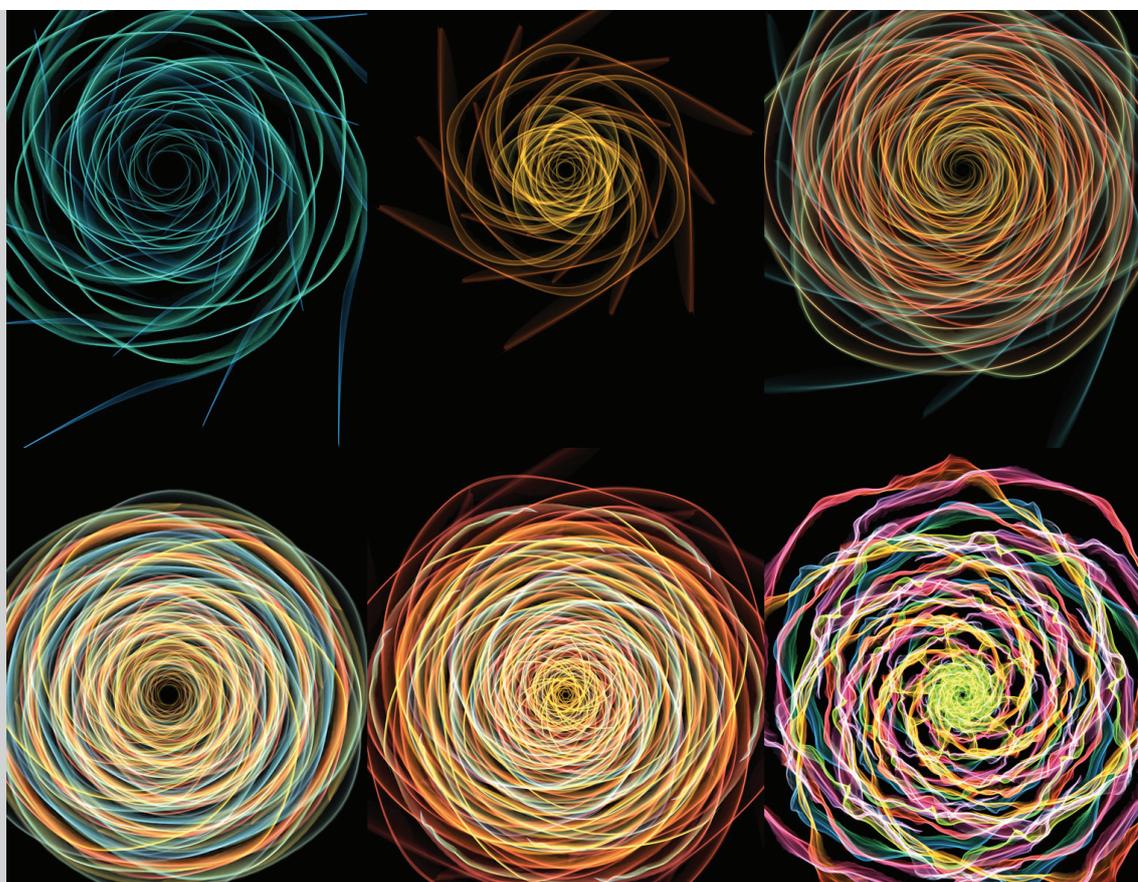


# Mental Healthcare in Young People and Young Adults **REPORT 2**

A review of the quality of care provided to young people and young adults with mental health conditions presenting to acute general hospitals or mental health inpatient facilities



NCEPOD

Improving the quality of healthcare



Swansea University  
Prifysgol Abertawe



# Mental Healthcare in Young People and Young Adults: **REPORT 2**

A review of routinely collected national datasets to assess service utilisation by children and young people with mental health conditions presenting to acute general or mental health facilities

A report published by the National Confidential Enquiry into Patient Outcome and Death (2019)

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## **The report was compiled by:**

Ann John MRCP FFPH MD - Clinical Professor, Public Health and Psychiatry, HDRUK, Swansea University Medical School

Sophie Wood MSc - Research Assistant, Division of Population Medicine, Cardiff University

Sarah Rees MSc - Scientist, Sail Databank, Swansea University Medical School

Ting Wang PhD - Data Scientist, Sail Databank, Swansea University Medical School

Amanda Marchant MSc - Data Scientist, PPSI, Swansea University Medical School

Mark Allsopp MRCPsych - Clinical Co-ordinator at NCEPOD and Consultant in the Psychiatry of Adolescence at Berkshire Healthcare NHS Foundation Trust

Kathy Wilkinson FRCA MRCP - Clinical Co-ordinator at NCEPOD and Consultant in Paediatric Anaesthesia, Norfolk and Norwich University Hospital NHS Trust

Heather Freeth BSc (Hons) MSc RGN MSc - Clinical Researcher, NCEPOD

Kathryn Kelly BA (Hons) PGC Health Research - Researcher, NCEPOD

Kirsty MacLean Steel MSc - Project Manager, NCEPOD

Marisa Mason PhD - Chief Executive, NCEPOD

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Designed by Dave Terrey [dave.terrey@greysquirrel.co.uk](mailto:dave.terrey@greysquirrel.co.uk)

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data analysis

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# Introduction

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In 2013 the Royal College of Paediatrics and Child Health published their '*Overview of Child Deaths in the Four UK Countries*' report.<sup>1</sup> This report highlighted that 30-40% of 13-18 year olds, who died, were affected by mental health, learning difficulties or behavioural conditions. The reports presented here are a natural follow-on to this work, to look in detail at the mental healthcare provided to children and young people from the unique perspective of the overlap between physical and mental healthcare, the quality of physical and mental healthcare provided and how patients with mental health conditions use healthcare services. The overarching aim of this study was to identify areas of care that can be improved for all children and young people aged between 11 and 25 years (up to their 26th birthday for REPORT I and up to their 25th birthday for REPORT II).

The study focused on patients with three common mental health conditions and one behaviour: eating disorders, depression, anxiety and self-harm. The conditions /behaviour were chosen as exemplars of the whole spectrum of mental health conditions and behaviours, whilst recognising that there would be differences in incidence, common age for presentation and associated guidelines. However, the common issues between the different groups allowed a useful examination of the pathways of care for children and young people aged 11-17 years and 18-25 years (up to their 26th birthday for REPORT I and up to their 25th birthday for REPORT II), including the interface and transition between child and adult healthcare and the access to appropriate and timely input from specialist crisis and general hospital mental health liaison services.

REPORT II presented here focuses on an analysis of routinely collected national datasets for patients aged 11-24 years (up to their 25th birthday) and how they used healthcare services over a ten-year period between 2004 and 2014. This report provides a population overview that could not be achieved from the review of clinical data in REPORT I. It helps to set the scene by supporting the qualitative findings

with 'big data' from the four UK countries and completes aspects of the pathway that could not be achieved through case note review.

REPORT I which can be accessed using the hyperlink, provides an in-depth qualitative overview of patients aged 11-25 years (up to their 26th birthday) who were admitted as an inpatient to an acute general hospital, or mental health facility, either via an emergency department or via referral from a community mental health team or primary care. It summarises the findings from across the UK, from clinical questionnaires and multidisciplinary case note reviews, to highlight improvements in clinical care. Since the case acquisition and data collection points (spring 2016 and 2004-2014 respectively) and the analysis and drafting of this report in early 2018 there has been a lot of focus on young people's mental health, and changes are already underway. The provision of mental healthcare varies across the four UK countries and each service provider will need to assess the service they provide against the recommendations made here to identify where to focus their quality improvement plans.

## England

Since the study began there have been significant changes in England in both policy and delivery. '*Future in Mind*'<sup>2</sup>, '*Five Year Forward View for Mental Health*' (FYFVMH)<sup>3</sup> and subsequent implementation programmes have seen improvements in service development, joint working and access to mental health care. The '*NHS Long Term Plan*'<sup>4</sup>, published in January 2019, commits to the continued investment to expand access to community-based mental health services and commits to a new approach for young adult mental health services for people aged 18-25, to support the transition to adulthood.

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For children and young people (CYP) under 18 years of age, Clinical Commissioning Groups (CCGs) working with partners across health, social care, the voluntary sector and experts by experience annually refresh whole system 'Local Transformation Plans'.<sup>5</sup> These plans set out how local services work together to deliver improved outcomes for children and young people. This includes improved access to treatment, with 324,724<sup>6</sup> children and young people being treated in 2017-18. Access to CYP urgent and emergency mental health care and intensive community support has also improved, with a recent 2018 audit showing that the majority of responding CCGs are offering as a minimum, crisis assessment and brief follow-up appointments. The NHS Long Term Plan states that children and young people experiencing a mental health crisis will be able to access the support they need with a single point of access through NHS 111, 24/7. Every area will have age appropriate, urgent and emergency assessment, intensive home treatment and liaison functions in place.

The NHS has committed that by 2021 all adults over 18 years of age will have access to 24/7 community-based crisis response and intensive home treatment as an alternative to an acute inpatient admission. In addition, all acute hospitals with 24/7 emergency departments will have a liaison mental health team, with at least 50% meeting the criteria for 'Core 24'.<sup>7</sup> Findings from recent national surveys suggest that the NHS is on-track to meet this commitment, having invested £45m in 71 sites between 2017-2019. There has also been an increase of over 1000 (WTE) staff working in these teams since 2016.

In December 2017 the Department of Health and the Department of Education jointly published a Green Paper 'Transforming Children and Young People's Mental Health Provision' for England.<sup>8</sup> As well as a proposal for a new waiting time standard for referral times to treatment, which acknowledged the significant differences across areas, other key elements included named leads in every school and college for mental health and wellbeing with links to child and adolescent mental health services (CAMHS) to provide rapid advice, consultation and sign-posting and Mental Health Support Teams for early intervention and on-going help.

In October 2018 the Government made an announcement on suicide prevention which included further measures on support for children and young people including a 'State of the Nation' report every year on World Mental Health Day highlighting trends and issues in young people's mental health alongside their physical health and educational attainment. It committed to providing tools to help schools measure their students' mental wellbeing, building on the commitment to make mental health literacy and resilience a compulsory part of the curriculum.

In November 2018 NHS Digital published the 'Children and Young People's Mental Health Survey'<sup>9</sup> to examine the prevalence of mental disorders in England, the first since 2004. It showed that in 2017, 12.8% of 5 to 19 year olds had at least one mental disorder, with emotional disorders, such as anxiety and depression, being the most prevalent type of disorder (8.1%). Rates increased with age. Data from this survey revealed a slight increase over time in the prevalence of mental disorder in 5 to 15 year olds from 9.7% in 1999 and 10.1% in 2004, to 11.2% in 2017.

## Wales

'Together for Mental Health'<sup>10</sup> is the Welsh Government's 10 year cross-Government, all-age strategy, to improve mental health and well-being in Wales. The strategy was published in 2012, following significant engagement and formal consultation with key partner agencies, stakeholders, services users and carers. The strategy is supported by a series of delivery plans which encompasses a range of actions, from those designed to improve the mental well-being of all residents in Wales, to those required to support people with severe and enduring mental illness. To ensure progress against the delivery plans a cross-cutting approach has been taken, implemented jointly by partners, including the Welsh Government, health boards, local authorities, third and independent sector, Public Health Wales, police, ambulance and others. Progress against the delivery of the strategy is overseen by the Mental Health National Partnership Board (MHNPB) and seven Local Partnership Boards (LPBs), who provide a public facing statement on what has been achieved within their own area. Key activities since the publication

of the 2016-19 *'Together for Mental Health Delivery Plan'*<sup>11</sup> highlighted that progress had been made across all priority areas and the National Partnership Board is currently shaping the core themes for the 2019-2022 delivery plan.

### Scotland

Scotland's children and young people's mental healthcare is delivered through 14 Health Boards which are part of Health and Social Care Partnerships. This provides a variable degree of integration at children's services level, with considerable variation in local funding. Over the past couple of years there has been sharing of best practice and the development of community intensive treatment teams which has allowed the adolescent inpatient units to reduce the length of stay and improve access to beds.

All the actions from the 2017 *'Mental Health Strategy'*<sup>12</sup> relating to children and young people, the *'Rejected Referrals Audit'*,<sup>13</sup> *'Audit Scotland'* report<sup>14</sup> and the *'Programme for Government'* in 2018<sup>15</sup> have been brought together in the newly established Children and Young People's Mental Health and Well-being Taskforce. This has been jointly commissioned by Scottish Government and Convention of Scottish Local Authorities (COSLA) to take a whole system approach to children and young people's mental health. It will bring together input from partners across a range of sectors and will focus on services for children and young people aged 0-25 years and will run until the end of 2020. This will build on the national multi-agency approach underpinning all children's services in Scotland; *'Getting It Right For Every Child (GIRFEC)'*<sup>16</sup>. There are four strands of work focusing on, generic, neurodevelopmental, specialist services and for those children and young people at risk. There will be accompanying work on the development of the workforce, improving data quality and the promotion, prevention and support for mental health within schools. This work will be supported by the established training and workforce development within NHS Education Scotland (NES), data collection by the Information Statistics Division (ISD) and the Mental Health Access Improvement Support Team (MHAIST) hosted by Healthcare Improvement Scotland.

### Northern Ireland

The policy for child and adolescent mental health services (CAMHS) in Northern Ireland is stated in the *'Child and Adolescent Mental Health Services - A Service Model'* issued by the Department of Health in July 2012.<sup>17</sup> The model outlined an integrated approach that addressed equity, accessibility and early intervention. Transformation of CAMHS based on the implementation of the *'Stepped Care Model'* is a 'work in progress'. All Health and Social Care Trusts in Northern Ireland have seen the consistent establishment of Primary Mental Health Teams, Crisis Resolution and Home Treatment Teams and the development of a single point of entry to support effective service responses provided at the right time and right place and based on needs.

The developments in CAMHS have been consolidated through publication of the co-designed and co-produced care pathway for CAMHS – *'Working Together: A Pathway for Children and Young people through CAMHS'*<sup>18</sup> published in March 2018. The pathway sets out the journey through CAMHS from referral, through to treatment and discharge/transition and the standards to be expected along that journey of care. A further important achievement is the revision to the CAMHS Minimum Dataset which now captures demand, need, activity outcomes and experience. Improvements to information systems continue to ensure consistent data returns across the region. The current data shows a sustained increase in demand and an increase in the percentage of children and young people being accepted (80% acceptance across the region for 18/19).

A key priority is the establishment of a Managed Care Networks for acute CAMHS to address the difficulties of providing support to young people presenting in crisis. The purpose of the network is to develop standardised approaches and consistency of care to improve service responses across key service interfaces such as secure care, forensic care and youth justice. The Managed Care Network is designed to bring the acute service response into a single system of care, delivered locally which supports a consistent approach as well as more timely access for support and advice. It is also important to note that the first ever prevalence study of children and young people's mental health in Northern Ireland is underway and publication of this may be anticipated mid-2020.

# Executive summary

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## **STUDY AIMS**

The primary aims of this study were to:

- Review the pattern of mental healthcare utilisation across different healthcare settings to people aged 11-24 years (up to their 25th birthday)
- Examine the interface between different care settings
- Examine the transition of care from child to adult mental health services.

## **METHOD AND DATA RETURNS**

The analysis of routinely collected national datasets has the potential to provide population-based quantitative information about the service utilisation of children and young people with mental health conditions, including trends by age, sex, social economic status, over time and inter-country comparisons to inform policy and care.

Therefore at a national level, and by UK country, data were obtained, where possible, for the time period 2004-2014 which included:

1. Secondary healthcare data from England and Wales
2. Primary care data from the Clinical Practice Research Datalink (CPRD) – this provided a 6.9% sample of primary care data from all four UK countries and linked secondary care data for a sample of GP practices in England
3. Linked primary and secondary healthcare data in Wales at a whole population level
4. Mental health facility, emergency care, education and intensive care data from England, Wales, Northern Ireland and Scotland.

## Key messages ► [LINK TO KEY MESSAGES IN REPORT I](#)

	Key message	Key findings
1	Routine, national data collection, including coding and ease of access, required improvement	<ul style="list-style-type: none"> <li>The processes around obtaining access to the routinely collected datasets, data cleaning and preparation for analysis proved to be complex and time consuming</li> <li>UK countries differed in the quality, extent and type of routine national data collected. Whilst standard ICD-10 and READ codes were used, the variables collected differed. Different definitions and reporting systems were used (e.g. for admission or discharge) and outcome data was poorly recorded</li> </ul>
2	For the conditions of interest there was variability in the presentation to primary and secondary care and admissions to hospital when the demographics of age, sex, country and index of deprivation were compared	<p>a. Self-harm</p> <ul style="list-style-type: none"> <li>There was little change in the overall presentation to or the recording of self-harm in primary care. It was more common in females, in people from deprived areas and increased significantly for 11-15 year olds over time</li> <li>Rates of hospital admission for self-harm were the highest of all the conditions analysed, particularly in older females (16-24 years)</li> <li>Trends in hospital inpatient admission rates for self-harm varied between countries, increasing in Wales and Northern Ireland, decreasing in Scotland and remaining relatively constant in England</li> </ul> <p>b. Depression</p> <ul style="list-style-type: none"> <li>There was an overall decrease in recording of depression diagnosis in primary care, thought to be due to recording behaviours of GPs to code for symptoms (in order to avoid labelling or acting strategically in relation to the Quality Outcomes Framework)</li> <li>Diagnosis of depression in primary care was more common in females and increased with deprivation index</li> <li>There was a steep increase in hospital admissions associated with depression in females and in those aged 16-24 years</li> <li>General hospital inpatient admission rates associated with depression increased significantly across all countries between 2004 and 2014, apart from Scotland where rates decreased marginally. This maybe an impact of policy changes in Scotland with the implementation of its mental health strategy 2012-2015, which aimed to strategically shift the mental healthcare of people from inpatient treatment to care in the community</li> </ul>

	<b>Key message</b>	<b>Key findings</b>
2	Continued	<p>c. Anxiety</p> <ul style="list-style-type: none"> <li>• There was an increase in recording of anxiety in 11-24 year olds presenting to primary care, as well as, an increase in hospital admissions across all countries associated with anxiety</li> </ul> <p>d. Eating disorders</p> <ul style="list-style-type: none"> <li>• Rates of eating disorder presentation to primary care remained relatively stable while hospital admissions for eating disorders increased over time, although numbers remain relatively small</li> <li>• Eating disorders were more common in females and demonstrated the reverse pattern for deprivation to other conditions – being most evident in least deprived areas for both primary care and hospital admissions</li> </ul>
3	The proportion of referrals from primary care to secondary care for children and young people was highest for people from the least deprived areas despite levels of mental health conditions being higher in the most deprived areas but 'did not attend' rates were higher for those from the most deprived areas and for older males	<ul style="list-style-type: none"> <li>• Proportionally more males than females were referred from primary to secondary care for 'all mental health' conditions. This may reflect severity on presentation to primary care given known sex differences in help-seeking behaviour</li> <li>• The proportion of referrals from primary care to secondary care for children and young people was highest for people from the least deprived areas despite levels of conditions being higher in the most deprived areas (except for in eating disorders where a pattern was unclear)</li> <li>• Mental health specialty outpatient attendances for individuals with new appointments increased over the study period</li> <li>• The rate of 'new to follow-up' appointments were higher for mental health conditions than for all specialties together i.e. people with mental health conditions were provided with more follow-up appointments implying a greater need for specialist support</li> <li>• In contrast to the number of appointments made, 'did not attend' (DNA) rates for mental health specialties were significantly higher than those for all specialties but had shown some improvements</li> <li>• Children and young people from the most deprived areas attended fewer follow-up appointments for every new appointment than people from the least deprived areas</li> <li>• 21-24 year old males consistently had the highest DNA rates for outpatient appointments</li> </ul>

## KEY MESSAGES

	Key message	Key findings
4	Emergency department attendance showed an increased presentation rate due to mental health conditions when compared with other health conditions, this was also associated with the demographics of sex and index of deprivation	<ul style="list-style-type: none"> <li>• While there were fewer males overall with a record of self-harm or a mental health condition compared to females, a higher percentage of males presented to emergency departments for all conditions except eating disorders</li> <li>• There was a steep deprivation gradient for individuals attending emergency departments for self-harm or psychiatric conditions, with 50% of attendances from the two most deprived quintiles</li> <li>• Re-attendance rates to emergency departments were much higher for self-harm and mental health conditions than all attendances, particularly for people from the most deprived areas</li> </ul>
5	All hospital admissions showed variation in length of stay when the demographics of sex and index of deprivation for patients with mental health conditions was compared	<ul style="list-style-type: none"> <li>• For all the conditions of interest approximately a third to a half of individuals (range 31.9% (anxiety) - 55.7% (self-harm)) with a new diagnosis in primary care were admitted to a hospital (general or mental health) within the subsequent year</li> <li>• People from the most deprived areas were the most likely to be admitted with any of the conditions of interest recorded, except for eating disorders</li> <li>• Virtually all admissions for self-harm were unplanned emergency admissions</li> <li>• The mean length of stay for people with an associated 'all mental health' diagnosis was considerably longer than for 'any' admission in this age group (21 days vs. 8 days)</li> <li>• Males were more likely to be admitted to an ICU for self-harm than females, despite females having higher recorded rates of self-harm in primary and secondary care. This could reflect the severity of self-harm methods used by males</li> <li>• More males than females aged 11-24 years were admitted to inpatient mental health facilities. The excess of male admissions is in contrast to community prevalence where females out-number males</li> <li>• In England, transition from child to adult services in children and young people over 11 years with associated depression, anxiety, eating disorders or self-harm occurred later than all children and young people regardless of treatment specialty. Admissions for eating disorders transitioned later still than the other conditions</li> </ul>

	<b>Key message</b>	<b>Key findings</b>
6	Deprivation was associated with a lack of access to psychological therapies and antidepressants were used frequently but varied when associated with the demographics of age, deprivation and sex	<ul style="list-style-type: none"> <li>• A larger proportion of females than males were referred to Improving Access to Psychological Therapies (IAPT) (adult service in England) but once referred similar proportions of males and females received treatment</li> <li>• A larger proportion of children and young people aged 11-24 years from deprived areas were referred to IAPT (adult service) but they were less likely to attend at least one appointment and receive treatment</li> <li>• Of the annual incident cases of recorded depression between 2004 and 2014 in 11 to 24 year olds 80% received an associated prescription (12 months either side of the recorded diagnosis) for an antidepressant. In comparison for self-harm, anxiety and eating disorders, 43%, 41% and 34% were prescribed associated antidepressants respectively. The rates of antidepressants prescribed associated with the conditions of interest: <ul style="list-style-type: none"> <li>- Decreased significantly for depression diagnosis between 2004 and 2014</li> <li>- Increased significantly for anxiety between 2004 and 2014</li> </ul> </li> </ul>
7	Education data demonstrated variation in attainment in those under 18 years of age when compared with the conditions of interest and the demographic of sex	<ul style="list-style-type: none"> <li>• The presence of any of the conditions of interest diagnosed in primary care between the ages of 11 and 18 years was associated with lower attainment at Key Stage 4, GCSE (except for in females with anxiety and/or eating disorders where there was no significant difference) and lower attendance</li> <li>• Males with self-harm recorded in primary care before they were 18 years old were more likely to be excluded from school than those with no record</li> </ul>

# Recommendations

These recommendations have been formed by a consensus exercise including all those listed in the acknowledgements.

	Recommendations	Who should action
<b>DESIGN OF SERVICES</b>		
11	Implement evidence-based interventions in all healthcare and educational settings and organisations	<ul style="list-style-type: none"> <li>• Executive Boards for Mental Health and for Physical Health</li> <li>• Commissioners</li> <li>• Public Health England/ Wales</li> <li>• Primary Care</li> <li>• Community Mental Health Leads</li> <li>• Schools, further and higher educational establishments</li> </ul>
12	Raise awareness, improve emotional literacy, tackle stigma and particularly engage with males in improving their help-seeking behaviour	<ul style="list-style-type: none"> <li>• Executive Boards for Mental Health and for Physical Health</li> <li>• Commissioners</li> <li>• Public Health England/ Wales</li> <li>• Primary Care</li> <li>• Community Mental Health Leads</li> <li>• Schools, further and higher educational establishments</li> </ul>
13	Design mental health services to: <ol style="list-style-type: none"> <li>Promote access for children and young people from the most deprived communities</li> <li>Provide access to developmentally appropriate healthcare</li> <li>Provide training initiatives to promote staff awareness of the impact of inequalities, such as deprivation</li> <li>Monitor the impact of any change in service provision on such inequalities</li> </ol>	<ul style="list-style-type: none"> <li>• Commissioners</li> </ul> <p>Supported by</p> <ul style="list-style-type: none"> <li>• Executive Boards for Mental Health and for Physical Health</li> <li>• Community Mental Health Leads</li> <li>• Public Health England</li> <li>• Health Education England</li> </ul>
14	Undertake local clinical audit of people with mental health conditions who 'do not attend' clinics to understand why and facilitate improvements thereafter through action plans and local quality improvement projects	<ul style="list-style-type: none"> <li>• Executive Boards for Mental Health and for Physical Health</li> <li>• QI leads</li> </ul>

	<b>Recommendations</b>	<b>Who should action</b>
<b>DATA COLLECTION and CODING</b>		
15	Harmonise the governance and application process to obtain faster and easier access to routinely collected national datasets in England, Wales, Scotland and Northern Ireland	<ul style="list-style-type: none"> <li>• <i>NHS Digital</i></li> <li>• <i>NHS Improvement</i></li> <li>• <i>NHS Scotland</i></li> <li>• <i>NHS Wales Informatics Service</i></li> <li>• <i>Northern Ireland Statistics and Research Agency</i></li> </ul>
16	<p>Ensure coding of mental health conditions in all healthcare records and routinely collected datasets is accurate and consistent. Service providers need to:</p> <ol style="list-style-type: none"> <li>a. Review and agree data metrics to determine what is relevant for families, clinicians and commissioners</li> <li>b. Train primary and secondary care staff and clinical coders</li> <li>c. Ensure hospitals have the appropriate IT and data collection/entry processes</li> <li>d. Ensure review of the data by local stakeholders</li> <li>e. Record and use outcome data to guide future care delivery</li> </ol>	<ul style="list-style-type: none"> <li>• <i>NHS Wales Informatics Service</i></li> <li>• <i>NHS</i></li> <li>• <i>England</i></li> <li>• <i>NHS Improvement</i></li> <li>• <i>Department of Health</i></li> <li>• <i>NHS Scotland</i></li> <li>• <i>NHS Wales</i></li> <li>• <i>Northern Ireland Statistics and Research Agency</i></li> <li>• <i>Commissioners</i></li> </ul>

## Method ► SEE APPENDIX 1 FOR MORE DETAIL

### STUDY AIM

The primary aims of this study were to:

- Review the pattern of mental healthcare utilisation across different healthcare settings
- Examine the interface between different care settings
- Examine the transition of care from child to adult mental health services.

### METHOD

Routinely collected national datasets were used to examine their potential contribution to an assessment of the health needs and the quality of care received by children and young people with mental health conditions (with a focus on depression, anxiety, eating disorders) and who self-harm, particularly in relation to the transition to adult services and the interface between primary and secondary care.

A series of descriptive cross sectional analyses were designed to address the key questions across datasets. All questions had the potential to be addressed but analyses were limited by data availability (e.g. access within the timeframe of the project), data completeness and the cost of data.

#### **Inclusions**

Data were collected on children and young people aged 11 to 24 years who had depression, anxiety an eating disorders or who self-harmed and who were resident in England, Wales, Scotland or Northern Ireland between January 1st 2004 and 31st December 2014.

#### **Exclusions**

Organic mental disorders were excluded since they are due to medical or physical disease and coding of acute confusional states would be non-specific for mental disorders in this type of data.

### **Data sources**

The data sources and how they are linked to address the key questions are described in Figure 1.1.

### **Study questions**

The study questions across different healthcare settings included:

#### *1. Primary care*

*(Addressed across the UK using the Clinical Practice Research Datalink (CPRD) dataset)*

- What was the rate of individuals contacting primary care for mental health conditions?
- What was the rate and proportion of specific psychotropic prescriptions for individuals diagnosed with an incident case of one of the conditions of interest?

#### *2. Hospital - inpatient admissions*

*(Addressed using Hospital Episode Statistics (HES) England and Patient Episode Database Wales (PEDW))*

- What was the count and rate of admissions to hospital every year?

*(Addressed using HES, PEDW, Scottish Morbidity Record 01 (SMR01 + SMR04 where relevant) Scotland and the Northern Ireland Patient Administration System (PAS))*

- How did the conditions of interest compare to individuals' admission rates for other mental health conditions in secondary care?
- What was the mean/median length of stay?
- What were the types (emergency, elective) of and reasons (by treatment specialty) for hospital admission?
- What were the number of re-admissions per year?
- Where were patients discharged to after an admission?

#### *3. Hospital - outpatients*

*(Addressed using HES outpatient data)*

- What was the rate of individuals attending new outpatient appointments?
- What were the new-to-follow-up rates for outpatient appointments with a mental health specialty code?
- How many children and young people did not attend outpatient appointments with a mental health specialty code?

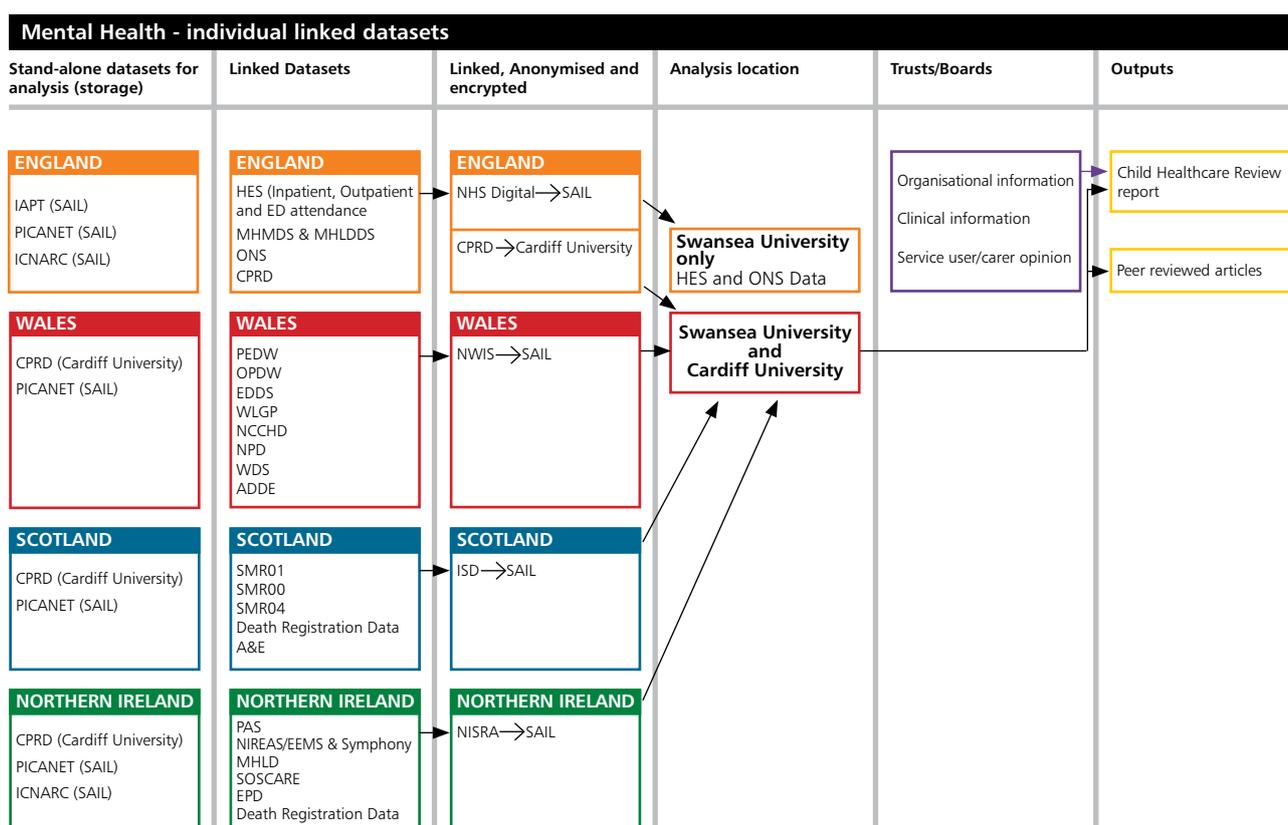


Figure 1.1 Individual and linked datasets that informed the research questions

#### 4. Mental health facility admissions

(Addressed using mental health hospital episode datasets in England and Scotland – Mental Health Minimum Dataset (MHMDS) and Mental Health and Learning Disabilities (MHLDDS) and (SMR04).

- Where were children and young people admitted to mental health facilities referred from?
- What was the type of mental health facility admission (routine, urgent or emergency)?
- What was the count and rate of admissions to mental health facilities every year?
- What proportion of admissions to mental health facilities were for the conditions of interest and how did that compare to other mental health conditions?
- What specialty were children and young people admitted to (paediatric, adolescent, adult) for 11-17 year olds vs. 18-24 year olds?
- What was the annual trend of emergency admissions for 11-17 year olds vs. 18-24 year olds admitted with mental health conditions?
- What was the mean/median length of stay?
- What was the distance of facility from the young person's home/out of area placements?

## METHOD

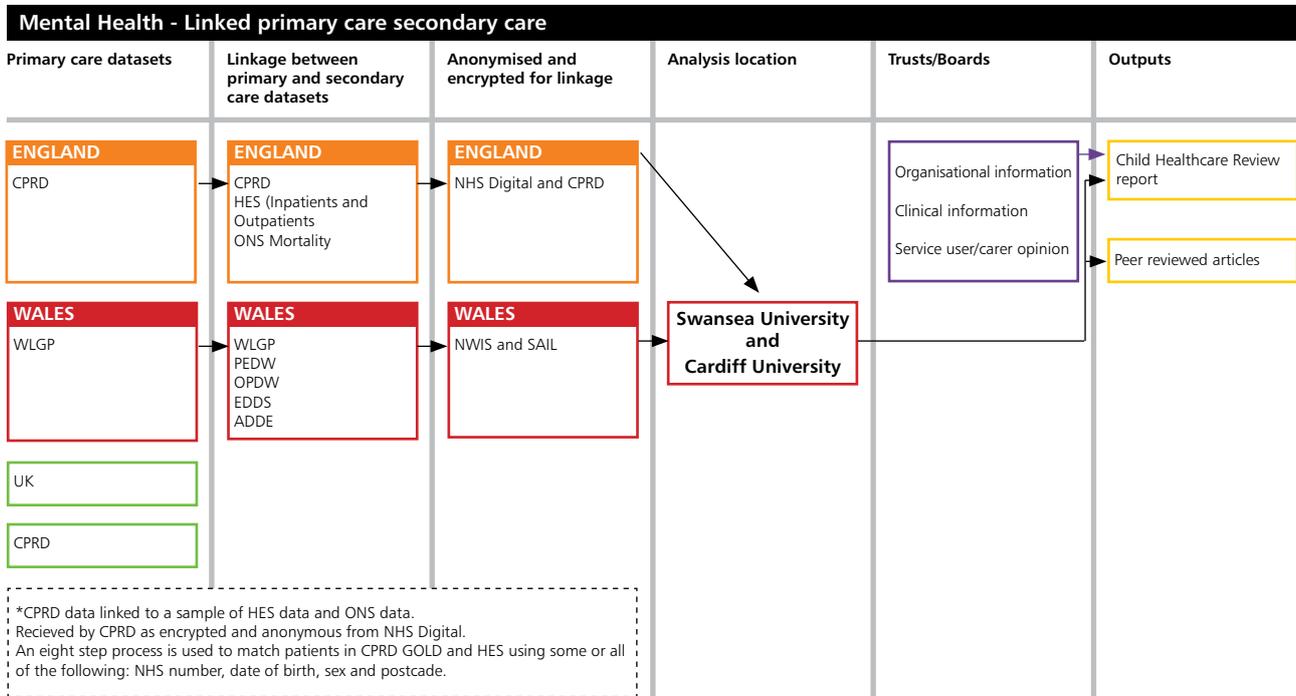


Figure 1.2 Data for analysis across primary and secondary care

\* ADDE - Annual District Death Extract  
 NWIS – National Welsh Information Service

### 5. Primary /secondary care interface

(Addressed in England using the CPRD GP referral to secondary care data set and from data linkage between the CPRD GP dataset and HES. In Wales using a cohort of individuals registered with a Secure Anonymised Information Linkage SAIL supplying GP (WLGP) from 2010-2014 linked to PEDW, Outpatient Data Wales (OPDW) and the Emergency Department Data Set (EDDS) (Figure 1.2).

- What was the rate and proportion of general practice GP referrals to primary care for mental health conditions? (CPRD)
- What was the time between a GP consultation for the conditions of interest and subsequent inpatient admission? (CPRD linked with HES)
- What was the service use within one year of diagnosis in primary care across inpatient, outpatient and emergency services? (WLGP, PEDW, OPDW, EDDS).

### 6. Transition between child and adult services

(Addressed using the transition between paediatric and adult services was explored in England (HES) and Wales (PEDW) and in intensive care (PICANet and ICNARC).

- What was the proportion of individuals admitted to paediatric or adult treatment specialties by age?
- What was the proportion of under 16 year olds admitted to adult intensive care units for self-harm?

### 7. Emergency care

(Addressed using the EDDS in England and Wales)

- What was the rate and count of individuals attending the emergency department for self-harm or a mental health condition?
- What was the number of repeat attendances within one year for self-harm or a mental health condition?

### 8. Intensive care

(Addressed using ICNARC data from England, Wales and Northern Ireland)

- What was the number and proportion of admissions with a self-harm diagnosis?

### 9. Improving access to psychological therapies

(Addressed using the IAPT dataset England in 16-24 year olds only)

- What was the source of referral?
- What was the referral pathway (e.g. proportion referred and then treated)?
- What type of therapy was delivered?
- How many children and young people did not attend or cancelled an appointment?
- What were the proportions of patients receiving therapies and prescribed psychotropic medication.

### 10. Education

(Assessed using WLGP for individuals diagnosed in primary care aged 11-24 years with self-harm, depression, anxiety or an eating disorder)

- What was the educational attainment (5 or more GCSEs graded A\*-C)?
- What was the school attendance level?
- How many individuals were excluded from school?
- How many individuals qualified for free school meals?

### 11. Mortality

(Assessed using data from individuals with a recorded diagnosis of self-harm, depression, anxiety or an eating disorder in primary or secondary care (inpatients) within the study period aged 11 to 24 years)

- What was the mortality rate (CPRD linked with HES and Office for National (ONS) mortality-England)

- What was the underlying cause of death (CPRD linked with HES and ONS mortality-England)
- What were the standardised mortality ratios (SMRs) (WLGP, PEDW, ADDE-Wales).

#### Data linkage

► *SEE APPENDIX 3 FOR MORE DETAIL*

Once permissions were granted, datasets were linked remotely and provided to the Secure Anonymised Information Linkage (SAIL) Databank for data cleaning. The typical process for data linkage relied upon the NHS Number for England, Wales and Northern Ireland and the Community Health Index (CHI) in Scotland, although other fields were used in their absence (Figure 1.3).

#### DENOMINATORS

##### Primary care

Person years at risk (PYAR) were used as the denominator for primary care analyses reflecting the time an individual was registered with a CPRD or SAIL supplying GP within the study period and who contributed data. PYAR is considered a more accurate denominator than the total number of individuals registered, since it accounts for the amount of time at risk of developing and recording a condition. For example an individual who supplied 6 months of data to the study as they had been registered at their GP for 6 months of a year would contribute 0.5 PYAR to the denominator, those registered for a year would provide 1 PYAR.

► *(SEE APPENDIX 3 FOR MORE DETAIL)*

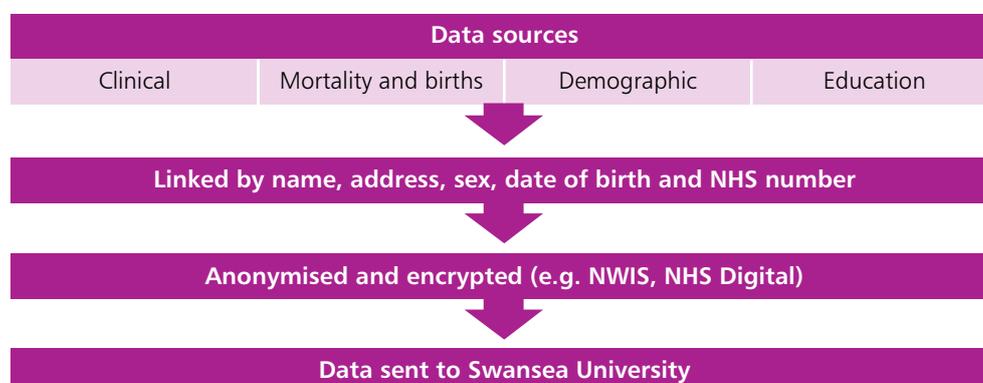


Figure 1.3 The process of data linkage

### **Secondary care**

ONS mid-year population estimates for each country were used as denominators and are publicly available.<sup>19</sup>

Identification of children and young people with mental health conditions

Coding methods varied between nations and data sets:

**Primary care** – v2 5 character READ codes;

**Secondary care** – all inpatient data sets used ICD-10 codes, however due to poor recording of diagnoses in outpatient datasets, specialty codes were used;

**Emergency Departments** local codes specific to the nation were used;

**PICANet**- v3 READ codes,

**ICNARC**- ICNARC Coding Method (ICM).

Validated code lists from previous studies were used and adapted to identify children and young people with mental health conditions,<sup>18</sup> depression<sup>21</sup> and eating disorders.<sup>6,20</sup> Previous studies of self-harm in primary care<sup>22,23</sup> included intentional self-harm codes and relevant undetermined intent codes, hospital admission data did similarly but with a broader range of undetermined intent codes (X60-X84, Y10-Y34 excluding Y33.9) In England and Wales the emergency department attendance category 'deliberate self-harm' was used to identify attendances for self-harm and, in keeping with other studies,<sup>24</sup> 'undetermined intent' codes were not used.

Condition specific ICD-10 code lists were mapped across the datasets coding systems where code lists were not readily available (available on request). A suite of disease related codes (ICD-10 and Read codes) were used to identify morbidity (available on request).

### **DATA ANALYSIS**

Data are presented for key questions in simple graphical form for trends across time, age groups, sex and Index of Multiple Deprivation (IMD) (where possible). Population rates according to PYAR were calculated for key outcomes and compared by age group, year of event and IMD (using CPRD and Wales SAIL data). Where overall rates were shown, this was the average rate across the 11 years of data e.g. (sum of individuals 2004-2014/sum of PYAR 2004- 2014)\*1000.

Annual prevalence was defined as an individual with any record with a relevant Read code in a target year regardless of any previous diagnosis. Reasons for attendance are described by proportion of attendances by diagnosis or treatment specialty, where relevant confidence intervals were calculated to enable comparisons. When interpreting the results, consideration must be given to the possible effects of the size and nature of the datasets, the variation in definitions, case ascertainment rates and methods and variation of case-mix within and between datasets/countries.

Analyses were stratified by age bands to assess the transition from child to adult services (11-15, 16-20, 21-24 years) and in other analyses by people aged 11-17 or 18-24 years. Results were compared between participating countries where possible.

### **Mortality**

The number of deaths, within the study period in children and young people with each mental health condition were calculated. An individual could be diagnosed with more than one condition. Standardised Mortality Ratios (SMRs) were calculated using the indirect method in Wales with the Welsh dataset population (aged between 11 to 24 years) as the standard population. In Wales estimated SMRs were calculated by combining the primary and secondary (PEDW inpatient diagnosis) cohorts within the study period for each condition.

### **INFORMATION GOVERNANCE**

All data received and handled by NCEPOD and Swansea University complied with all relevant national requirements, including the Information Commissioner's Office (NCEPOD Z5442652), the NHS Act 2006 (15/CAG/0210), the NHS Code of Practice and Public Benefit and Privacy Panel for Health and Social Care (for NHS Scotland). As anonymous data were requested ethical approvals were not required, approvals from the data providers for each individual country was. 'Approved researcher status' for each member of the data linkage team was sought and granted in order to access data from the Office for National Statistics (ONS). Each member of the team completed Medical Research Council (MRC) Research Data and Confidentiality e-module training.

The findings of the report were reviewed by the Study Advisory Group, Reviewers, NCEPOD Steering Group including Clinical Co-ordinators, Trustees and Lay representatives prior to publication.

### STUDY LIMITATIONS

- The processes around obtaining access to the routinely collected datasets, data cleaning and preparation for analysis proved to be complex and time consuming
- The various organisations that hold the data required different application processes and had different governance requirements. Further applications for updated data were required and data application systems changed within the time frame of applying for datasets
- UK countries differed in the extent and type of data availability, whilst standard ICD-10, READ codes v2 and v3 are used, the variables collected differed between countries and different definitions and coding systems were used (e.g. for admission, discharge, transfer, emergency department). The data quality and types and definitions of data fields included also differed
- Some of the data obtained lacked the level of detail necessary to gain a full understanding of the range of needs and service utilisation of children and young people with mental health conditions
- The extent to which data sources could be linked and the nature of the questions that could be addressed from each set of linked data varied and limited the ability to make comparisons across the UK. However different data linkage in different regions had the potential to reflect different components of health and social care
- The consistency and accuracy of coding varied and affected the robustness of findings. Completion of data fields (missing data) affected the potential for detailed analysis
- The care of children and young people with mental health conditions is largely managed within the community and outpatient settings. Routine data collection in these settings was poor particularly for diagnostic categories so contact with health services is likely to be under estimated
- Mental health conditions vary in levels of severity. Data on severity are not currently collected routinely and confound detailed analysis of service utilisation and quality of care according to clinical need
- Differences in coding practices, as well as the use of local codes (particularly hospital transfer codes and emergency department diagnostic codes), make comparisons across countries challenging. Attempts to standardise methods across national data sets were made, for instance the Four Nation Person Spell. Harmonisation would enable broad comparisons to be made across the four UK countries and across the NHS informing service configuration and care.

## Data returns and study population

### PRIMARY CARE

Primary care data were available across the four UK countries and were either sampled or at a population level. CPRD included data from 674 general practices (GP) in the UK and covered approximately 6.9% of the UK population. The sample included was broadly representative of the UK general population in terms of age, sex and ethnicity. The majority of patients registered with a CPRD supplying GP practice were based in England (81.8%), with further registrations in Scotland (8.5%), Wales (7.3%) and Northern Ireland (2.4%). Additional primary care data from Wales was available from the Secure Anonymised Information Linkage (SAIL) Databank. SAIL holds data for 348 practices in Wales (73% of practices).

Rates were calculated using person years at risk (PYAR). The number of individuals included from the two sources and PYAR contributed is shown in Table 2.1.

#### **Conditions of interest – definition for the purpose of this study**

Children and young people's mental health covers a broad range of conditions presenting to GPs and hospitals. This study focussed on depression, anxiety and eating disorders. It also included recorded self-harming behaviours. The care of young people who self-harm is undertaken across general and mental health services.

Many people who self-harm will have diagnosable but not necessarily diagnosed mental health conditions. Figure 2.1 shows how these conditions presented across primary care services in comparison to other broad mental health diagnoses by sex.

Some children and young people had more than one condition, and therefore appeared in multiple categories. The 'all mental health' columns represent the proportion of all children and young people assessed as having one or more mental health condition including depression, anxiety, eating disorder, personality disorder, bipolar disorder, schizophrenia, drug/alcohol disorders, pervasive developmental disorders, Attention Deficit Hyperactivity Disorder (ADHD) and conduct disorders.

Females, aged 11-24 years generally had higher prevalence rates of recorded diagnoses in primary care, 2004-2014 for:

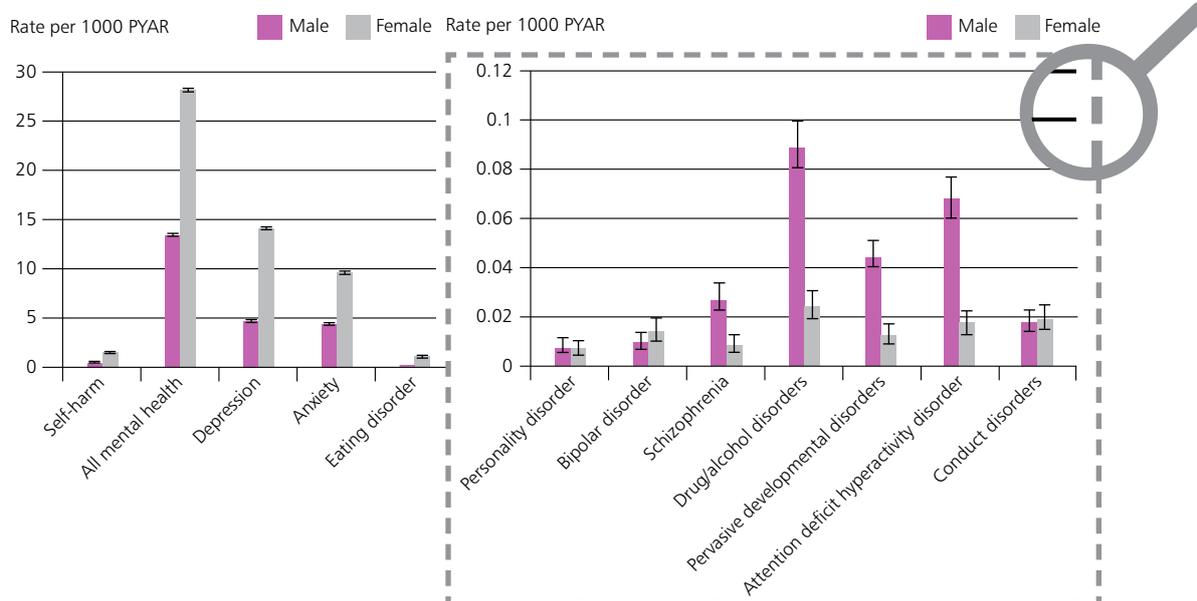
- For all mental health conditions (28.1 per 1000 PYAR,  $n=105,496$  for females vs. 13.4 per 1000 PYAR,  $n=54,561$  for males)
- For self-harm (1.5 per 1000 PYAR,  $n=5,309$  for females vs. 0.6 per 1000 PYAR,  $n=2,193$  for males).

These results reflected presentation to primary care, recognition by GPs and the way in which, for example, depression, anxiety, eating disorders and self-harm in children and young people is recorded in primary care.

**Table 2.1 Populations (denominators) for primary care data: 11-24 year olds registered with a CPRD or SAIL GP between 2004 and 2014 meeting the study inclusion criteria**

	CPRD 4 Nations		SAIL Wales	
	Individuals	PYAR	Individuals	PYAR
<b>Male</b>	908,948	4,064,408	340,775	1,731,152
<b>Female</b>	932,735	3,753,042	341,581	1,633,695
<b>All</b>	1,841,683	7,817,450	682,356	3,364,847

PYAR - person years at risk



**Figure 2.1 The rate per 1000 PYAR of individuals with mental health disorders in primary care for 11-24 year olds between 2004 and 2014 . The section in the dotted box zooms in on the second half of the graph to present the rate per 1000 PYAR at a different scale due to low numbers.**

Source: CPRD four nations

Willingness to record a diagnosis will be affected by stigma and strategic labelling (avoidance of labelling children or incentive). The data presented here are likely to be an underestimation, since, for example, routine data does not capture individuals with whom self-harm is discussed but not recorded or who do not attend healthcare services. This is a common feature of all routinely collected database studies which are likely to be under-estimates when compared to community surveys.<sup>9,25</sup>

#### **Conditions of interest: numbers, rates and trends in the national data**

In CPRD across the four UK countries in 2004-2014, there were 1,841,683 individuals (7,817,450 PYAR) aged 11-24 years, of whom:

- 7,502 had a record of self-harm, a rate of 1.0 per 1000 PYAR
- 59,650 had a record of depression, a rate of 9.3 per 1000 PYAR
- 45,290 had a record of anxiety, a rate of 7.0 per 1000 PYAR
- 4,123 had a record of eating disorder, a rate of 0.6 per 1000 PYAR.

In order to capture service use in primary care, 'other' and 'admin' codes were excluded from the consultation and staff file for the CPRD analysis. These codes made up 75.1% (95% CI 75.0-75.1, n=47,053,051) of primary care events and included general administration, letters from the emergency department/hospital as well as any events entered by administrative staff. However, most events with an 'admin' or 'other' code also had a 'contact' consultation code on the same day and so were included in GP prevalence rates. Excluding these codes provided a more accurate representation of service use in primary care by capturing only individuals who had contact with their practice, e.g. clinic, home visit or telephone consultation.

The results differed from other published work where the emphasis has been on the burden on the individual. This was particularly apparent for self-harm. When 'other' and 'admin' were omitted from the analysis, the total number of unique self-harm events dropped from 66,589 (42,662 individuals) to 8,752 (7,502 individuals). Whereas for depression, unique events dropped from 208,285 (108,980 individuals) to 100,240 (59,650 individuals). A considerable proportion of the unique events excluded for self-harm

## DATA RETURNS AND STUDY POPULATION

were for the consultation code 'casualty attendance' (6.3%, n=3,660), 'letter from outpatients' 7.9% (n=4,538) or 'discharge details' 4.3% (n=2,467). This reflects service presentation patterns observed for individuals who self-harm, with a high proportion of whom presented to emergency departments.

Counts and confidence intervals (only included if relevant i.e. confidence intervals wide or overlapping) around rates reflect the numbers of practices sampled in CPRD across the four countries. This introduces a note of caution when comparing rates across countries. Table 2.2 reflects the relative contribution of each country to these figures.

Figure 2.2 shows that over the study period in primary care:

- Recording of self-harm remained relatively stable from 1.1 per 1000 PYAR (n=744) to 1.2 per 1000 PYAR (n=702)<sup>22</sup>

- Depression diagnosis decreased from 10.9 per 1000 PYAR (n=7,383) to 8.4 per 1000 PYAR (n=4,963). This is in keeping with previous studies and reflects an increased use of symptom codes within primary care to denote depressive conditions which may be due to strategic labelling related to incentive targets such as the Quality Outcome Framework or avoidance to diagnose young people due to stigma.<sup>21</sup>
- Anxiety diagnoses increased from 6.6 per 1000 PYAR (n=4,458) to 9.4 per 1000 PYAR (n=5,543) which is also in keeping with other studies<sup>26</sup>
- Recording of eating disorders<sup>27</sup> remained relatively stable, 0.7 per 1000 PYAR (n=442) to 0.6 per 1000 PYAR (n=362).

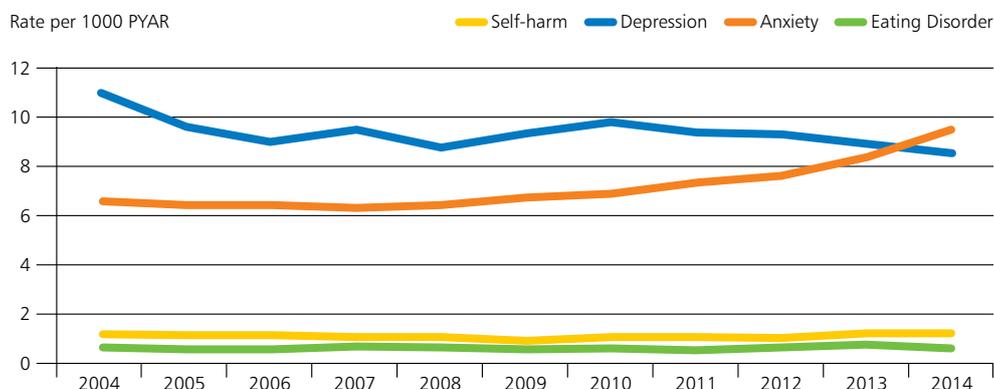
Trends across conditions in each country were broadly similar although some differences were evident.

- [Link to rate of individuals per 1000 PYAR with depression, anxiety, eating disorders or self-harm for 11-24 year olds in primary care in individual countries:](#)  
Source: CPRD 4 countries

**Table 2.2 Counts and rate per 1000 PYAR for individuals with depression, anxiety, eating disorders and who self-harm by nation, between 2004 and 2014**

Condition	England	Wales	Scotland	Northern Ireland	All nations
	Count Rate (95% CI)				
<b>Self-harm</b>	5,432 1.0(0.9-1.0)	714 1.1(1.0-1.0)	1,038 1.3(1.3-1.4)	318 1.2(1.1-1.4)	<b>7,502</b> <b>1.0(1.0-1.1)</b>
<b>Depression</b>	46,591 9.5(9.4-9.6)	4,533 7.7(7.5-7.9)	6,628 9.6(9.4-9.9)	1,898 7.8(7.4-8.1)	<b>59,650</b> <b>9.3(9.2-9.4)</b>
<b>Anxiety</b>	36,365 7.4(7.3-7.4)	3,352 5.8(5.6-6.0)	4,080 5.9(5.7-6.1)	1,493 6.2(5.9-6.5)	<b>45,290</b> <b>7.0(7.0-7.1)</b>
<b>Eating disorder</b>	3,360 0.7(0.6-0.7)	299 0.5(0.5-0.5)	348 0.5(0.5-0.6)	116 0.5(0.4-0.6)	<b>4,123</b> <b>0.6(0.6-0.6)</b>

Source: CPRD



**Figure 2.2 The annual prevalence rate of individuals per 1000 PYAR with depression, anxiety, eating disorders or self-harm for 11-24 year olds in primary care**

Source: CPRD four nations

**Conditions of interest: trends by age and sex**

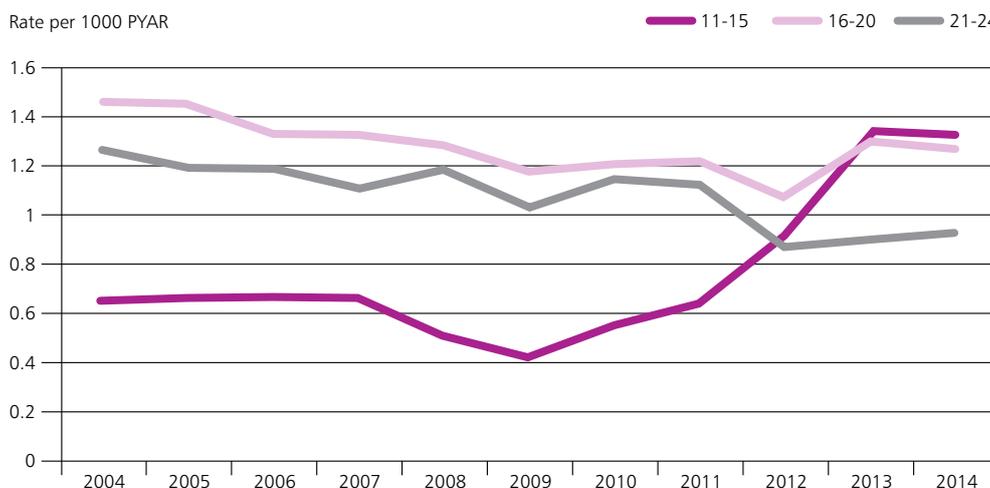
In CPRD across the four countries there were 908,948 males (4,064,408 PYAR) and 932,735 females (3,753,042 PYAR) recorded, aged 11-24 years during 2004-2014. Of which, 847,808 individuals aged 11-15 years contributed 2,861,911 PYAR to the study, 920,590 individuals aged 16-20 years 2,743,449 PYAR and 900,831 individuals aged 21-24 years 2,212,080 PYAR (as individuals age they cross age groups, a period effect, therefore numbers are inflated and PYAR is a more accurate representation of contribution to study data).

**Self-harm**

Self-harm was more commonly recorded in females in primary care. There were 5,309 females (a rate of 1.5 per 1000 PYAR) compared with 2,193 males with a record of self-harm (a rate of 0.6 per 1000 PYAR).

There was no significant change in rates of recorded self-harm by gender over time, although they did fluctuate within the female group.

► *Link to the annual rate of individuals per 1000 PYAR with self-harm by sex in primary care Source: CPRD four countries*



**Figure 2.3 The annual prevalence rate of individuals per 1000 PYAR with self-harm by age group in primary care**

Source: CPRD four nations

A record of self-harm was found for:

- 2,029 individuals aged 11-15 years, a rate of 0.7 per 1000 PYAR
- 3,374 individuals aged 16-20 years, a rate of 1.3 per 1000 PYAR
- 2,263 individuals aged 21-24 years, a rate of 1.1 per 1000 PYAR.

The prevalence rate of self-harm presenting to primary care was highest for the 16-20 year old age group but did not change significantly over time (Figure 2.3). There was a non-significant decrease from 1.3 per 1000 PYAR (n=235) in 2004 to 0.9 per 1000 PYAR (n=161) in 2014 for 21-24 year olds. The greatest and most significant change was for 11-15 year olds, where rates increased from 0.64 per 1000 PYAR (n=167) in 2004 to 1.3 per 1000 PYAR (n=271) in 2014.

**Depression**

Recorded depression in primary care over the same time period was more common in females. There were 42,686 females (a rate of 14.1 per 1000 PYAR) compared with 16,964 males (a rate of 4.9 per 1000 PYAR). Prevalence rates between 2004 and 2014 decreased significantly for females from 16.8 per 1000 PYAR (n=5,392) to 11.8 per 1000 PYAR (n=3,403), but not for males (5.5 per 1000 PYAR (n=1,991) to (5.2 per 1000 PYAR (n=1,560)). This most likely reflects known coding behaviour patterns.<sup>21</sup>

- ▶ [Link to the annual rate of individuals per 1000 PYAR with depression by sex in primary care Source: CPRD four countries](#)

Rates of recorded depression were highest in 21-24 year olds. A record of depression was found for:

- 1,888 individuals aged 11-15 years, a rate of 0.7 per 1000 PYAR
- 26,350 individuals aged 16-20 years, a rate of 11.0 per 1000 PYAR
- 35,216 individuals aged 21-24 years, a rate of 18.6 per 1000 PYAR.

Prevalence rates of depression decreased significantly across all age groups between 2004 and 2014 (Figure 2.4).

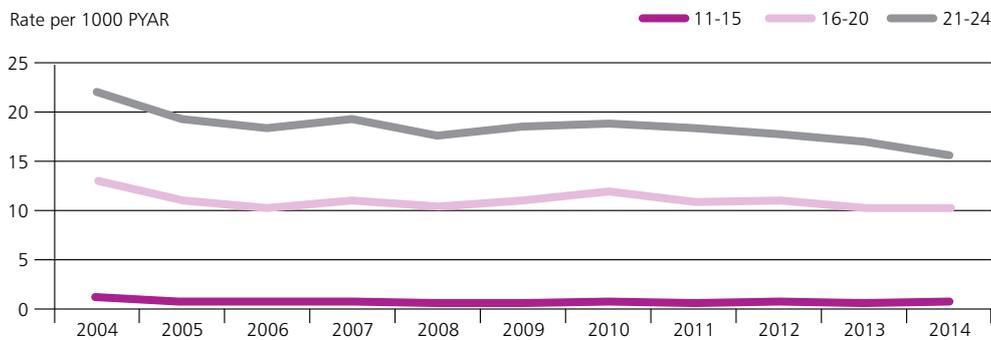
**Anxiety**

Anxiety was more commonly recorded in females in primary care. There were 30,141 females (a rate of 9.8 per 1000 PYAR) compared with 15,149 males (a rate of 4.5 per 1000 PYAR). Prevalence rates increased significantly for males from 4.1 per 1000 PYAR (n=1,469) in 2004 to 6.0 per 1000 PYAR (n=1,812) in 2014, and females from 9.3 per 1000 PYAR (n=2,989) in 2004 to 13.0 per 1000 PYAR (n=3,731) in 2014.

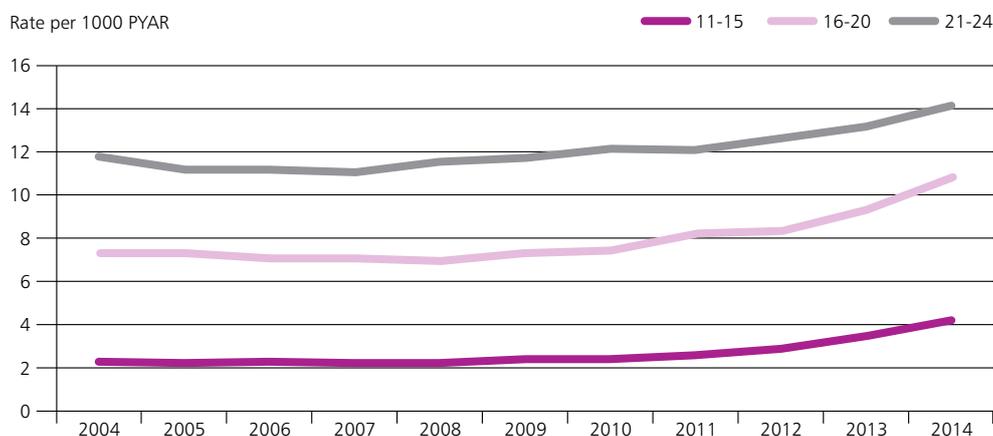
- ▶ [Link to the annual rate of individuals per 1000 PYAR with anxiety by sex in primary care Source: CPRD four countries](#)

Anxiety was the most prevalent in the 21-24 year old age group. A record of anxiety was found for:

- 6,763 individuals aged 11-15 years, a rate of 2.5 per 1000 PYAR
- 18,777 individuals aged 16-20 years, a rate of 7.8 per 1000 PYAR
- 2,693 individuals aged 21-24 years, a rate of 12.0 per 1000 PYAR.



**Figure 2.4 The annual prevalence rate of individuals per 1000 PYAR with depression by age group in primary care Source: CPRD four nations**



**Figure 2.5 The annual prevalence rate of individuals per 1000 PYAR with anxiety by age group in primary care** *Source: CPRD four nations*

Prevalence rates increased significantly across all age groups between 2004 and 2014 (Figure 2.5).

### Eating disorders

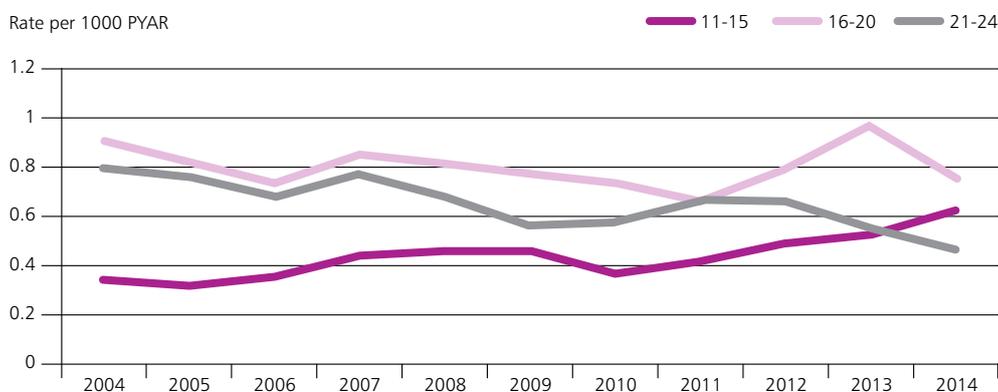
Eating disorders were also more common amongst females in primary care (1.2 per 1000 PYAR, n=3,748) compared to males (0.1 per 1000 PYAR, n=375); rates did not change significantly for males or females between 2004-2014

► [Link to the annual rate of individuals per 1000 PYAR with eating disorder by sex in primary care](#) *Source: CPRD four countries*

Eating disorders were the most prevalent in the 16-20 year old age group. A record of an eating disorder was found for:

- 1,138 individuals aged 11-15 years, a rate of 0.4 per 1000 PYAR
- 1,924 individuals aged 16-20 years, a rate of 0.8 per 1000 PYAR
- 1,263 individuals aged 21-24 years, a rate of 0.7 per 1000 PYAR.

Prevalence rates for 11-15 year olds increased significantly from 0.3 per 1000 PYAR (n=88) to 0.6 per 1000 PYAR (n=125), 2004-2014 (Figure 2.6). Rates for 21-24 year olds decreased significantly from 0.8 per 1000 PYAR (n=147) to 0.5 per 1000 PYAR (95% CI 0.4-0.6, n=80). There was no overall significant change in rates for 16-20 year olds.



**Figure 2.6 The annual prevalence rate of individuals per 1000 PYAR with eating disorder by age group in primary care**

*Source: CPRD four nations*

**Conditions of interest: trends by deprivation**

There was a socio-economic gradient in recording of depression, anxiety and self-harm i.e. diagnosis increased with increasing Index of Multiple Deprivation (IMD) quintiles. The steepest gradient was in depression with a rate of 6.6 per 1000 PYAR (n=5,607) in the least deprived individuals and 12.9 per 1000 PYAR (n=9,021) in the most deprived (Figure 2.7). Conversely for eating disorders higher levels were found in the least deprived quintile with a rate of 0.8 per 1000 PYAR (n=690) compared to the most deprived at 0.5 per 1000 PYAR (n=346) for both primary and secondary care admissions.

**Conditions of interest in context: mortality**

**England**

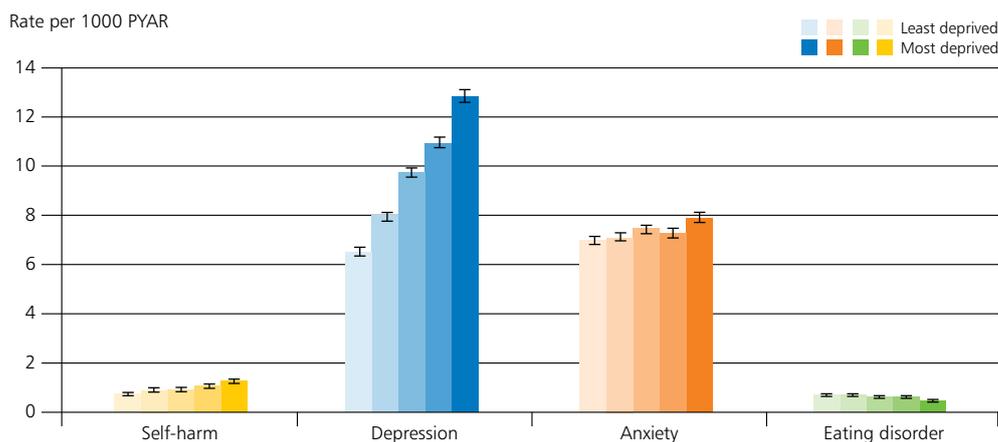
Mortality rates were calculated for individuals aged 11-24 years in CPRD linked with Hospital Episode Statistics (HES) and Office for National Statistics (ONS) in England between 2004-2014 (the denominator for the rates was the accumulated PYAR for individuals diagnosed with a condition of interest in primary or secondary care within the study period).

Rates were calculated for people with a GP recorded diagnosis and people with a GP and/or inpatient diagnosis. Mortality rates tended to be higher when people were identified from both datasets combined. This was more evident for individuals diagnosed with a mental health condition than for people with any diagnosis, possibly reflecting the severity of illness on admission. For all 11-24 year olds identified in primary care compared to people identified in primary and secondary care the mortality rate was:

- 0.5 per 1000 PYAR (95% CI 0.5-0.5, n=2,262) vs. 0.6 per 1000 PYAR (n=2,403) any diagnosis
- 0.8 per 1000 PYAR (95% CI 0.7-0.9, n=361) vs. 1.3 per 1000 PYAR (n=605) 'all mental health' conditions
- 0.5 per 1000 PYAR (95% CI 0.4-0.7, n=44) vs. 2.0 per 1000 PYAR (n=181) self-harm
- 0.7 per 1000 PYAR (95% CI 0.6-0.8, n=156) vs. 1.0 per 1000 PYAR (n=243) depression
- 0.5 per 1000 PYAR (n=95) vs. 0.7 per 1000 PYAR (n=137) anxiety.

The number of deaths in people with eating disorders were too small for robust calculations (n=19)

The underlying cause of death was explored for people with a GP contact and/or an inpatient admission.



**Figure 2.7 The prevalence rate of individuals per diagnosis per 1000 PYAR with depression, anxiety, eating disorders or self harm for 11-24 year olds by deprivation quintile in primary care between 2009-2014**

Source: England

For people with any sort of GP contact and/or an inpatient admission the top three underlying causes of death were:

1. External causes (42.5%; n=1,020)
2. Neoplasms (13.1%; n=314)
3. Nervous system conditions (9.1%; n=219)

In this group of individuals mental health conditions were attributed to 3.1% (n=74) of deaths.

For people who had 'all mental health' diagnoses the top three underlying causes of death were:

1. External causes (48.8%; n=295)
2. Neoplasms (8.3%; n=87)
3. Nervous system conditions (7.8%; n=47)

In this group of individuals mental health conditions were attributed to 6.1% (n=37) of deaths.

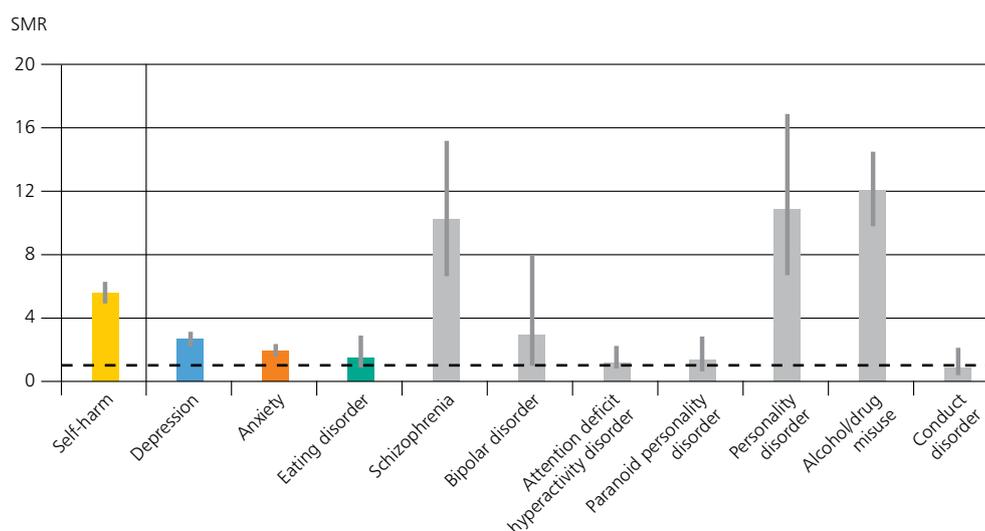
These top three underlying causes of death were the same for anxiety and depression as well as 'all mental health'. Self-harm differed, the top three underlying causes of death for people with a record of self-harm were external causes (68.0%; n=123), mental health conditions (8.3%; n=15) and nervous system conditions (4.4%; n=8).

## Wales

Standardised Mortality Ratios (SMRs) were calculated using the indirect method with the Wales GP registered SAIL Databank population aged 11-24 years as the standard population. The primary (GP diagnosis) and secondary (Patient Episode Data Wales (PEDW) inpatient diagnosis) cohorts were combined within the study period for each condition. Mortality in people with presentations for self-harm (SMR=5.6; observed deaths=177), depression (SMR=2.7; observed deaths=122) and anxiety (SMR=2.0; observed deaths=73) were higher than for the general population as were those for schizophrenia, personality disorders, alcohol and drug misuse (Figure 2.8). The numbers of deaths in people with eating disorders was small and the SMR was not significantly different to the general population.

## SECONDARY CARE

Inpatient and outpatient data were available for all 11-24 year olds in England, Scotland and Wales admitted to general hospitals between 2004 and 2014. England and Scotland additionally had separate mental health facility datasets. In Wales and England mental health facility admissions were



**Figure 2.8 Standardised rate mortality ratios (SMR) for individuals with mental health disorders identified in primary and secondary care (inpatient)**

Source: Wales- Primary Care GP, PEDW, ADDE (mortality)

included in the inpatient data set (Scotland’s was linked for consistency). For Northern Ireland inpatient data was limited to the Southern Trust region as data from mental health facilities was incomplete for the other Trusts. Emergency department data availability varied between countries (SEE APPENDIX 1 FOR MORE DETAIL).

The number of individuals included from across the four countries is shown in Table 2.3. ONS mid-year population estimates for each country were used as denominators.

**Conditions of interest in context: inpatients**

► **LINK TO PROSPECTIVE DATA COLLECTION IN REPORT I**

Table 2.3 shows that females had a higher prevalence of inpatient admissions to hospitals in England between, 2004 and 2014 compared with males for the same time period:

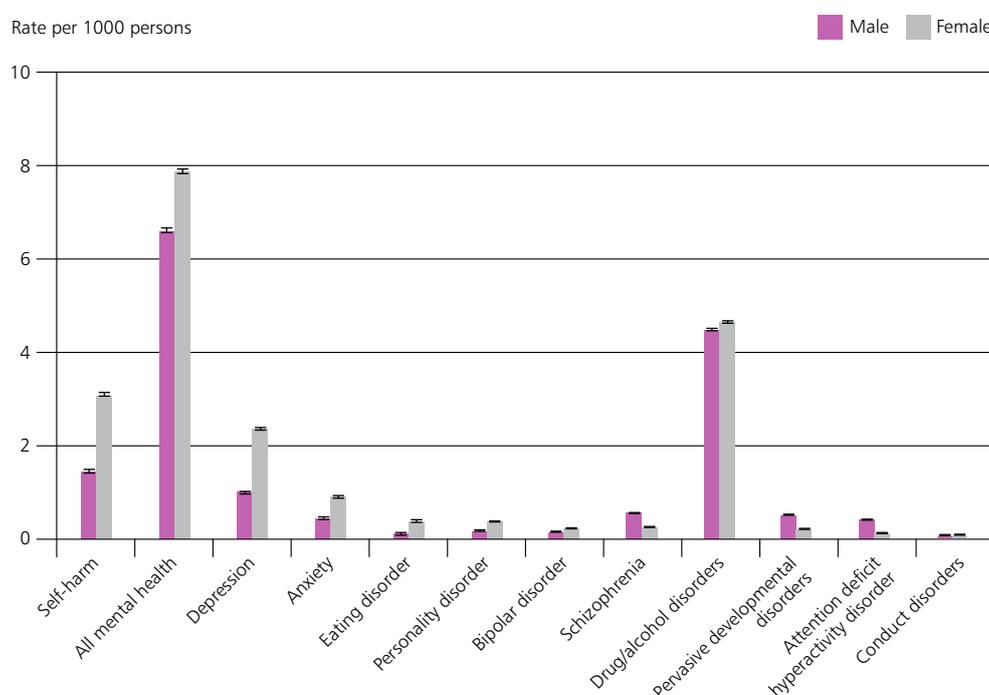
- For ‘all mental health’ conditions (7.9 per 1000 persons; 95% CI 7.9-7.9, n=395, 580 vs. 6.7 per 1000 persons; 95% CI 6.6-6.7, n=344,259)
- For self-harm (3.1 per 1000 persons; 95% CI 3.1-3.2, n=157,322 vs. 1.5 per 1000 persons; 95% CI 1.5-1.6, n=79,921).

**Table 2.3 Number and proportions of individuals aged 11-24 year from hospital data sources from across the four nations.**

	England	Wales	Scotland	Northern Ireland
	Individuals % (95% CI)	Individuals % (95% CI)	Individuals % (95% CI)	Individuals % (95% CI)
<b>Emergency department</b>				
<b>Male</b>	4,359,813 53(53-53)	204,955 54(53-54)	380,354 54(54-54)	108,991 55(54-55)
<b>Female</b>	4,006,893 47(47-47)	177,542 46 (46-47)	324,022 46(46-46)	90,806 45(45-46)
<b>All</b>	8,546,706	382,497	704,376	199,797
<b>Inpatients</b>				
<b>Male</b>	2,336,815 44(44-44)	145,922 42 (42-42)	220,408 47 (47-47)	82,637* 44 (44-44)
<b>Female</b>	2,972,389 56(56-56)	202,068 58 (58-58)	250,673 53 (53-53)	105,260* 50 (50-50)
<b>All</b>	5,309,204	347,990	470,954	187,883*
<b>Outpatients</b>				
<b>Male</b>	4,903,236 47(47-47)	277,782 48 (47-48)	442,337 46 (46-47)	12,969 53(52-54)
<b>Female</b>	5,447,989 53(53-53)	306,543 52 (52-53)	510,504 54 (53-54)	11,531 47(46-48)
<b>All</b>	10,351,225	584,325	952,841	24,500

\* Southern Trust only- Male: 12178 40% (95% CI 39-40); Female: 18385 60% (95% CI 60-61); All: 30563

\* See chapter 7 for mental health facility numbers and proportions



**Figure 2.9 The rate per 1000 mid-year ONS population estimates of individuals with mental health conditions in inpatient care by sex for 11-24 year olds between 2004 and 2014** Source: NHS Digital England

The sex differences identified across all mental health conditions and settings were in keeping with previous studies.<sup>28</sup> Of the mental health conditions, drug and alcohol disorders were the most commonly recorded diagnoses associated with inpatient admissions (Figure 2.9).

**Conditions of interest: hospital admission numbers, rates and trends in the national data**

► **LINK TO REASONS FOR ADMISSION IN REPORT 1**

Comparisons of general hospital data across the four countries should be interpreted with caution. Recording practices, data availability and data format varied. While trends over time for each country have been included, direct comparisons are problematic.

► **Link to the rate per 1000 mid-year population of individuals admitted to a general hospital with a diagnosis of depression, anxiety, eating disorders or self-harm for 11-24 year olds across four countries**

Patterns of care for depression in Scotland's dataset may reflect implementation of Scotland's mental health strategy 2012-2015, which aimed to strategically shift the mental healthcare of people from inpatient treatment to the care in the community.<sup>29</sup> In England, there had been an increase in admission rates associated with:

- Depression - 0.8 per 1000 persons (n=7,213) in 2004 to 3.0 per 1000 persons (n=27,122) in 2014)
- Anxiety - 0.2 per 1000 persons (n=1,936) in 2004 to 1.6 per 1000 persons (n=14,962) in 2014)
- Eating disorders - 0.1 per 1000 persons (n=1,066) in 2004 to 0.4 per 1000 persons (n=3,214) in 2014.

The same increase was not seen for self-harm rates 2.1 per 1000 persons (n=19,290) in 2004 compared with 2.0 per 1000 persons (n=18,404) in 2014 (Table 2.4).

**Table 2.4 Rate of individuals per 1000 mid-year population of inpatients<sup>a</sup> admissions between 2004 and 2014**

Condition	England	Wales	Scotland	Northern Ireland	Northern Ireland Southern Trust
	Count rate	Count rate	Count rate	Count rate	Count rate
<b>Depression</b>	169,231 (1.7)	8,380 (1.6)	8,624 (1.0)	3,781 (1.2)	903 (1.4)
<b>Anxiety</b>	67,033 (0.7)	3,918 (0.7)	3,453 (0.4)	1,270 (0.4)	253 (0.4)
<b>Eating disorder</b>	20,648 (0.2)	904 (0.20)	1,165 (0.2)	411 (0.1)	88 (0.2)
<b>Self-harm</b>	237,243 (2.3)	16,638 (3.3)	27,839 (3.4)	9,648 (3.2)	1,944 (3.1)

<sup>a</sup> Inpatient admissions only – day case patients excluded

<sup>b</sup> Overall rate calculated as (sum midyear population)/(sum counts of individuals per year) \*1000

Source: England- NHS Digital- HES, Wales –SAIL- PEDW, Scotland-ISD- SMR01 +SMR04, Northern Ireland -HBS- AD

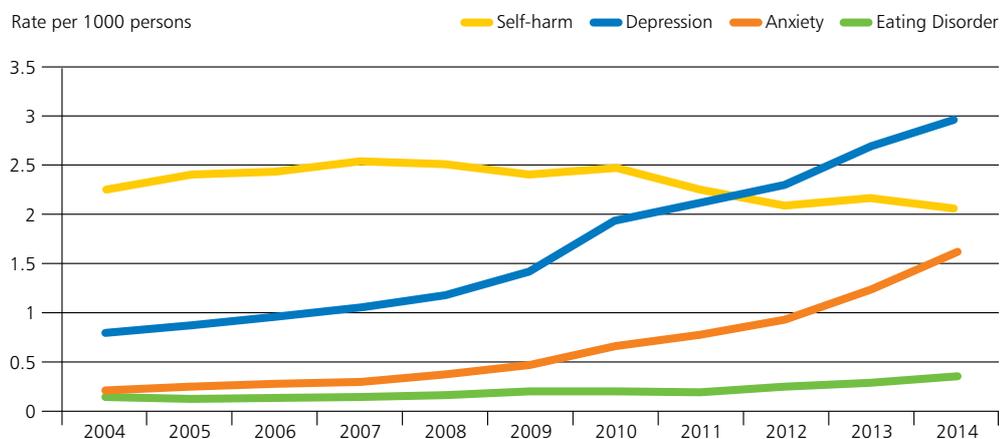
**Hospital admissions - sex, age and deprivation**

Figure 2.10 shows that admissions related to:

- Depression, anxiety and eating disorders increased significantly over time in females
- Admission rates related to depression increased most markedly in females from 1.0 per 1000 persons (n=4,632) in 2004 to 4.4 per 1000 persons (n=19,886) in 2014
- Anxiety also increased significantly for females from 0.3 per 1000 persons (n=1,157) in 2004 to 2.3 per 1000 persons (n=10,491) in 2014.

- Eating disorders increased for females slightly from 0.2 per 1000 persons (n=984) in 2004 to 0.7 per 1000 persons (n=3,008) in 2014
- Self-harm decreased slightly in both males and females from 1.5 per 1000 persons (n=6,952) in 2004 to 1.3 per 1000 persons (n=6,192) in 2014 for males and from 3.0 per 1000 persons (n=13,466) to 2.9 per 1000 persons (n=12,835) for females.

► *Link to the rate by mid-year population of individuals admitted to hospital with a diagnosis of depression, anxiety, eating disorder or self-harm by sex Source: HES England*

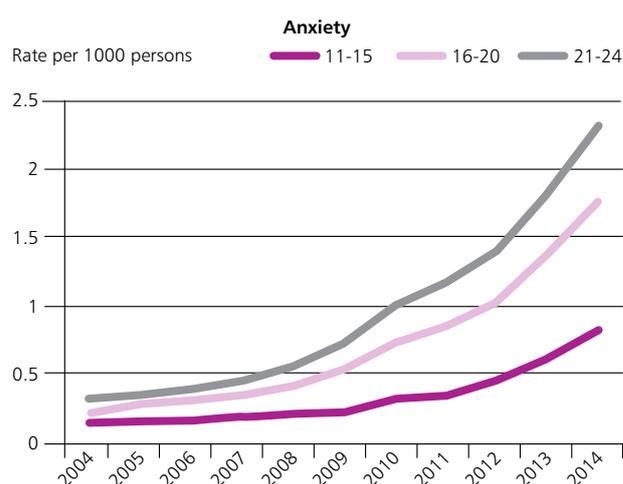
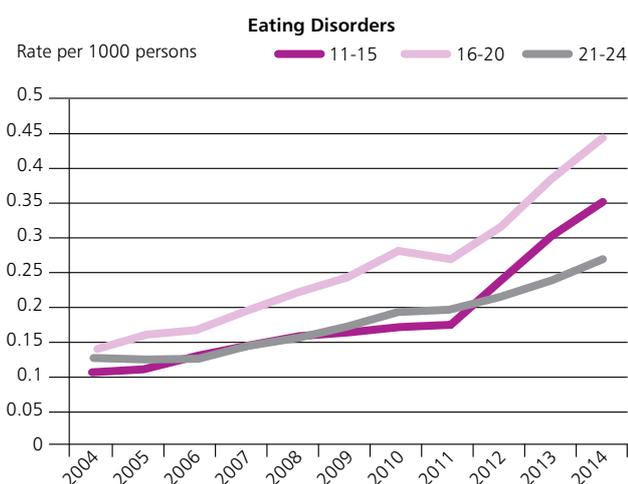
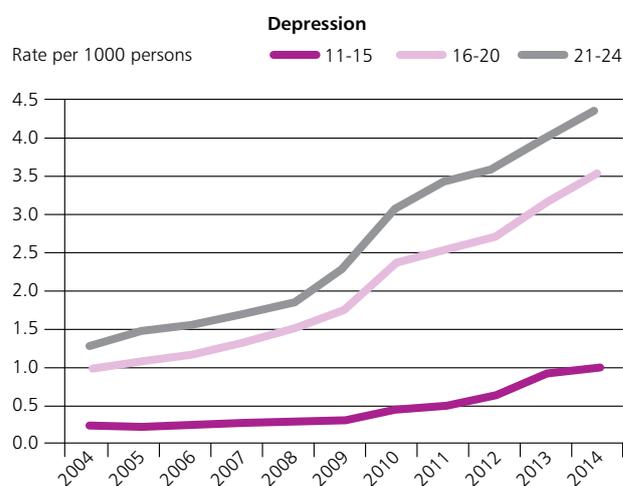
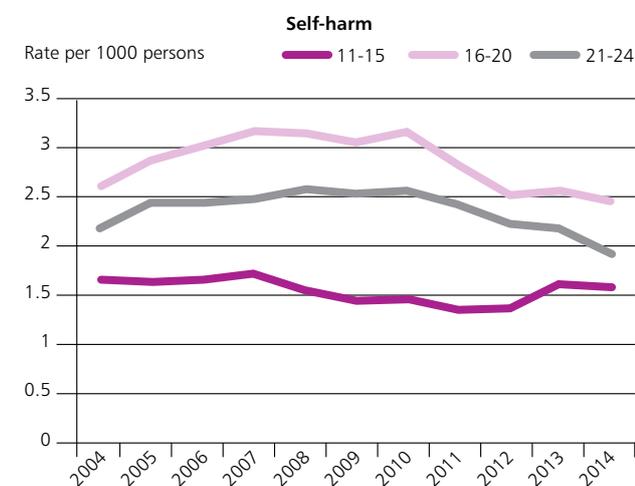


**Figure 2.10 Rate per 1000 mid-year population of individuals admitted as an inpatient with diagnosis of depression, anxiety, eating disorders or self-harm for 11-24 year olds in England**  
Source: England- NHS Digital

Figure 2.11 shows that the most significant increases in admission rates between 2004 and 2014 were for 21-24 year olds with associated depression or anxiety:

- Depression rates increased from 1.3 per 1000 persons (n=3,373) to 4.4 per 1000 persons (n=12,680)
- Anxiety rates increased from 0.3 per 1000 persons (n=842) to 2.3 per 1000 persons (n=6,757) and for 16-20 year olds with an associated eating disorder diagnosis

- Eating disorder rates increased from 0.1 per 1000 persons (n=443) in 2004 to 0.4 per 1000 persons (n=1,450) in 2014.
- Self-harm rates were the highest for 16-20 year olds, on average of 3.0 per 1000 persons (n=107,846) between 2004 and 2014.



**Figure 2.11 Number and rate per 1000 mid-year population of individuals admitted as an inpatient with diagnosis of depression, anxiety, eating disorders or self-harm for 11-24 year olds in England**

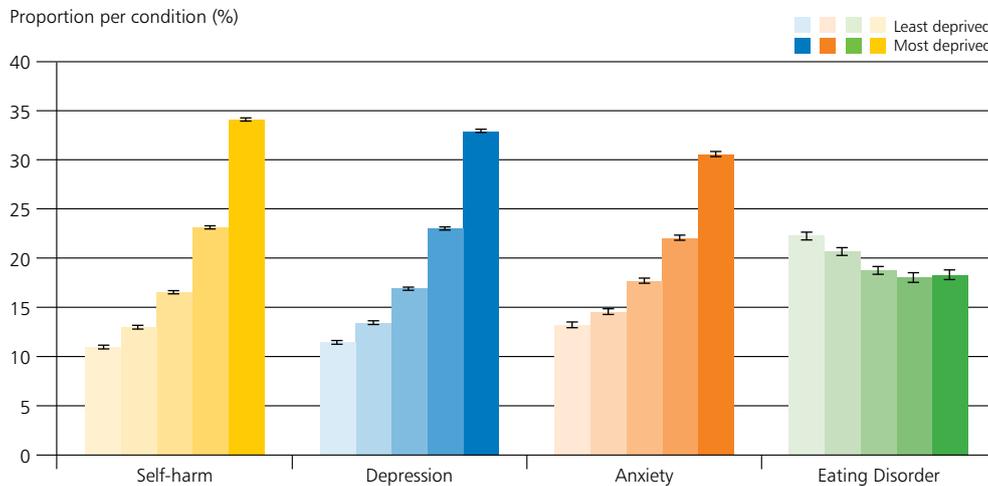
Source: HES – NHS Digital England

DATA RETURNS AND STUDY POPULATION

The proportion of admissions was considerably higher for people from the most deprived quintile for depression, anxiety and self-harm (Figure 2.12). The gradient was steepest for self-harm associated patient admissions where 34.0% (n=86,911) were from the most deprived areas compared to 11% (n=27,910) from the least deprived. This gradient was not observed for eating disorders where 18.3% (n=5,386) of patient admissions were from the most deprived quintile areas compared to 22% (n=6,538) from the least.

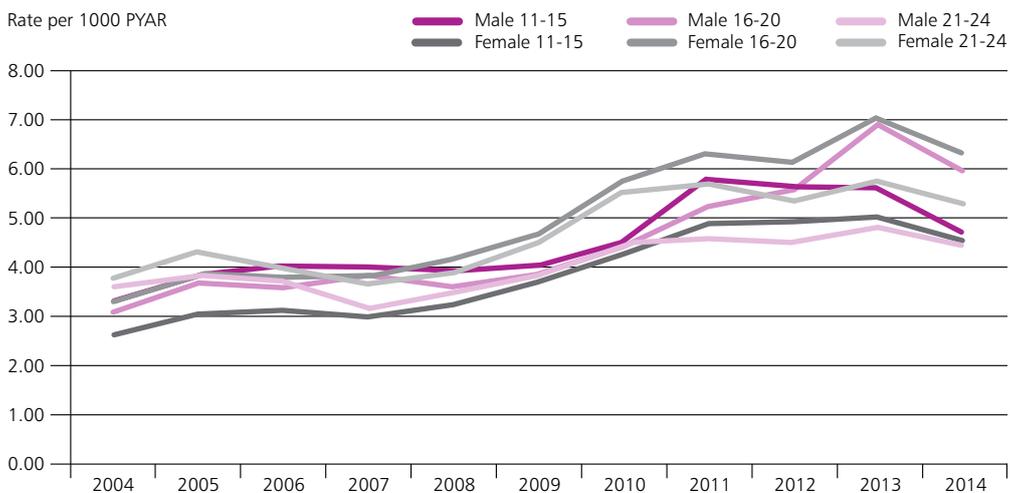
During 2004-2014 there appeared to be an overall increase in the rate of attendance at outpatients for all age and sex groups. There appeared to be greater increases for females (particularly younger females) and younger males. Trends did fluctuate (Figure 2.13).

In 2004 the rates were highest for the 21-24 year old groups (males: 3.6 per 1,000; 95% CI 3.5-3.7, n=4,627; females: 3.7 per 1,000; 95% CI 3.6-3.8, n=4,787)



**Figure 2.12 Proportion of admissions (spells) to inpatient care with a diagnosis of depression, anxiety, eating disorder and self-harm by deprivation quintile.**

Source: HES- NHS Digital England



**Figure 2.13 Rate by mid-year population of individuals attending new outpatient appointments with a mental health specialty by age group and sex**

Source: HES- outpatients- England

- By 2014 the rates were highest for 16-20 year old females (6.3 per 1,000; 95% CI 6.2-6.4, n=10,068) and lowest for the older groups (males aged 21-24: 4.4 per 1,000; 95% CI 4.0-4.1, n=6,583; females aged 21-24: 5.2 per 1,000; 95% CI 5.1-5.4, n=7,513)
- Overall for 2004-2014 the highest rate of outpatient attendance was for females aged 16-20 (5.0 per 1,000; 95% CI 5.0-5.0, n=89,345).

## Key Findings CHAPTER 2

### **Self-harm**

1. There was little change in presentation to, or the recording of self-harm in primary care and this was potentially an underestimation of reporting
2. Presentation to primary care for self-harm was more common in females in people from deprived areas and increased significantly for 11-15 year olds over time
3. Rates of hospital admission for self-harm were the highest of all the conditions analysed particularly in older females (16-24 years) although there had been an overall increase in admissions related to depression in recent years
4. Trends in inpatient admission rates for self-harm varied between countries, increasing in Wales and Northern Ireland, decreasing in Scotland and remaining relatively constant in England

### **Depression**

5. There was an overall decrease in recording of depression diagnosis in primary care, thought to be due to recording behaviours by GPs to code for symptoms (in order to avoid labelling or acting strategically in relation to the Quality Outcomes Framework)
6. Diagnosis of depression in primary care was more common in females and increased with deprivation index. There was a steep increase in hospital admissions associated with depression in females and in those aged 16-24 years. General hospital inpatient admission rates associated with depression increased significantly across all countries between 2004 and 2014, apart from Scotland where rates decreased marginally. This maybe an impact of policy changes in Scotland with the implementation of its mental health strategy 2012-2015, which aimed to strategically shift the mental healthcare of people from inpatient treatment to care in the community

The drop seen in 2014 was only apparent for attendances to a mental health specialty outpatient appointment (it did not occur for attendances in all other specialties, where there was a consistent year-on-year increase in numbers). This may be due to the introduction of IAPT and reduced demand from older adolescents who would otherwise have been seen in outpatient facilities.

### **Anxiety**

7. There was an increase in recording of anxiety in 11-24 year olds presenting to primary care. Rates were higher in the older age groups and in females
8. Admissions to a general hospital associated with anxiety had also increased
9. Inpatient admission rates for anxiety increased significantly across all countries

### **Eating disorders**

10. Rates of eating disorder presentation to primary care remained relatively stable while hospital admissions for eating disorders increased over time, although numbers remain relatively small
11. Inpatient rates of eating disorders remained at a low rate over time increasing slightly across all countries

### **All conditions**

12. In England the sharpest increase in admissions across all conditions was for females and 21-24 year olds admitted to hospital for depression or anxiety
13. People from the most deprived areas were the most likely to be admitted for any of the conditions of interest, except for eating disorders
14. Eating disorders were more common in females and demonstrated the reverse pattern for deprivation to other conditions – being most evident in least deprived areas for both primary care and hospital admissions.
15. Mental health specialty outpatient attendances for individuals with new appointments increased over the study period.

## Mental healthcare in primary care

### REFERRALS FROM PRIMARY CARE TO SECONDARY CARE

The Clinical Practice Research Database (CPRD) referral file contains referral details recorded on General Practitioner (GP) systems across the four countries. It holds information relating to patient referrals to secondary care and includes specialty and referral type. It should be noted that referrals made to secondary care mental health services may not meet service level thresholds and so may be rejected.

- There were 326,430 GP referrals for 11-24 year olds registered with a CPRD GP between 2004 and 2014 of whom 3.1% (n=10,084) were referred with an associated 'all mental health' diagnosis
- Across the conditions of interest the majority of referrals were to outpatient services (ranging from 76.0-81.0%) and of low urgency i.e. routine (ranging from 53.9-71.8%)
- A person who had recorded self-harm was most likely to be referred for either an immediate (8.6%, n=46/534) or urgent (18.7%, n=100/534) appointment

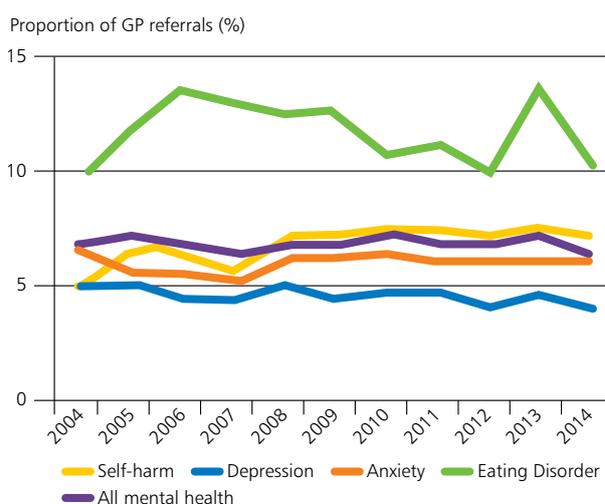
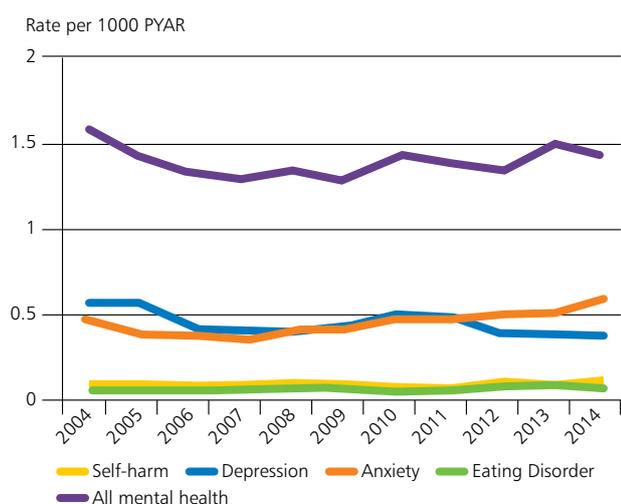
- Northern Ireland had the highest proportion of referrals to secondary care with associated 'all mental health' conditions. Of those people with an 'all mental health' diagnosis 17.7% (n=821) were referred compared to 6.6% (n=7,757) in England.

► *Link to the count, rate and proportion of GP referrals to secondary care for depression, anxiety, eating disorders and self-harm by country for 11-24 year olds between 2004 and 2014 Source: CPRD four countries*

The overall rates of referral to secondary care across all UK countries in 2004-2014 were:

- 0.1 per 1000 PYAR (n=534) for self-harm
- 0.4 per 1000 PYAR (n=3,245) for depression
- 0.4 per 1000 PYAR (n=3,183) for anxiety
- 0.1 per 1000 PYAR (n=551) for eating disorders.

Referral rates for self-harm and eating disorders remained relatively stable over the study period (NB administrative codes were removed). Referral rates to secondary care were highest for depression and anxiety (Figure 3.1) although they decreased significantly from 0.6 per 1000 PYAR



**Figure 3.1 Rate and proportion of referrals from primary care to other services for 11-24 year olds by condition of interest over time**

Source: CPRD four nations

(n=374) to 0.4 per 1000 PYAR (n=210) for depression during 2004-2014. In contrast referral rates for anxiety increased significantly from 0.5 per 1000 PYAR (n=306) to 0.6 per 1000 PYAR (n=350) reflecting the increase in overall rates for recorded anxiety observed in primary care.

Proportionately, where the denominator was 'number of individuals with the given diagnosis in primary care', people with eating disorders (11.9%) were the most likely to be referred to secondary care (Figure 3.1, right panel). The proportions for other conditions in 11-24 year olds 2004-2014 across all UK countries were:

- 6.8% of individuals with recorded self-harm
- 4.7% of individuals with recorded depression
- 6.1% of individuals with recorded anxiety.

The proportion of eating disorder referrals increased insignificantly from 10.0% to 10.8% during 2004-2014. There were no significant changes for the other conditions.

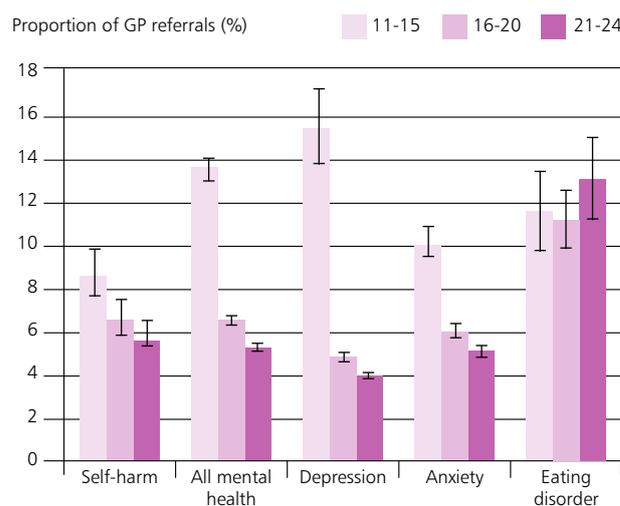
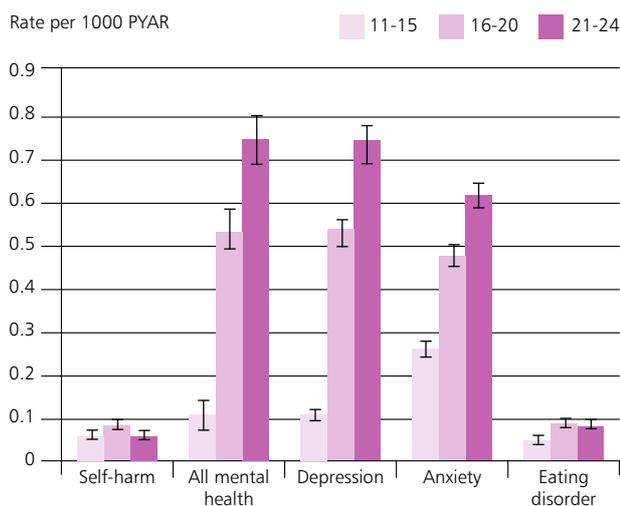
Referral rates to secondary care were higher for females than males across all conditions of interest, reflecting the higher recorded rates in females for these conditions:

- Males: 0.0 per 1000 PYAR (n=145) / females: 0.1 per 1000 PYAR (n=389) for self-harm

- Males: 0.3 per 1000 PYAR (n=1,062) / females: 0.6 per 1000 PYAR (n=2,183) for depression
- Males: 0.3 per 1000 PYAR (n=1,186) / females: 0.6 per 1000 PYAR (n=1,997) for anxiety
- Males: 0.0 per 1000 PYAR (n=51) / females: 0.1 per 1000 PYAR (n=500) for eating disorders.

However, males were proportionately more likely to be referred for 'all mental health' conditions (8.4%; n=4,227 for males vs. 6.0%; n=5,857 for females). This may reflect severity on presentation to primary care given known sex differences in help-seeking behaviour. Proportionately there were no significant differences between referrals for males compared to females for the conditions of interest, except for depression where males were slightly more likely to be referred (5.6% for males vs. 4.3% for females), despite having lower rates of diagnosis.

Referral rates across age groups showed similar patterns often with higher rates of referral in older age groups but with proportionately more 11-15 year olds referred to secondary care (Figure 3.2):



**Figure 3.2 Rate and proportion of referrals from primary care to secondary care for 11-24 years by condition of interest and age group**

Source: CPRD four nations

- Referral rates for self-harm were highest for 16-20 year olds (0.1%; n=226), but 11-15 year olds had the highest proportion of referrals (8.6%; n=176) compared to 6.6% (n=226) for 16-20 year olds
- Referral rates for depression were highest for 21-24 year olds (0.7 per 1000 PYAR; n=1,582) but 11-15 year olds were the most likely to be referred (proportion of referrals: 15.4%; n=300) compared to 4.0% (n=1,582) for 21-24 year olds
- Referral rates for people with anxiety, those aged 21-24 years had the highest rate of referral (0.6%; n=1,286) and 11-15 year olds had the highest proportion of referrals, (10.1%; n=708) compared to 5.1% (n=1,286) for 21-24 year olds
- Referral rates for eating disorders were the highest for 16-20 year olds (0.1 per 1000 PYAR; n=233).

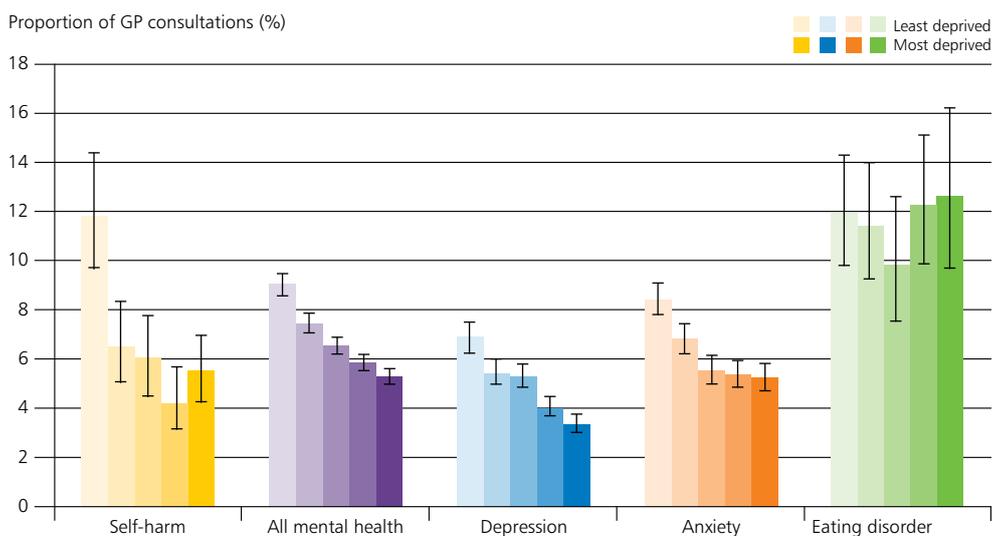
The proportion of referrals by age group showed no significant differences but numbers were very small and confidence intervals wide.

The proportion of referrals from primary care to secondary care for children and young people was highest for people from the least deprived areas despite levels of conditions being higher in the most deprived areas (except for in eating disorders where a pattern was unclear). This may be a demonstration of the inverse care law where people most in

need are least likely to receive care. The gradient was most stark for self-harm where the proportion of GP referrals for self-harm was 11.8% (n=86) in the least deprived quintile area and 5.5% (n=59) in the most deprived (Figure 3.3).

**REFERRALS TO IMPROVING ACCESS TO PSYCHOLOGICAL THERAPIES (IAPT)**

The National Institute for Health and Care Excellence (NICE) published ‘Clinical Guideline 28’<sup>30</sup> in 2005 (updated March 2015), recommending that the first-line treatment for moderate to severe depression in children and young people is psychological therapies. Access to psychological therapies varies across the four countries. In England 2014/15 the Improving Access to Psychological Therapies (IAPT) programme was established to provide access to adults mainly, but with some provision for younger people. The analyses in this study differed from IAPT data published by NHS Digital (e.g. waiting times) since they were based on all referrals received during the year 2014/2015 and the patient’s pathway within the year, regardless of whether the referral had an end date present, rather than based on appointments only. There were no data available to the project team for the transformation programme for under 18 year old psychological services during the study period, but findings from this analysis may be relevant to this service provision and data is now available.



**Figure 3.3 The proportion of referrals from primary care to other services for 11-24 years by condition of interest and deprivation**

Source: CPRD England

The IAPT service received 158,134 referrals, relating to 135,553 individuals, aged 11-24 year olds in the years 2014-2015 of which 65.5% (n=103,636) were female. The majority of referrals came from primary care (54.1%; n=85,577) and a significant proportion self-referred (37.4%; n=59,137). The youngest person in the dataset of those aged 11-24 years was 11 years (mean age: 20.7 years; median age: 21 years; mode age: 23 years).

► [Link to referral pathways for IAPT 2014-2015 for 11-24 year olds table based on number of referrals Source: IAPT – NHS Digital](#)

Whilst a larger proportion of females than males were referred to IAPT (65.6%; n=88,868 vs. 34.4%; n=46,667), once referred similar proportions of females and males received treatment (female: 56.2%; n=58,274 vs. male: 52.4%; n=28,568). While the majority of referrals to psychological therapies were for 18-24 year olds (89.7%; n=141,853), similar proportions of children and young people received treatment (11-17: 56.3%; n=9,166 vs. 18-25: 54.8%; n=77,676).

A larger proportion of children and young people from deprived areas were referred to IAPT:

- 25.4% (n=35,095) of total referrals were from the most deprived quintile
- 13.7% (n=18,920) were from the least deprived quintile.

Despite this, people from more deprived areas were least likely to receive treatment. Only 50.0% (n=20,742) of referrals from the most deprived areas attended at least one treatment appointment by the end of the reporting period, compared with 60.7% (n=12,822) of those from the least deprived areas. This represented a clear inequity in accessing treatment. There was some evidence that a higher proportion of appointments were classified as 'did not attend' (DNA) when made by people from the most deprived quintile areas of deprivation (most deprived: 20.7%; n=20,155 vs. least deprived: 14.2%; n=8,915).

► [Link to appointments, DNAs and cancellations for IAPT 2014-2015 for 11-24 year olds Source: IAPT – NHS Digital](#)

Table 3.1 shows the types of therapies accessed when appointments were attended. These figures were based on referrals received in the 2014/2015 financial year so referrals received towards the end of this period would have had limited time to be acted upon, resulting in a lower

**Table 3.1 Types of therapies accessed when appointments were attended**

	Self-help	Behavioural Activation (inc high and low intensity)	Cognitive Behavioural Therapy	Psychoeducational peer support	Counselling for Depression	Other - all other categories
	Count	Count	Count	Count	Count	Count
	Proportion of total attendances (% and 95% CI) n=291,336					
	57,772	5,112	87,549	8,984	16,285	74,680
<b>All</b>	19.8(19.7-20.0)	1.8(1.7-1.8)	30.1(29.9-30.2)	3.1(3.0-3.2)	5.6(5.5-5.7)	25.6(25.5-25.8)
	18,763	1,956	27,940	2,750	4,618	23,985
<b>Male</b>	20.1(19.8-20.3)	2.1(2.0-2.2)	29.9(29.6-30.2)	2.9(2.8-3.1)	4.9(4.8-5.1)	25.7(25.4-25.9)
	39,009	3,156	59,609	6,234	11,667	50,695
<b>Female</b>	19.7(19.5-19.9)	1.6(1.5-1.7)	30.1(29.9-30.3)	3.2(3.1-3.2)	5.9(5.8-6.0)	25.6(25.4-25.8)
	6,203	704	9,265	1,058	1,417	7,652
<b>Under 18</b>	21.0(20.6-21.5)	2.4(2.2-2.6)	31.4(30.9-31.9)	3.6(3.4-3.8)	4.8(4.6-5.1)	25.9(25.4-26.4)
	51,569	4,408	78,284	1,058	14,868	67,028
<b>18 and over</b>	19.7(19.5-19.9)	1.7(1.6-1.7)	29.9(29.7-30.1)	3.0(3.0-3.1)	5.7(5.6-5.8)	25.6(25.4-25.8)

Source: IAPT - NHS Digital- England

overall proportion of people treated. IAPT data in CPRD was not useable due to data quality issues although work is underway in CPRD to assess and improve this.

## PRESCRIPTION MEDICATION

### **Antidepressant and anxiolytic/hypnotic prescriptions in primary care**

#### ► *LINK TO RECORDING OF MEDICATION FOR MENTAL HEALTH CONDITIONS IN REPORT I*

British National Formulary (BNF) codes converted into CPRD specific product codes were used to explore prescribing in the CPRD dataset. In CPRD across the UK for people aged 11-24 years during 2004-2014, there were:

- 1,222,609 antidepressant prescriptions prescribed to 163,435 individuals
- 175,873 anxiolytic/hypnotic prescriptions prescribed to 42,827 individuals.

Incident cases of depression, anxiety, self-harm and eating disorders with an associated prescription were identified as 'no previous record of the condition in the previous year. Incident rates were calculated per 1000 PYAR.

An associated prescription was defined as an antidepressant or anxiolytic/hypnotic 12 months either side of an incident case of anxiety, depression, eating disorder or self-harm. The rates of incident cases with an associated prescription were calculated per 1000 PYAR. The proportion of incident cases with an associate prescription were also calculated.

In general, antidepressant medication should be offered only in combination with psychological therapies.<sup>30</sup> If fluoxetine is not providing a therapeutic benefit after an adequate trial at adequate dosages in under 18 year olds, and the depression is sufficiently severe to justify the trial of another antidepressant, NICE recommends citalopram or sertraline as second-line treatments. However, this is required to be logged as unlicensed use. In these analysis it is not known whether the medication was started in primary or secondary care and prescribing is not explicitly linked to a diagnosis.

Associated prescriptions of antidepressants with incident diagnoses of the conditions of interest between 2004 and 2014 in 11 to 24 year olds were prescribed to:

- 80.8% (n=46,828) of incident cases of recorded depression
- 42.9% (n=3,189) of incident recorded self-harm
- 41.3% (n=18,546) of people with incident diagnoses of anxiety
- 34.5% (n=1,384) of incident recorded eating disorders.

Associated prescriptions of anxiolytics and hypnotics with incident diagnoses of the conditions of interest ranged from 4.9% (n=209) in eating disorders to 11.7% (n=875) for self-harm.

#### ► *Link to the count, rate and proportion of individuals with an incident depression, anxiety, eating disorder or self-harm diagnoses with an associated antidepressant, anxiolytic/hypnotic for 11-24 year olds between 2004 and 2014 Source: CPRD 4 countries*

### **Trends in antidepressant prescribing**

#### Rates

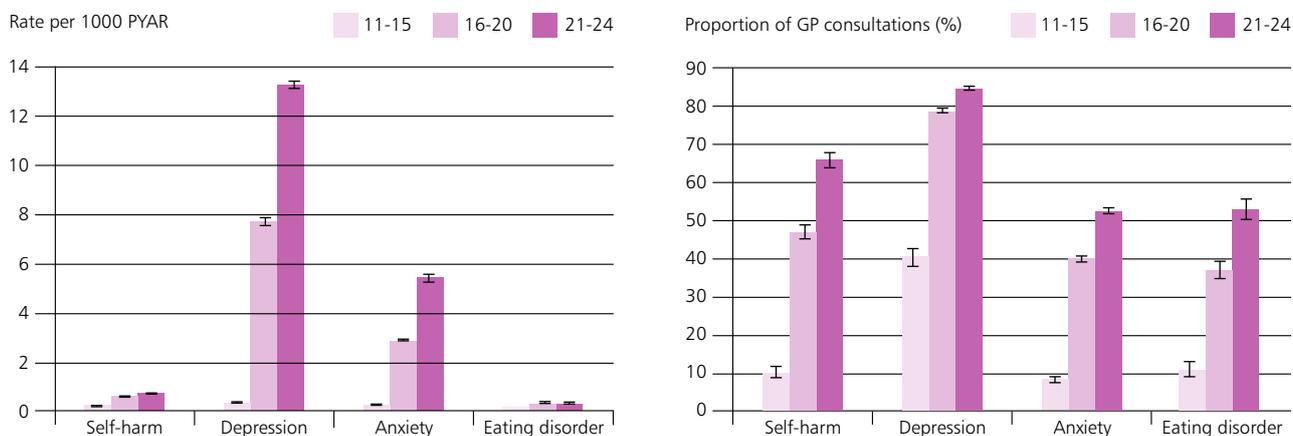
The rates of antidepressants prescribed associated with the conditions of interest:

- Decreased significantly for depression diagnosis from 7.3 per 1000 PYAR (95% CI 7.1-7.5; n=4,982) in 2004 to 6.2 per 1000 PYAR (95% CI 6.1-6.5; n=3,686) in 2014
- Increased significantly for anxiety from 2.5 per 1000 PYAR (95% CI 2.4-2.6; n=1,694) in 2004 to 3.7 per 1000 PYAR (95% CI 3.6-3.9; n=2,184) in 2014.

Rates of antidepressant prescriptions associated with self-harm and eating disorders diagnoses remained stable. There were no significant changes in the proportion of antidepressants prescribed in relation to the rate of incident diagnoses over the study period.

### **Sex and age**

Across the conditions of interest the rate of associated prescriptions of antidepressants with incident diagnoses reflected the difference in GP diagnosis rates. However, females with a recorded diagnosis of depression



**Figure 3.4 The rate and proportion of individuals with incident diagnoses of depression, anxiety, eating disorder or self-harm with an associated prescription of antidepressants by age group in primary care**

Source: CPRD four nations

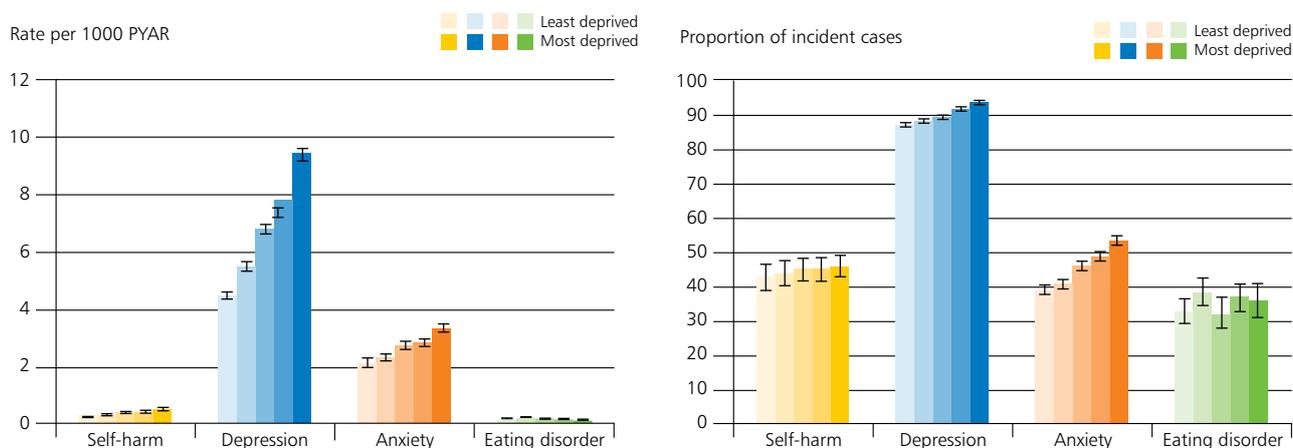
were proportionately more likely to be prescribed an antidepressant than males, 81.6% (95% CI 81.2-82.0; n=33,806) for females vs. 78.6% (95% CI 78.0-79.2; n=13,022) for males, as were females diagnosed with an eating disorder, 35.9% (95% CI 34.4-37.4; n=1,315) vs. 19.6% (95% CI 16.0-23.9; n=69) for males.

Those in the oldest age group, for all conditions were more likely to be prescribed an antidepressant at the incident diagnosis, although 78.9% (n=20,224) of 16-20 year olds and 40.6% (n=750) of 11-15 year olds were prescribed

an antidepressant at the point of the incident diagnosis of depression being recorded. (Figure 3.4).

### Deprivation

Rates of prescribing of antidepressants associated with recorded diagnoses showed a socio-economic gradient (increased in more deprived areas) across all conditions of interest except for eating disorders (Figure 3.5). These were (rate, number of individuals, least deprived quintile areas vs. rate, number of individuals, rate in most deprived quintile areas:



**Figure 3.5 The rate and proportion of individuals with incident diagnoses of depression, anxiety, eating disorder or self-harm with an associated prescription of antidepressants by deprivation quintile in primary care**

Source: CPRD England

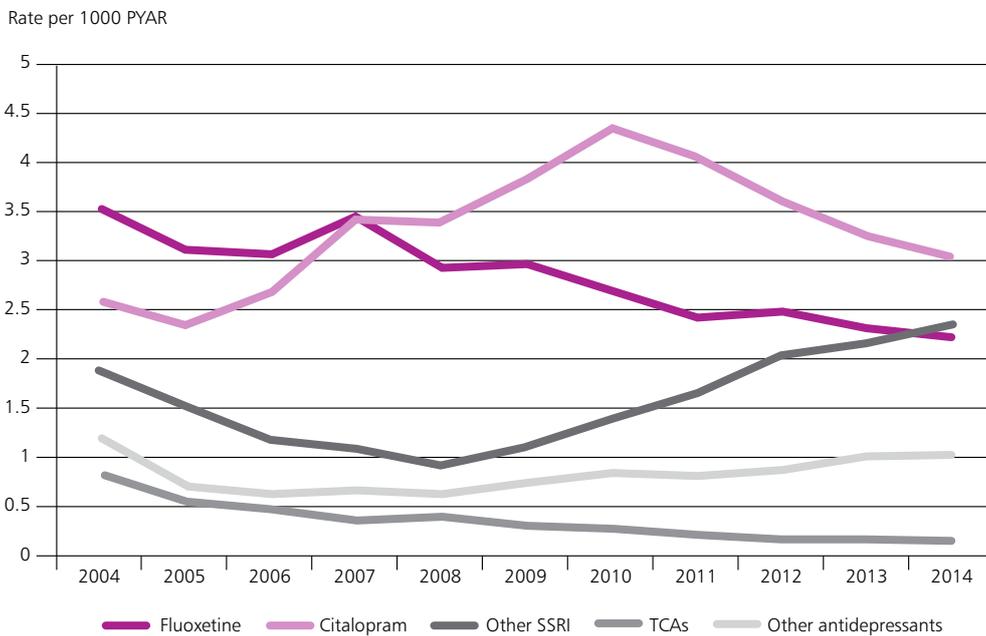
- 0.3 per 1000 PYAR vs. 0.5 per 1000 PYAR with an associated self-harm diagnosis
- 4.5 per 1000 PYAR vs. 9.4 per 1000 PYAR with an associated depression diagnosis
- 2.2 per 1000 PYAR vs. 3.4 per 1000 PYAR with an associated anxiety diagnosis
- 0.2 per 1000 PYAR, (95% CI 0.2-0.2), 205 vs. 0.1 per 1000 PYAR, (95% CI 0.1-0.2), 113 associated eating disorder diagnosis.

When exploring proportions of individuals prescribed antidepressants by diagnosis a significant difference between the least and most deprived was still observed for anxiety and depression, but not for self-harm or eating disorders: 86.6% vs. 93.3% for depression; 38.9% vs. 53.3% for anxiety; 42.8% vs. 46.0% for self-harm; 32.6% vs. 36.2% for eating disorders.

**Type of antidepressant prescribed**

Citalopram was the most common antidepressant prescribed to 11 to 24 year olds with an associated incident depression diagnosis in primary care (Figure 3.6). There were 24,316 (40.5%) individuals diagnosed with depression who had an associated citalopram prescription.

Citalopram prescriptions increased significantly between 2004 and 2014 from 2.5 (n=1,723) to 3.0 (n=1,780) per 1000 PYAR, peaking in 2010 at 4.3 per 1000 PYAR (n=3,196). This increase could be attributed to 18-24 years olds in whom citalopram prescriptions with an associated depression diagnosis significantly increased from 4.8 per 1000 PYAR (n=1,559) to 5.5 per 1000 PYAR (n=1,640) peaking in 2010 at 8.1 per 1000 PYAR (n=2,960).



**Figure 3.6 The rate individuals with an incident diagnosis of depression and associated prescription of antidepressants by year and antidepressant type in primary care, 11-24 years old.**

Source: CPRD four nations

Fluoxetine should be the initial choice of antidepressant for mild to moderate depression in those under 18 years of age according to guidelines. In this study:

- 2,643 (34.8%) of individuals aged 11-17 years with an annual incident diagnosis of depression had an associated fluoxetine prescription, a rate of 0.7 per 1000 PYAR
- 1,908 (24.8%) of individuals aged 11-17 years with an annual incident diagnosis of depression had an associated citalopram prescription, a rate of 0.5 per 1000 PYAR (95% CI 0.5-0.5). This may have been recommended by a specialist or followed a trial of fluoxetine.

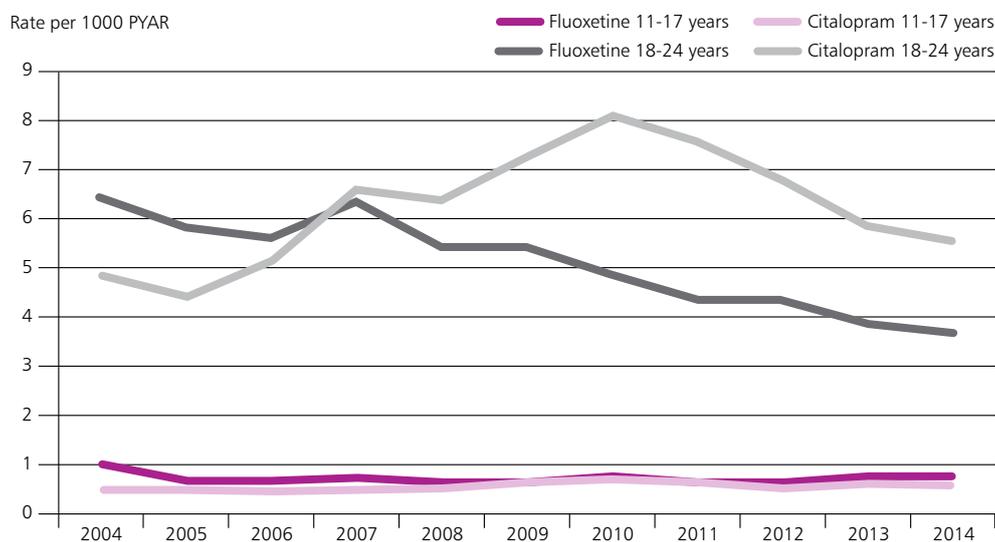
Fluoxetine prescriptions in 11-24 year olds decreased significantly from 3.5 per 1000 PYAR (n=2,385) in 2004 to 2.2 per 1000 PYAR (n=1,291) in 2014 (Figure 3.7). These patterns were in keeping with previous studies.<sup>21</sup> Fluoxetine prescription rates for 18-24 year olds diagnosed with depression significantly decreased from 6.4 per 1000 PYAR

(n=2,059) in 2004 to 3.7 per 1000 PYAR (n=1,080) in 2014. Fluoxetine prescriptions for 11-17 year olds diagnosed with depression were relatively stable, 0.9 per 1000 PYAR (n=326) in 2004 and 0.7 per 1000 PYAR (n=211) in 2014.

## EDUCATION

### *Educational outcomes for people diagnosed in primary care*

The cohort for the education data aged 11-24 during 2004-2014, was made up of 71,291 individuals with a Key Stage 4 record and five years of attendance linked to their primary care records. Individuals were included in condition categories with their first ever record of each condition in primary care stratified by age at diagnosis (self-harm, n=1,116; depression, n=2,229; anxiety, n=1,852; eating disorder, n=222). Both symptoms and diagnosis of depression and anxiety were included. This was decided in reflection on the decline in the incidence of diagnosis codes.



**Figure 3.7 The rate individuals with an incident diagnosis of depression and associated prescription of fluoxetine or citalopram for 11-17 year olds and 18-24 year olds by year in primary care**

Source: CPRD four nations

Attainment at KS4 (achieving 5 GCSEs grade A\*-C) yes/no, attendance, exclusions and free school meals were explored for the whole cohort and people diagnosed with the conditions of interest in primary care. Analyses were stratified by sex and age at diagnosis: 11-13 years (pre GCSE), 14-16 years (during GCSE) and 17-18 years (post GCSE).

► [Link to the breakdown of the primary care linked to education cohort](#)

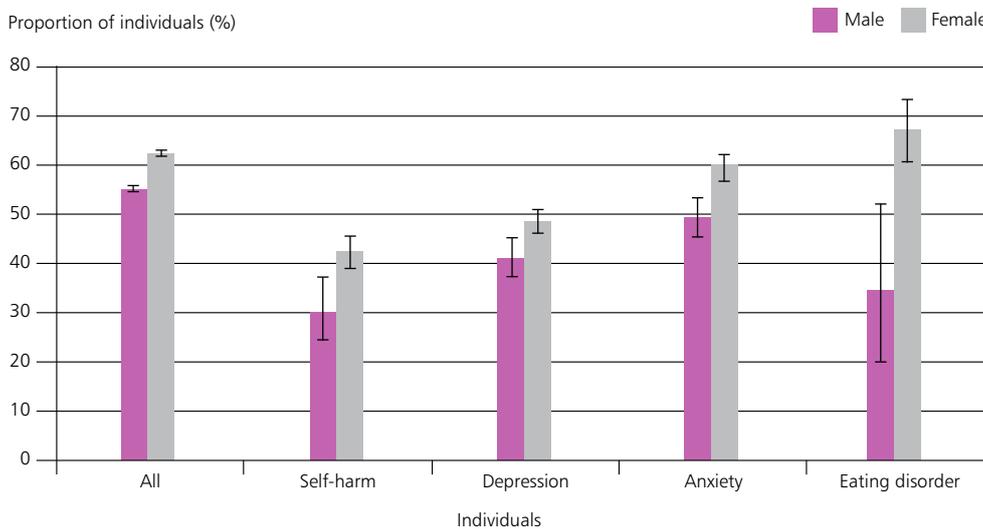
**Attainment 2009 to 2016**

Overall the presence of a condition of interest was associated with lower attainment except for females with eating disorders where there was no significant difference (Figure 3.8). Male attainment was lower than female in the whole cohort at Key Stage 4 and regardless of mental health condition. 62.5% (n=35,118) of females and 55.4% (n=36,173) of males in the whole cohort achieved 5 GCSEs grade A\*-C. Attainment of 5 GCSEs grade A\*-C was:

- 42.4% (n=935) of females and 30.4% (n=181) of males who self-harmed

- 48.7% (n=1,669) of females and 41.3% (n=560) of males with depression
- 59.6% (n=1,242) of females and 49.5%(n=610) of males with anxiety
- 67.5% (n=194) of females and 34.5% (n=29) of males with recorded eating disorders.

Age at diagnosis in primary care showed no statistically significant difference on attainment at Key Stage 4, apart from for people diagnosed at 17-18 aged years with anxiety after sitting their GCSEs. These pupils had a lower proportion of attainment than those diagnosed with anxiety either before (11-13) or during their GCSEs (14-16). The proportion diagnosed with anxiety at 17-18 years old attaining KS4 was 45.0% (95% CI 38.1-51.9; n=196) compared to 58.3% (95% CI 55.4-61.2; n=1,089) of those diagnosed at 14 to 16 years old and 56.3% (95% CI 52.2-60.3; n=567) diagnosed at 11-13 years old. This suggested early recognition, support and intervention for anxiety disorders may impact on educational attainment but a bidirectional influence was likely.



**Figure 3.8 The proportion of individuals achieving 5 GCSEs grade A\* to C at Key stage 4 when diagnosed in primary care with a condition of interest between 2013 and 2016 by sex**

Source: WLGP & NPD – Wales

### Attendance 2009 to 2016

People diagnosed in primary care with one of the conditions of interest had lower mean percentage attendance compared to all pupils. The mean percentage attendance in the whole cohort for males was 93.1% (95% CI 93.1-93.1; n=180,842) and for females 92.7% (95% CI 92.7-92.7; n=175,573), this dropped to:

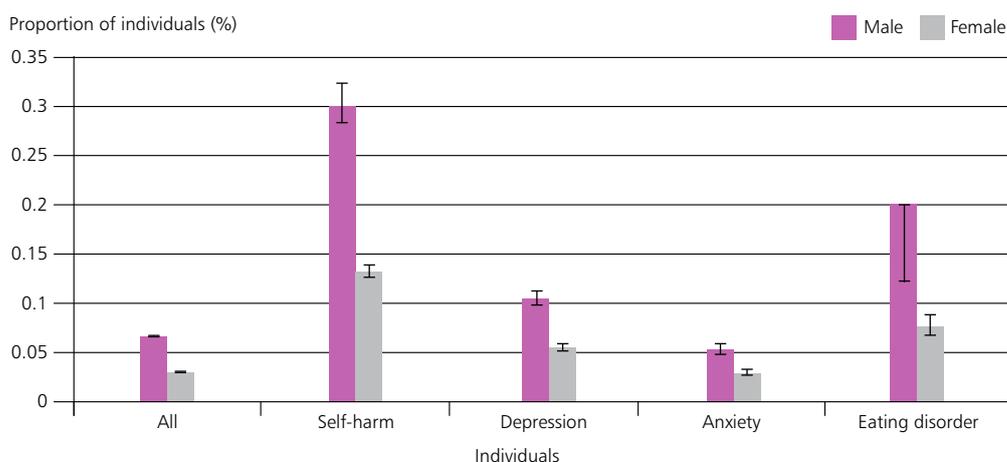
- Male 87.0% (95% CI 86.9-87.2; n=905), females (87.63% (95% CI 87.6-87.7; n=4,675) for self-harm
- Male 88.4% (95% CI 88.3-88.5; n=2,799), female 88.2% (95% CI 88.2-88.2; n=8,345) for depression
- Male 90.0% (95% CI 90.0-90.1; n=3,049), female 90.0% (95% CI 89.9-90.0; n=6,208) for anxiety
- Male 89.8% (95% CI 89.5-90.1; n=139), female 91.3% (95% CI 91.2-91.4; n=970) for eating disorders.

Age at diagnosis made minimal difference to attendance rates.

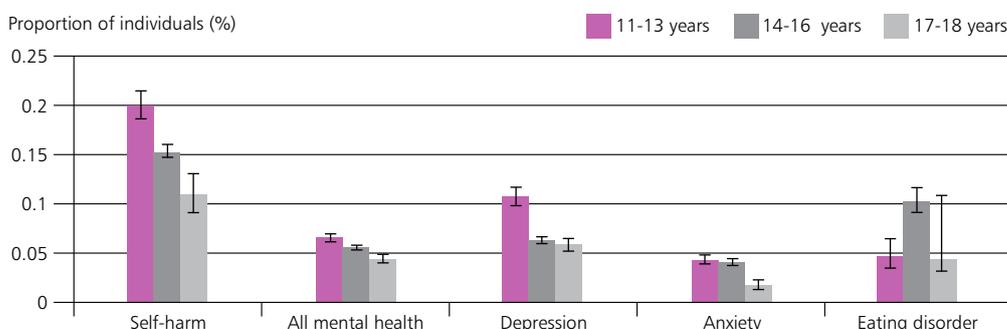
### Exclusions 2013 to 2016

Note: Numbers are small and the records supplied by Welsh Government are limited to the years 2013-2016 so this analysis should be interpreted with caution. Prior to 2013 it was not a requirement for schools to report exclusion data. Additionally, how exclusions are currently reported is at the head teacher's discretion, so records may be under reported or non-comparable.

Males who self-harm had the highest proportion of exclusions (Figure 3.9). Individuals diagnosed at an earlier age had higher proportion of exclusions with the exception of those with eating disorders (Figure 3.10).



**Figure 3.9 The proportion of individuals excluded from school with a diagnosis in primary care of one of the condition of interest between 2013 and 2016** Source: WLGP & NPD – Wales



**Figure 3.10 The proportion of individuals excluded from school with a diagnosis in primary care of one of the condition of interest between 2009 and 2016** Source: WLGP & NPD – Wales

**Free school meals 2009 to 2016**

Eligibility for free school meals is often used as an indicator of deprivation. Higher levels of deprivation, assessed through eligibility for free school meals, were again associated with higher incidence of the conditions of interest, in particular self-harm compared to the cohort as a whole. This pattern was not seen for eating disorders but numbers were too small for robust analyses (Figure 3.11).

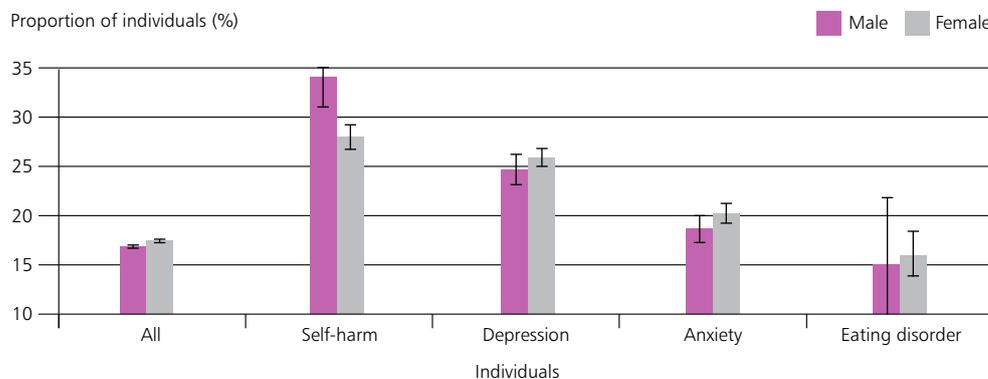
**PATHWAYS OF CARE**

▶ *LINK TO CHAPTER 3 IN REPORT I*

The following analysis was based on a cohort of individuals registered with a SAIL supplying GP from 2010-2014 (limited by availability of reliable emergency department data). It reports on the percentage of individuals registered at each age who were either admitted to hospital, attended the emergency department or had an outpatient appointment were calculated (i.e. percentage of registered

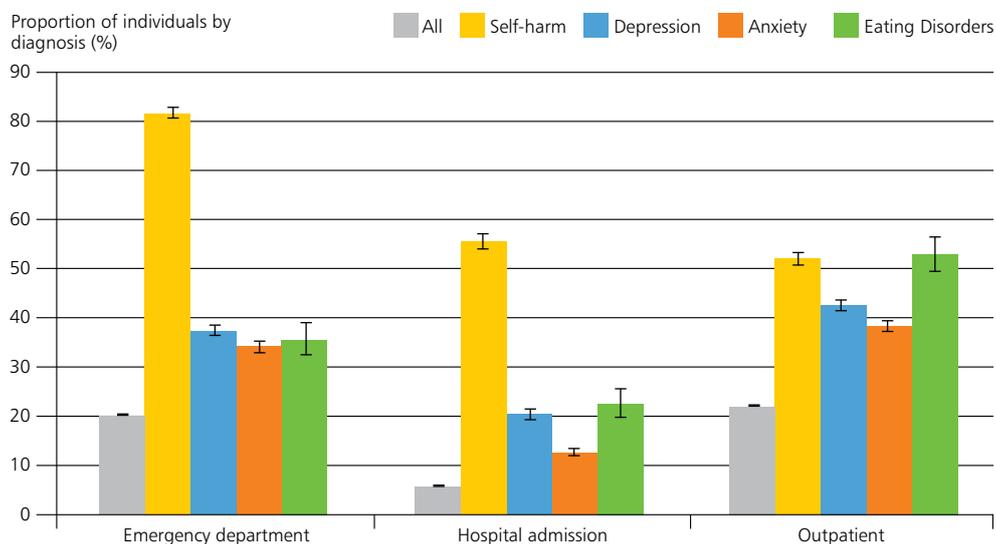
11 year olds who were admitted to hospital). The first ever record of that diagnosis in the GP data was used, and presentation to services at the age of diagnosis recorded. Where 'all' is used, this meant children and young people who presented to primary care for any reason and their use of other services at the same age.

Across all the conditions of interest there was a higher proportion of individuals presenting across services compared with the entire population (Figure 3.12). This was most apparent for self-harm particularly for emergency department attendance where 81.7% (n=4,353) of people with a record of self-harm in primary care had an emergency department attendance at the same age. While a higher proportion of emergency department attendances were associated with older age groups, a high proportion of hospital admissions and outpatient appointments are associated with younger age groups. This pattern varied across diagnoses.



**Figure 3.11 The proportion of individuals receiving free school meals with a diagnosis in primary care of one of the conditions of interest between 2009 and 2016**

*Source: WLGP & NPD – Wales*



**Figure 3.12 Percentage of individuals aged 11-24 attending services by diagnosis\***

Source: WLGP, EDDS, PEDW, OPD- Wales

While there were fewer males overall with a record of self-harm or a mental health condition, a higher percentage of males presented to emergency departments for all conditions except eating disorders:

- Self-harm: males 85.4% (n=1,583) vs. females 79.8% (n=2,770)
- Depression diagnosis: males 39.1% (n=1,377) vs. females, 36.8% (n=2,792)
- Anxiety diagnosis: males 35.2% (n=1,249) vs. females 33.4% (n=2,059)
- Eating disorders: males 29.2% (n=28) vs. females 36.6% (n=284).

A higher proportion of females across diagnoses attended outpatients or were admitted to hospital.

**Key Findings** CHAPTER 3

**Referral rates from primary care to secondary care**

16. GP referral rates to secondary care for all mental health conditions were higher for females compared to males
17. People with depression and anxiety diagnoses had the highest rates of GP referral to secondary care, however those with an eating disorder were proportionally more likely to be referred by their GP
18. Referral rates across age groups in self-harm, depression and anxiety showed similar patterns with higher rates of referral in older age groups but with 11-15 year olds proportionally more likely to be referred to secondary care. These relationships were less evident for eating disorders
19. The proportion of referrals from primary care to secondary care for children and young people was highest for people from the least deprived areas despite levels of conditions being higher in the most deprived areas (except for in eating disorders where a pattern was unclear)
20. Proportionally more males than females were referred from primary to secondary care for 'all mental health' conditions. This may reflect severity on presentation to primary care given known sex differences in help-seeking behavior
21. While there were fewer males overall with a record of self-harm or a mental health condition compared to females, a higher percentage of males presented to emergency departments for all conditions except eating disorders

**Referrals to Improving Access to Psychological Therapies (IAPT)**

22. A larger proportion of females than males were referred to adult IAPT programmes
23. Once referred to adult IAPT similar proportions of males and females received treatment
24. Whilst the majority of referrals to IAPT were for 18-24 year olds (90%), as this service provision is intended for adults, the proportion of people receiving treatment

was similar to those aged 11-17 years (approximately 55%) when they were referred to a psychology service for children and young people. This suggested that the acceptability of IAPT services for those aged 11-17 years who may be appropriately accessing such a service is similar to that for those aged 18-25 years. A larger proportion of children and young people aged 11-24 years from deprived areas were referred to IAPT (adult service) but they were less likely to attend at least one appointment and receive treatment

**Prescription of medication**

25. Of the annual incident cases of recorded depression between 2004 and 2014 in 11 to 24 year olds, 80% received an associated prescription (12 months either side of the recorded diagnosis) for an antidepressant. In comparison for self-harm, anxiety and eating disorders, 43%, 41% and 34% were prescribed associated antidepressants respectively. The rates of antidepressants prescribed associated with the conditions of interest:
  - Decreased significantly for depression diagnosis from 7.3 per 1000 PYAR (95% CI 7.1-7.5; n=4,982) in 2004 to 6.2 per 1000 PYAR (95% CI 6.1-6.5; n=3,686) in 2014
  - Increased significantly for anxiety from 2.5 per 1000 PYAR (95% CI 2.4-2.6; n=1,694) in 2004 to 3.7 per 1000 PYAR (95% CI 3.6-3.9; n=2,184) in 2014
26. Associated prescriptions of anxiolytics and hypnotics with incident diagnoses of the conditions of interest ranged from 5% in eating disorders to 12% for self-harm
27. Across conditions the rate of associated prescriptions of antidepressants with incident diagnoses increased with age. Similar patterns, though with lower rates and proportions were seen for anxiolytics
28. Rates of prescribing of antidepressants associated with recorded diagnoses showed a socio-economic gradient (increased in more deprived areas) across all conditions except eating disorders
29. For individuals with an incident depression diagnosis, fluoxetine was most likely to be prescribed to children and young people

**Education**

30. The presence of any of the conditions of interest diagnosed in primary care between the ages of 11 and 18 years was associated with lower attainment at Key Stage 4, GCSE (except for in females with anxiety and/or eating disorders where there was no significant difference) and lower attendance
31. Males who were diagnosed in primary care with self-harm before they were 18 years old were more likely to be excluded from school
32. There was some evidence that early recognition and intervention for anxiety disorders may impact on educational attainment.

## Mental healthcare in acute general hospitals

► [LINK TO CHAPTER 3 IN REPORT I](#)

### OUTPATIENT ATTENDANCE

#### **New to follow-up rates - NHS Digital**

Across all age and sex groups, new to follow-up rates for mental health outpatient appointments were significantly higher than those for all specialties in this age group, with:

- 2.0 follow-up attendances per new attendance for all specialties (n=23,545,445 new appointments) compared with 4.5 follow-up attendances per new attendance for mental health specialties (n=608,336 new appointments). For mental health specialties (and for all specialties), 11-15 year olds (both male and female) had significantly higher follow-up rates than older individuals.

Mental health follow-up rates for each group during 2004-2014 were:

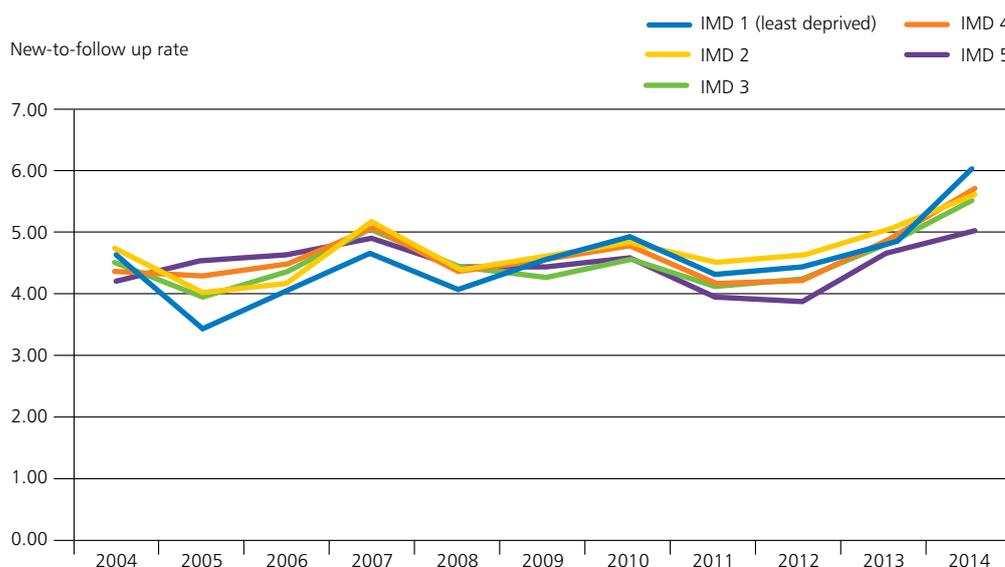
- Males aged 11-15 years, 5.9 follow-ups per new attendance (n=96,927 new appointments); 16-20 years,

3.7 follow-ups per new attendance (n=98,853 new appointments); 21-24 years 3.9 follow-ups per new attendance (n=91,325 new appointments)

- Females aged 11-15 years, 5.5 follow-ups per new attendance (n=95,555 new appointments); 16-20 years, 4.3 follow-ups per new attendance (n=124,188 new appointments); 21-24 years, 3.6 follow-ups per new attendance (n=101,488 new appointments).

► [Link to New to follow-up rates by age and sex \(the number of follow-up appointment ATTENDED for each new appointment ATTENDED\) for mental health specialties](#) [Link to New to follow-up rates by age and sex \(the number of follow-up appointment ATTENDED for each new appointment ATTENDED\) for ALL specialties](#)

Figure 4.1 shows the rates of 'new to follow-up' appointments for mental health specialties which were higher than those for all specialties, highlighting the need for more specialist support in people with mental health conditions. Since 2012 rates appeared to have increased,



**Figure 4.1 New to follow-up rates by IMD quintile (5 = most deprived) (the number of follow-up appointment ATTENDED for each new appointment ATTENDED) for mental health specialties only**

Source: HES outpatients

and in 2014 there were significant differences between the rate for people from the most deprived quintile with 4.8 follow-ups per new attendance (n=19,302 new appointments) and the least deprived Index of Multiple Deprivation (IMD) quintile with 6.0 follow-ups per new attendance (n=7,985 new appointments). This can be interpreted as people from the least deprived quintile attending one more follow-up appointment for each new appointment than people from the most deprived quintile. This may be linked to the relationship between deprivation and 'did not attend' (DNA) rates, with greater deprivation associated with higher DNA rates. Rates for all specialties appeared to be relatively stable from 2004-2014 and consistent across all deprivation quintiles.

► *Link to new to follow-up rates by IMD quintile (the number of follow-up appointments ATTENDED for each new appointment ATTENDED) for ALL specialties*

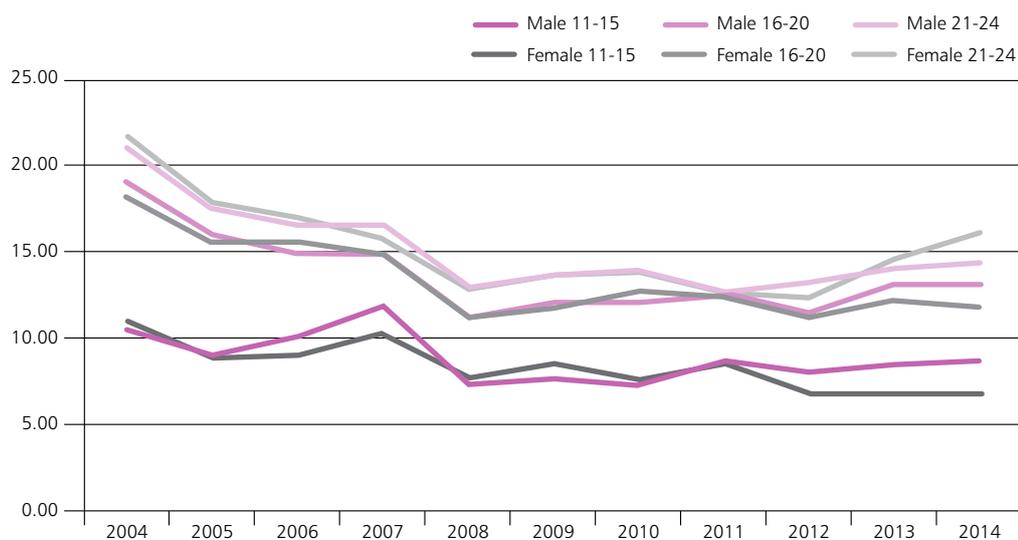
#### **Did not attends for general hospital outpatient appointments**

DNA rates for mental health specialties were significantly higher than overall rates for all specialties in any care setting. These rates were calculated by dividing the total number of DNAs by the total number of all appointments.

Overall DNA rates for mental health specialties for 2004-2014 were 12.4% (n=99,707) for new appointments and 13.8% (n=516,266) for follow-up appointments, compared with 10.3% (n=2,971,291) for new appointments in all specialties and 12.0% (n=7,388,536) for follow-ups in all specialties. A general reduction in the number of DNAs, particularly for follow-up appointments was seen over the study period in mental health DNAs. The reduction in mental health DNAs for new appointments appeared to plateau from 2011 onwards and for some age bands had started to increase (particularly for males ages 21-24). This reduction in DNA rates may have been a result of specific strategies introduced by providers. The rate of reduction in DNAs was greater for mental health specialties than for appointments in all specialties, particularly for new appointments. All specialties showed a fairly consistent DNA rate for all age bands across all years.

DNA rates for new appointments younger individuals were significantly lower (Figure 4.2). During the period 2004-2014, the DNA rates for new mental health appointments in each age band were:

- Males aged 11-15 years, 8.8% (n=10,608); 16-20 years, 13.6% (n=18,231) and 21-24 years, 15.4% (n=19,093)
- Females aged 11-15 years, 8.0% (n=9,378); 16-20 years, 13.0% (n=21,672) and 21-24 years, 14.8% (n=20,725).



**Figure 4.2 Did not attend rate for new outpatient appointments with a mental health specialty between 2004 and 2014 by age and sex**

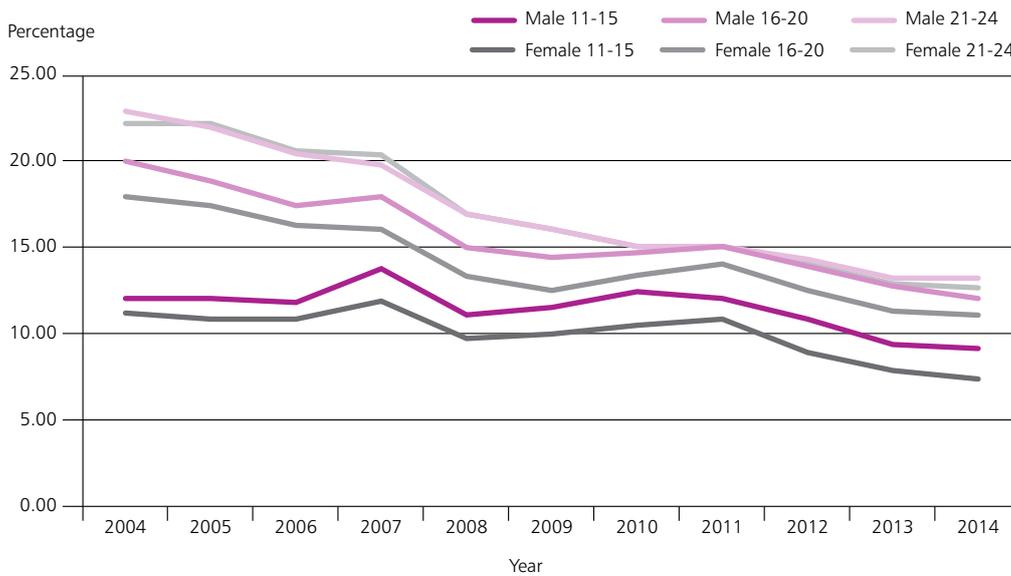
Source: HES outpatients

► *Link to the 'did not attend rate for new outpatient appointments with ALL specialties' between 2004 and 2014 by age and sex*

For follow-up appointments, females aged 21-24 years had higher DNA rates for mental health specialties, but had lower rates for all specialties whereas males aged 21-24 years consistently had the higher DNA rates for both mental health and all specialties (Figure 4.3). During the period 2004-2014, the DNA rates for follow-up mental health appointments in each age band were:

- Males aged 11-15 years, 11.6% (n=88,510); 16-20 years, 15.7% (n=81,938) and 21-24 years, 17.4% (n=88,838)
- Females aged 11-15 years, 9.8% (n=65,178); 16-20 years, 13.8% (n= 00,819) and 21-24 years, 16.7% (n=90,983).

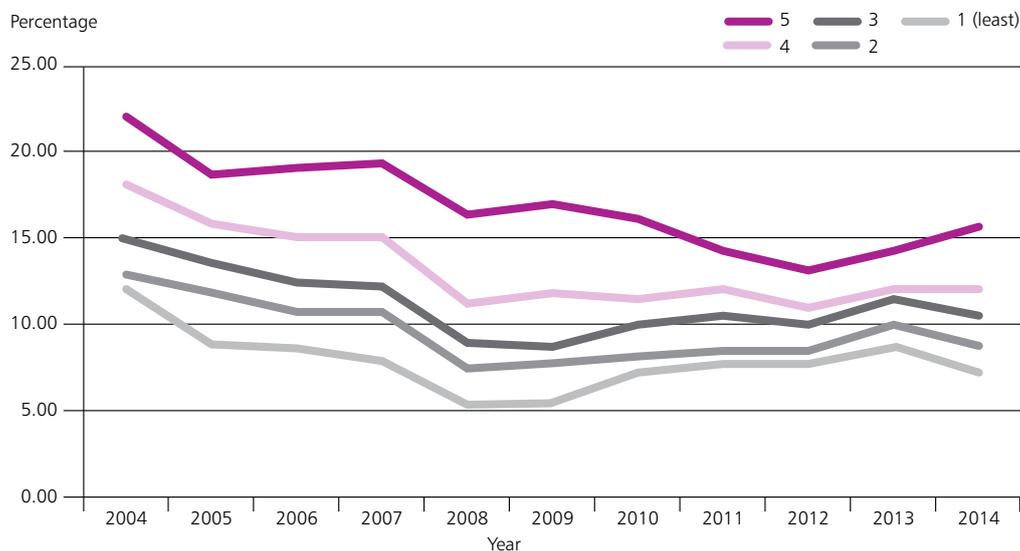
Figures 4.4 and 4.5 show the DNA rates for outpatient appointments during 2004-2014 in all mental health specialties, by deprivation quintile where 5 was the most deprived. Rates were shown separately for new and follow-up appointments. DNA rates were higher for people from the most deprived quintile compared to the least deprived, deprivation index of 5 (most deprived) was 16.6% (n=38,435) and a deprivation index of 1 (least deprived) was 7.8% (n=9,742) for new appointments. The follow-up appointment DNA rates for the same period showed a similar pattern; deprivation index of 5 was 17.1% (n=178,789) whereas a deprivation index of 1 (least deprived) was 9.8% (n=58,911).



**Figure 4.3 Did not attend rate for follow-up outpatient appointments with a mental health specialty between 2004 and 2014 by age and sex**

Source: HES outpatients

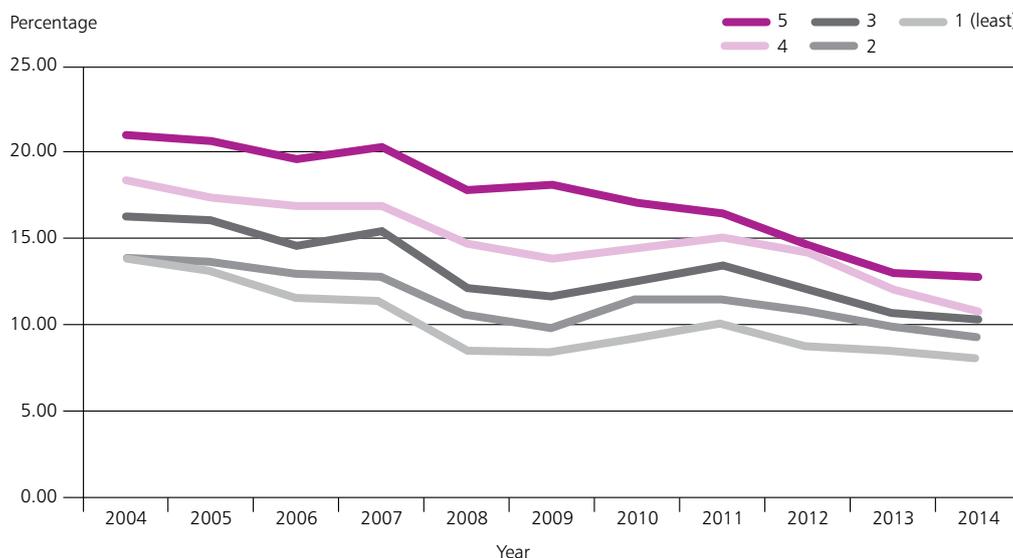
► [Link to the 'did not attend rate for follow-up outpatient appointments with ALL specialties' between 2004 and 2014 by age and sex](#)



**Figure 4.4** The did not attend rate for new outpatient appointments with a mental health specialty between 2004 and 2014 by deprivation (5 - most deprived)

Source: HES outpatients

► [Link to the 'did not attend' rate for new outpatient appointments for ALL specialties between 2004 and 2014 by deprivation \(5-most deprived\)](#)



**Figure 4.5** The did not attend rate for follow-up outpatient appointments with a mental health specialty between 2004 and 2014 by deprivation (5- most deprived)

Source: HES outpatients

► [Link to the 'did not attend' rate for follow-up outpatient appointments for ALL specialties between 2004 and 2014 by deprivation \(5- most deprived\)](#)

New appointment DNA rates appeared to decline for all deprivation quintiles between 2004 and 2012, but in 2013 and 2014 this trend appeared to have reversed, particularly in more deprived groups. Follow-up appointment DNA rates showed a consistent decline from 2004-2014, for all deprivation quintiles.

The finding that DNA rates were significantly higher among more deprived groups is reflected in the literature from England and Scotland which suggests that greater levels of deprivation are associated with higher DNA rates and greater proportionate use of emergency/unscheduled care such as emergency departments.<sup>31</sup>

**EMERGENCY DEPARTMENT ATTENDANCES**

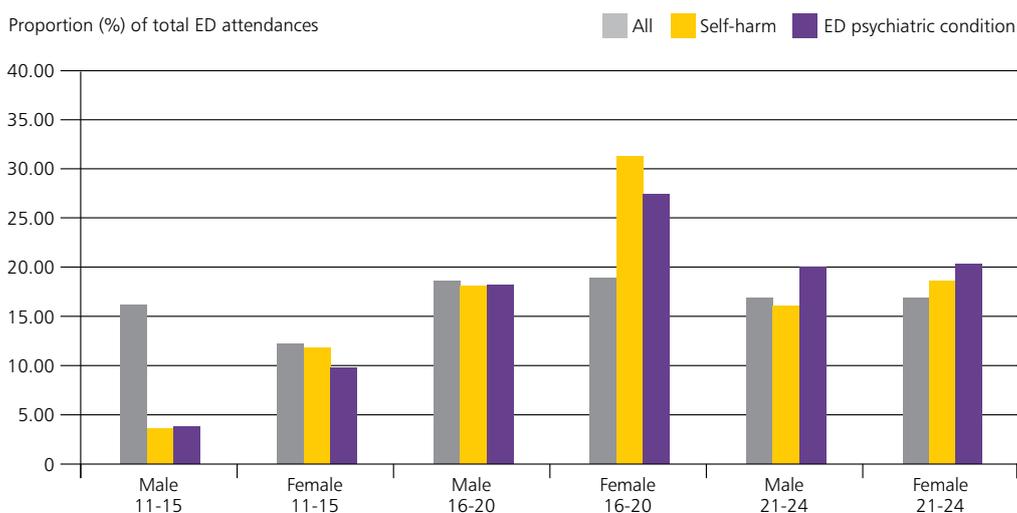
► **LINK TO ARRIVAL AT THE GENERAL HOSPITAL IN REPORT 1**  
 Admission to hospital through emergency departments (ED) was common for the conditions of interest, particularly self-harm. There were 22,855,990 attendances to the ED in England for 11-24 year olds between 2008 and 2014, made by 8,546,706 individuals. 273,132 attendances (made by 185,665 individuals) were for self-harm, making up 1.2% of total ED attendances for 11-24 year olds. The proportion of ED attendances (new and unplanned follow-up only) for self-harm (a named patient group) and psychiatric

conditions (a named diagnosis group code in the dataset) in 11-24 year olds between 2008 and 2014 varied across age and sex when compared with all attendances (Figure 4.6).

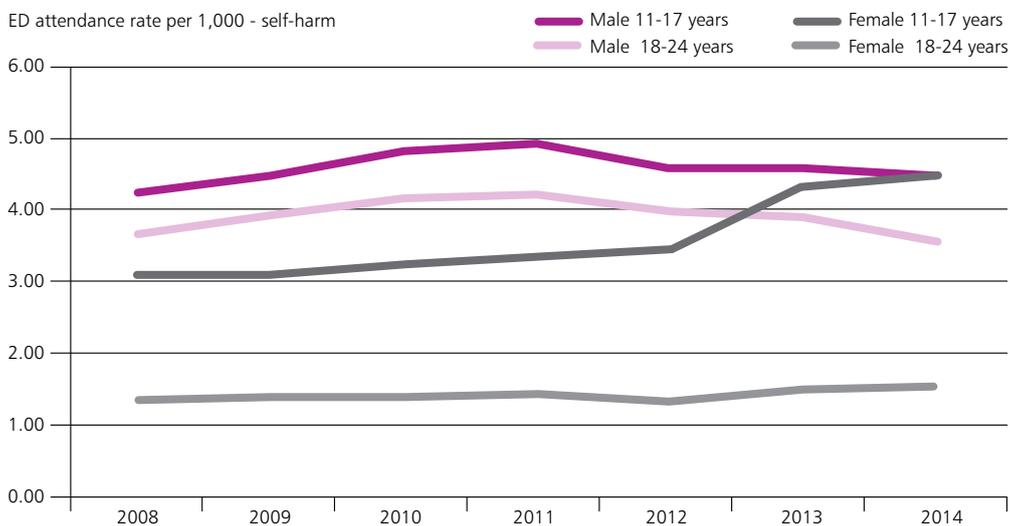
Rates of ED attendance for younger females, aged 11-17 years increased significantly over the study period, from 3.1 per 1,000 in 2008 (n=6,794) to 4.5 in 2014 (n=9,290) (Figure 4.7). This increase was also seen in younger males, but to a lesser extent, and for both sexes was particularly apparent from 2012 when NICE guidance and England’s suicide prevention strategy were issued.<sup>31,32</sup>

► *Link to rate per 1,000 ONS mid-year population estimates (counts per individual) for self-harm in the emergency department for 11-24 year olds by year, sex and project age group between 2008-2014*

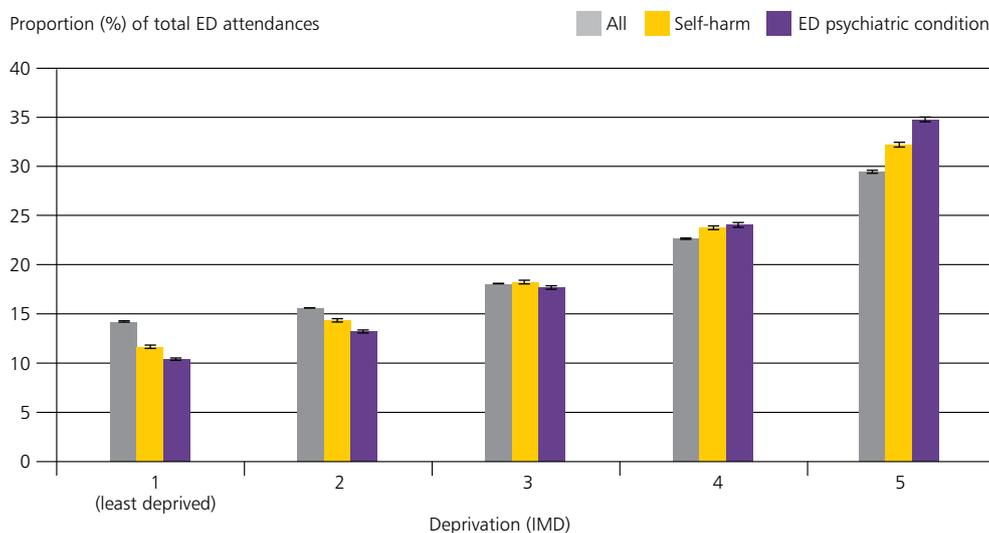
In England the highest rate of attendance for individuals to the ED between 2008 and 2014 for self-harm was for females aged 16-20 years with a rate of 5.5 per 1000 persons (n=72,466). This care which is unplanned and unscheduled represents a challenge for health services. The peak in self-harming behaviour at the age children and young people transition to adulthood and across child/adult services is well recognised in the literature.<sup>33</sup> It suggested that females aged 16-20 were not accessing and/or receiving care in an appropriate setting around the age of transition.



**Figure 4.6 The proportion of emergency department attendances for self-harm and mental health conditions between 2008 and 2014 for 11-24 year olds by sex and age group** Source: NHS Digital England



**Figure 4.7 Rate per 1,000 ONS mid-year population estimates (counts per individual) for self-harm in the emergency department for 11-24 year olds by year, sex and age group between 2008-2014** *Source: ED*



**Figure 4.8 The proportion of emergency department attendances for self-harm and mental health conditions between 2008 and 2014 by area deprivation** *Source: NHS Digital England*

There was a socio-economic gradient in ED attendance with people from more deprived areas forming an increasing proportion of attendances across deprivation quintiles. This gradient was steeper for self-harm (over 50% from the two most deprived quintile areas) and steeper still

for psychiatric conditions (Figure 4.8). Self-harm is often a reflection of complex underlying social, psychological and biological factors and attendance at an ED offers an opportunity for prevention and management with provision of a comprehensive psychosocial assessment.

**Re-attendance to the emergency department**

▶ **LINK TO PREVIOUS MENTAL HEALTHCARE ADMISSIONS TO A GENERAL HOSPITAL IN REPORT I**

The most commonly accepted definition for a person who attends an ED frequently is attendance five or more times per year.<sup>31</sup> The proportion of people aged 11-23 years who had five or more re-attendances in the year following an index attendance between 2008 and 2013 was explored.

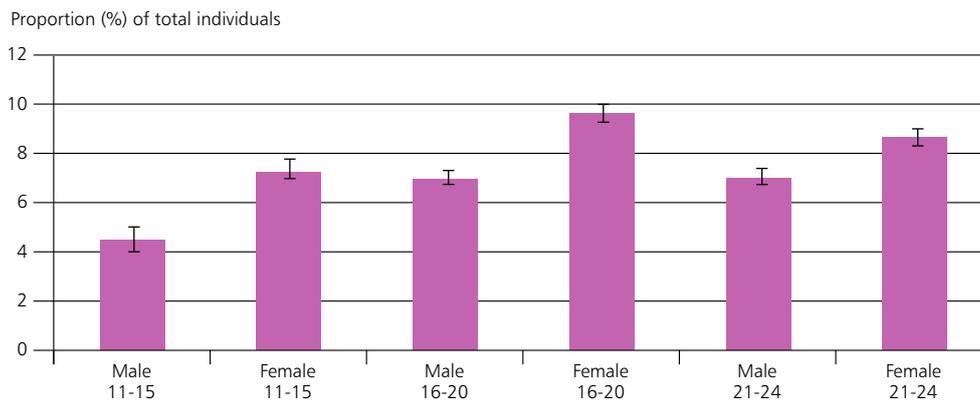
Since there was access to data for attendances up to 24 years of age only, a full year of follow-up data for 24 year olds was not available, hence analysis of re-attendances was carried out for 11-23 year olds only. There was 46.6% (n=69,674) of individuals with an index self-harm attendance and 43.5% (n=46,284) of individuals with an index psychiatric condition attendance who did not re-attend in the following year, compared with 67.2% (n=4,780,791) of people following an index attendance for any reason.

- ▶ *Link to the proportion of re-attenders within one year following an index attendance for a psychiatric condition by sex and age group*
- ▶ *Link to the proportion of re-attenders within one year following an index attendance to the emergency department by sex and group*

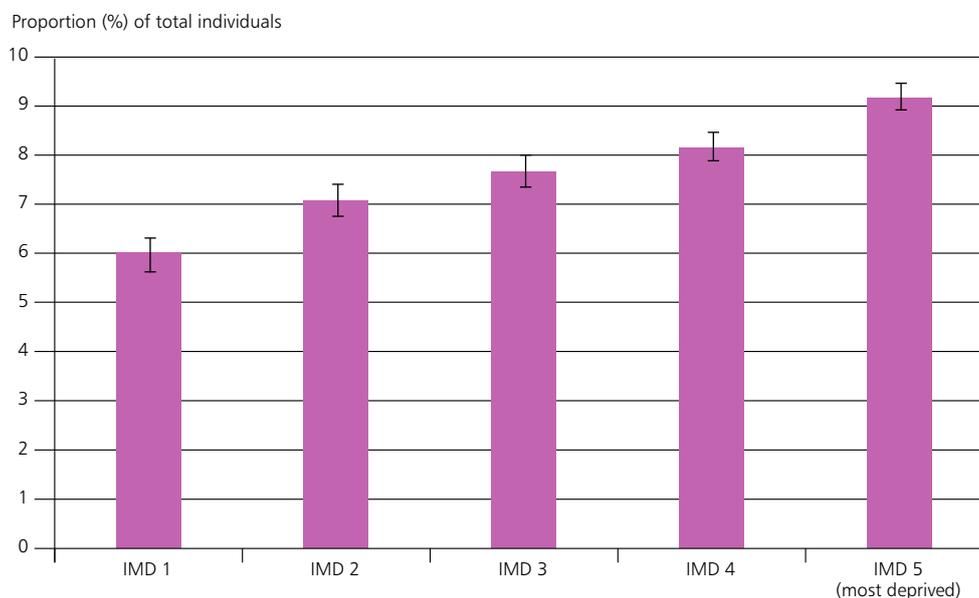
People from deprived communities were more likely to re-attend for self-harm and psychiatric conditions. This pattern was also present in the re-attendances following an index attendance for any reason, but was less pronounced. There were a small number of individuals who re-attended very frequently, sometimes over 50 times in the year following the index admission.

- ▶ *Link to the proportion of re-attenders within one year following an index attendance for psychiatric conditions by deprivation*
- ▶ *Link to the proportion of re-attenders within one year following an index attendance to the emergency department by deprivation*

In the year following an index self-harm attendance, females were significantly more likely than males to re-attend five or more times (Figure 4.9), particularly females aged 16-20 years old (9.7%; n=4,532). People from the most deprived quintile areas were significantly more likely to re-attend five times or more (9.6%; n=4,461), with an increasing proportion associated with increasing



**Figure 4.9 The proportion of individuals re-attending more than five times within one year following an emergency department index attendance for self-harm by sex and age group between 2008 and 2013** Source: NHS Digital England



**Figure 4.10 The proportion of individuals re-attending more than five times within one year following an index emergency department attendance for self-harm by deprivation between 2008 and 2013** *Source: NHS Digital England*

deprivation (Figure 4.10). A similar pattern for age, sex and deprivation was seen for re-attendance following any index emergency department attendance for a psychiatric condition.

- ▶ [Link to the proportion of re-attenders re-attending more than five times within one year following an index attendance for psychiatric conditions by sex and age group](#)
- ▶ [Link to the proportion of re-attenders re-attending more than five times within one year following an index attendance for psychiatric conditions by deprivation](#)
- ▶ [Link to the proportion of re-attenders re-attending more than five times within one year following an index attendance for any reason by sex and age group](#)
- ▶ [Link to the proportion of re-attenders re-attending more than five times within one year following an index attendance for any reason by deprivation](#)

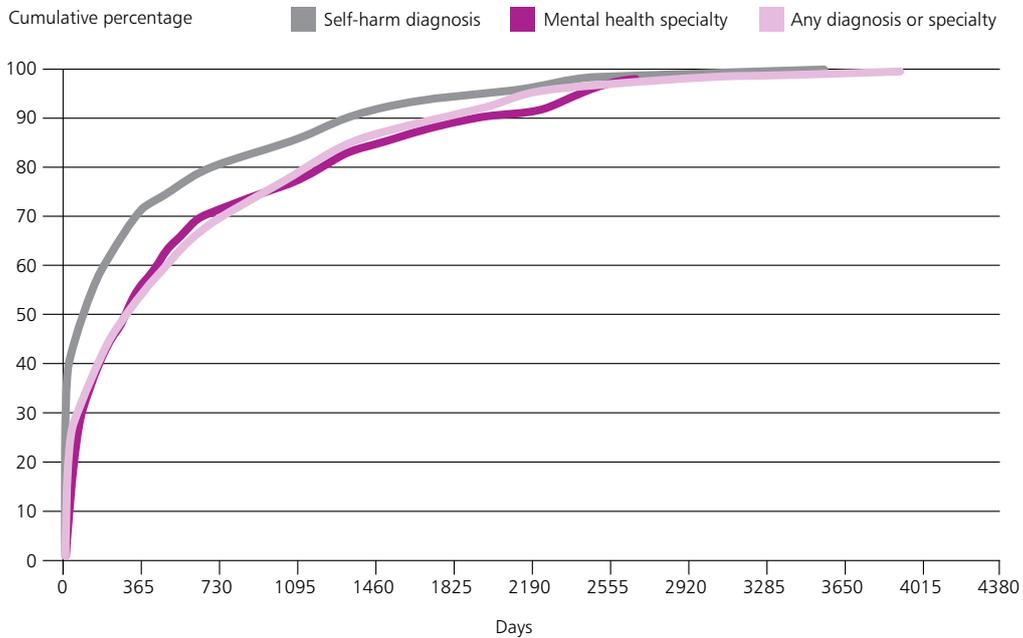
#### **ADMISSION FOLLOWING DIAGNOSIS IN PRIMARY CARE**

##### **GP referral**

The time from a General Practitioner (GP) consultation to a subsequent inpatient episode was explored for the conditions of interest. This was undertaken through the linkage of the Clinical Practice Research Database (CPRD) primary care data with hospital episode statistics (HES) inpatient data in England (Figures 4.11-4.14).

##### **Self-harm**

People who visited their GP with incident/new recorded self-harming behaviour during the study period (n=5,397) were proportionally (of the conditions of interest) most likely to have a subsequent inpatient admission (40.2%; n=2,167) within the study period. 17.6% (n=949) had a subsequent inpatient admission where that admission included a code for self-harm and 4.7% (n=253) where the subsequent inpatient admission was under a mental health specialty treatment code.



**Figure 4.11 Time between GP incident case for self-harm and subsequent inpatient admission for 11-24 year olds between 2004 and 2014**

Source: CPRD England linked with HES

Of those people with incident recorded self-harm in primary care with a subsequent inpatient admission with any recorded diagnosis under any specialty (n=2,167), 34.8% (n=755) were seen within three months, 43.3% (n=939) were seen within six months and 55.7% (n=1,207) were seen within one year. The proportion of people subsequently having an inpatient admission where self-harm was recorded (n=949) showed a different pattern where 52.4% (n=497) were seen within three months, 60.7% (n=576) were seen within six months and 71.2% (n=676) were seen within one year (Figure 4.11).

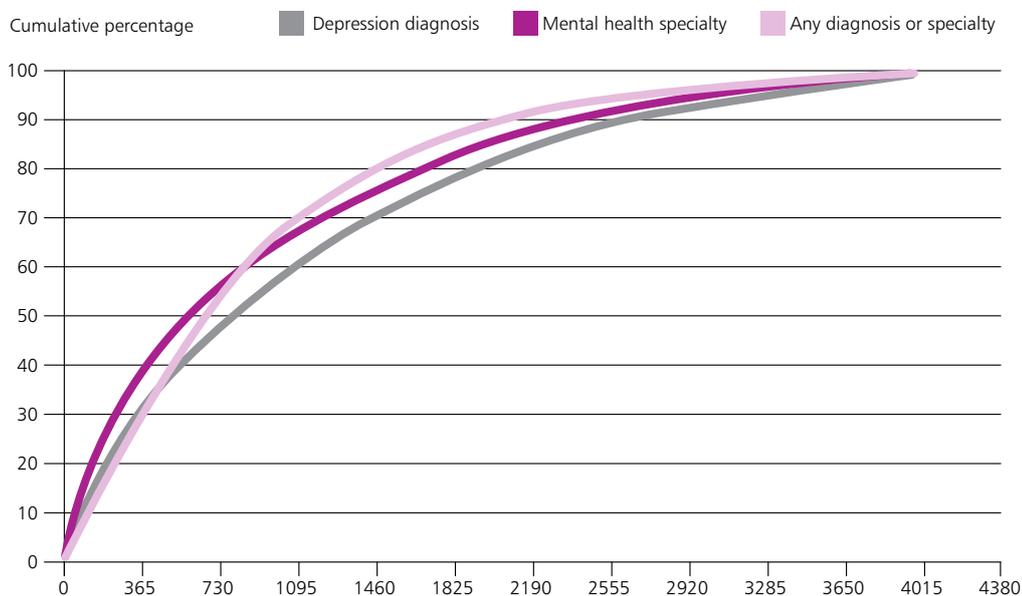
**Depression**

The actual number of children and young people who visited their GP with depression was much larger (n=44,714) than the other conditions of interest. Of those people diagnosed with depression in primary care 34.0% (n=15,218) had a subsequent inpatient admission over the study period, 6.5% (n=2,907) where that admission included a code for depression and 1.44% (n=643) where the subsequent inpatient admission was under a mental health specialty treatment code.

Of those where a depression diagnosis was recorded in primary care with a subsequent inpatient admission with any diagnosis under any specialty, 11.2% (n=1,698) were admitted within three months of GP diagnosis, 18.4% (n=2,797) within six-months and 33.3% (n=5,067) within one year (Figure 4.12). Similar timelines were observed for a subsequent inpatient admission with depression recorded or to a mental health specialty.

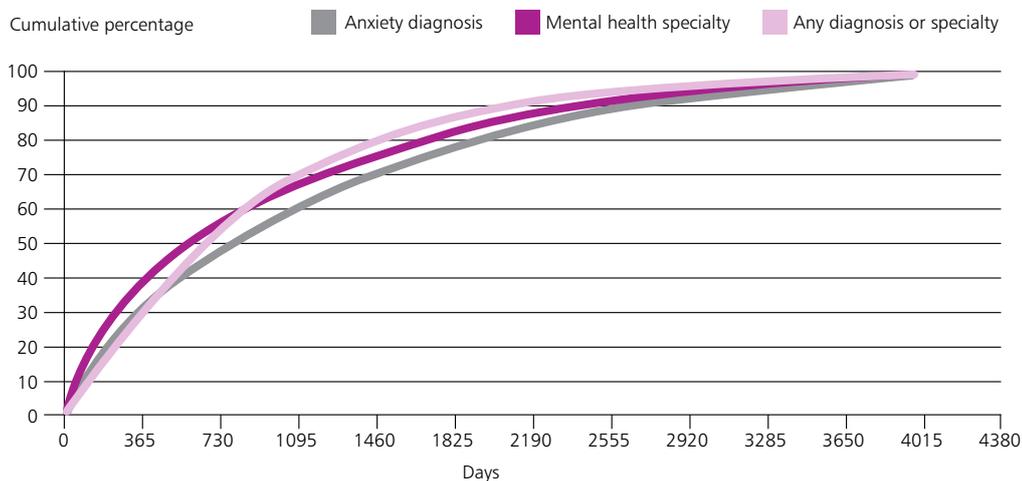
**Anxiety**

For people with an incident anxiety diagnosis (n=35,562) in primary care 26.3% (n=9,353) had a subsequent inpatient admission within the study period, 3.0% (n=1,055) had a subsequent inpatient admission mentioning anxiety and 1.2% (n=409) had a subsequent inpatient admission under a mental health specialty treatment code.



**Figure 4.12 Time between GP incident case for depression and subsequent inpatient admission for 11-24 year olds between 2004 and 2014**

Source: CPRD England linked with HES

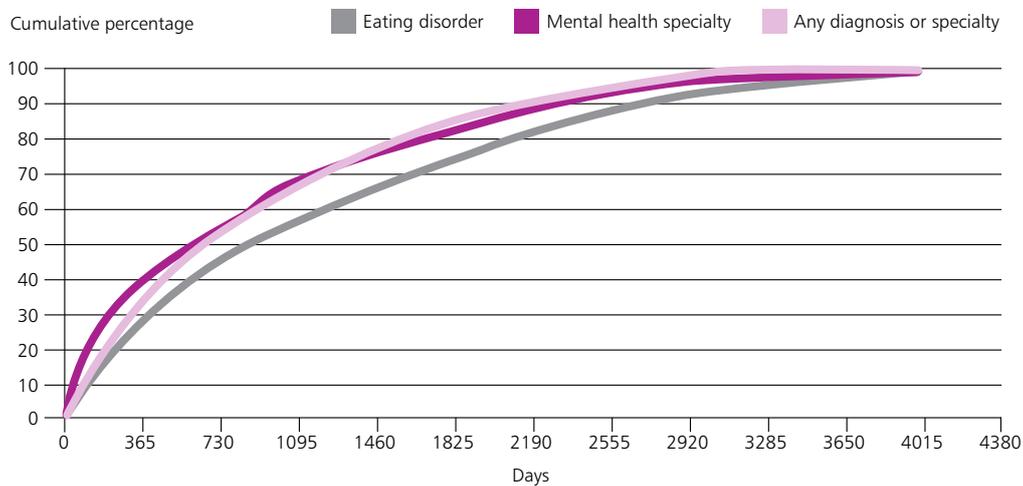


**Figure 4.13 Time between GP incident case for anxiety and subsequent inpatient admission for 11-24 year olds between 2004 and 2014**

Source: CPRD England linked with HES

Of those where an incident anxiety diagnosis was recorded in primary care with a subsequent inpatient admission with any diagnosis under any specialty, 10.7% (n=1,004) were admitted within three months, 18.34 (n=1,715) within six

months and 31.9% (n=2,982) within one year (Figure 4.13). Similar timelines were observed for a subsequent inpatient admission with anxiety recorded or to a mental health specialty.



**Figure 4.14 Time between GP incident case for an eating disorder and subsequent inpatient admission for 11-24 year olds between 2004 and 2014**

Source: CPRD England linked with HES

**Eating disorders**

For people with an incident eating disorder diagnosis (n=3,276) in primary care 31.3% (n=1,024) had a subsequent inpatient admission within the study period, 7.6% (n=248) had a subsequent inpatient admission mentioning an eating disorder and 4.4% (n=145) had a subsequent inpatient admission with a mental health specialty treatment code. Of those with an eating disorder diagnosis in primary care with a subsequent inpatient admission for with any diagnosis or specialty 18.7% (n=191) were seen within three months, 28.0% (95% CI 25.4-30.9; n=287) were seen within six months and 39.4% (95% CI 36.4-42.4; n=403) were seen within one year (Figure 4.14).

The timelines for people who had an inpatient admission in which an eating disorder was mentioned (7.6%; n=248) showed a different pattern to those with a subsequent inpatient admission for ‘any diagnosis or specialty’, with higher percentages throughout. There was 42.3% (n=105) of people who were seen within three months, 54.0% (n=134) were seen within six months and 67.7% (n=168) were seen within one year.

**ADMISSION**

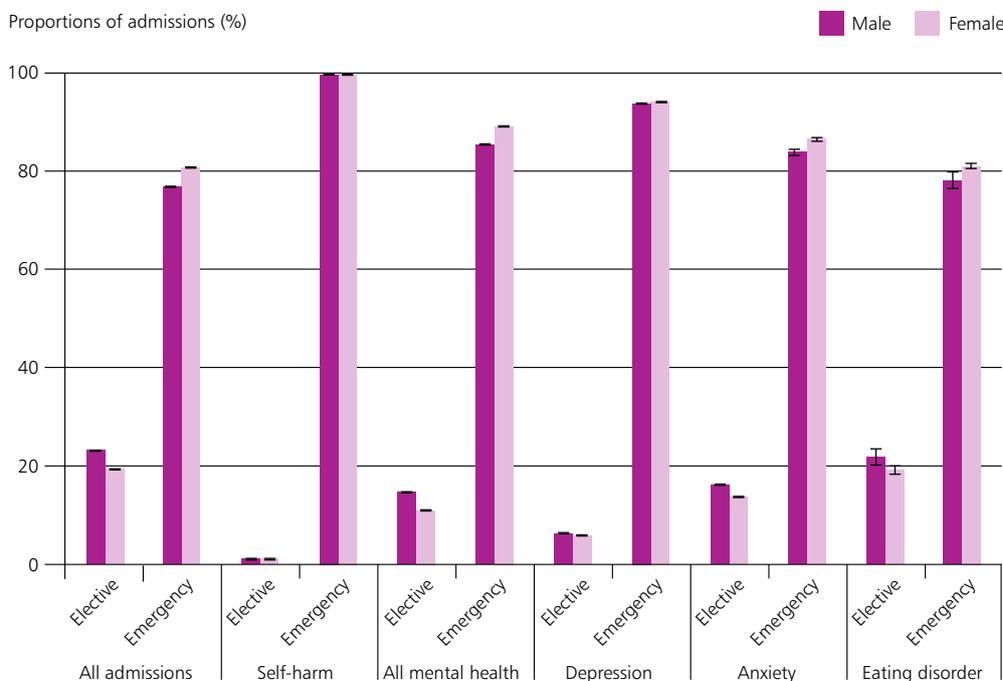
**Type of admission**

► [LINK TO CHAPTER 3 IN REPORT I](#)

The type of acute general hospital admission was explored i.e. emergency or elective/planned. A greater proportion of emergency admissions were evident when the admission was associated with an ‘all mental health’ diagnosis than in all types of admission (Figure 4.15). Virtually all admissions for self-harm were unplanned emergency admissions (Figure 4.16). A greater proportion of males than females had emergency admissions for depression and anxiety. Where the admission was associated with self-harm or eating disorders it was similar across the sexes. Since the prevalence of many of the conditions of interest were higher in females this may reflect different help-seeking behaviours, with females more likely to seek help earlier and in the community.<sup>34</sup> People with eating disorders had the greatest proportion of elective admissions reflecting the nature of the management of the condition.

People aged between 11-15 years were more likely to be admitted electively compared to people aged between 16-24 years for ‘all mental health’ conditions:

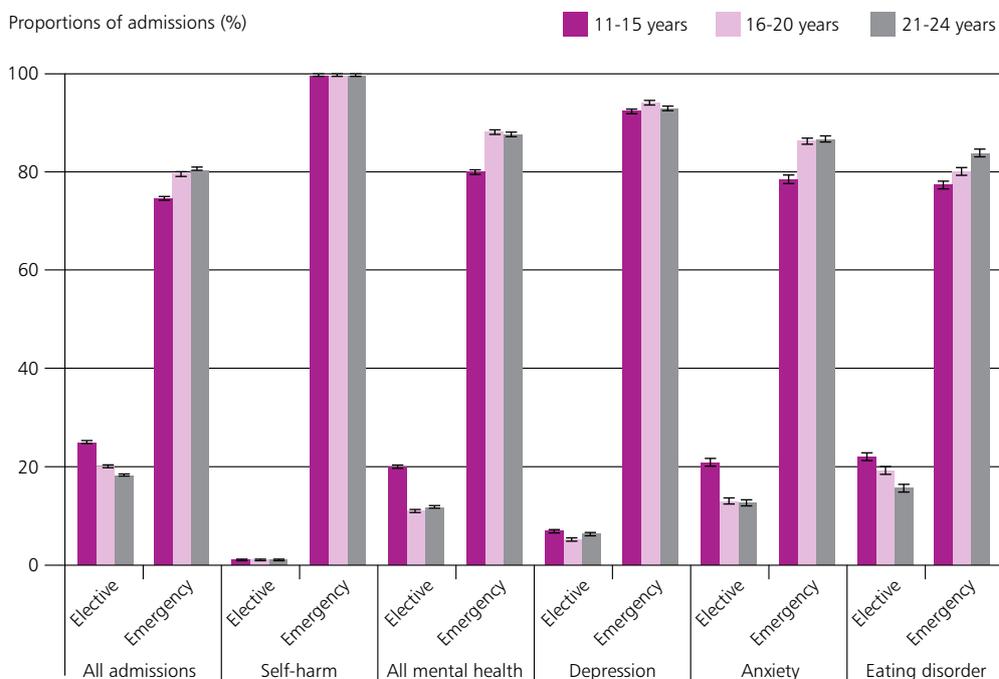
- 11-15 years old: 20.0%, n=24,669
- 16-20 years old: 11.1%, n=39,298
- 21-24 years old: 12.1%, n=47,566.



**Figure 4.15**  
The proportion of admissions<sup>a</sup> by urgency of care, diagnosis and sex

<sup>a</sup>Admissions categorised as maternity (21%) or other (1%) are excluded from analysis

Source: HES- NHS Digital – England



**Figure 4.16**  
The proportion of admissions<sup>a</sup> by urgency of care, diagnosis and age group

<sup>a</sup>Admissions categorised as maternity (21%) or other (1%) are excluded from analysis

Source: HES- NHS Digital – England

**Treatment speciality**

► **LINK TO ADMISSION TO A GENERAL HOSPITAL WARD IN REPORT I**

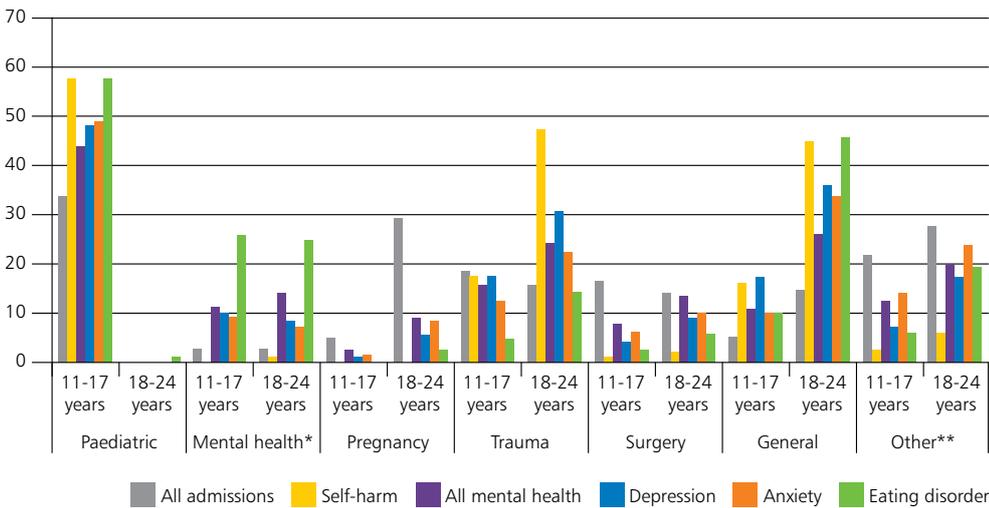
Most patient admissions to an acute general hospital, with any mention of the conditions of interest, were to a paediatric speciality for those aged 11-17 years although this was not always the case (Figure 4.17).

Children and young people with recorded self-harm were most likely to be treated in paediatric care (11-17 years old: 63.2%; n=64,557). People aged 11-17 were less likely to be

treated under trauma specialties (18.0%; n=18,411) than those aged 18-24 years (47.6%; n=72,583) and general medicine (11-17 years: 15.6%; n=15,936 vs. 18-24 years: 44.1%; n=67,308).

Males with a self-harm diagnosis were more likely to be treated in trauma care (male: 39.5%; n=33,761 vs. female: 33.8%; n=57,233) and general medicine (male: 38.7%; n=33,059 vs. female: 29.6%; n=50,185) than females possibly reflecting severity of the behaviour (Figure 4.18).

Proportions of admissions (%)

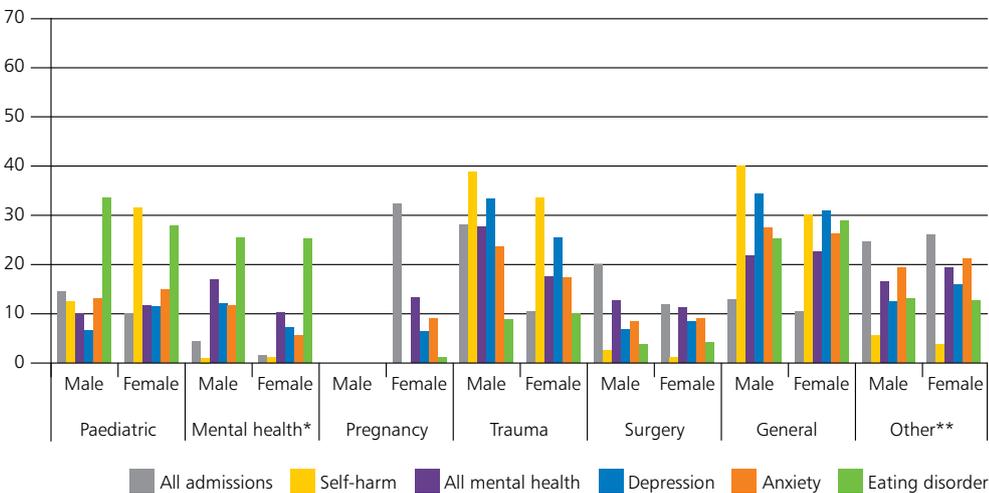


**Figure 4.17 Treatment specialties by under vs over 18 years and diagnosis from 2004-2014**

Source: HES- NHS Digital – England

\*Unknown speciality was not shown  
 \*\* Other includes a number of specialties making up very small percentages individually: Critical care, infectious diseases, radiology, other diagnostic testing, palliative care, therapies and allied professionals, blood and immune system, neoplasms, eye, skin and tissue, respiratory, endocrine, nervous, ENT, circulatory, digestive, genitourinary, dental and learning disability

Proportions of admissions (%)



**Figure 4.18 Treatment specialties by sex and diagnosis from 2004-2014**

Source: HES- NHS Digital – England

\*Unknown speciality was not shown  
 \*\* Other includes a number of specialties making up very small percentages individually: Critical care, infectious diseases, radiology, other diagnostic testing, palliative care, therapies and allied professionals, blood and immune system, neoplasms, eye, skin and tissue, respiratory, endocrine, nervous, ENT, circulatory, digestive, genitourinary, dental and learning disability

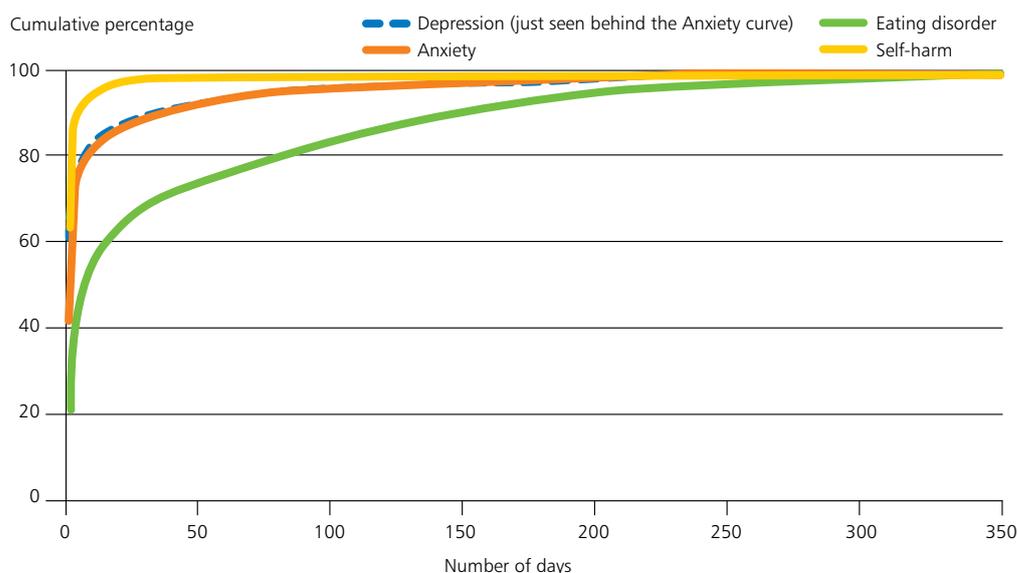
### Length of stay for inpatient admissions to an acute general hospital

#### ► [LINK TO LENGTH OF STAY IN REPORT I](#)

There were 8,620,916 patient admissions to hospital for 11-24 years olds between 2004 and 2014, for any reason. The mean length of stay (LOS) varied considerably. The mean LOS for people with an 'all mental health' diagnosis was considerably longer than for any admission in this age group (8 days vs. 21 days). In the conditions of interest, mean LOS in people with a self-harm diagnosis were shortest (6 days) and eating disorders the longest (47 days). Sex differences in LOS were most apparent for people with an 'all mental

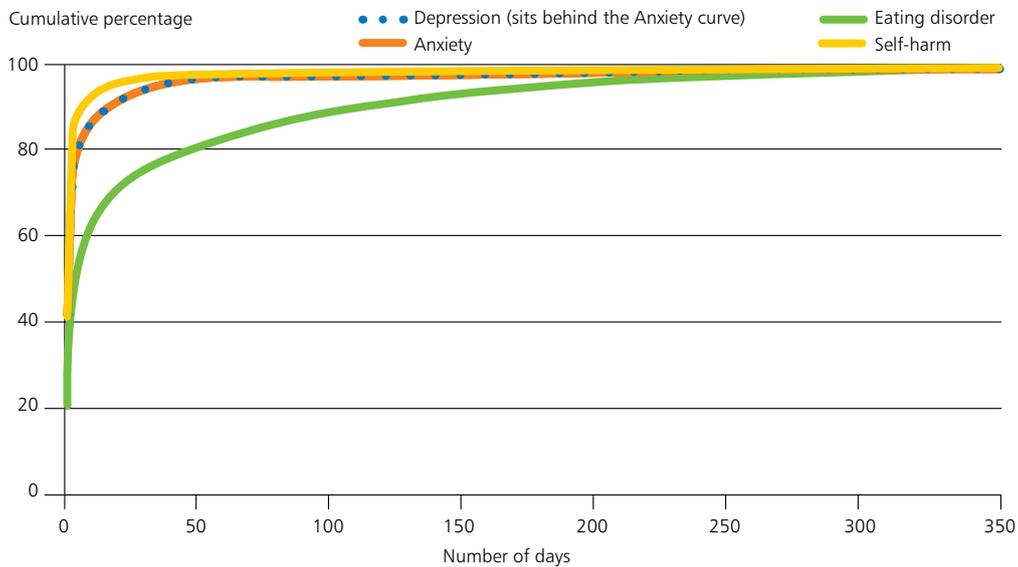
health' diagnosis or anxiety, with males experiencing longer LOS. There was no significant sex difference in LOS for eating disorders. LOS tended to reduce with increasing age except for self-harm and 'all mental health'.

Lengths of stay for 11-17 and 18-24 year olds in the conditions of interest showed similar patterns but were shorter for the younger age group. This was less apparent in eating disorders and more apparent in self-harm. The latter most likely reflected the admission of under sixteen year olds who self-harmed for assessment, as per the NICE guidance<sup>35</sup> (Figures 4.19 and 4.20).



**Figure 4.19 Length of inpatient stay by condition for 11-17 year olds between 2004 and 2014 graph capped at 365 days**

Source: HES- NHS Digital - England



**Figure 4.20 Length of inpatient stay by condition for 18-24 year olds between 2004 and 2014 graph capped at 365 days**

Source: HES- NHS Digital - England

**Re-admissions to an acute general hospital within one year of the index admission**

The number of re-admissions in the year following an index admission for an individual was explored. The first record of a condition of interest diagnosis within a spell of care in the study period was used as an index date (i.e. if an individual had multiple admissions with a diagnosis of depression recorded only the first of these admissions would be defined as an index date and subsequent admissions for any reason were counted within one year of discharge). Individuals who died within one year of discharge were excluded.

Based on HES inpatient data in England during 2004-2014 in people with index admissions between 2004 and 2013:

- 43,007 (36.1%) individuals with an associated index diagnosis of depression had a total of 98,395 subsequent readmissions (any diagnosis) within one year; average 0.8 (SD 1.8) readmissions per individual; range 1-65
- 16,587 (35.0%) individuals with an associated index diagnosis of anxiety had a total of 41,016 subsequent readmissions (any diagnosis) within one year; average 0.9 (SD 2.0) admissions per individual; range 1-64
- 5,509 (41.8%) individuals with an associated index diagnosis of eating disorders had a total of 12,447 subsequent readmissions (any diagnosis) within one year; average 1.0 (SD 1.9) admissions per individual; range 1-54
- 50,141 (25.6%) individuals with an associated index diagnosis of self-harm had a total of 97,359 subsequent readmissions (any diagnosis) within one year; average 0.5 (SD 1.1) admissions per individual; range 1-50.

**Intensive care admissions for self-harm**

There were a total of 53,788 admissions to an intensive care unit (ICU) in England, Wales or Northern Ireland for people aged 11-24 years between 2008 and 2014. Of these, 5,239 (9.7%; 95% CI 9.5-10.0) admissions were due to self-harm. Paediatric intensive care unit (PICU) admissions made up

16,051 of the total admissions, 233 (1.5%, 95% CI 1.3-1.7) of which were for self-harm. There were 37,737<sup>b</sup> total admissions to adult ICU (AICU)/HDU, of which 5,006 were for self-harm (13.0%; 95% CI 12.9-13.6). Table 4.1 provides a detailed overview of the patient demographics.

**Table 4.1 Patient characteristics for 11-24 years admitted to ICU between 2008-2014**

	Self-harm admissions (n=5,239)	All admissions (n=53,788)	Proportion of all admissions with a self-harm diagnosis (95% CI)
<b>Sex</b>			
<b>Male</b>	2,742 (52.3%)	25,716 (46.1%)	10.66 (10.3-11.1)
<b>Female</b>	2,497 (47.6%)	28,067 (50.3%)	8.90 (8.6-9.2)
<b>Age</b>			
<b>11-15</b>	463 (8.8%)	15,469 (27.7%)	2.99 (2.7-3.3)
<b>16-20</b>	2,249 (42.9%)	20,892 (37.4%)	10.76 (10.4-11.2)
<b>21-24</b>	2,527 (48.2%)	17,427 (31.2%)	14.50 (14.0-15.0)
<b>Deprivation (IMD quintile)</b>			
<b>1 (Least deprived)</b>	485 (9.3%)	7,130 (12.8%)	6.80 (6.2-7.4)
<b>2</b>	652 (12.4%)	7,995 (14.3%)	8.16 (7.6-8.8)
<b>3</b>	800 (15.3%)	9,423 (16.9%)	8.49 (7.9-9.1)
<b>4</b>	1,135 (21.6%)	11,243 (20.2%)	10.10 (9.6-10.7)
<b>5</b>	1,850 (35.3%)	14,792 (26.5%)	12.51 (12.0-13.1)
<b>Missing</b>	317 (6.1%)	3,205 (5.7%)	9.89 (8.9-11.0)
<b>Country</b>			
<b>England</b>	4,491 (85.6%)	48,402 (86.7%)	9.28 (9.0-9.5)
<b>Northern Ireland</b>	354 (6.8%)	2,222 (3.9%)	15.93 (14.5-17.5)
<b>Wales</b>	394 (7.5%)	3,164 (5.7%)	12.45 (11.4-13.7)

<sup>a</sup> Adult ICU data was not available for Scotland, so Scottish data were excluded from paediatric ICU data for any results which combine the two data sets. Also the paediatric ICU data includes data for residents of England, Wales and Northern Ireland (therefore some admissions for the Republic of Ireland will be included if Northern Irish residents went to an ICU there), whereas the adult ICU data are based on attendances to ICUs in England, Wales and Northern Ireland regardless of residency.

<sup>b</sup> All re-admissions within the same hospital stay to adult ICUs have been omitted from analysis (3.0% of total admissions).

<sup>c</sup> There are 5 ambiguous/unknown sex admissions in the all admissions data, therefore the proportions don't add up to 100% in the table.

### ***Discharge destination***

Over 97.9% (n=8,438,666) of all inpatient spells in England (day case patients excluded) resulted in discharge to the patient's usual place of residence. This remained fairly constant across conditions with 94.1% (n=894,086) of those with an 'all mental health' diagnosis, 92.8% (n=194,743) of those with a recorded depression diagnosis, 94.9% (n=74,460) of those with a recorded anxiety diagnosis, and 90.2% (n=221,601) of those with a diagnosis of self-harm. The lowest percentage of people discharged to the usual place of residence was for eating disorders, 88.8% (n=25,870).

## Key Findings CHAPTER 4

### ► [LINK TO KEY FINDINGS IN CHAPTER 3 IN REPORT I](#)

#### **Admission to a general hospital**

33. For all the conditions of interest approximately a third to a half of individuals (range 31.9% (anxiety)-55.7% (self-harm)) with a new diagnosis in primary care were admitted to a hospital (general or mental health) within the subsequent year
34. The rate of 'new to follow-up' appointments were higher for mental health conditions than for all specialties together i.e. people with mental health conditions attend more follow-up appointments implying a greater need for specialist support
35. Children and young people from the most deprived areas attended fewer follow-up appointments for every new appointment than people from the least deprived areas
36. In contrast to the number of appointments made, 'did not attend' (DNA) rates for mental health specialties were significantly higher than those for all specialties but had shown some improvements
37. 21-24 year old males consistently had the highest 'did not attend' rates for outpatient appointments
38. Higher levels of deprivation were associated with higher new and follow-up 'did not attend' rates

#### **Emergency department attendance**

39. In England the highest rate of attendance for individuals to emergency departments for self-harm was for females aged 16-20 years old
40. The rate of individuals attending emergency departments for self-harm increased amongst females aged 11-20 between 2004 and 2014. This was particularly apparent from 2012 onwards
41. There was a steep deprivation gradient for individuals attending emergency departments for self-harm or psychiatric conditions, with 50% of attendances from the two most deprived quintiles

Re-attendance rates to emergency departments were much higher for self-harm and mental health conditions than all attendances, particularly for people from the most deprived areas

#### **Inpatient care including intensive care**

42. For all the conditions of interest, people aged 11-17 years were most likely to be treated as inpatients under paediatric specialties and 18-24 year olds were most likely to be treated under general medicine specialties or trauma for self-harm admissions
43. The mean length of stay for people with 'all mental health' diagnosis was considerably longer than for any admission in this age group (8 days vs. 21 days)
44. In the conditions of interest, admissions for self-harm were shortest (length of stay 6 days) and eating disorders the longest (length of stay 47 days)
45. Sex differences in length of stay were most apparent for people with an 'all mental health' diagnosis or anxiety, with males experiencing longer LOS. There was no significant sex difference in length of stay for eating disorders
46. Length of stay tended to reduce with increasing age except for self-harm and 'all mental health'
47. Males were more likely to be admitted to an ICU for self-harm than females, despite females having higher recorded rates of self-harm in primary and secondary care. This could reflect the severity of self-harm methods used by males
48. People from the most deprived areas were more likely to be admitted to intensive care for self-harm than people from the least deprived areas.

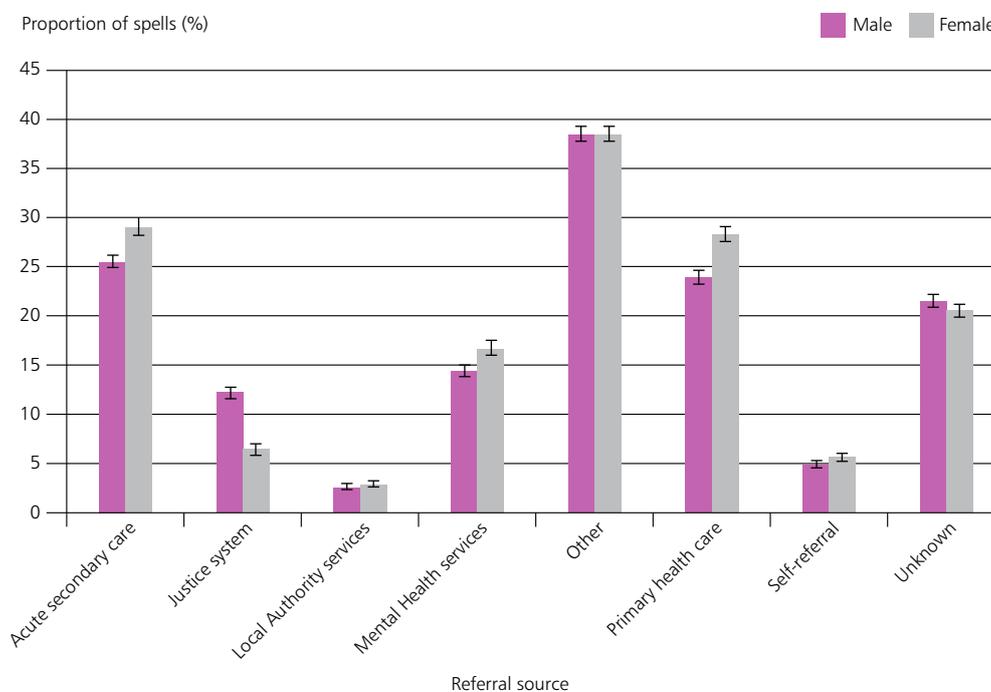
## Mental healthcare in mental health facilities

► [LINK TO CHAPTER 4 IN REPORT I](#)

### REFERRALS FROM PRIMARY CARE AND GENERAL ACUTE SECONDARY CARE

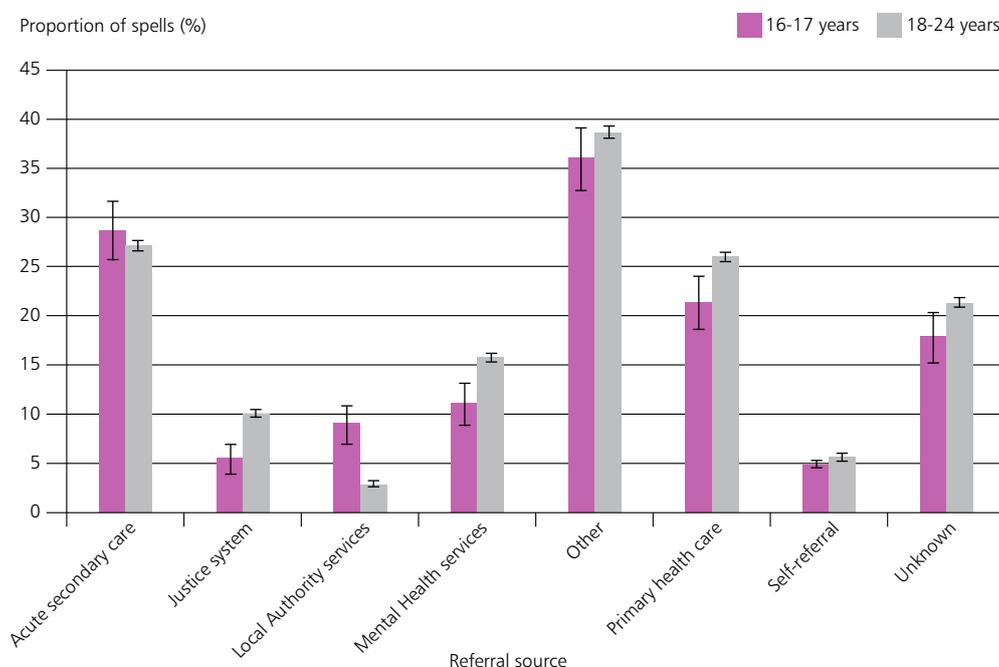
Source of referral to an inpatient mental health facility using the mental health minimum dataset (MHMDS) and the mental health and learning disabilities statistics (MHLDDS) in England, the source of referral to an inpatient mental health facility was assessed.

The majority of referrals to an inpatient mental health facility were from referral source 'other' 38.8% (n=12,362), followed by 'acute secondary care' 27.3% (n=8,703) and 'primary healthcare' 26.0% (n=8,298). 'Other' included 'other clinical specialty' (Figure 5.1).



**Figure 5.1 Source of referral to an inpatient mental health facility between 2011/12 to 2014/15 for 16 to 24 year olds in England by sex**

Source: MHMDS/MHLDDS- NHS Digital



**Figure 5.2 Source of referral to an inpatient mental health facility between 2011/12 to 2014/15 for 16 to 24 year olds in England by age under 18 (16 to 17) and over 18 (18 to 24)**

Source: MHMDS/MHLDDS- NHS Digital

Females were more likely than males to be referred from:

- Acute secondary care settings (29.2%; n=4,063 vs. 25.8%; n=4,640)
- Mental health services (17.1%; n=2,377 vs. 14.6%; n=2624)
- Primary care (28.5%; n=3,969 vs. 24.1%; n=4329).

Males were more likely than females to be referred from:

- The justice system (12.4%; n=2,223 vs. 6.6%; n=917)
- 11-17 year olds were more likely to be referred by:
- local authority services (social care, education) than 18-24 year olds (9.1%; n=74 vs. 2.8%; n=876)

Figure 5.2 shows that 18-24 year olds were more likely to be referred by:

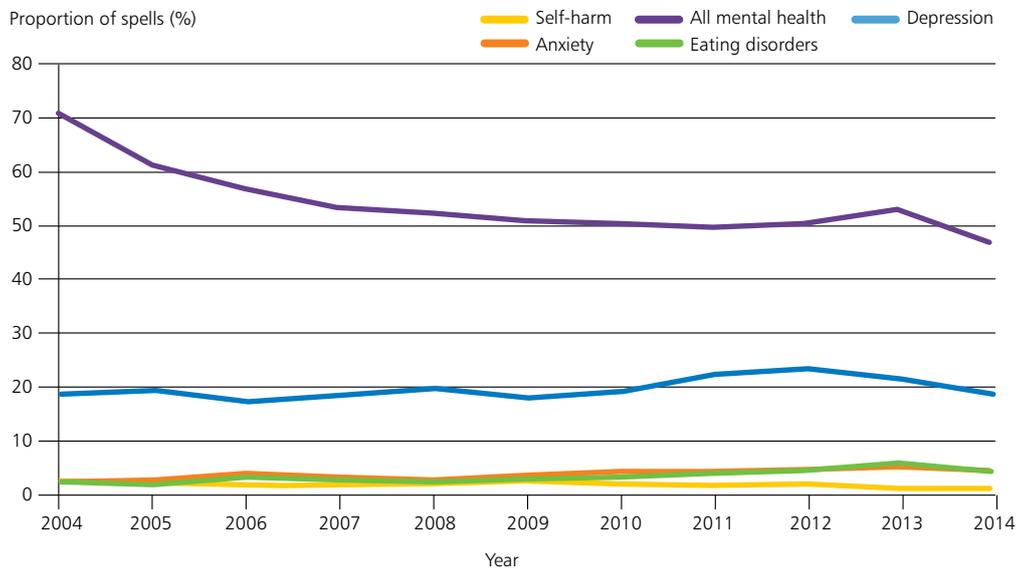
- The justice system (10.0%; n=3,095 vs. 5.5%; n=45)
- Mental health services (15.8%; n=4,911 vs. 11.1%; n=90)
- Primary care (26.1%; n=8,124 vs. 21.4%; n=174)
- Self-referral (5.5%; n=1710 vs. 2.6%; n=21).

► [LINK TO TABLE 4.5 IN REPORT I](#)

### INPATIENT MENTAL HEALTH FACILITY CARE (SCOTLAND ONLY)

Children and young people with mental health conditions or who self-harm are cared for by a range of NHS services in a range of settings. The vast majority of people with severe, complex or persistent mental health conditions never require hospital admission. Instead they are effectively assessed and treated in the community. However, inpatient admissions are an essential part of the overall care pathway when the patient cannot be safely supported, assessed or treated within a community setting due to levels of risk or complexity, or if they require a specialist assessment admission.

The Scottish Morbidity Record 04 (SMR04) is generated for patients receiving care in mental health specialties and provided the most reliable dataset in relation to inpatient mental health facility care for 11-24 year olds, since it contains child and adolescent mental health services (CAMHS) data (SEE GLOSSARY FOR MORE DETAILS).



**Figure 5.3 The annual proportion of spells to inpatient mental health facilities for depression, anxiety, eating disorders and self-harm between 2004-2014 for 11-24 year olds in Scotland**

Source: SMR04 Scotland

People with a mental health diagnosis and receiving their care in an acute general hospital are recorded on Scottish Morbidity Record 01 (SMR01). The SMR04 was therefore focused on for this part of the analysis. In Wales, mental health facility units are currently not held separately to other inpatient data. However a mental health minimum dataset is being developed. The recently defined dataset in England for children and young people’s inpatient mental health facility care (which will include under 16 year olds) was not available within the project timelines. Other contacts with specialist community mental health teams, outpatient facilities or general practice are included elsewhere and data quality and ability to link across datasets was variable.

Proportion of spells associated with recorded depression were stable at around 20% during the study period (Figure 5.3).

Admission rates to inpatient mental health facilities in Scotland were higher in males. This was in contrast to the community prevalence of many mental health conditions which are generally higher in females.<sup>36</sup> The opposite pattern by sex for admissions was observed for the conditions of interest. For eating disorders, twelve times as many females as males were admitted. Mental health

admission rates for depression were higher in females and in 21-24 year olds. The average age for first admission to an inpatient mental health facility was 20 years for those aged between 11-24 years during the study period 2004-2014. This was the same for all the conditions of interest, except for eating disorders where the average age was 17 years.

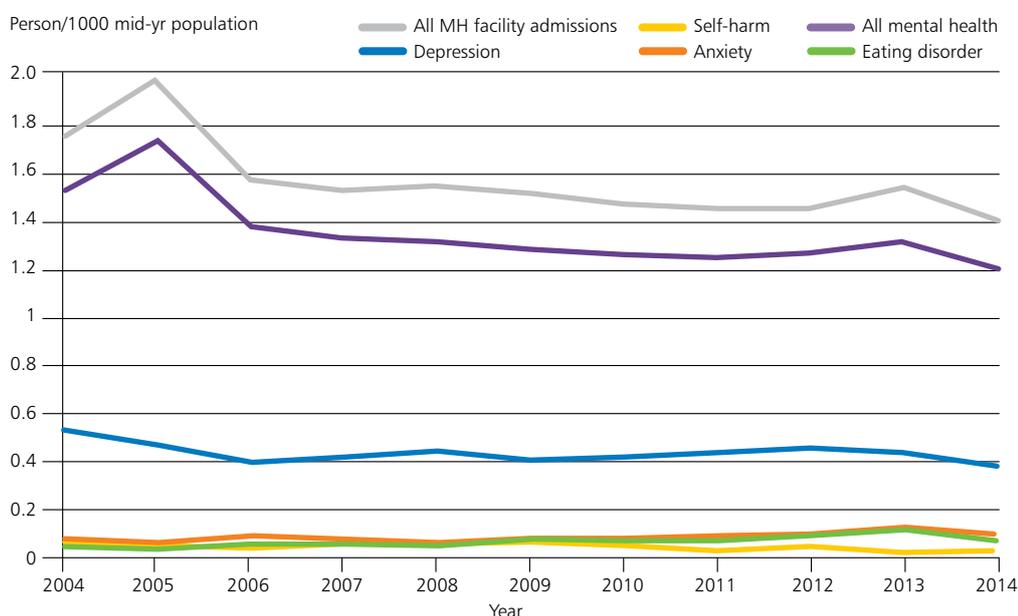
► *Link to the average age at first admission to a mental health facility in Scotland between 2004 and 2014 for those aged between 11 and 24 years during the study period*

It is known that three quarters of all mental health conditions emerge by the age of 24,<sup>37</sup> so this has implications both for early intervention in depression i.e. recognition and appropriate management earlier in the care pathway, the interface between primary and secondary care and for support during transition.

Out of the conditions of interest, admissions associated with depression had the highest rate of admission, followed by anxiety, self-harm and eating disorders per 1000 mid-year population from 2004-2014. Overall admission rates to mental health facilities in Scotland generally decreased over the study period, from 1.8 (n=1,588) to 1.4 (n=1,229) cases per 1000 mid-year population from 2004-2014.

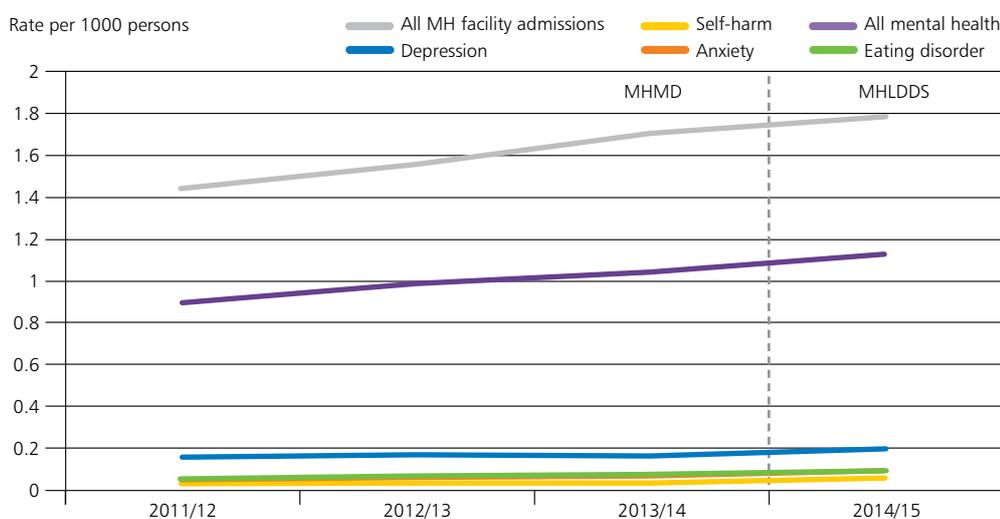
Admission rates for 'all mental health' conditions (1.5; n=1,385 in 2004 to 1.2; n=1,053 in 2014), self-harm (0.1; n=55 in 2004 to 0.0; n=19 in 2014) and depression (0.5 per 1000 persons, n=492 in 2004 to 0.4 per 1000 persons, n=336 in 2014) showed a similar trend (Figure 5.4). In contrast, admission rates associated with anxiety and eating disorders were stable with no significant changes

during the study period, although numbers were very small. Maximum admission rates were observed in 2013 for these two disorders. Trends for admissions in England showed a different pattern with increasing rates (Figure 5.5) – note that data were only available for 16 to 24 years olds from 2011 so these were not comparable.



**Figure 5.4** Annual admission rate (as patient count per annual 1000 mid-year population) for all mental health facilities between 2004-2014 for individuals aged between 11 and 24 in Scotland

Source: SMR04- Scotland



**Figure 5.5** Annual admission rate (as patient count per annual 1000 mid-year population) for all mental health facilities between 2011/12-2014/15 for individuals aged between 16 and 24 in England

Source: NHS Digital - England

**Treatment specialty for the admission to mental health facility (Scotland only)**

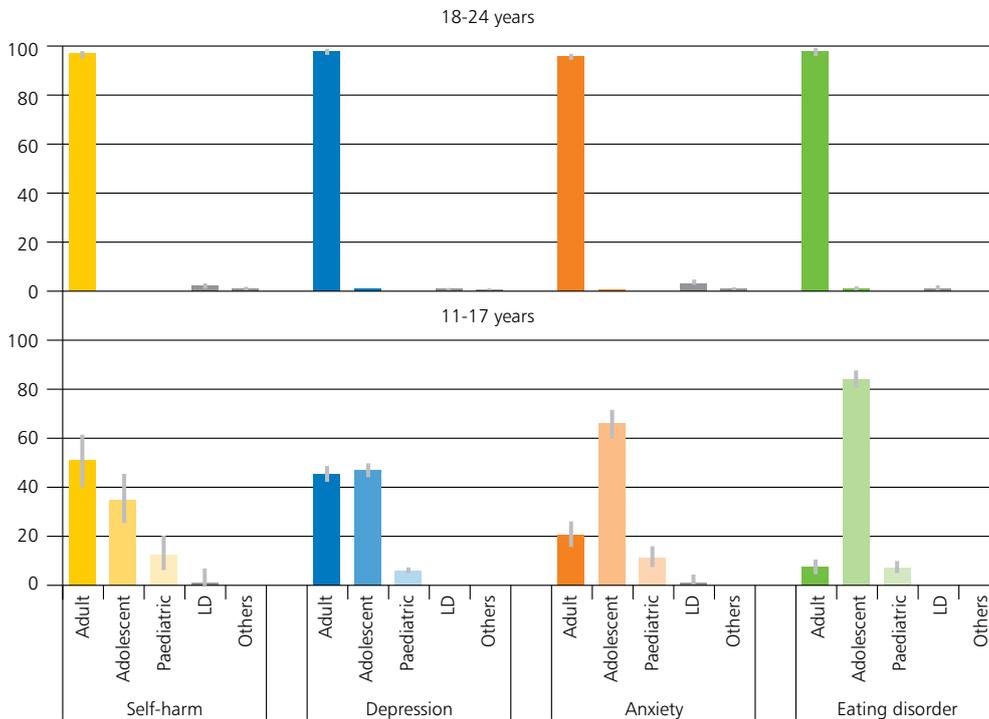
Of the spells of admission to mental health facilities for people aged 11-24 years between 2004 and 2014, 68.7% (n=17,923) were for those aged 18-24 years. The majority of people aged 18-24 years of age were admitted under an adult psychiatric speciality for self-harm (97.5%), depression (98.5%), anxiety (96.6%) or an eating disorder (98.4%). Of the spells for people aged 11 to 17 years, a notable percentage were to adult specialties for self-harm (51.6%; spells=47), depression (46.2%; spells=491), anxiety (20.5; spells=47) and an eating disorder (7.7%; spells=33). A considerable proportion of spells (84.9%; spells=366) for 11-17 year olds were admitted under adolescent specialties for eating disorders. Adolescent admission for people 18-24 years was rare (< 1%). Admissions for learning disability (LD) and other specialties were low (max. 2.2%) (Figure 5.6).

**URGENCY OF ADMISSION (SCOTLAND ONLY)**

▶ [LINK TO TABLE 4.4 IN REPORT I](#)

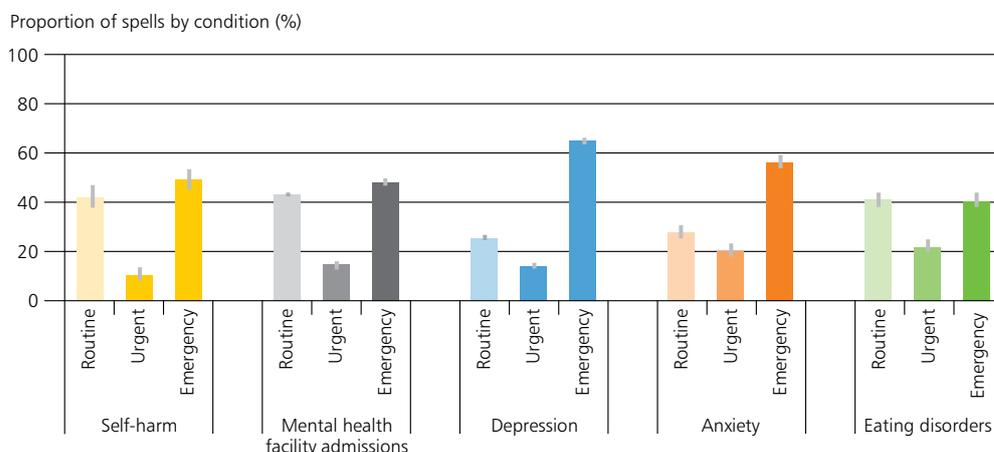
For all admissions to a mental health facility 43.2% (spells=11,266) were routine i.e. planned, 14.4% (spells=3,761) urgent and 48.1% (spells=12,550) emergencies, this varied by condition (Figure 5.7).

Depression had the greatest proportion of emergency admissions of all mental health emergency admissions to mental health facilities for the conditions of interest (64.5%, spells=3,253). Note that episode number was not available in Scotland so it could not be determined which admission type was allocated first.



**Figure 5.6 Specialty of admission spell to inpatient mental health facility by diagnosis and age group (11-17 and 18-24 year olds)**

Source: SMR04 - Scotland



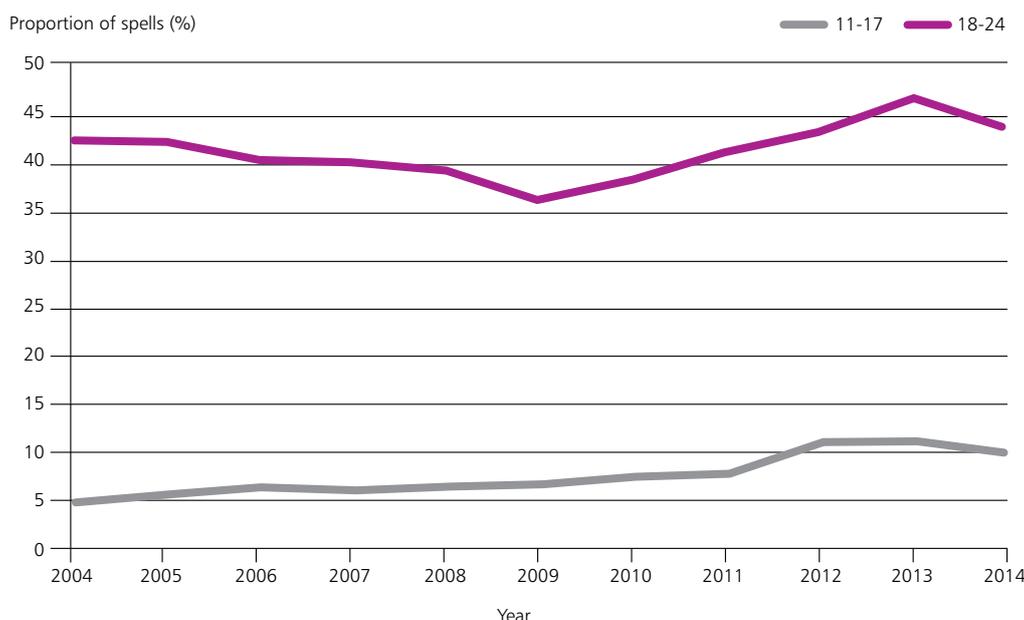
**Figure 5.7 Types of admission by condition to inpatient mental health facilities between 2004 and 2014 for individuals aged from 11 to 24 year olds.** *Source: SMR04 Scotland*

### EMERGENCY ADMISSION RATES (SCOTLAND ONLY)

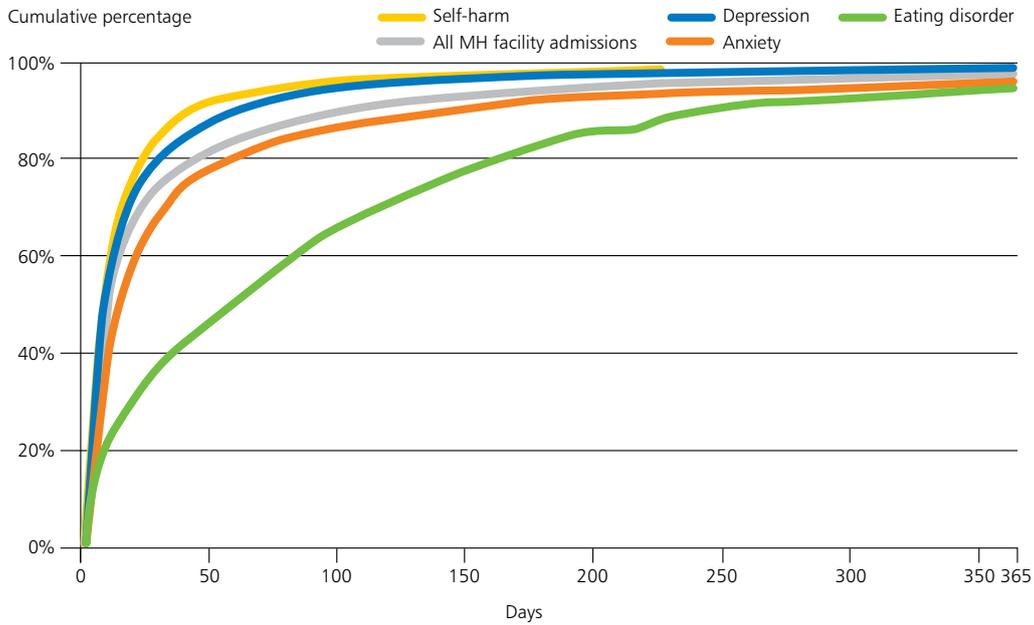
► [LINK TO DURATION OF ADMISSION IN REPORT I](#)

Annual emergency admission rates were calculated using the annual number of emergency admissions for specific conditions divided by the annual total number of emergency admissions. Numbers of admissions were relatively small,

therefore conditions of interest could not be reported individually. Emergency admissions for all people admitted to a mental health facility increased significantly for 11 to 17 year olds from 4.7% (spells=143) in 2004 to 9.9% (spells=96) in 2014. There was no significant change for 18 to 24 year olds from 42.0% (spells=1,286) in 2004 to 43.4% (spells=864) in 2014 (Figure 5.8).



**Figure 5.8 Annual proportion of emergency admissions to an inpatient mental health facility between 2004 and 2014 for individuals aged from 11 to 17 and 18 to 24 year olds** *Source: SMR04 Scotland*



**Figure 5.9 Cumulative percentage of length of stay for an inpatient mental health facility with a depression, anxiety, self-harm or eating disorder diagnosis between 2004 and 2014 for 11-24 year olds (Capped at 365 days)**

Source: SMR04 Scotland

The mean length of stay (Figure 5.9) was longest for 11-24 year olds with an inpatient mental health facility admission for eating disorders (106 days) compared to the other conditions of interest (anxiety, 61; depression, 31; self-harm, 26 days). There was little difference in mean length of stay

by sex but once admitted the younger age groups tended to be inpatients for longer across all conditions. This is likely to reflect the severity of the condition once thresholds to admit younger age groups are reached.

**Key Findings** CHAPTER 5► *LINK TO KEY FINDINGS IN CHAPTER 4 IN REPORT I***Admission to an inpatient facility**

52. Data availability varied between countries for inpatient mental health facility data, Scotland had the most reliable dataset and included child and adolescent mental health data
53. In Scotland, more males than females aged 11-24 years were admitted to inpatient mental health facilities. The excess of male admissions is in contrast to community prevalence where females out-number males
54. In Scotland, depression was the most common mental health condition recorded for mental health facility admissions and was on par with psychotic illnesses such as schizophrenia, furthermore inpatient mental health facility rates for depression were higher in females and in 21-24 year olds
55. All mental health facility admissions decreased in Scotland between 2004 and 2014 for 11-24 year olds. This reflected current policy in Scotland to shift the mental healthcare of individuals from inpatient to the community

**Emergency admissions**

56. The majority of mental health facility admissions in Scotland were for emergencies (48%). Out of the conditions of interest, people with a depression diagnosis were most likely to be admitted as an emergency (62.5%) and eating disorders the least likely (39%)
57. Regardless of age, all emergency admissions in Scotland for anxiety and eating disorders increased during the study period although numbers were relatively smaller for eating disorders.

## Mental healthcare in the transition period between child and adult services

► [LINK TO CHAPTER 5 IN REPORT 1](#)

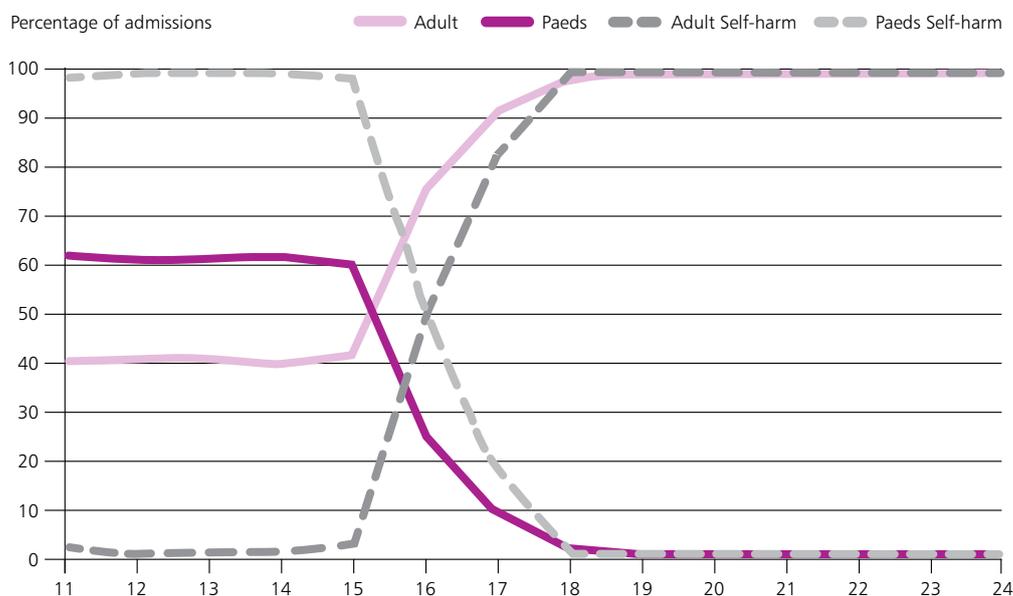
### TRANSITION

Transition describes the process of moving from child to adult healthcare, whether that is physical or mental health, and encompasses the initial planning, the actual transfer between services, and any support provided throughout.<sup>38,39</sup> In England and Wales general hospital admissions under adult or paediatric specialty codes were used to explore transition for people with an admission with any mention of the conditions of interest. A similar analysis was done for adult vs. child and adolescent mental health specialties. The usual planned age of transition from paediatric to general adult services is between 16 to 18 years but is 18 years in almost all mental health services.

### Inpatient admissions - all specialties

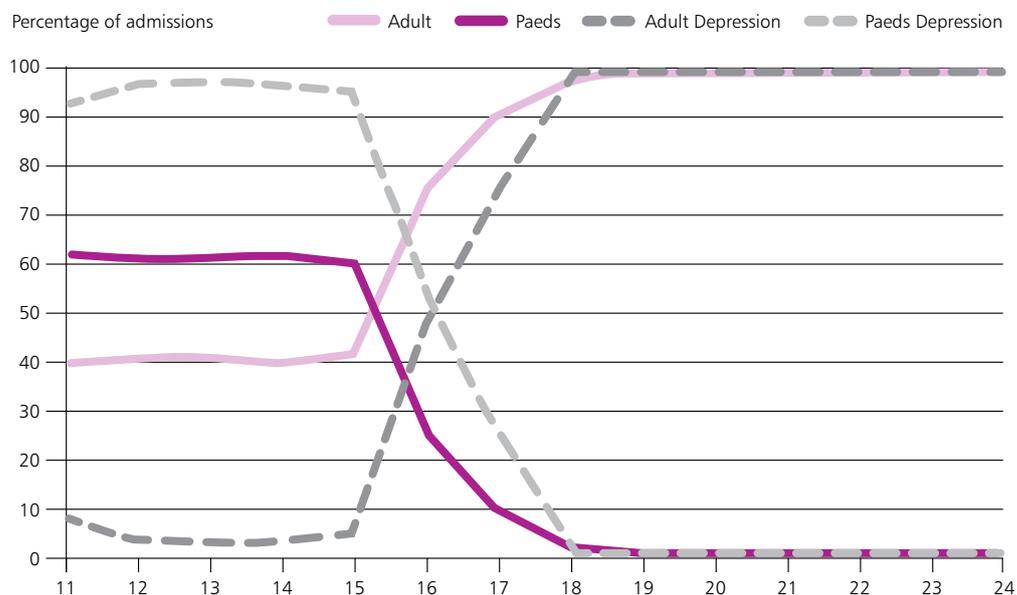
► [LINK TO AGE OF TRANSITION IN REPORT 1](#)

Figures 6.1-6.8 show the proportion of admissions by adult and paediatric treatment specialties for children and young people with associated depression, anxiety, eating disorders and self-harm. The actual age of transition was 16 for associated self-harm, depression and anxiety (where the paediatric and adult lines cross). Transition was slightly later for associated eating disorders at age 17. Approximately 10.7% (95% CI 9.2-120, n=277) of children and young people with an associated anxiety diagnosis were treated under an adult specialty. A similar analysis conducted in Wales showed the same trends.



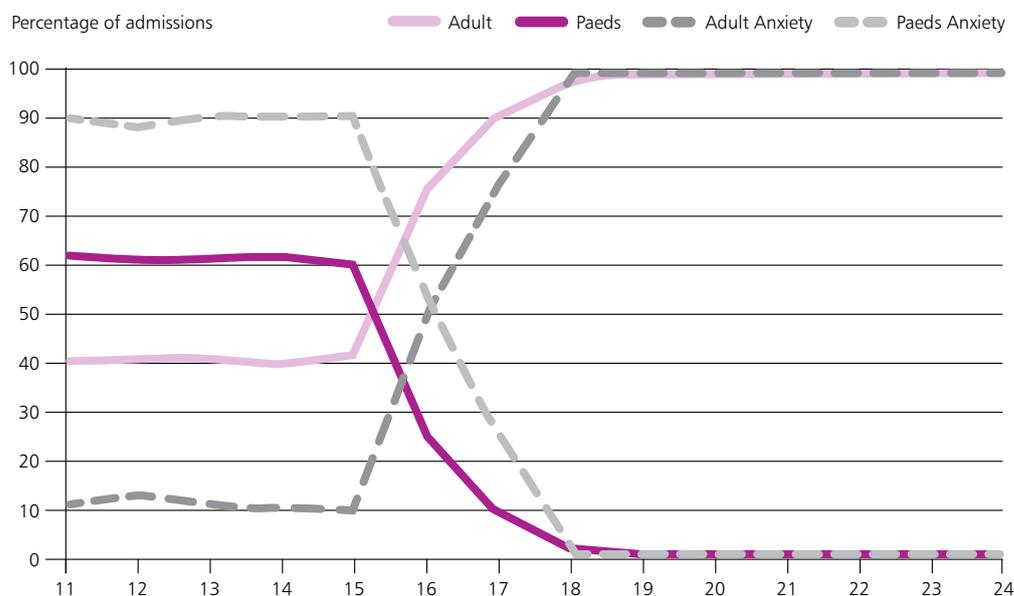
**Figure 6.1 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult specialties (any) by age and self-harm diagnosis**

Source: HES- NHS Digital - England



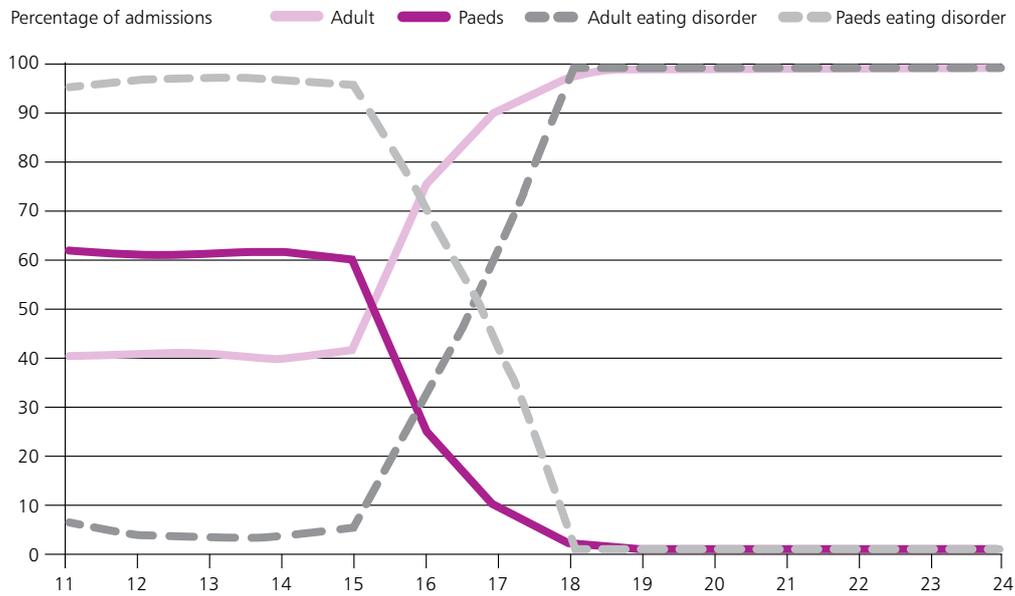
**Figure 6.2 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult specialties (any) by age and depression diagnosis**

Source: HES- NHS Digital - England



**Figure 6.3 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult specialties (any) by age and anxiety diagnosis**

Source: HES- NHS Digital - England



**Figure 6.4 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult specialties (any) by age and eating disorder diagnosis**

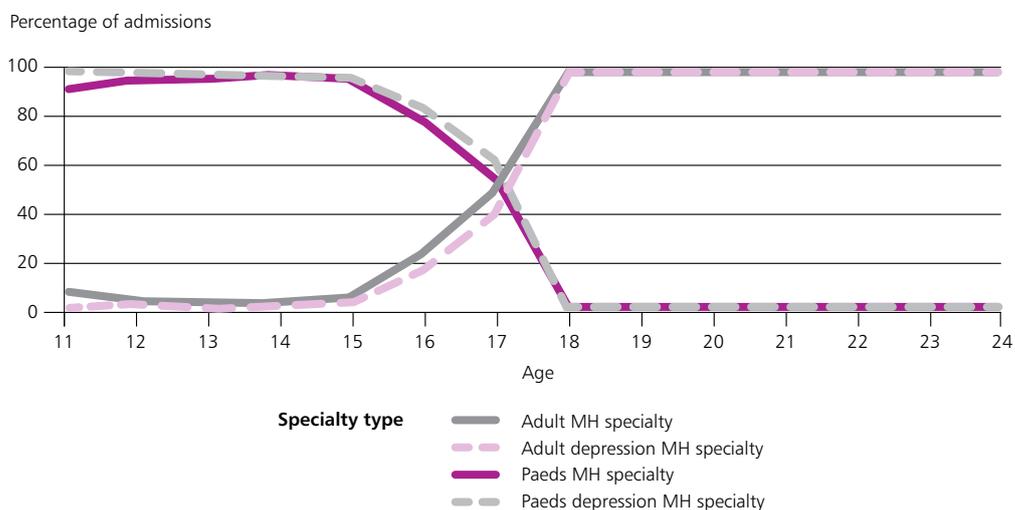
Source: HES- NHS Digital - England

***Inpatient admission - mental health facilities/mental health specialty admission***

In England children and young people over 11 years with any mention of depression, anxiety, eating disorders or self-harm in their mental health specialty admission transitioned to adult mental health services slightly later than those with any mental health diagnosis (age at transition=17).

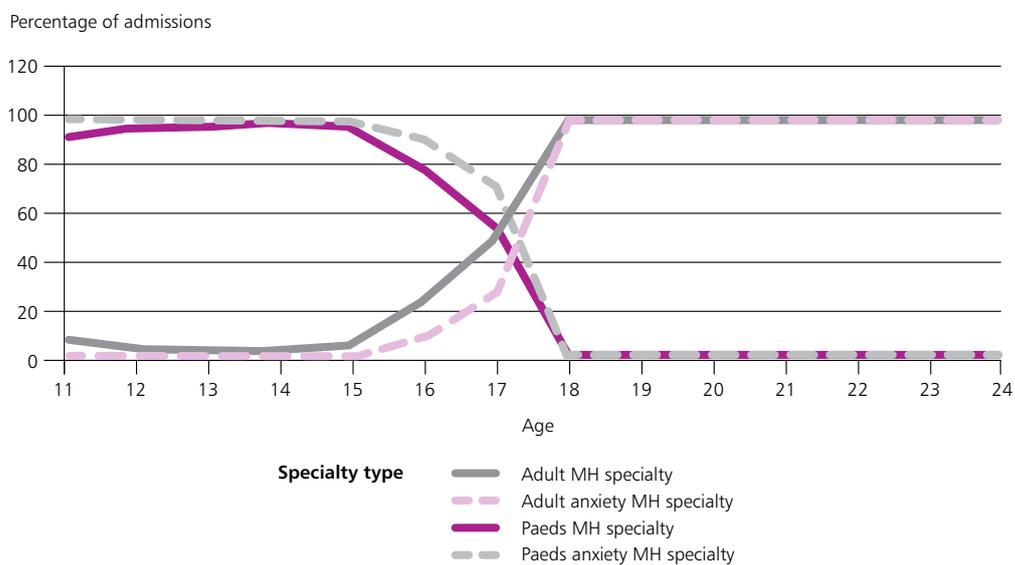
All children and young people had transitioned to adult mental health services or general adult services whatever their associated mental health diagnosis by age 18 years. There was evidence of admissions to adult specialties for all admissions to mental health specialties, including the conditions of interest from at least 15 years of age (e.g. 5.3%: 95% CI 4.7-6.0; n=276) admissions (spells) admitted to an adult mental health specialty were for 15 year olds).

► [LINK TO FIGURE 5.2 IN REPORT I](#)



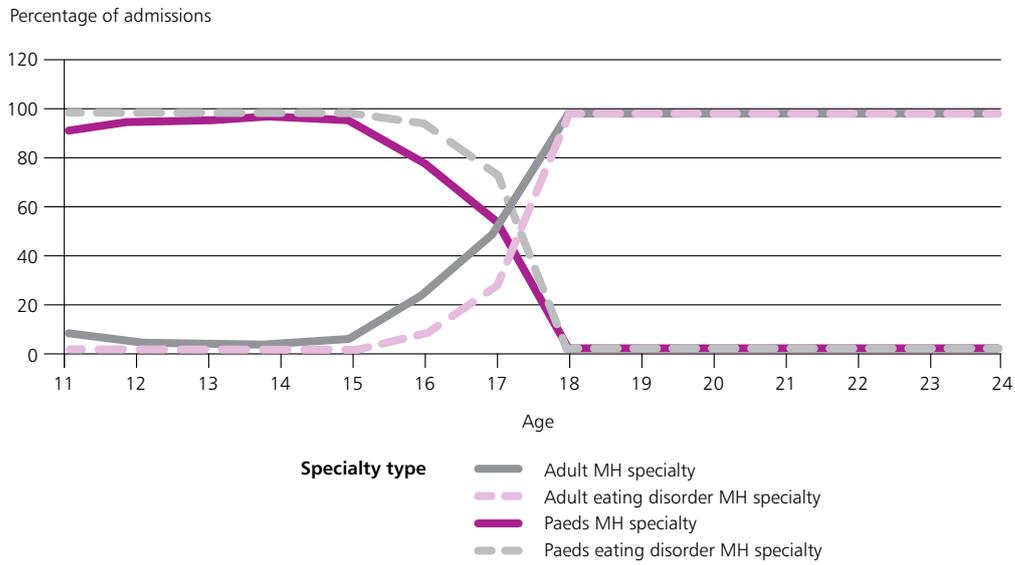
**Figure 6.5 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult mental health specialties by age and depression diagnosis**

Source: HES- NHS Digital - England



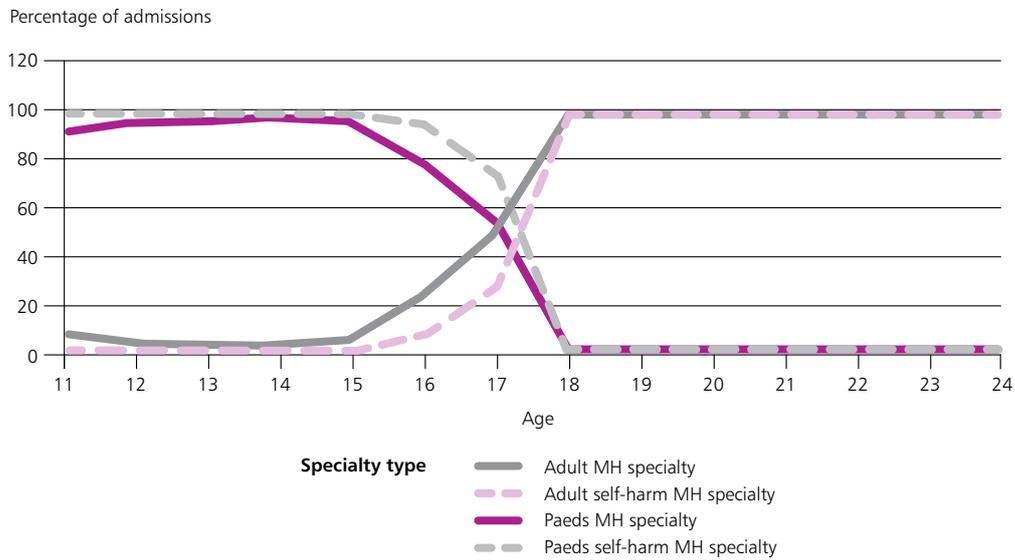
**Figure 6.6 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult mental health specialties by age and anxiety diagnosis**

Source: HES- NHS Digital - England



**Figure 6.7 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult mental health specialties by age and eating disorder diagnosis**

Source: HES- NHS Digital - England



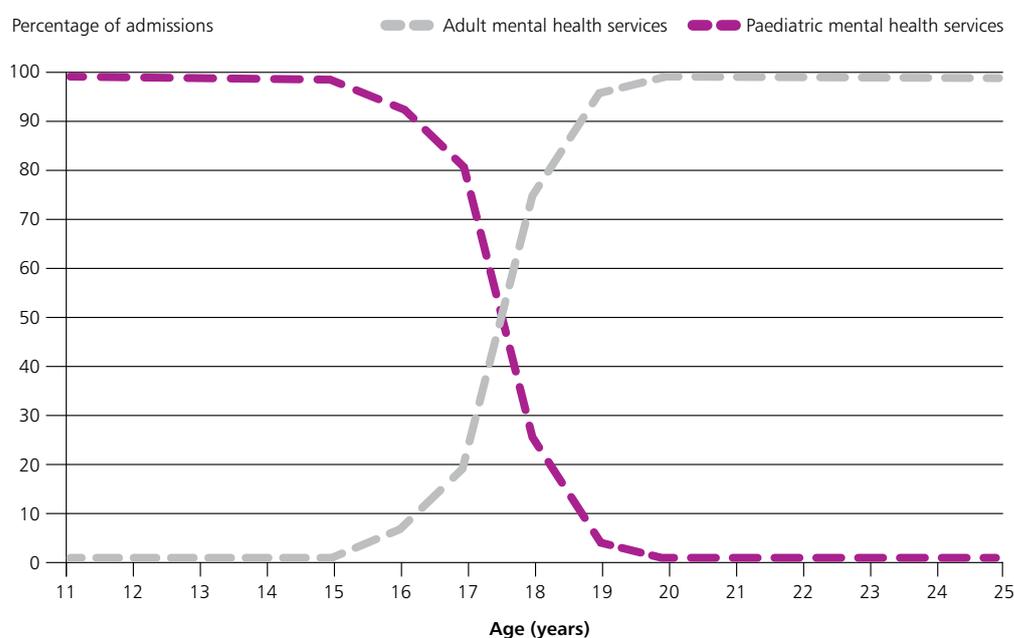
**Figure 6.8 Percentage of inpatients aged 11-24 between 2004 and 2014 under paediatric and adult mental health specialties by age and self-harm diagnosis**

Source: HES- NHS Digital - England

### Outpatient appointments

Coding within the outpatient dataset was too poor to assess specific diagnoses, so mental health specialty was used. It appeared that people seen in outpatient mental health specialties transitioned to adult services (age 17.5) slightly later than those admitted as inpatients (age 17). Children and young people were still being seen in mental health paediatric outpatients up to the age of 19, whereas for mental health specialty inpatient admissions all paediatric admissions stopped at age 18.

Figure 6.9 shows that over 98% of attendances in children and young people between the ages of 11 and 15 were under child and adolescent mental health services. Transition became apparent at age 16 where 6.6% (95% CI 6.5-6.6; n=18,932) of appointments were under adult mental health services. By age 19, 96.2% (95% CI 96.1-96.3; n=158,811) of people were seen in adult mental health services and by age 21 the proportion seen in adult mental health services was 99.2% (95% CI 99.2-99.3; n=192,561).



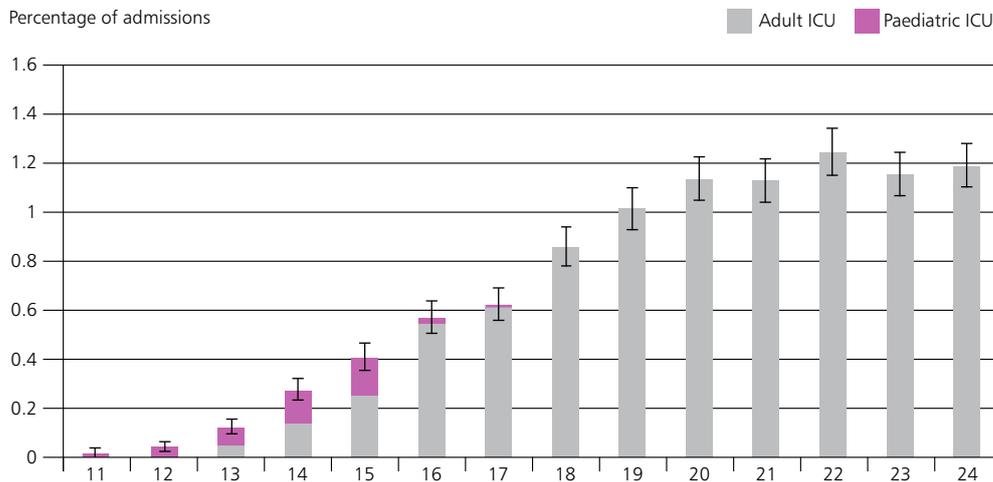
**Figure 6.9 Percentage of outpatients aged 11-24 between 2004 and 2014 under paediatric and adult mental health specialties by ages**

Source: HES- outpatients- England

**Admission to intensive care**

Admissions to intensive care for self-harm increased with age but were a small proportion of overall admissions in 11-24 year olds. Most intensive care admissions for the study population were for 21-24 year olds (48.2%; n=2,527). This age group were admitted to adult intensive care units (ICU) only. Within adult ICUs, 22 year olds (12.7%; n=667) had the highest number of self-harm admissions. In paediatric ICUs, 14 (30.5%; n=71) and 15 (35.2%; n=82) year olds had the highest number of admissions. There was evidence of admissions to adult

ICUs in children as young as 11 (0.01%; n<5) for self-harm, but this may have reflected paediatric intensive care bed availability in certain areas at certain times. From the age of 14, children were more likely to be admitted to an adult ICU than paediatric ICU. For example, 15 year olds were 1.7 times more likely to be admitted to an adult ICU (62.4%; n=136) than a paediatric ICU (37.6%; n=82) for self-harm (Figure 6.10). Coding of the other conditions of interest was either too poor or numbers too small in the received dataset to include in the report.



**Figure 6.10 The age distribution of ICU self-harm admissions for 11-24 year olds between 2008-2014**

Source: PICANet and ICNARC – England, Wales and Northern Ireland

**Key Findings** CHAPTER 6▶ *LINK TO KEY FINDINGS IN CHAPTER 5 IN REPORT I****Transition of care from child to adult services***

58. In England, transition from child to adult services in children and young people over 11 years with associated depression, anxiety, eating disorders or self-harm occurred later than all children and young people regardless of treatment specialty. Admissions for eating disorders transitioned later still than the other conditions, which were positive findings
59. For children and young people over 11 years with depression, anxiety, eating disorders or self-harm admitted to a mental health specialty, transition from child mental health inpatient services to adult mental health inpatient services was slightly later than people with any mental health diagnosis
60. All children and young people had transitioned to adult mental health inpatient services whatever their associated mental health diagnosis by age 18 years
61. There was evidence of admissions to adult specialties for all admissions to mental health specialties including the conditions of interest from at least 15 years of age
62. Age at transition appeared to be slightly later for outpatient mental health specialty appointments than for inpatient mental health specialty admissions
63. There was evidence of admissions to adult intensive care units for self-harm in children as young as 11 but this may have reflected paediatric intensive care bed availability in at certain times.

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## Glossary

<b>Anxiolytics</b>	Medications often used to manage anxiety
<b>CAMHS</b>	Child and Adolescent Mental Health Services. CAMHS are the NHS services that assesses and treat young people with emotional, behavioural or mental health difficulties
<b>Children</b>	This term refers to people from the age of 11 to 17 years
<b>CMHT</b>	Community mental health teams
<b>Comorbidities</b>	The presence of one or more additional disorders (or diseases) occurring with a primary disease or disorder.
<b>CPRD</b>	Clinical Practice Research Datalink is a governmental, not-for-profit research service, jointly funded by the NHS National Institute for Health Research (NIHR) and the Medicines and Healthcare products Regulatory Agency (MHRA), a part of the Department of Health, providing anonymised primary care records for public health research
<b>CYP</b>	Children and Young People
<b>DNA</b>	Did not attend
<b>Hypnotics</b>	Medications used to reduce anxiety and/or induce sleep
<b>Improving Access to Psychological Therapies (IAPT)</b>	Improving Access to Psychological Therapies – a large England-wide community-based expansion of psychotherapy services
<b>Mental health and learning disabilities (MHCD)</b>	Service review in Northern Ireland
<b>Mental health minimum dataset (MHMDS) Mental health and learning disabilities statistics (MHLDDS)</b>	<p>The Mental Health Minimum Data Set (MHMDS) was renamed Mental Health and Learning Disabilities Data Set (MHLDDS) following an expansion in scope (from September 2014) to include people in contact with learning disability services for the first time. This monthly statistical release makes available the most recent MHLDDS data from September 2014 onwards.</p> <p>As well as providing timely data, it presents a wide range of information about care given to users of NHS-funded, secondary mental health and learning disability services for adults and older people ('secondary mental health and learning disability services') in England.</p>
<b>Psychosocial</b>	A combination of psychological and social factors
<b>Person Years at Risk (PYAR)</b>	The denominator in an incidence rate is the sum of each individual's time at risk (i.e. the length of time they were followed up in the study) and is commonly expressed as person years at risk. The incidence rate is the rate of contracting the disease among people still at risk.

<p><b>Scottish Mortality Ratio SMR04</b></p>	<p>An SMR04 is generated for patients receiving care in Mental Health Specialties when the following events occur. Part 1 of the record containing admission details is completed and submitted; on discharge Part 2 is completed and submitted.</p> <ol style="list-style-type: none"> <li>1. Inpatients and Day Cases are admitted to NHS hospitals from locations external to the NHS.</li> <li>2. Inpatients and Day Cases are admitted to contracted NHS beds in non-NHS institutions.</li> <li>3. Inpatients and Day Cases change specialty (with or without a change of consultant): <ul style="list-style-type: none"> <li>• An inpatient transfers to become an Inpatient in another specialty in the same hospital</li> <li>• An inpatient becomes a Day Case in another specialty during the inpatient stay</li> <li>• A day case transfers to become an Inpatient in another specialty (except when the day case episode during an inpatient stay and the patient is transferring back to the original consultant)</li> <li>• A day case transfers back to resume an Inpatient stay but DOES NOT transfer back to the original consultant for medical reasons</li> </ul> </li> <li>4. Inpatients and Day Cases transfer from another NHS hospital (including contracted NHS beds in non-NHS institutions).</li> <li>5. Inpatients and Day Cases change consultant for medical reasons within the same specialty: <ul style="list-style-type: none"> <li>• An inpatient transfers as an Inpatient to the care of a different consultant for medical reasons in the same specialty in the same hospital</li> <li>• An inpatient becomes a Day Case in the same specialty under a different consultant for medical reasons during the inpatient stay</li> <li>• A day case transfers to become an Inpatient under the care of a different consultant in the same specialty for medical reasons (except when the day case episode is during an inpatient stay and the patient is transferring back to the original consultant)</li> <li>• A day case transfers back to resume an Inpatient stay in the same specialty but DOES NOT transfer back to the original consultant for medical reasons</li> </ul> </li> <li>6. Inpatients move into and/or out of one of the significant facilities listed in this section.</li> </ol> <p>Note: The General Definition of Psychiatric is now referred to as Mental Health.</p>
<p><b>Self-harm</b></p>	<p>Self-harm is when somebody intentionally damages or injures their body, such as cutting or burning themselves, hitting or poisoning. It's usually a way of coping with or expressing overwhelming emotional distress.</p>
<p><b>Suicidal ideation</b></p>	<p>Suicidal thoughts</p>
<p><b>Transition</b></p>	<p>The process of moving from children's to adults' services. It refers to the full process including initial planning, the actual transfer between services, and support throughout. (Transition from children's to adult's services for young people using health or social care services. NG43 (2016))</p>
<p><b>Young people</b></p>	<p>This term refers to people from the age of 18 to 24 years</p>

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Ground Floor  
Abbey House  
74-76 St John Street  
London EC1M 4DZ

T 0207 251 9060  
F 0207 250 0020  
E [info@ncepod.org.uk](mailto:info@ncepod.org.uk)  
w [www.ncepod.org.uk](http://www.ncepod.org.uk)

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