The Royal College of Pathologists
Pathology: the science behind the cure

National Medical Examiner's Good Practice Series No. 7

Mental health and eating disorders

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Contents

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About the National Medical Examiner's Good Practice Series

Medical examiners – senior doctors providing independent scrutiny of non-coronial deaths in England and Wales – are a relatively recent development.

While there is extensive guidance available on a wide range of topics for NHS and public sector staff, the National Medical Examiner's Good Practice Series highlights how medical examiners and medical examiner officers can better meet the needs of local communities and work more effectively with colleagues and partners.

The Good Practice Series is a topical collection of focused summary documents, designed to be easily read and digested by busy front-line staff, with links to further reading, guidance and support.

Introduction

At any time as many as one in six adults has experienced a common mental health disorder in previous days according to surveys discussed in more detail later in this paper. There are more than half a million people with more severe mental illnesses. Mental health conditions are common, affect people of all ages including children, and can have a significant impact on those who experience them, as well as their relatives, carers or those around them.

Most people with mental health conditions can live successfully, with support and treatment where this is necessary. However, this is not always the case, and it is not uncommon for those reviewing deaths of people with mental health disorders to find links between those disorders and poor health outcomes and, in some cases, direct links to causes of death. A recent Prevention of Future Death report,[1] explored in more detail later in this paper, notes that while anorexia nervosa has the highest mortality of any mental disorder affecting young people and adults, this should not be simply accepted. Where a patient has died and there is a link to a mental health disorder, it is important to consider proactively whether there are lessons to learn, to prevent similar tragic outcomes for another person in similar circumstances.

This paper explores the role medical examiners can play in identifying links between mental health disorders and causes of death; notifying others when lessons can be learned so that care of future patients with mental health conditions is improved; and ensuring medical certificates of cause of death (MCCDs) are completed appropriately.

There are connections between the challenges faced by people with mental health disorders and their families and carers, and previous Good Practice Series papers. In particular, the papers regarding supporting people with BAME heritage (no. 1);[2] learning disability and autism (no. 3);[3] and deaths of children (no. 6)[4] should be read in conjunction with this paper and the recommendations noted.

[1] Regulation 28: *Report to Prevent Further Deaths*. Published 2021. Available at: www.judiciary.uk/wp-content/uploads/2021/03/Averil-Hart-2021-0058-Redacted.pdf

[2] Royal College of Pathologists. *National Medical Examiner's Good Practice Series No. 1. How medical examiners can support people of Black, Asian and minority ethnic heritage and their relatives*. Available at: www.rcpath.org/uploads/assets/72675084-5ed3-43a1-b518c61395dd1194/Good-Practice-Series-BAME-paper.pdf

[3] Royal College of Pathologists. *National Medical Examiner's Good Practice Series No. 3. Learning disability and autism*. Available at: www.rcpath.org/uploads/assets/daf86eaa-d591-40d5-99d54118d10444d2/Good-Practice-Series-Learning-disability-and-autism-For-Publication.pdf

[4] Royal College of Pathologists. *National Medical Examiner's Good Practice Series No. 6. Medical examiners and child deaths*. Available at: www.rcpath.org/uploads/assets/7fa7a9d6-ada5-4597-b16f4602c93d3e91/Good-Practice-Series-Child-Deaths.pdf

Recommendations for medical examiners – mental health and eating disorders

Medical examiners should:

1. be proactive in considering whether there are links between patients' mental health conditions and the causes of death, and whether this should be referred for a case record review and recorded in the MCCD. For example, a person with a mental health disorder may display a combination of risk factors that can contribute to causes of death, such as alcohol abuse and difficulties accessing healthcare.

2. recognise that many common mental health disorders (such as depression) are not normally included in the definition of serious mental illness but may nevertheless have contributed to death. This may also apply to neurodevelopmental disorders (such as attention deficit hyperactivity disorder), which can increase the risk of premature mortality. In addition, in the same way that physical comorbidities may combine to adversely affect health outcomes, multiple mental health conditions may contribute to causes of death, such as depression with eating disorders.

3. during scrutiny, ensure they carry out a proportionate review of relevant mental health care providers' records, and consider whether communication and handover between providers was appropriate and optimal, for example, between acute trusts and mental health trusts, or between child and adult mental health services. The presence of a mental health condition anywhere on the MCCD should prompt medical examiners to consider whether any aspect of treatment or care requires further investigation.

4. refer all deaths of people with severe mental illness for case record review, in line with Learning from Deaths[5] guidance.

5. seek opportunities to develop links with providers of mental health services and provide information to support their reviews of deaths and learning to improve services. Such providers are likely to welcome information about the final illnesses of deceased patients they cared for, as they may otherwise receive limited information to inform learning.

6. actively cultivate links with mental health specialists, both within their host trust, and providers of mental health services in their area or Integrated Care System. The interplay between physical and mental health conditions is often problematic, and specialists can provide insight into complex areas. The developing role of Integrated Care Systems is likely to lead to more opportunities for learning and cooperation between different providers.

7. ensure MCCDs record a full and comprehensible sequence of causation. For example, a mental health condition is unlikely to cause malnutrition of a degree leading to death without an intervening finding such as self-neglect, or neglect by others. Equally, a cause of death that is unsupported by an adequate sequence may indicate a mental health condition that has not been mentioned in the available medical history.

[5] NHS. *National Guidance on Learning from Deaths*. Available at: www.england.nhs.uk/publication/national-guidance-on-learning-from-deaths/

8. be alert to factors that indicate notification to the coroner is appropriate including when the deceased was subject to compulsory detention under the Mental Health Act; self-harm and neglect (including self-neglect); and due to violence trauma and injury.

9. consider identifying a lead in each medical examiner office to champion understanding for patients who die with mental health disorders, and their families and carers. This could include developing expertise in identifying links between mental health conditions and causes of death, and increasing understanding of care provision for patients with mental health conditions. Champions could also create opportunities within and across medical examiner offices by sharing learning (with appropriate regard to confidentiality requirements).

Context and background

The National Medical Examiner's ambition is for medical examiners to provide a mechanism for linking the various initiatives for learning from deaths. In the case of deaths of people who experience mental illness, medical examiners should make suitable information available to mental health providers so they can focus on ways to improve care. This should be possible without adding to the burden of data collection.

Inequalities and mental illness

The UK Government's mental health webpages note that people with severe and enduring mental illness are at greater risk of poor physical health and reduced life expectancy compared with the general population.[6] One in six adults have had a common mental health disorder, such as anxiety, in the last week, according to survey data. Three quarters of mental health conditions are established by the age of 24. Rates of probable mental disorders in children have increased since 2017; in 6–16 year olds from one in nine (11.6%) to one in six (17.4%), and in 17–19 year olds from one in ten (10.1%) to one in six (17.4%).[7] Rates in both age groups remained similar between 2020 and 2021. Recent data indicate that there are close to 551,000 people in England with more severe mental illness such as schizophrenia or bipolar disorder.[6] This is likely to be an underestimate as figures only include those who are diagnosed and recorded on GP registers. Serious mental illness covers a range of needs and diagnoses, including but not limited to: psychosis, bipolar disorder, 'personality disorder' diagnosis, eating disorders, severe depression and mental health rehabilitation needs. Some of these may co-exist with other conditions such as frailty, cognitive impairment, neurodevelopmental conditions or substance use.[8] Wider comorbidities and common mental health problems are potential risk factors. Other issues, such as gambling, can cause low self-esteem, stress, anxiety and depression, particularly if they become an addiction, just as drugs or alcohol can.

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[6] UK Government. Public Health England. *Health matters: reducing health inequalities in mental illness*. Available at: www.gov.uk/government/publications/health-matters-reducing-health-inequalities-in-mental-illness/health-matters-reducing-health-inequalities-in-mental-illness

[7] NHS Digital. *Mental Health of Children and Young People in England 2021 – wave 2 follow up to the 2017 survey*. Available at: digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2021-follow-up-to-the-2017-survey

[8] NHS England and NHS Improvement. *NHS Mental Health Implementation Plan 2019/20–2023/24*. Available at: www.longtermplan.nhs.uk/wp-content/uploads/2019/07/nhs-mental-health-implementation-plan-2019-20-2023-24.pdf.

The Wales NHS website notes that 'a quarter of us will experience mental health conditions or illness at some point, having an enormous effect on those around us. Worse still, sufferers often face discrimination and stigma.' Together for Mental Health[9] is a 10-year strategy for improving the lives of people using mental health services, their carers and their families, implemented through a delivery plan.[10] The Mental Health (Wales) Measure[11] was introduced by the National Assembly for Wales to improve the support available for people with mental health conditions in Wales.[12]

Health Matters: reducing health inequalities in mental illness highlights the association between mental illness and health and social inequalities, which is discussed further in this section.[6] Mental illness is often closely associated with health inequalities and indicators of deprivation. These differences can be in relation to prevalence, access to, experience and quality of care and support, as well as opportunities and outcomes. Health inequalities can mean reduced quality of life, poorer health outcomes and early death for many people. People living with severe mental illness experience some of the worst inequalities, with a life expectancy of up to 20 years less than the general population, and evidence suggests that the mortality gap is widening.

People with mental illness are more likely to have higher rates of:

- poverty
- homelessness
- incarceration
- social isolation
- unemployment.

As an example, psychosis is up to 15-times higher among people who are homeless compared with the general population. Levels of psychotic disorders are 9-times higher in people in the lowest fifth (quintile) of household income compared with the highest.

Although cardiovascular disease accounts for the majority of premature deaths among people with serious mental illness, health disparities are greatest for liver disease and respiratory disease and there has been little improvement over time.

The increased burden of physical ill health and reduced life expectancy for people with severe mental illness are due to complex and interrelated factors. Medical examiners should be alert to these factors:

- wider social factors such as unemployment and poverty
- increased behaviours that pose a risk to health such as smoking and poor diet

[9] Welsh Government. *Together for mental health: our mental health strategy*. Published 31 October 2021. Available at: https://gov.wales/together-mental-health-our-mental-health-strategy

[10] Welsh Government. *Mental health delivery plan 2019 to 2022*. Available at: https://gov.wales/mental-health-delivery-plan-2019-to-2022

[11] Welsh Government. *Mental Health (Wales) Measure 2010*. Available at: https://gov.wales/mental-health-wales-measure-2010-leaflet

[12] More data regarding mental health in Wales is available at gov.wales/mental-health-data-sources

- lack of support to access care and support
- effects of medication which include weight gain
- stigma, discrimination, isolation and exclusion preventing people from seeking help
- diagnostic overshadowing, which is the misattribution of physical health symptoms to part of an existing mental health diagnosis, rather than a genuine physical health problem requiring treatment.

Perinatal mental illness can have a significant and long-lasting effect on women, their babies and families if not identified early enough and managed effectively. Some groups may be more vulnerable to perinatal mental health conditions such as women with a pre-existing psychiatric diagnosis. The Confidential Enquiry into Maternal Deaths and Morbidity[13] shows that suicide remains one of the leading causes of maternal mortality in the UK.

People from minority ethnic backgrounds experience further disadvantage. For example, black people are more likely to be detained under the Mental Health Act and have lower rates of recovery.

Black people with serious mental illness are more likely than other groups to come into contact with secondary care services through non-health agencies, in particular, the police. Adverse experiences of hospital mental health services among minority ethnic groups continue to be a cause of concern. These issues can lead to a mistrust of services and delays in seeking care.

Eating disorders

An eating disorder is a mental health condition where control of food is used to cope with feelings and other situations. Unhealthy eating behaviours may include eating too much or too little or worrying about weight or body shape. Eating disorders commonly start in childhood and adolescence but affect people of all ages, genders and sexual orientation. Anyone can get an eating disorder, but teenagers between 13 and 17 are mostly affected. The proportion of children and young people with possible eating problems has increased since 2017; from 6.7% to 13.0% in 11–16 year olds, and from 44.6% to 58.2% in 17–19 year olds.[14] Estimates suggest more than 4% of adults in the UK have an eating disorder.[15] With treatment, most people can recover from an eating disorder.

[13] NPEU. MBRRACE-UK. *Confidential Enquiry into Maternal Deaths*. Available at: www.npeu.ox.ac.uk/mbrrace-uk/reports/confidential-enquiry-into-maternal-deaths

[14] NHS Digital. *Mental Health of Children and Young People in England 2021 – wave 2 follow up to the 2017 survey*. Available at: digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2021-follow-up-to-the-2017-survey

[15] NHS Digital. *Health Survey for England 2019 [NS].* Available at: digital.nhs.uk/data-and-information/publications/statistical/health-survey-for-england/2019

The Medical Emergencies in Eating Disorders (MEED) report identified a need among clinicians for guidance when managing adults with an eating disorder.[16] The MEED guidance includes several helpful summary sheets for doctors and other professionals involved in care.

Referrals for eating disorders have increased significantly during the pandemic. In a recent Prevention of Future Death report,[1] the coroner wrote in 2021, "*Evidence confirmed that whilst AN (anorexia nervosa) has the highest mortality of any mental disorder affecting young people and adults this should not be simply accepted and that AN and other EDs (eating disorders) are treatable mental disorders, with even severe complications such as malnutrition safely reversible. The evidence further established that whilst in the long-term primary prevention strategies including early recognition and treatment of the disease was critical, in the short to medium term, improving access to treatment and the effective monitoring of the severely ill is to be regarded as essential to address the risk of avoidable future deaths…*

Further, I am concerned that there may also be a significant under-reporting of the extent to which EDs have caused or contributed to deaths, leading to cases either not being referred to the coroner or, if they are, the coroner in question determining that death was one of 'natural causes' with only the terminal cause of death, and not the underlying ED cause or contribution to the death, being recorded. In such circumstances there is a concern that a number of such deaths (where, for example, lack of care may have contributed to the death) are neither investigated appropriately by the coroner nor taken to inquest with a concomitant risk of a significant underestimation of the true mortality rate of EDs."

Unfortunately, there is evidence of persistent themes relating to levels of awareness and understanding of eating disorders among some clinicians. The coroner's report noted, "*All five inquests revealed a common theme of wide-spread and continuing lack of training, knowledge, or experience on the part of physicians and medical staff (including GPs and nurse practitioners, as well as acute hospital doctors, nurses and dieticians) regarding eating disorders (EDs) and specifically Anorexia Nervosa (AN). Many witnesses (from both the death 2012 and those in 2017/2018) conceded that they had had only the most superficial knowledge of the often complex issues relating to recognition, monitoring, management and treatment of EDs and AN specifically*."[1]

A Parliamentary Committee report and the Government response provide useful indications of key factors driving outcomes.[17] These include, for example, the quality and availability of adult services; the transition from child to adult services; the importance of improving coordination and clear clinical responsibilities when more than one service or provider is involved; and gaps in provision of eating disorder specialists. These are matters that medical examiners should bear in mind while evaluating proposed causes of death of patients with eating disorders.

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[16] Royal College of Psychiatrists. *Guidance on Recognising and Managing Medical Emergencies in Eating Disorders*. Available at: https://www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/college-report-cr233---annexe-1.pdf?sfvrsn=1ba7e785_10

[17] House of Commons Public Administration and Constitutional Affairs Committee. *Ignoring the Alarms follow-up: Too many avoidable deaths from eating disorders* and *Government response to the recommendations of the Public Administration and Constitutional Affairs Committee's Seventeenth Report of Session 2017-19: Ignoring the Alarms follow-up: Too many avoidable deaths from eating disorders*

Other Reports to Prevent Future Deaths have expressed similar concerns about under-reporting of eating disorders,[18] and medical examiners should be alert to this when reviewing cases with any history of eating disorder.

Table 1: Mortality statistics – underlying causes, sex and age.[19]

Cause of death	2017	2018	2019
F50 Eating disorders	23	25	18
F50.0 Anorexia nervosa	16	22	15
F50.1 Atypical anorexia nervosa	0	0	0
F50.2 Bulimia nervosa	4	0	0
F50.3 Atypical bulimia nervosa	0	0	0
F50.4 Overeating associated with other psychological disturbances	0	0	0
F50.5 Vomiting associated with other psychological disturbances	0	0	0
F50.8 Other eating disorders	0	0	0
F50.9 Eating disorder, unspecified	3	3	3
Source:	ONS Crown Copyright Reserved		

Medical examiners' scrutiny and coroner investigations

Bereaved families may have a range of expectations or responses to the death of someone with a mental health disorder. Some may have extensive or even unrealistic expectations about the degree of investigation, while others may not wish to discuss mental health disorders at all. Medical examiners may also encounter diverse cultural and religious perspectives on mental health and suicide, both from members of the public and other professionals. Doctors completing MCCDs may face pressure to avoid linking mental disorders with causes of death. This makes it more important for medical examiners to be proactive in considering whether such links exist.

Medical examiners should be alert to factors that mean notification to the coroner is appropriate including when the deceased was subject to compulsory detention under the Mental Health Act, self-harm and neglect (which includes self-neglect), and due to violence, trauma and injury. Suicide is also a significant cause of death among people with mental illness. The 2018 National Confidential Inquiry reports that 28% of all suicides were in people who had contact with mental health services in the 12 months prior to death. Of young people who died by suicide, a report found 26% were in recent contact with mental health care.[20] Information is collated by the National Confidential Inquiry into Suicide and Safety in Mental Health.

In 2020, there were 5,224 suicides registered in England and Wales, equivalent to an age-standardised mortality rate of 10.0 deaths per 100,000 people and statistically significantly lower

[18] Regulation 28: *Report to prevent future deaths*. Published 2021. Available at: www.judiciary.uk/wp-content/uploads/2021/12/Nichola-Lomax-Prevention-of-future-deaths-report-2021-0433_Published.pdf

[19] Office for National Statistics. *Deaths from eating disorders and other mental illnesses*. Released December 2020. Available at: www.ons.gov.uk/aboutus/transparencyandgovernance/freedomofinformationfoi/deathsfromeatingdisordersandothermentalillnesses

[20] National Confidential Inquiry into Suicide and Homicide by People with Mental Illness (NCISH). *Suicide by children and young people*. Manchester, UK: University of Manchester, 2017. Available at: sites.manchester.ac.uk/ncish/reports/suicide-by-children-and-young-people/

than the 2019 rate of 11.0 deaths per 100,000. Around three-quarters of registered suicide deaths in 2020 were for men (3,925 deaths; 75.1%), which follows a consistent trend back to the mid-1990s. The England and Wales male suicide rate of 15.4 deaths per 100,000 is statistically significantly lower than in 2019 but consistent with rates in earlier years; for females, the rate was 4.9 deaths per 100,000, consistent with the past decade. Males and females aged 45 to 49 years had the highest age-specific suicide rate (24.1 male and 7.1 female deaths per 100,000). For the fifth consecutive year, London has had the lowest suicide rate of any region of England (7.0 deaths per 100,000), while the highest rate in 2020 was in the North East with 13.3 deaths per 100,000.[21]

The National Child Mortality Review Database published a thematic report on learning from deaths by suicide in children and young people, based on data from 1 April 2019 to 31 March 2020.[22] The report identified 15 factors present in the suicides they reviewed, including:

- household functioning
- conflict within key relationships
- problems at school, bullying
- neurodevelopmental conditions
- loss of key relationships
- problems with service provision
- mental health needs
- abuse and neglect
- drugs or alcohol misuse.

Completing MCCDs

Despite their increased profile given to mental health conditions, there can be reluctance on the part of some doctors to include them in MCCDs, reflecting stigma and an incorrect assumption that only physical diseases should appear on MCCDs. The table in the annex provides data from the Office for National Statistics (ONS), published in response to a question on this matter in England. There are also cases where there is a failure to identify links between mental health disorders and other causes of death.

Clumsy or inappropriate construction of the causes of death can be particularly distressing to bereaved families. The ONS and Home Office (Passport Office/General Register Office) publish official guidance for doctors completing MCCDs,[23] which notes that "*…mental health conditions…are rarely sufficient medical explanation of the death in themselves. If such a condition*

[21] Office for National Statistics. *Suicides in England and Wales: 2020 registrations*. Available at: www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/suicidesintheunitedkingdom/2020registrations

[22] National Child Mortality Database. *Suicide in Children and Young People National Child Mortality Database Programme Thematic Report*. Published October 2021. Available at: www.nspa.org.uk/wp-content/uploads/2021/10/NCMD-Suicide-in-Children-and-Young-People-Report.pdf

[23] Ministry of Justice. *Notification of Deaths Regulations 2019 guidance*. Available at: www.gov.uk/government/publications/notification-of-deaths-regulations-2019-guidance

is considered to be relevant, the more immediate mechanism(s) or train of events leading to death must be made clear…" There has to be a physical mechanism (e.g. self-neglect, malnutrition) or an event (e.g. suicide). While suicide will obviously require coroner notification, physical mechanisms may also lead to a decision to notify the coroner.

Where a mental health condition is the root cause of a physical illness or event, it is essential to record this condition, usually on the lowest completed line of the MCCD part 1. The mental health condition should not be omitted out of consideration for the bereaved family or carer, as this will create an incorrect cause of death and potentially distort important mortality statistics and medical research. If a mental health condition contributed to the death indirectly, such as by affecting the deceased's care-seeking behaviour for a physical condition or their compliance with treatment, the mental health condition should be mentioned in the MCCD part 2.

Find out more

- Welsh Government policies, plans, reports, standards and guidance on mental health in Wales: gov.wales/health-conditions (see 'mental health')
- UK Government mental health webpage: www.gov.uk/health-and-social-care/mental-health
- Office for Health Improvement and Disparities: Severe Mental Illness Profiling tool
- Office for National Statistics, *Deaths from eating disorders and other mental illnesses*. Released December 2020. Available at: www.ons.gov.uk/aboutus/transparencyandgovernance/freedomofinformationfoi/deathsfromeatingdisordersandothermentalillnesses
- Reports published by the Parliamentary and Health Service Ombudsman and responses:
  - Ignoring the alarms: How NHS eating disorder services are failing patients
  - Ignoring the Alarms follow-up: Too many avoidable deaths from eating disorders
  - Government response to the recommendations of the PACAC's 17th report of session 2017 to 2019.
- NHS England:
  - Mental health web page: www.england.nhs.uk/mental-health/
  - NHS Mental Health Implementation Plan 2019/20 – 2023/24 (longtermplan.nhs.uk) (includes action on children and young people as well as adults)
- NCISH | The University of Manchester
- NCMD | The National Child Mortality Database
- Royal College of Psychiatrists, *MEED Guidance on Recognising and Managing Medical Emergencies in Eating Disorders*. Available at:www.rcpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/college-report-cr233---annexe-1.pdf?sfvrsn=1ba7e785_10
- NHS Digital: Adult Psychiatric Morbidity Survey

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Annex

Deaths from selected causes where a severe mental illness was mentioned on the death certificate, England, deaths registered 2012–16 [1,2,3,4,5,6]

All Cancers

	Year	Number of deaths	Age standardised Rate	Upper Confidence Interval	Lower Confidence Interval
Without SMI Mentioned	2012	133,029	280.59	279.07	282.10
	2013	132,776	275.41	273.92	276.90
	2014	134,235	272.57	271.11	274.03
	2015	135,167	270.41	268.97	271.86
	2016	136,759	269.06	267.63	270.49
Schizophrenia mentioned	2012	85	0.18	0.14	0.22
	2013	91	0.19	0.15	0.23
	2014	103	0.21	0.17	0.25
	2015	110	0.22	0.18	0.26
	2016	118	0.23	0.19	0.27
Bipolar disorder mentioned	2012	17	0.04 u	0.02	0.06
	2013	19	0.04 u	0.02	0.06
	2014	23	0.05	0.03	0.07
	2015	28	0.06	0.04	0.08
	2016	31	0.06	0.04	0.09

Diabetes

	Year	Number of deaths	Age standardised Rate	Upper Confidence Interval	Lower Confidence Interval
Without SMI Mentioned	2012	4,603	9.69	9.41	9.97
	2013	4,656	9.65	9.37	9.93
	2014	4,939	9.98	9.70	10.26
	2015	5,206	10.37	10.09	10.66
	2016	5,311	10.38	10.10	10.66
Schizophrenia mentioned	2012	11	0.02 u	0.01	0.04
	2013	10	:	0.01	0.04
	2014	22	0.04 u	0.03	0.07
	2015	17	0.03 u	0.02	0.05
	2016	16	0.03 u	0.02	0.05
Bipolar disorder mentioned	2012	3	:	0.00	0.02
	2013	4	:	0.00	0.02
	2014	3	:	0.00	0.02
	2015	7	:	0.01	0.03
	2016	3	:	0.00	0.02

Cardiovascular Disease

	Year	Number of deaths	Age standardised Rate	Upper Confidence Interval	Lower Confidence Interval
Without SMI Mentioned	2012	131,527	277.66	276.15	279.17
	2013	130,444	270.71	269.23	272.18
	2014	126,540	256.12	254.70	257.53
	2015	129,004	257.56	256.15	258.97
	2016	124,459	243.77	242.42	245.13
Schizophrenia mentioned	2012	97	0.20	0.17	0.25
	2013	99	0.20	0.16	0.25
	2014	110	0.22	0.18	0.27
	2015	114	0.23	0.19	0.27
	2016	116	0.23	0.18	0.27
Bipolar disorder mentioned	2012	31	0.06	0.04	0.09
	2013	31	0.06	0.04	0.09
	2014	33	0.07	0.05	0.09
	2015	30	0.06	0.04	0.09
	2016	41	0.08	0.06	0.11

Respiratory Disease

	Year	Number of deaths	Age standardised Rate	Upper Confidence Interval	Lower Confidence Interval
Without SMI Mentioned	2012	65,851	139.74	138.67	140.82
	2013	68,970	143.81	142.73	144.88
	2014	61,879	125.77	124.77	126.76
	2015	69,886	139.99	138.95	141.03
	2016	66,835	131.41	130.41	132.41
Schizophrenia mentioned	2012	144	0.30	0.25	0.35
	2013	147	0.30	0.25	0.35
	2014	129	0.26	0.22	0.31
	2015	181	0.37	0.31	0.42
	2016	172	0.34	0.29	0.39
Bipolar disorder mentioned	2012	42	0.09	0.06	0.12
	2013	56	0.12	0.09	0.15
	2014	53	0.11	0.08	0.14
	2015	45	0.09	0.07	0.12
	2016	55	0.11	0.08	0.14

Source: Office for National Statistics

Notes:

[1] Figures are for deaths registered in each calendar year.

[2] Deaths of non-residents are excluded from these England figures which are based on boundaries as of February 2018.

[3] Age-standardised mortality rates are expressed per 100,000 population and standardised to the 2013 European Standard Population.

[4] See the 'Definition' tab for further details of the underlying causes of death included.

[5] Age-standardised mortality rates based on fewer than 10 deaths are not presented due to low reliability and marked as ':'; figures based on 10 to 19 deaths are presented, but marked with 'u' to show low reliability

[6] Figures show where schizophrenia and/or bipolar disorder was mentioned on the death certificate. If a death has both causes mentioned it will be counted in both categories. Therefore the figures here for the grouped causes may be higher than previously published.