cohort 2: Psychoses	Cohort 3: Personality Disorders	Cohort 4: Common / other mental health conditions	Cohort 5: Mental Health, no specific diagnosis

Algorithm 4

Where there is no specific PbR cluster recorded (i.e. cluster 0 or NULL) for a patient in MHMDS, algorithm 4 uses the type of episodic care from MHMDS to assign patients with likely psychosis on the following basis:

Type	
INPAT	Inpatient episode
MHA	Mental Health Act episode
PROSP	Hospital Provider spell
WRDST	Ward Stay within Hospital Provider spell
AWOL	Absence without leave
LOA	Leave of absence
RCALL	Supervised community treatment recall
SCT	Supervised community treatment

No patients are assigned to Cohort 1 in this algorithm

No patients are assigned to Cohort 3 in this algorithm

No patients are assigned to Cohort 4 in this algorithm

No patients are assigned to Cohort 5 in this algorithm

Cohort 1: Cognitive Impairment / Dementia

Cohort 2: Psychoses

Cohort 3: Personality Disorders

Cohort 4: Common / other mental health conditions
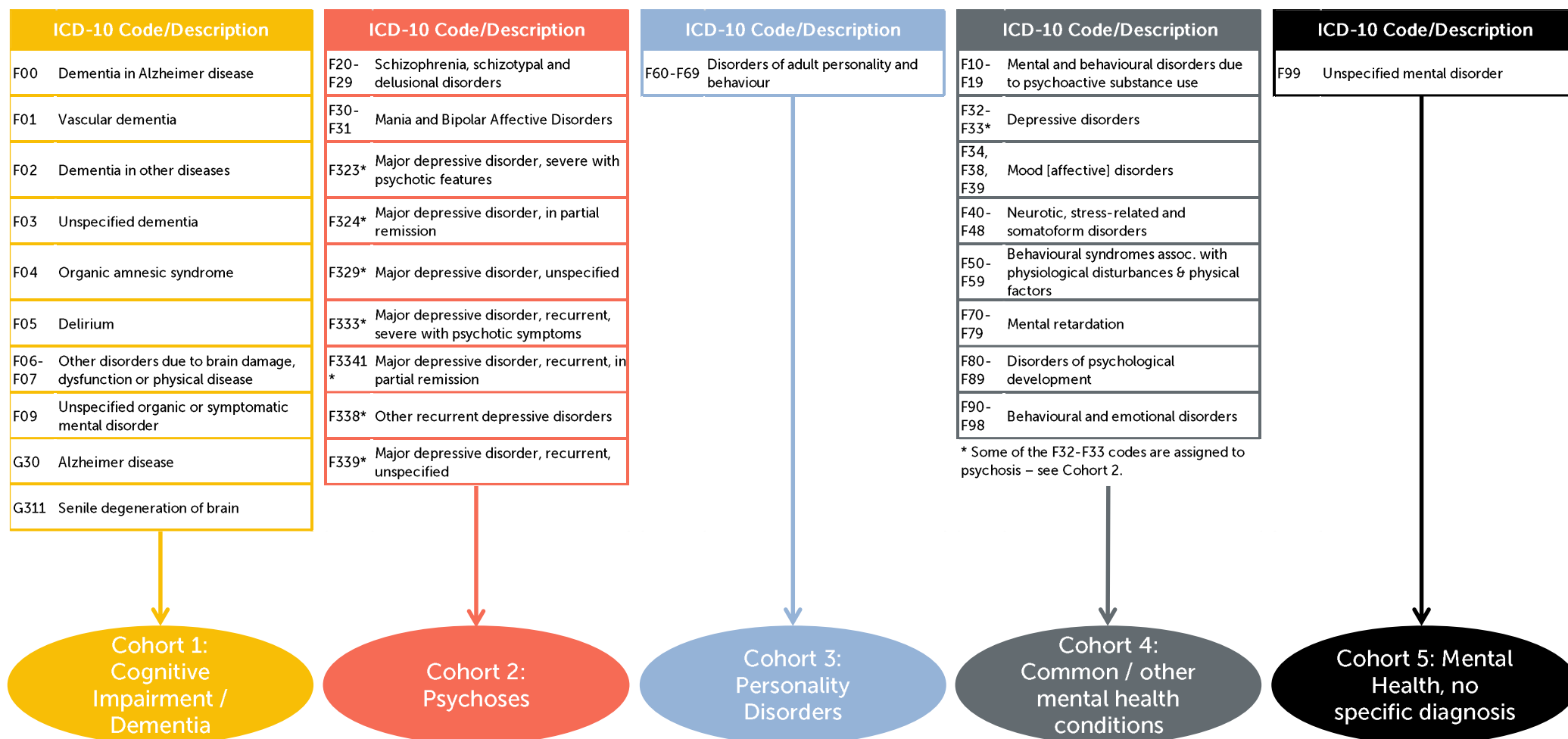
Cohort 5: Mental Health, no specific diagnosis

Algorithm 5

Where there is no specific diagnosis in MHMDS already, algorithm 5 uses first 20 diagnoses from linked HES inpatient records to assign patients on following basis (same ICD-10 diagnosis codes as algorithm 3 with the exception of Cohort 3):

ICD-10 Code/Description	
F00	Dementia in Alzheimer disease
F01	Vascular dementia
F02	Dementia in other diseases
F03	Unspecified dementia
F04	Organic amnesic syndrome
F05	Delirium
F06-F07	Other disorders due to brain damage, dysfunction or physical disease
F09	Unspecified organic or symptomatic mental disorder
G30	Alzheimer disease
G311	Senile degeneration of brain

ICD-10 Code/Description	
F20-F29	Schizophrenia, schizotypal and delusional disorders
F30-F31	Mania and Bipolar Affective Disorders
F323*	Major depressive disorder, severe with psychotic features
F324*	Major depressive disorder, in partial remission
F329*	Major depressive disorder, unspecified
F333*	Major depressive disorder, recurrent, severe with psychotic symptoms
F3341*	Major depressive disorder, recurrent, in partial remission
F338*	Other recurrent depressive disorders
F339*	Major depressive disorder, recurrent, unspecified

ICD-10 Code/Description	
F60-F69	Disorders of adult personality and behaviour
1dx = X60-X84 And 2dx = F60-F69	Primary diagnosis of Intentional self-harm and Secondary diagnosis of disorders of adult personality and behaviour

ICD-10 Code/Description	
F10-F19	Mental and behavioural disorders due to psychoactive substance use
F32-F33*	Depressive disorders
F34, F38, F39	Mood [affective] disorders
F40-F48	Neurotic, stress-related and somatoform disorders
F50-F59	Behavioural syndromes assoc. with physiological disturbances & physical factors
F70-F79	Mental retardation
F80-F89	Disorders of psychological development
F90-F98	Behavioural and emotional disorders

* Some of the F32-F33 codes are assigned to psychosis – see Cohort 2.

ICD-10 Code/Description	
F99	Unspecified mental disorder

Cohort 1: Cognitive Impairment / Dementia

Cohort 2: Psychoses

Cohort 3: Personality Disorders

Cohort 4: Common / other mental health conditions

Cohort 5: Mental Health, no specific diagnosis

Algorithm 6

Where there is no diagnosis code in HES inpatient data, algorithm 6 uses the treatment speciality recorded in linked outpatient appointments to assign patients on the following basis:

Specialty Code/Description	
715	Old age psychiatry
727	Dementia assessment

Specialty Code/Description	
711	Child and Adolescent psychiatry
712	Forensic psychiatry
723	Psychiatric intensive care
724	Perinatal psychiatry
726	Mental Health dual diagnosis

Specialty Code/Description	
700	Learning Disability
710	Adult mental illness
713	Psychotherapy
720	Eating disorders
721	Addiction services
722	Liaison psychiatry
725	Mental health recovery and rehabilitation

There are no treatment functions specifically addressing personality disorders, although patients may be treated within other generic specialties. It is not possible to detangle them other than via diagnosis codes (which will already have been picked up in Algorithm 1 or 5)

At this stage, all remaining patients in the MHMDS with no cohort assignment using any of the 6 algorithms are retained within Cohort 5

Cohort 1: Cognitive Impairment / Dementia

Cohort 2: Psychoses

Cohort 3: Personality Disorders

Cohort 4: Common / other mental health conditions

Cohort 5: Mental Health, no specific diagnosis

Links to full list of diagnosis codes and treatment specialty codes and list of episode types

ICD-10 diagnosis codes (2014 version)
http://apps.who.int/classifications/icd10/browse/2014/en

Treatment specialty codes
http://www.datadictionary.nhs.uk/data_dictionary/attributes/t/tran/treatment_function_code_de.asp?shownav=1

Mental Health episode types (MHMDS version 4.1)

Types		Types		Types	
AWOL*	Absence Without Leave	DDISC	Delayed Discharge	PROSP*	Hospital Provider Spell
CAREH	Mental Health NHS Care Home Stay Episode	HBCAR	Acute Home-based Care Episode	RCALL*	Supervised Community Treatment Recalls
CCASS	Care Co-ordinator Assignment	HOMEL	Home Leave	RCASS	Responsible Clinician Assignment
CLUST	Payment by Results Care Cluster	INPAT*	Inpatient Episode	REF	Referral
COMMH	Community Mental Health Team	LOA*	Leave of Absence	SCT*	Supervised Community Treatment
CPA	Care programme approach	MHA*	Mental Health Act Event Episode	TMEP	Mental Health Team Episode
DAYEP	NHS Day Care Episode	OPEP	Consultant Outpatient Episode	WRDST*	Ward Stay within Hospital Provider Spell

Appendix 5

Notes on attributable activity and savings

Notes on attributable activity and saving calculations

Avoidable activity:

We report all spells and attendances that meet definitions for potentially avoidable activity. We acknowledge however that not all of this activity will be amenable to avoidance strategies. For example, ambulatory care sensitive admissions are those that may have been avoided if improved primary care or community services had been available.

Definitions of ambulatory care sensitive admissions make reference to a patient's diagnoses and the procedures carried out in hospital. We have identified all activity that meets these definitions. This does not imply that all of the identified activity could have been avoided.

Savings:

Potential savings are calculated by comparing the actual spend on acute services for the mental health cohort to an expected level of spend. The expected level of spend is calculated by applying the spend rate of the non-mental health cohort by age-sex strata to the mental health cohort populations defined in chapter 3.

This expected spend rate should be seen as a benchmark, but reducing spend to this level may not be wholly achievable or clinically appropriate.

Because individual spells can meet the definition for a number of subgroups simultaneously, the sum of savings across subgroups may be more than the total savings available. For example it is possible that a spell might fit the definition for both a frail elderly patient whose health needs could be managed in non-acute settings and an admission via A&E with a primary mental health diagnosis. In total, around 40% of the inpatient spells selected for one of the subgroups will overlap into at least one other subgroup.

The total potential savings figures provided in the report include a correction to account for these overlaps.

If an emergency hospital admission is identified as potentially avoidable through some preventative intervention, then the prior A&E attendance may also have been avoided.

These additional potential savings across multiple points of delivery are not calculated here. This pack highlights only the potential savings within a point of delivery.

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Appendix 6

Full list of references

References

Executive Summary

Community and Mental Health Team. HES-MHLDDS data linkage report, April 2015 to November 2015. HSCIC, March 2016.

Dieterich M (2010) Intensive case management for severe mental illness. Cochrane Database Systematic Reviews. (10):CD007906. Available from: http://onlinelibrary.wiley.com/doi/10.1002/14651858

HM G. No health without mental health: a cross-government mental health outcomes strategy for people of all ages. London: Department of Health, 2011. Available from: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_123991

NHS England (2016). The five Year Forward for Mental Health. Available from: https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf

Mental Health Foundation (2013) Crossing Boundaries. Improving Integrated Care for People with Mental Health Problems. Available from: https://www.mentalhealth.org.uk/sites/default/files/crossing-boundaries.pdf

Panagioti M et al. (2014) Self-management support interventions to reduce health care utilisation without compromising outcomes: a systematic review and meta-analysis. BMC Health Services Research. 14:356. Available from: http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-14-356

Royal College of Psychiatrists (2014), Whole-person care: from rhetoric to reality Achieving parity between mental and physical health. Available from: http://www.rcpsych.ac.uk/files/pdfversion/OP88xx.pdf

Chapter 1 - The Life Expectancy of Mental Health Service Users

Appleby L et al. Sudden unexplained death in psychiatric in-patients. British Journal of Psychiatry (2000), 176, 405-406

Chesney E, Goodwin GM & Fazel S. Risks of all-cause and suicide mortality in mental disorders: a meta-review. World Psychiatry 2014;13:153–160

Chiang CL, The life table and its construction. From: Introduction to stochastic processes in Biostatistics. New York: John Wiley & Sons 1968, Chapter 9, 189-214.

Eayres D. Technical briefing 3: Commonly used public health statistics and their confidence intervals. Association of Public Health Observatories, March 2008.

Eayres D & Williams ES. Evaluation of methodologies for small area life expectancy estimation. J Epidemiol Community Health. 2004 Mar;58(3):243-9

Emerson E & Baines S (2010) Health Inequalities and People with Learning Disabilities in the UK: 2010. Durham: Improving Health & Lives: Learning Disabilities Observatory.

Hibbard KR, Propst A, Frank DE & Wyse J. Fatalities associated with clozapine-related constipation and bowel obstruction: a literature review and two case reports. Psychosomatics. 2009 Jul-Aug;50(4):416-9

Lawrence, D. & Kisely, S. Inequalities in healthcare provision for people with severe mental illness. J Psychopharmacol, 2010, 24 (4), 61-68.

Laursen TM. Life expectancy and cardiovascular mortality in persons with schizophrenia. Curr Opin Psychiatry. 2012 Mar;25(2):83-8

Office for National Statistics. Mortality statistics: Metadata pp. 15-18. July 2015

Prior P, Hassall C & Cross KW. Causes of death associated wit psychiatric illness. Journal of Public Health Medicine. Vol. 18, No. 4,pp. 381-389.

Russ TC et al. Association between psychological distress and mortality: individual participant pooled analysis of 10 prospective cohort studies. BMJ 2012;345:e4933

Suresh Kumar PN & Thomas B. Hyperglycemia associated with olanzapine treatment. Indian J Psychiatry. 2011 Apr-Jun; 53(2): 176–177

Wahlbeck K et al. Outcomes of Nordic mental health systems: life expectancy of patients with mental disorders. The British Journal of Psychiatry (2011) 199, 453–458.

Chapter 2 - Acute Hospital Utilisation of Mental Health Service Users

Department of Health (2013) Mental Health Clustering Booklet (2013/14). Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214908/Mental-Health-Clustering-Booklet.doc

A guide to using PbR data extracts

http://content.digital.nhs.uk/media/12502/pbr-data-user-guide-v1/pdf/PbR_data_user_guide_v1.0.pdf

NHS Digital SUS PbR Guidance reference resource

http://content.digital.nhs.uk/sus/pbrguidance

NHS reference information

https://www.gov.uk/government/publications/nhs-reference-costs-2014-to-2015

NHS Digital guide to HES data

http://content.digital.nhs.uk/hes

Chapter 3 - Opportunities to Reduce Acute Hospital Utilisation

Reynolds, M., Hickson, M., Jacklin, A., Franklin, B., 2014. A descriptive exploratory study of how admissions caused by medication-related harm are documented within inpatients' medical records. BMC Health Services Research 14, 257. doi:10.1186/1472-6963-14-257

Appendix 1 – The Links between Mental Health and Physical Health - A Summary of the Evidence

Archer J, et al (2012) Collaborative care for depression and anxiety problems. *Cochrane Database Systematic Reviews.* 10, CD006525.

Aitken, P. et al. (2014) An Evidence Base for Liaison Psychiatry - Guidance. Mental Health Partnerships. http://mentalhealthpartnerships.com/wp-content/uploads/sites/3/2-evidence-base-for-liaison-psychiatry-services.pdf [accessed March 2017].

Barnes TR et al. (2015) Screening for the metabolic side effects of antipsychotic medication: findings of a 6-year quality improvement programme in the UK. *BMJ Open.* 5 (10), e007633.

Barnett, P.G et al. (2015) Cost-effectiveness of smoking cessation treatment initiated during psychiatric hospitalization: analysis from a randomized, controlled trial. *Journal of Clinical Psychiatry.* 76(10), e1285-91.

Barnet, K. et al. (2013) Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. *The Lancet.* 380(9836), 37-43.

Baxter, A.J. et al. (2016) Reducing excess mortality due to chronic disease in people with severe mental illness: a meta-review of health interventions. *British Journal of Psychiatry.* 208 (4), 322-9.

Blakemore A et al. (2014) Depression and anxiety predict health-related quality of life in chronic obstructive pulmonary disease: systematic review and meta-analysis. *International Journal of Chronic Obstructucy Pulmonary Disorder.* 20 (9),501-12.

Burton A. et al. (2015) Lowering Cardiovascular Disease Risk for People with Severe Mental Illnesses in Primary Care: A Focus Group Study. *PLoS One.* 10 (8), e0136603.

Bonfioli, E. (2012) Health promotion lifestyle interventions for weight management in psychosis: A systematic review and meta-analysis of randomised controlled trials. *BMC Psychiatry.* 12, 78.

Bradford D.W. et al (2013) An evidence synthesis of care models to improve general medical outcomes for individuals with serious mental illness: a systematic review. *Journal of Clinical Psychiatry.* 74(8), e754-64.

Cabassa, L. J.et al. (2010) Lifestyle interventions for adults with serious mental illness: A systematic literature review. *Psychiatric Services.* 61(8), 774-782.

Chan M.K. et al. (2016) Predicting suicide following self-harm: systematic review of risk factors and risk scales. British Journal of Psychiatry. 209(4):277-283.

Chang CK et al. (2011) Life expectancy at birth for people with serious mental illness and other major disorders from a secondary mental health care case register in London. *PLoS ONE.* 6 (5): e19590.

Chatterjee S. et al (2016) Type 2 Diabetes as a Risk Factor for Dementia in Women Compared With Men: A Pooled Analysis of 2.3 Million People Comprising More Than 100,000 Cases of Dementia. *Diabetes Care.* 39(2), 300-7.

Cimo, A. et al. (2012) Effective lifestyle interventions to improve type II diabetes self-management for those with schizophrenia or schizoaffective disorder: A systematic review. *BMC Psychiatry.* 12, 24.

Coulter A et al. (2015) Personalised care planning for adults with chronic or long-term health conditions. *Cochrane Database Systematic Reviews.* 3, CD010523.

Coventry PA, et al (2014) Characteristics of effective collaborative care for treatment of depression: a systematic review and meta-regression of 74 randomised controlled trials. *PLoS One.* 29, (9), e108114.

Dauwan, M. et al. (2016) Exercise Improves Clinical Symptoms, Quality of Life, Global Functioning, and Depression in Schizophrenia: A Systematic Review and Meta-analysis. *Schizophrenia Bulletin.* 42(3), 588-599.

Dieterich M(2017) Intensive case management for severe mental illness. *Cochrane Database Systematic Reviews.* 1: CD007906

Dorning H. et al. (2015) People with mental ill health and hospital use. London. The Nuffield Trust. http://www.qualitywatch.org.uk/content/summary-people-mental-ill-health-and-hospital-use [accessed March 2017]

Goodwin N, et al. (2012) Integrated care for patients and populations: Improving outcomes by working together. London. The Kings Fund. http://www.kingsfund.org.uk/sites/files/kf/integrated-care-patients-populations-paper-nuffield-trust-kings-fund-january-2012.pdf [accessed March 2017]

Grassi L, et al. (2015) Consultation-Liaison Psychiatry in the General Hospital: the Experience of UK, Italy, and Japan. *Current Psychiatry Reports.* 44 (17).

Geulayov, G. et al. (2015) Epidemiology and trends in non-fatal self-harm in three centres in England, 2000–2012: findings from the Multicentre Study of Self-harm in England. *BMJ Open.* 6:e010538.

Hardy et al. (2012) The Northampton Physical Health and Wellbeing Project: the views of patients with severe mental illness about their physical health check. *Mental Health Family Medicine.* 9 (4), 233-40.

Hawton K. et al. (2016) Psychosocial interventions for self-harm in adults. *Cochrane Database Systematic Reviews.* CD012189.

Health and Social Care Information Centre's (HSCIC) (2013) Mental Health Minimum Dataset (MHMDS). Health and Social Care Information Centre. http://content.digital.nhs.uk/article/2543/Mortality-rate-three-times-as-high-among-mental-health-service-users-than-in-general-population [accessed March 2017]

Hjorth P. et al. (2014) A systematic review of controlled interventions to reduce overweight and obesity in people with schizophrenia. *Acta Psychiatrica Scandinavica.* 130 (4), 279-89.

Hopkinson, J.B. et al. (2016) People with dementia: what is known about their experience of cancer treatment outcomes? A systematic review. **Psychooncology.** 25 (10), 1137-1146.

Hunt et al. (2013) Psychosocial interventions for people with both severe metal illness and substance misuse. *Cochrane Database of Systematic Reviews.* CD001088.

Kapur N, et al. (2013) Does clinical management improve outcomes following self-harm? Results from the Multicentre Study of Self-harm in England. *PLoS ONE.* 3;8: e70434

Kisely S.R. and Campbell L.A. (2014) Compulsory community and involuntary outpatient treatment for people with severe mental disorders. *Cochrane Database of Systematic Reviews.* (12), CD004408.

Killaspy, et al. (2016) Clinical outcomes and costs for people with complex psychosis; a naturalistic prospective cohort study of mental health rehabilitation service users in England. *BMC Psychiatry.* 16, 95.

Lack D et al. (2015) Poor monitoring of physical health in patients referred to a mood disorders service. *Therapeutic Advances in Psychopharmacolology* 5 (1), 22-5.

Liddy C. Et al. (2014) Challenges of self-management when living with multiple chronic conditions: systematic review of the qualitative literature. *Canadian Family Physician.* 60 (12), 1123-33.

Marmot M (2010) Fair Society, Healthy Lives. London. Institute of Health Equity. http://www.instituteofhealthequity.org/Content/FileManager/pdf/fairsocietyhealthy lives.pdf [accessed March 2017]

McAneney H. Et al. (2015) Individual factors and perceived community characteristics in relation to mental health and mental well-being. *BMC Public Health.* 12 (15), 1237.

Martin JL et al. (2014) Impact of socioeconomic deprivation on rate and cause of death in severe mental illness. *BMC Psychiatry.* 12 (14), 261.

McBain, H. et al. (2016) Self-management interventions for type 2 diabetes in adult people with severe mental illness. Cochrane Database of Systematic Reviews. 4, CD011361.

Mental Health Foundation (2015) Peer Support. London. Mental Health Foundation. http://www.mentalhealth.org.uk/help-information/mental-health-a-z/P/peer-support/ [accessed February 2017]

Mental Health Foundation (2013) Crossing Boundaries. Improving Integrated Care for People with Mental Health Problems. London. Mental Health Foundation. https://www.mentalhealth.org.uk/sites/default/files/crossing-boundaries.pdf [accessed March 2017]

Miller C.J et al. (2013) Collaborative chronic care models for mental health conditions: cumulative meta-analysis and metaregression to guide future research and implementation. *Medical Care.* 51 (10), 922–930.

National Confidential Enquiry into Patent Outcome and Deaths (2017) Treat as one. London. NCEPOD. http://www.ncepod.org.uk/2017mhgh.html [accessed March 2017]

NICE (2016) Transition between inpatient mental health settings and community and care home settings [NG53]. https://www.nice.org.uk/guidance/ng53 [accessed March 2017]

NICE (2015) Psychosis and schizophrenia in adults. NICE quality standard [QS80]. https://www.nice.org.uk/guidance/qs80 [accessed March 2017]

NICE (2014) Psychosis and schizophrenia in adults: prevention and management. https://www.nice.org.uk/guidance/cg178 [accessed March 2017]

NICE (2013) Dementia: independence and wellbeing. NICE quality standard [QS30]. https://www.nice.org.uk/guidance/qs30/chapter/List-of-quality-statements [accessed March 2017]

NICE (2013) Self Harm, NICE quality standard [QS34]. https://www.nice.org.uk/guidance/qs34 [accessed March 2017]

NICE (2011) Service user experience in adult mental health services NICE quality standard [QS14]. https://www.nice.org.uk/guidance/qs14 [accessed March 2017]

NICE (2011) Depression in adults. NICE quality standard [QS8]. https://www.nice.org.uk/guidance/qs8/chapter/List-of-statements [accessed March 2017]

NICE (2011) Self harm in over 8s – longer term management [CG133]. https://www.nice.org.uk/guidance/cg133 [accessed March 2017]

NICE (2009) Depression in adults with a chronic physical health problem: recognition and management.[CG91]. https://www.nice.org.uk/guidance/cG91 [accessed March 2017]

NICE (2009) Self-harm in over 8s: short-term management and prevention of recurrence [CG16]. https://www.nice.org.uk/guidance/cg16 [accessed March 2017]

Naylor C. et al. (2016) Bringing together physical and mental health. London. Kings Fund. http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/Bringing-together-Kings-Fund-March-2016_1.pdf [accessed March 2017]

Naylor C et al. (2012) Long term conditions and Mental Health – the cost of comorbidities. London. Kings Fund and Centre for Mental Health. http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/long-term-conditions-mental-health-cost-comorbidities-naylor-feb12.pdf [accessed March 2017]

NHS England (2016). The five Year Forward for Mental Health. NHS England. London. https://www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf [accessed March 2017]

Noh D. et al. (2016) Effectiveness of Telephone-Delivered Interventions Following Suicide Attempts: A Systematic Review. *Archives of Psychiatric Nursing.* 30(1):114-9.

Ojo, O. and Brooke, J. (2015) Evaluating the Association between Diabetes, Cognitive Decline and Dementia. *International Journal of Environmental Research in Public Health.* 12 (7), 8281-94.

Panagioti, M. et al. (2014) Self-management support interventions to reduce health care utilisation without compromising outcomes: a systematic review and meta-analysis. *BMC Health Services Research.* 14, 356.

Pearsall, R. et al. (2016) Dietary advice for people with schizophrenia. *Cochrane Database of Systematic Reviews.* (3)CD009547.

Pearsall, R. et al. (2014) Exercise therapy in adults with serious mental illness: a systematic review and meta-analysis. *BMC Psychiatry.* 14, 117.

Pedditizi E. et al (2016) The risk of overweight/obesity in mid-life and late life for the development of dementia: a systematic review and meta-analysis of longitudinal studies. *Age Ageing.* 45 (1), 14-21.

Plever, S. et al. (2016) A collaborative approach to improve the assessment of physical health in adult consumers with schizophrenia in Queensland mental health services. *Australasian Psychiatry.* 24 (1), 55-61.

Public Health England (2014) Alcohol care in England's hospitals An opportunity not to be wasted. London, Public Health England. https://www.alcohollearningcentre.org.uk/_assets/Alcohol_Care_in_Englands_Hospitals_An_opportunity_not_to_be_wasted_PHE_Nov_14.pdf [accessed March 2017]

Rae, J. et al. (2015) Factors affecting smoking cessation efforts of people with severe mental illness: a qualitative study. *Journal of Dual Diagnosis.* 11(1), 42-9.

Rao, A. (2016) Outcomes of dementia: Systematic review and meta-analysis of hospital administrative database studies. ***Archives of Gerontology and Geriatrics,*** 66, 198-204.

Reilly, S. et al. (2013) Collaborative care approaches for people with severe mental illness. *Cochrane Database of Systematic Reviews.* (4)CD009531. 2017]

Repper, J. and Carter, T. (2010) Using Personal experiences to support others with similar difficulties (review of the literature, 2010). Together & University of Nottingham. http://www.together-uk.org/wp-content/uploads/downloads/2011/11/usingpersexperience.pdf [accessed March

Reilly, S. et al. (2015) Inequalities in physical comorbidity: a longitudinal comparative cohort study of people with severe mental illness in the UK. *BMJ* Open. 5 (12), e009010.

Ringen, P.A. et al. (2014) Increased mortality in schizophrenia due to cardiovascular disease - a non-systematic review of epidemiology, possible causes, and interventions. *Front Psychiatry.* 26 (5), 137.

Roberts, S. et al. (2011) Incentives and barriers to lifestyle interventions for people with severe mental illness: A narrative synthesis of quantitative, qualitative and mixed methods studies. *Journal of Advanced Nursing.* 67 (4), 690-708.

Rodgers, M. et al. (2016) Integrated care to address the physical health needs of people with severe mental illness: a rapid review. Health Services Delivery Research. 4, (43).

Royal College of Psychiatrists (2016) Improving the physical health of adults with severe mental illness: essential actions. London. Royal College of Psychiatrists. http://www.rcpsych.ac.uk/files/pdfversion/OP100.pdf [accessed February 2017]

Royal College of Psychiatrists (2014), Whole-person care: from rhetoric to reality Achieving parity between mental and physical health. London. Royal College of Psychiatrists. http://www.rcpsych.ac.uk/files/pdfversion/OP88xx.pdf [accessed February 2017]

Sharpe, M. (2014) Psychological Medicine and the Future of Psychiatry: *The British Journal of Psychiatry.* 204, (2) 91–92.

Smith, S.M. et al. (2012) Managing patients with multimorbidity: systematic review of interventions in primary care and community settings. *BMJ.* 3, 345, e5205.

Srebnik, D. et al. (2015) A pilot study of the Diabetes Prevention Program on weight loss for adults at community mental health centres. *Psychiatric Services.* 66 (2),200-203.

Stubbs B. et al. (2015) How can we promote smoking cessation in people with schizophrenia in practice? A clinical overview. *Acta Psychiatrica Scandinavica.* 132 (2), 122-30.

Thota A.B. et al (2012) Collaborative care to improve the management of depressive disorders: a community guide systematic review and meta-analysis. Community Preventive Services Task Force. *American Journal of Preventive Medicine.* 42(5), 525-38.

The British Society of Gastroenterology and the Royal Bolton Hospital NHS Foundation Trust (2016) Alcohol care teams: reducing acute hospital admissions and improving quality of care. Quality and Productivity: Proven Case Study. https://www.nice.org.uk/localPractice/collection

Townsend E. et al. (2016) Self-harm and life problems: findings from the Multicentre Study of Self-harm in England. Social Psychiatry and Psychiatric Epidemiology. 51(2):183-92.

Trigwell, P. et al. (2015) Framework for Routine Outcome Measurement in Liaison Psychiatry (FROM-LP)(FROM-LP). London. Royal College of Psychiatrists. http://www.rcpsych.ac.uk/pdf/FRLP02.pdf [accessed March 2017]

Twomey, C.D. et al. (2015) A systematic review of the predictors of health service utilisation by adults with mental disorders in the UK. **BMJ** Open 5 (7), 1-16.

Wahlbeck, K. et al. (2011) Outcomes of Nordic mental health systems: life expectancy of patients with mental disorders. *British Journal of Psychiatry.* 199 (6) 453-458.

Ward, M.C. et al. (2015) A meta-review of lifestyle interventions for cardiovascular risk factors in the general medical population: Lessons for individuals with serious mental illness. *Journal of Clinical Psychiatry.* 76(4), e477-e486.

Wistow G,et al. (2015) Putting integrated care into practice: the North West London experience. Nuffield Trust and London School of Economics and Political Science: Personal Social Services Research Unit.

Wood, R. and Wand, A.P. (2014) The effectiveness of consultation-liaison psychiatry in the general hospital setting: a systematic review. Journal of *Psychosomatic Research.* 76(3):175-92.

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