

Data supplement

Table DS1 Critical appraisal of studies							
Study	Study design, score and type	Sample size and quality, score	Adequacy of comparators, score	Consideration of confounders, score	Quality of outcome measure, score	Separation of delivery and uptake of care, score	Overall quality rating
<i>General (internal) medicine</i>							
Redelmeier <i>et al</i> (1998) ⁴⁶	1 Retrospective database	4	1	1	2	0	9 Adequate
Desai <i>et al</i> (2002) ⁴⁷	1 Retrospective database	4	1	2	2	1 Medical out-patient visits required in all patients	11 Adequate
Cradock-O'Leary <i>et al</i> (2002) ⁸	2 Retrospective cohort	5	1	2	1	1	12 Good
Dickerson <i>et al</i> (2003) ⁴⁹	1 Cross-sectional survey with indirect controls	2	1	1	2	0	7 Below average
<i>Cardiac care</i>							
Druss <i>et al</i> (2000) ⁵⁰	2 Retrospective cohort	5	1	2	2	1 Partial	13 Good
Li <i>et al</i> (2007) ⁵⁹	1 Retrospective cross-sectional	4	2	2	1	1	11 Adequate
Young <i>et al</i> (2000) ⁵²	2 Retrospective cohort	5	1	1	2	1 Partial	12 Good
Druss <i>et al</i> (2001) ⁵¹	2 Retrospective cohort	4	1	3	2	1 Partial	13 Good
Desai <i>et al</i> (2002) ⁵³	2 Retrospective cohort	4	2	3	2	2	9 Adequate
Lawrence <i>et al</i> (2003) ⁵⁴	2 Retrospective cohort	5	1	No	2	0	10 Adequate
Petersen <i>et al</i> (2003) ⁵⁵	2 Retrospective cohort	3	1	2	3	0	11 Adequate
Wang <i>et al</i> (2005) ⁵⁷	2 Retrospective cohort	4	1	4	1	3	15 Good
Jones <i>et al</i> (2005) ⁵⁶	2 Retrospective cohort	3	1	4	2	1	13 Good
Hippisley-Cox <i>et al</i> (2007) ⁵⁸	2 Retrospective cohort	5	2	2	1	0	13 Good
<i>Diabetes care</i>							
Desai <i>et al</i> (2002) ⁶⁰	2 Retrospective cohort	4	1	2	2	1	12 Good
Lin <i>et al</i> (2004) ⁶¹	1 Cross-sectional survey	3	1	1	1	0	7 Below average
Dixon (2004) ⁶²	1 Cross-sectional survey	2	2	4	3	3 No difference in number of out-patient visits for diabetes, emergency visits, hospitalisations are stated, with no statistical difference in attendance	15 Good
Jones <i>et al</i> (2004) ⁶³	2 Retrospective cohort	4	1	3	3	3 Adjusted for healthcare utilisation. Receipt of services declined with increasing healthcare utilisation	16 Excellent
Frayne <i>et al</i> (2006) ⁶⁴	1 Retrospective cross-sectional survey	5	1	4	3	3 Overall healthcare utilisation (including primary care) showed no significant difference between cohorts	17 Excellent
Whyte <i>et al</i> (2007) ⁷⁰	1 Retrospective cross-sectional survey	4	2	2	2	3	14 Good
Krein <i>et al</i> (2006) ⁶⁵	2 Retrospective cohort	5	1 (age matched only)	None	2	2	12 Good

Table DS1 (continued)							
Study	Study design, score and type	Sample size and quality, score	Adequacy of comparators, score	Consideration of confounders, score	Quality of outcome measure, score	Separation of delivery and uptake of care, score	Overall quality rating
<i>Diabetes care (continued)</i>							
Kreyenbuhl <i>et al</i> (2006) ⁶⁶	1 Cross-sectional survey	2	2	4	3	3 No difference in number of out-patient visits for diabetes, emergency visits, hospitalisations are stated, with no statistical difference in attendance	15 Good
Sullivan <i>et al</i> (2006) ⁶⁷	2 Retrospective cohort	3	0	1	1	0	7 Below average
Weiss <i>et al</i> (2006) ⁶⁸	2 Cross-sectional	3	2	1	2	1 Analyses were restricted to patients who had at least two out-patient visits	11 Adequate
Goldberg <i>et al</i> (2007) ⁶⁹	1 Cross-sectional survey	2	2	4	3	3 No difference in number of out-patient visits for diabetes, emergency visits, hospitalisations are stated, with no statistical difference in attendance	15 Good
<i>HIV/liver care</i>							
Palepu A <i>et al</i> (2006) ⁷³	3 Prospective cohort	2	1	Not stated	1	No	7 Below average
Bogart <i>et al</i> (2006) ⁷²	2 Cross-sectional	2	Poor	Not stated	1	No	5 Below average
Butt <i>et al</i> (2005) ⁷¹	2 Prospective cohort	2	1	0	1	0	6 Below average
Himelhoch <i>et al</i> (2007) ⁷⁴	2 Prospective cohort	3	2	3	1	1	12 Good
Fremont <i>et al</i> (2007) ⁷⁵	2 Prospective cohort	2	2	2	3	1	12 Good
<i>Cancer care</i>							
Goodwin <i>et al</i> (2004) ⁷⁶	2 Retrospective cohort	3	1	No	2	3 Looked at number of doctor visits in past 2 years	11 Adequate

Table DS2 Summary of methodology and results in five domains of quality of care

Reference	Study description					Findings in quality of care domain				
	Problem area Predictive measure (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<p><i>General (internal) medicine</i> Redelmeier <i>et al</i> (1998)⁴⁶</p>	<p>Arthritis Receipt of medical (drug) treatments for arthritis, HRT (oestrogen) replacement, lipid- lowering medication</p>	<p>1 344 145 patients, >64 years and part of Ontario drug benefit programme. Those with psychotic illness identified by prescriptions for haloperidol (17336) Adjusted for age and gender</p>	<p>Community patients including long-term care facilities Primary and secondary care clinicians</p>	<p>Not clearly defined (Examined rates of medical treatments for arthritis in those with psychosis and those without)</p>	<p>Those with psychotic illness less likely to receive medical treatment for arthritis: OR = 0.59 (95% CI 0.57–0.62) 30669 identified as having diabetes (by insulin prescriptions); less likely to receive HRT: $P < 0.001$ 56779 identified as having emphysema (by ipratropium prescriptions); less likely to receive lipid lowering drugs ($P < 0.001$)</p>	<p>Not measured</p>	<p>Not measured</p>	<p>Mental illness received lower levels of care on all measures</p>	<p>Not measured</p>	<p>Not measured</p>
<p>Desai <i>et al</i> (2002)⁴⁷</p>	<p>Basic medical care Receipt of nutrition and exercise counselling</p>	<p>Veterans Health Administration database identified 90 240 people with a diagnosis of obesity and/or hypertension Compared patients with and without a mental illness, substance use disorder, or dual diagnosis Controlled for demographic characteristics, level of Veterans Administration service connected- ness, and distance from home to nearest Veterans Administration centre</p>	<p>Veterans Administration medical centres Primary and secondary care Veterans Administration staff</p>	<p>Yes Obesity (BMI>27) and/or hypertension</p>	<p>Those with dual diagnosis significantly less likely to receive nutrition and exercise counselling, although the overall magnitude of the difference was small (2%). No difference between those with and without mental illness Partial adjustment for attendance (medical out-patient visits required in all patients)</p>	<p>Not measured</p>	<p>Not measured</p>	<p>No difference in care when comparing those with mental illness and those without Dual diagnosis received lower levels of care, but effect was small</p>	<p>Not measured</p>	<p>Not measured</p>

Table DS2 (continued)

Reference	Study description				Findings in quality of care domain					
	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<p>General (internal) medicine (continued)</p> <p>Craddock-O'Leary <i>et al</i> (2002)⁸</p>	<p>General medical care Use of medical services, number of medical visits</p>	<p>175653 Veterans Administration patients during 2000, in Southern California and Nevada Compared those with a primary diagnosis of mental illness (47.516 = 27%, ICD-9 diagnosis) and those without Controlled for demographic factors and medical comorbidity</p>	<p>Medical centres and out-patient clinics Primary and secondary care clinicians</p>	<p>Not stated (The physical diagnosis was not stated for whole cohort)</p>	<p>Rates of diagnosis of diabetes, pulmonary disease and hyper- tension far lower in those with mental illness. Those with mental illness had the highest rates of medical diagnosis (66% schizophrenia and 65% bipolar disorder) Logistic regression analysis predicting 1 or more medical visits for the year for veterans >49 years old Significantly less likely to have a medical visit with a diagnosis of substance misuse (OR=0.29, $P<0.001$), anxiety disorder (OR=0.36, $P<0.001$), bipolar disorder (OR=0.66, $P<0.001$), depression (OR=0.79, $P<0.001$) and post- traumatic stress disorder (OR=0.86, $P<0.05$). Partial adjustment for attendance (non-attenders excluded)</p>	<p>Not measured</p>	<p>Those with mental illness and substance misuse had fewer medical visits, this remained true even if they had diabetes or hypertension (low service utilisation)</p>	<p>Mental illness received lower frequency of medical care</p>	<p>Not measured</p>	<p>Not measured</p>

Table DS2 (continued)

		Study description				Findings in quality of care domain				
Reference	Problem area Predictive measure (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>General (internal) medicine</i>										
Dickerson <i>et al</i> (2003) ⁴⁹	General medical care Self-reported use of: medical services; complementary and alternative services; preventive medical services; perceived barriers to healthcare	100 with schizophrenia or schizoaffective disorder 100 with a mood disorder Compared with responses from national surveys (normal population) from which the study questions were ob- tained. Matched for age and ethnicity	Medical services received by community psychiatric patients	Not stated	People with mental illness more likely to have visited a doctor in the past year (OR =2) and had a full physical examination (Schizophrenia OR = 2.69, mood disorder OR = 1.74) Less likely to receive routine dental care (Schizophrenia OR = 0.46, mood disorder OR = 0.6)	Not measured	Those with mental illness more likely to report more barriers to having a visited a medical doctor (high likely to receive a full utilisation)	Mental illness received lower levels of dental care and report more barriers to treatment (patient experience) Mental illness more likely to receive a full physical examination	Report more perceived barriers to receiving medical care (OR>3)	Not measured
<i>Cardiac care</i>										
Druss <i>et al</i> (2000) ⁵⁰	Cardiac care Likelihood of: cardiac catheterisation; PTCA; CABG	National cohort 113 653 >64 years, hospitalised for a confirmed myocardial infarction. 5365 had a diagnosis of mental illness Data from Medicare Controlled for demographic, clinical, hospital and regional variables	Hospitalised patients Cardiologists	Yes Acute myocardial infarction	People with any comorbid mental illness less likely to undergo PTCA (11.8% v. 16.8%; P<0.001), CABG (8.2% v. 12.6%; P<0.001) Those with mental illness were 41% (for schizophrenia) to 78% (for substance misuse) less likely to undergo cardiac catheterisation compared with those without mental illness (P<0.001 for all). Among those having cardiac catheterisation there was no significant difference in rates of PTCA or CABG between those with and without mental illness There was no difference in the 30-day mortality rate	No difference found	Not measured	Mental illness and substance misusers received lower levels of care on all measures	Not measured	Not measured

Table DS2 (continued)

Reference	Problem area (e.g. physical exam/ investigation)	Study description			Findings in quality of care domain					
		Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
Cardiac care (continued) Young <i>et al</i> (2000) ⁵²	Cardiac care Likelihood of: cardiac catheterisation; PTCA; CABG	Healthcare invest- ment analysis (HCIA)-Sachs data- base. 354 195 people included with a principal diagnosis of acute mental illness (143421, 40.5% under 65 years). Using definitions similar to Druss 2000 <i>et al</i> identified 25237 (7.1%) with mental illness None of the data adjusted for admission characteristics or left ventricular function	Hospitalised patients Cardiologists	Yes Acute myocardial infarction	Those with mental illness significantly less likely to undergo cardiac catheterisation, mortality PTCA or CABG. Greatest disparities seen in older people with schizophrenia. In those aged 65 years or older rates of cardiac catheterisation were as follows (all statistically significant): schizophrenia $RR = 0.52$, affective disorders $RR = 0.8$, substance misuse $RR = 0.9$. In this age group the odds of PTCA for a person with schizophrenia was 32% the rate in those without mental illness	In older age-group (>65 years) during admission lower in those with mental disorders, who had a 21% lower risk- adjusted likelihood of death ($P < 0.001$) compared with those without mental illness Younger group with mental illness had a higher in-patient mortality rate for those with schizophrenia ($P < 0.001$) and substance misuse ($P < 0.001$)	Not measured	Mental illness (and substance misusers) received lower levels of care on all measures Need to interpret with caution as unadjusted data	Not measured	Not measured

Table DS2 (continued)

		Findings in quality of care domain								
		Study description								
Reference	Problem area Predictive measure (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Cardiac care (continued)</i> Druss et al (2001) ⁵¹	Cardiac care Mortality before and after considering five quality indicators: reperfusion therapy; aspirin; beta- blockers; ACE inhibitors; smoking cessation counselling	88 241 Medicare patients hospitalised for a clinically con- firmed myocardial infarction Data from Medicare Controlled for eligibility for procedure, demographics, cardiac risk factors, left ventricular function, admission and hospital characteristics and regional factors	Hospitalised patients Cardiologists	Yes Acute myocardial infarction	After adjusting for potential confounding factors, presence of any secondary mental disorder predicted a 13% decreased likelihood of reperfusion therapy in 'ideal' candidates and 26% reduction in 'eligible but not ideal'. Such people were also about 10% less likely to receive aspirin, beta-blockers, ACE inhibitors As compared with those without a psychiatric disorder those with schizo- phrenia were less likely to have reperfusion, beta-blockers, ACE inhibitors. People with affective disorders were less likely to have reperfusion and aspirin. Those with substance misuse disorders were less likely to be given ACE inhibitors	Mental illness of all types associated with a 19% increase in mortality at 1 year: HR = 1.19 (CI 1.04–1.36). Schizophrenia had a higher mortality with HR = 1.34 (CI 1.01–1.67) When the five quality measures were added to the model the association was no longer significant Concluding that deficits in quality of care explain a substantial proportion of the excess mortality of individuals with mental illness	Not measured	Mental illness received lower levels of care on all measures People with schizophrenia had particular high risk of poor care	Not measured	Not measured

Table DS2 (continued)

Reference	Study description				Findings in quality of care domain					
	Problem area Predictive measure (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<p>Cardiac care (continued)</p> <p>Desai et al (2002)⁵³</p>	<p>Cardiac care</p> <p>Use of aspirin, use of beta-blockers, most recent out-patient visit, development of a cholesterol/cardiac risk factor management plan</p>	<p>National sample of 5886 veterans discharged from Veterans Administration hospitals with a principal diagnosis of acute myocardial infarction up to 6 months before the index study date.</p> <p>Overall, 27.4% had a diagnosed mental illness. Aged under 65 years</p> <p>Controlled for age, gender, ethnicity, level of Veterans Administration service connectedness and distance from veteran's home to nearest Veterans Administration medical facility, chronic medical conditions and use of medical services in the past year (number of primary care visits, number of speciality medical visits, and number of medical in-patient days) and hospital size</p>	<p>Setting and who seen by</p>	<p>Yes</p> <p>Myocardial infarction</p>	<p>Quality of care similar, but people with a substance use disorder were significantly less likely to be taking beta-blockers than those without such a disorder</p> <p>In fully adjusted analyses, use of beta-blockers was 5% less likely among individuals with a substance use disorder compared with those with no such disorder</p>	<p>Healthcare utilisation in the past year controlled in analysis but not discussed</p>	<p>Not measured</p>	<p>Mental illness received similar levels of care with slightly lower care in those with substance misuse</p>	<p>Not measured</p>	<p>Not measured</p>

Table DS2 (continued)

		Study description				Findings in quality of care domain				
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Cardiac care (continued)</i> Lawrence <i>et al</i> (2003) ⁵⁴	Cardiac care SMR due to IHD, revascularisation procedures (removal of coronary art obstruction and CABG)	Western Australia linked database used to identify 210 129 users of mental health services (ICD-9 diagnosis). Note hierarchical model used so most severe diagnosis carried forward and coded as the main diagnosis Note psychiatric diagnosis examined included dementia Unable to adjust for demographic and clinical characteristics	Hospitalised and community patients seen in secondary care Cardiologists?	Yes IHD	Revascularisation rates low for dementia followed by those with schizophrenia, substance disorder, other psychosis and affective psychosis (rate ratios=0.14, 0.31, 0.60, 0.66, 0.77 respectively) but significant only for men. The only significant difference in revascularisation in women was in those with schizophrenia with a rate ratio of 0.34 (95% CI 0.18–0.64)	Specific diagnosis did have significantly lower rates of hospitalisation that in for IHD, overall lowest in those with schizophrenia total IHD, followed by 1.74 acute those with mental illness). Majority of Males with schizophrenia deaths were only ascribed to 60% as likely mental illness (59%) to be admitted for IHD compared with males in the general population, despite being 1.8 times as likely to die from IHD	SMR due to IHD in mental health users almost twice for men	Mental illness received lower levels of care but health users significant only for men	Not measured	Not measured

Table DS2 (continued)

		Study description				Findings in quality of care domain				
Reference	Problem area Predictive measure (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Cardiac care (continued)</i> Petersen et al (2003) ⁵⁵	Cardiac care Examined age adjusted RR for thrombolytic treatment, use of medications at discharge (beta-blockers, ACE inhibitors, aspirin) age adjusted mortality at 30 days and 1 year	4340 veterans discharged after a clinically confirmed myocardial infarction. mental illness 859 (19.8%) had mental illness (mental illness identified if had been admitted to a psychiatric hospital, received a mental health diagnosis or been seen in a psychiatric or drug/ alcohol clinic, all in the year before). Therefore mental illness may not be current or ongoing and therefore more likely to be minor Controlled for age, comorbidity and hospital characteristics	Secondary care Recently discharged with a confirmed mental illness Cardiologists	Yes Acute myocardial infarction	Those with mental illness less likely to undergo in-patient diagnostic angiography, age- adjusted RR = 0.9 (CI 0.83–0.98) No difference in RR of CABG, receipt of medications Risk-adjusted OR of death at 30 days = 1 (CI 0.75–1.32) and 1 year = 1.25 (CI 1.00–1.53) did not reach statistical significance	Trend towards higher rate of death at 1 year in those with mental illness	Not measured	Mental illness received lower levels of care of angiography but not CABG or medication offered	Not measured	Not measured

Table DS2 (continued)

		Study description				Findings in quality of care domain				
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
Cardiac care (continued) Wang et al (2005) ⁵⁷	Cardiac/antihypertensives Antihypertensive use identified by database	51 517 patients, >64 years of age, enrolled in a state prescription benefits programme with a diagnosis of hypertension Compared those with depression (6.4%) with those with other chronic medical conditions and those without depression identified by ICD-9 codes, filled >1 prescription for antidepressants Controlled for sociodemographic, cardiovascular conditions, clinical comorbidity and healthcare utilisation	Community primary care physicians	Yes Hypertensive	Antihypertensive use lower in those with depression OR = 0.50 (95% CI 0.45–0.55) The other chronic medical conditions also associated with significantly lower rates of antihypertensive use Asthma/chronic obstructive pulmonary disease having a lower OR than depression at 0.43 (95% CI 0.40–0.47)	Not measured	Not measured	Mental illness (depression) received lower levels of care	Not measured	Not measured

Table DS2 (continued)

Reference	Study description				Findings in quality of care domain					
	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<p><i>Cardiac care (continued)</i> Jones et al (2005)⁵⁶</p>	<p>Cardiac care Likelihood of receiving: PTCA; CABG within 30 days of discharge from hospital for a mental illness</p>	<p>Blue cross/blue shield database for claims 3368 adults hospitalised for a mental illness 40% (1342) died having a mental diagnosis. Included those who received their first diagnosis of mental disorder within the first 30 days of mental illness. Mental disorder identified from insurance claims between 1996–2001 and associated ICD–9 codes Adjusted for demo- graphic and clinical characteristics (adjusted for age, gender, number of days hospitalised, residence, hospital transfer, cardio- vascular risk factors and other medical comorbidity)</p>	<p>Hospitalised patients Cardiologists</p>	<p>Yes Acute myocardial infarction</p>	<p>No significant difference in rates of revascularisation Those with mental disorder more likely to have more cardiovascular risk factors and have other comorbidity. Partial adjustment for attendance in acute period Small sample size, very high rates of mental disorder, young age of sample (associated with higher rates of revascularisa- tion especially PCTA), higher rates of medical comorbidity</p>	<p>Not measured</p>	<p>Not measured</p>	<p>No difference in care</p>	<p>Not measured</p>	<p>Not measured</p>

Table DS2 (continued)

Study description			Findings in quality of care domain							
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<p>Cardiac care (continued)</p> <p>Hippisley-Cox et al (2007)⁵⁸</p>	<p>Cardiac care</p> <p>Relative risks of receiving: statin; cholesterol level; smoking cessation advice; blood pressure; prescription for aspirin, antiplatelets, anticoagulants or beta-blockers</p>	<p>127 932 people with coronary heart disease of whom 701 had a diagnosis of schizophrenia or bipolar disorder</p> <p>The results were adjusted for age, gender, deprivation, diabetes, stroke and smoking status and allowed for clustering by practice</p>	<p>Primary care patients from 485 UK general practices</p>	<p>Yes</p> <p>Coronary heart disease</p>	<p>Although there were no differences in parameters, people with schizophrenia were 15% less likely to have a recent prescription for a statin (95% CI 8–20%) and 7% less likely to have a recent record of cholesterol level (95% CI 3–11%) than those without mental illness</p> <p>There were no significant differences in smoking status, advising on smoking cessation, recording blood pressure, achieving target blood pressure or cholesterol values, or prescribing aspirin, antiplatelets, anticoagulants or beta-blockers.</p>	<p>Not measured</p>	<p>Not measured</p>	<p>Mental illness (schizophrenia) received lower levels of care in cholesterol checks and statins but no difference in other markers</p>	<p>Not measured</p>	<p>Not measured</p>
<p>Li et al (2007)⁵⁹</p>	<p>Cardiac care</p> <p>Odds ratio of receiving: CABG from a 'high-mortality' surgeon; CABG from a 'low-mortality' surgeon</p>	<p>39 839 individuals who had CABG in New York state of whom 2651 had psychiatric disorder and 447 substance misuse disorder. 113 had dual-diagnosis</p> <p>Results were adjusted for sociodemographic and clinical characteristics as well as surgeon work volume</p>	<p>Secondary care Heart surgeons</p>	<p>Yes</p> <p>Coronary heart disease with CABG</p>	<p>Patients with mental illness had an odds of receipt of care from a high mortality surgeon. No effect for substance misuse group alone or dual diagnosis, although subsample size was small</p>	<p>Not measured</p>	<p>People with mental illness were more likely to have treatment from low quality surgeons</p>	<p>Not measured</p>	<p>Not measured</p>	<p>Not measured</p>

Table DS2 (continued)

		Study description				Findings in quality of care domain				
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
Diabetes care (continued) Desai <i>et al</i> (2002) ⁶⁰	Diabetes Diabetes monitoring; HbA _{1c} ; eye examination; foot exam; pedal pulse exam; foot sensory exam In the past year	38 020 veteran health patients with diabetes. 23.7% had a mental illness. 1.3% substance misuse disorder, 2.6% dual diagnosis Controlled for demographic, health status, use of medical services and facility characteristics	Veterans Administration medical centres Primary and secondary care Primary and secondary care clinicians	Yes Diabetes	Those with substance misuse disorders less likely to receive retinal exam ($P<0.001$) or foot sensory exam ($P<0.05$) Partial adjustment for attendance (non-attenders excluded)	Not measured	Those with mental illness had significantly more out- patient visits in the previous year and received similar levels of care when compared with those without mental illness	Those with substance misuse disorders had lower levels of care but those with mental illness did not differ	Not measured	Not measured
Lin <i>et al</i> (2004) ⁶¹	Diabetes Diabetes monitoring; HbA _{1c} test; retinal examination; two examinations within 2 years among people with retinopathy; microalbumin urine test among patients not taking ACE inhibitors	4500 primary care patients with diabetes conducted between 2001 and 2003 and using a prepaid health insurance plan in western Washington state	Community Primary care setting Primary and secondary care clinicians	Yes Diabetes (predominantly type II)	A slightly higher proportion of people with depression received no HbA _{1c} test in the prior year (6.3 v. 4%; $P = 0.005$). Otherwise, there was no difference between the depressed and non-depressed people in use of diabetes monitoring and preventive services People with depression adhered less to oral hypoglycaemic agents and antihypertensive and lipid-lowering medications. Depression was not related to self-monitoring of blood glucose or daily foot checks	Not measured	Not measured	Depression was linked with slightly lower care (HbA _{1c} testing) but not other physician-initiated monitoring	Not measured	Not measured

Table DS2 (continued)

		Findings in quality of care domain								
		Study description								
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness						
				Comment	Outcomes					
					Access					
					Process					
					Patient experience					
					Structure					
<i>Diabetes care (continued)</i> Dixon (2004) ⁶²	Diabetes HbA _{1c} , age of diagnosis of diabetes mellitus, knowledge of diabetes mellitus, BMI, smoking, knowledge of hypertension, symptom index score	300 people with type II diabetes: 100 schizophrenia- spectrum disorder; 101 major mood disorder; 99 no mental illness Age 18–65 Matched for age, gender, ethnicity and education level. Also controlled for these factors and duration of diabetes mellitus, receipt of services including education, adherence to diet and exercise regimes	Recruited from community out-patient clinics Clinicians not specified	Yes Type II diabetes	Patients with schizophrenia less likely to receive diabetes education (<i>P</i> = 0.002). HbA _{1c} levels lower in those with mental illness and significantly lower in those with schizophrenia compared with those with no mental illness (<i>P</i> < 0.001). Those with schizophrenia had significantly younger age at diagnosis compared with the other two groups, (No mental illness <i>P</i> < 0.001; major mood disorder <i>P</i> < 0.01). Poorer knowledge of diabetes (<i>P</i> < 0.002), lower BMI (<i>P</i> < 0.02), higher rates of smoking and higher symptom score <i>P</i> < 0.001 (Colorado symptom index) Those people with schizophrenia and on olanzapine associated with significantly higher HbA _{1c} values compared to other antipsychotics	HbA _{1c} levels were significantly lower among people with schizophrenia than among people who did not have severe mental illness but were not significantly different from those of people who had major mood disorders	No difference in number of out-patient visits for diabetes, emergency visits, hos- pitalisations are stated, with no statistical difference in attendance	Mental illness received lower levels of diabetes education Those with schizophrenia significantly younger age at diagnosis compared with those without mental illness	Not measured	Not measured

Table DS2 (continued)

		Findings in quality of care domain								
		Study description								
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Diabetes care (continued)</i> Jones <i>et al</i> (2004) ⁶³	Diabetes Receipt of diabetic services: HbA _{1c} measurement; dilated eye examination; cholesterol measurement; urine protein testing	26 020 blue cross patients with diabetes, 6627 had a coexisting mental illness (25%) Calculated HR after adjusting for demographic, disease and utilisation factors	Out-patient and in-patient visits Primary and secondary care clinicians	Yes Diabetes	Those with mental illness more likely to be younger, female, urban residence, have at least one diabetes complication, have more comorbidity and increased healthcare utilisation (all $P < 0.001$) Mental illness associated with: a delay in receipt of all four services, by an average of 6.6 months ($P < 0.001$); received more services with on average 10 months more follow-up; less likely to receive all four services (unadjusted HR only); less likely to receive HbA _{1c} (HR = 0.92, 99.9% CI 0.87–0.97) and cholesterol measurement (HR = 0.92, 99.9% CI 0.86–0.98)	Not measured	Adjustment made for healthcare utilisation and receipt of services declined with increasing healthcare utilisation	Mental illness received lower levels of care (delayed and received) in all categories Those with mental illness who either over- or under- utilised healthcare appeared more at risk of not receiving diabetes services	Not measured	Not measured

Table DS2 (continued)

Reference	Study description				Findings in quality of care domain					
	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
Diabetes care (continued) Frayne et al (2006) ⁶⁴	Diabetes Diabetes monitoring: HbA _{1c} : low density lipoprotein; eye examination Outcome: poor glycaemic control; poor lipid control	313 586 veteran health patients with diabetes. 76 799 had any mental illness (25%), identified by ICD-9 codes Controlled for age, gender, race/ ethnicity, income, education, physical comorbidity, healthcare utilisation	Primary and secondary care Primary and secondary care clinicians	Yes Diabetes (received an antglycaemic prescription and/or had two or more ICD codes for diabetes)	Those with mental illness were less likely to receive all three measures of diabetic monitoring No HbA _{1c} : OR=1.23 (95% CI 1.2-1.26) No low density lipoprotein: OR = 1.25 (95% CI 1.21-1.27) No eye exam OR = 1.07 (95% CI 1.05-1.08) No monitoring at all OR = 1.38 (95% CI 1.33-1.43) Also those with mental illness had worse outcomes with poor glycaemic control: OR= 1.17 (95% CI 1.15-1.2) Poor lipid control: OR = 1.2 (95% CI 1.18-1.22) Percentage not meeting diabetes care standards increased with increasing number of mental illness diagnoses. Overall healthcare utilisation (including primary care) showed no significant difference between cohorts	Mental illness had worse outcomes with inferior glycaemic control and inferior lipid control	Overall healthcare utilisation (including primary care) showed no significant difference between cohorts	Mental illness received lower levels of care in all domains	Not measured	Not measured

Table DS2 (continued)

		Study description				Findings in quality of care domain				
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Diabetes care (continued)</i> Krein et al (2006) ⁶⁵	Diabetes HbA _{1c} , low density lipoproteins, cholesterol	18 273 people with both diabetes and a comorbid serious mental illness in financial year 1998. The second group consisted of a randomly selected age-matched set of 18 273 people with diabetes who did not have a diagnosis of serious mental illness All participants needed to have had at least one primary care or mental healthcare visit during the year to be included in the study. Also, because the utilisation part of the study primarily focused on ambulatory care, participants with an in-patient stay longer than 150 contiguous days were excluded	Primary and secondary care Primary and secondary care clinicians	Yes Diabetes	On average, people with diabetes and serious mental illness had 1.0 more visit to primary care than people with diabetes only (mean of 5.8 visits compared with 4.8), 1.1 more speciality higher HbA _{1c} levels than of 5.3 compared with 4.2), and 1.3 more multi-clinic visits (mean of 3.5 compared with 2.2)	Among people who did not receive hypo- glycaemic medications, people with diabetes alone had slightly higher HbA _{1c} levels than their counter- parts who also had a serious mental illness	Higher healthcare utilisation in mental illness group	Little difference shown despite higher healthcare utilisation in mental illness group	Not measured	Not measured
Kreyenbuhl et al (2006) ⁶⁶	Diabetes Prescribed medications including cholesterol lowering statin medications, ACE inhibitors and angiotensin receptor blocking agents Measurer of health included cholesterol levels, glucose control, blood pres- sure control, frequency metabolic syndrome	Cross-sectional study using medical charts 201 with serious mental illness and 99 without serious mental illness	Primary and secondary care Primary and secondary care clinicians	Yes Diabetes	All groups were also similar in terms of their extent of blood glucose control, blood pressure control and cholesterol control	Those with and without serious mental illness had similar numbers of hospitalisa- tions and out-patient visits related to diabetes over the preceding 6 months	Less than one quarter of people with diabetes and schizophrenia and mood disorders were prescribed lipid lowering statins and angiotensin-blocking medications compared with people with diabetes but without serious mental illness	Not measured	Not measured	Not measured

Table DS2 (continued)

Reference	Problem area (e.g. physical exam/ investigation)	Study description			Findings in quality of care domain					
		Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
Diabetes care (continued) Sullivan et al (2006) ⁵⁷	Diabetes Hospital admission after emergency presentation	All emergency visits for diabetes (n = 4275) made by persons with and without co-occurring mental disorders 268 visits (6%) were made by persons with diabetes and co-occurring mental disorders. A total of 136 visits (3%) were made by persons with co-occurring psy- chotic disorders Adjusted for age, gender and ethnicity	Secondary care clinicians	Yes Diabetes	Those with diabetes and co-occurring mental illness were less likely than those without mental illness to be hospitalised after an emergency department visit (adjusted OR=0.65) Persons with diabetes and co-occurring non-psychotic disorders were at especially high risk (adjusted OR=0.55) to not be admitted Those younger than 30 years, visits by men, visits by White people and visits by ambulance were significantly more likely to result in hospitalisation	Not measured	Mental illness received lower levels of admission following emergency attendance after adjustment	Not measured	Not measured	Not measured

Table DS2 (continued)

Reference	Study description				Findings in quality of care domain					
	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
Diabetes care (continued) Weiss et al (2006) ⁶⁸	Diabetes Use of a hypoglycaemic medication for individuals with a glycosylated haemoglobin (HbA _{1c}) level greater than 7%, use of an ACE inhibitor or angiotensin receptor blockers, use of an antihypertensive medication among people with hyper- tension, use of a lipid-lowering agent among people with hyperlipidaemia, use of aspirin	214 people with schizophrenia or a schizophrenia- related syndrome v. 3594 with diabetes but no severe mental illness	Primary and secondary care Primary and secondary care clinicians	Yes Diabetes	People with elevated blood glucose (HbA _{1c} greater than 7%) were taking a hypoglycaemic medication (92% of comparison group and 95% of people with schizophrenia). However, people with schizophrenia were slightly more likely than comparison group to specifically receive insulin therapy (47% compared with 38%, adjusted OR = 1.44, <i>P</i> = 0.08) In addition, although the participants with hyperlipidaemia in the two groups were equally likely to receive some form of lipid- lowering therapy, those with schizophrenia were significantly more likely to receive one of the older, non-statin agents (14% compared with 7%, adjusted OR = 1.85, <i>P</i> < 0.05)	Poor diabetic control (HbA _{1c} greater than 9%) similar in both groups 77% of the comparison v. population v. 66% of the cohort with schizophrenia had good cholesterol control	People with schizo- phrenia were significantly more likely than comparison group to miss at least one out-patient appointment (46% compared with 32%, more likely than comparison participants to be on a lipid-lowering agent and more likely than individuals who missed comparison appointment referred for nutritional significantly more likely to have poor cholesterol control (27% compared with 22%, $\chi^2 = 10.5$, d.f. = 1, <i>P</i> = 0.001), regardless of diagnostic group	Mental illness received similar treatment although those with schizophrenia were significantly more likely to receive one of the older, non-statin agents However, among people with heightened cholesterol levels those with schizophrenia were more likely than comparison participants to be on a lipid-lowering agent and more likely than individuals who missed comparison appointment referred for nutritional significantly more likely to have poor cholesterol control (27% compared with 22%, $\chi^2 = 10.5$, d.f. = 1, <i>P</i> = 0.001), regardless of diagnostic group	Not measured	Not measured

Table DS2 (continued)

		Findings in quality of care domain								
		Study description								
Reference	Problem area (e.g. physical exam/investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Diabetes care (continued)</i> Goldberg et al (2007) ⁶⁹	Diabetes Standards set by Quality Improvement Project (DQIP) Glycosylated haemoglobin examination, eye and foot examinations, blood pressure check urine and lipid profiles	Cross-sectional study using medical charts 201 with serious mental illness and 99 without serious mental illness	Primary and secondary care Primary and secondary care clinicians	Yes Diabetes	Recruited from 6 public and private out-patient mental health clinics (25% Veteran healthcare) Group with serious mental illness received significantly fewer of all six recommendations (56% v. 77%) Statistically significant were receipt of a retinal examination (80% v. 94%) and lipid profile analysis (77% v. 93%) For both the full and restricted samples, people with serious mental illnesses were significantly less likely to receive any type of diabetes education, including any offered in either a written or a more informal format Similarly those with serious mental illness were less likely to receive cues from providers about glucose monitoring. No differences between the groups were found in receipt of cues from providers about adherence to diet, exercise and medication	Not reported but reported by Kreyenbuhl et al (2006) above	Those with and without serious mental illness had similar numbers of hospitalisations and out-patient visits related to diabetes over the preceding 6 months	Group with serious mental illness received significantly lower standard of care, diabetes education and written material However, they were more likely to receive smoking cessation counselling (not adjusted for frequency of smoking)	Not measured	Not measured but a restricted sample of 220 were re-analysed controlled for structural aspects of care delivery (people who received care in similar hospital- and community-based primary care clinics)

Table DS2 (continued)

		Findings in quality of care domain								
		Study description								
Reference	Problem area Predictive measure (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Diabetes care (continued)</i> Whyte <i>et al</i> (2007) ⁷⁰	Diabetes 17 indicators from the General Medical Services contract for UK general practitioners Recorded BMI, smoking history, smoking cessation advice, biochemical levels, HbA _{1c} levels, pulses checked, retinal screening	11 043 with diabetes of whom 705 had schizophrenia, 396 had bipolar disorder and 38 had both schizophrenia and bipolar disorder	Primary clinicians (66% urban)	Yes Diabetes	Mental illness did not effect quality of diabetes care in UK primary care Those with mental illness were more likely to have a lower HbA _{1c}	Poor diabetic control similar in both groups but good control (HbA _{1c} less than 7.5%) better in those with mental illness (54% v. 47%)	Not measured	No difference in monitoring parameters	Not measured	Not measured
<i>HIV and hepatitis care</i> Butt <i>et al</i> (2005) ⁷¹	Hepatitis Receipt of hepatitis treatment	354 people with hepatitis C of whom 139 had mental illness (undefined type)	Secondary care clinician treating liver disease	Yes Hepatitis	No difference in the rate of under- treatment in those with v. without mental illness	Not measured	Not measured	No difference in the rate of under- treatment in those with v. without mental illness (82.7% v. 69.7%)	Not measured	Not measured
Bogart <i>et al</i> (2006) ⁷²	HIV Receipt of HAART use and physician monitoring	154 people with serious mental illness infected with HIV Data from 762 HIV-only patients from a separate Western USA probability sample were used for comparison	Secondary care clinician treating HIV	Yes HIV	HAART use and patterns of CD4 count and viral load monitoring did not differ significantly between people with both serious mental illness and HIV, and people with HIV only (all $P > 0.05$)	Not measured	Not measured	People with mental illness received similar levels of care but comparison sample was indirect and sample size small	Not measured	Not measured

Table DS2 (continued)

Study description			Findings in quality of care domain							
Reference	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>HIV and hepatitis care (continued)</i> Palepu <i>et al</i> (2006) ⁷³	Receipt of liver speciality services Visit to specialist in the past 6 months	231 persons co-infected with HIV and hepatitis C virus: 116 were receiving substance misuse treatment; 23 were alcohol dependant; 52 had injection drug misuse; 139 had depression symptoms	Secondary care clinician treating hepatitis C	Yes HIV plus hepatitis C virus	In the longitudinal multivariable model there was a non-significant positive trend between substance misuse treatment and receipt of liver speciality care. There was no link with depressive symptoms. However, 30-day alcohol abstinence was positively associated with increased care	Not measured	Not measured	Patients with substance use, received slightly greater speciality liver care perhaps related to increased help seeking This was significant in those who were abstinent from alcohol for the last 30 days	Not measured	Not measured
Himelhoch <i>et al</i> (2007) ⁷⁴	HIV Receipt of HAART	Data from minimum dataset of the HIV Research Network 5119 people with HIV in primary care. 504 had serious mental illness, 1298 injection drug misuse and 267 both serious mental illness and drug misuse	Primary care	Yes HIV	73% of those with schizophrenia and related disorders, 72.7% of those with bipolar disorder and 80.2% of those with depression received HAART v. 84.1% in those without mental illness or drug misuse	Not measured	Those with serious mental illness and/ or drug misuse were significantly more likely to have in-patient hospital- isation	After adjustment for age, gender, ethnicity, CD4 count, and site those with serious mental illness+drug problems (dual diagnosis) had a 0.52 odds of receiving HAART	Not measured	Not measured
Fremont <i>et al</i> (2007) ⁷⁵	HIV Access to medical care, good quality hospital care, function/disability	Interview and chart review in Los Angeles and New York	Primary care and secondary care clinician	Yes HIV	In both cities those with serious mental illness had difficulty obtaining care. In Los Angeles (but not New York) those with serious mental illness had a poorer hospital experience, lower functional status	In Los Angeles (but not New York) those with serious mental illness had lower functional status ($P=0.001$) 5% for Los Angeles, 16% v. 7% New York)	Those with serious mental illness had difficulty obtaining care (18% v. 5% for Los Angeles, 16% v. 7% New York)	Not measured	In Los Angeles (but not New York) those with serious mental illness had a poorer hospital experience	Not measured

Table DS2 (continued)

Reference	Study description				Findings in quality of care domain					
	Problem area (e.g. physical exam/ investigation)	Sample (size, diagnoses)	Setting and who seen by	Defined physical illness	Comment	Outcomes	Access	Process	Patient experience	Structure
<i>Cancer care</i> Goodwin <i>et al</i> (2004) ⁷⁵	Breast cancer Receipt of definitive treatment for breast cancer, 3-year survival, frequency of doctors visits	Cancer database and medicare database. Identified 24 696 women aged 67 years and older, with a diagnosis of breast cancer. Of them 7.5% (1841) had received a diagnosis of depression in the 2 years prior to recruitment	Secondary care Surgeons and oncologists	Yes Breast cancer	Women with depression associated with a 19% increase in the odds of receiving less than definitive therapy ($P < 0.0001$). 42% more likely to die in the 3-year follow-up period (after controlling for other factors that might affect survival) (HR= 1.42, 95% CI 1.13-1.79). This difference remained significant after restricting the analysis to women who did receive definitive treatment, implying this difference in survival cannot be explained by differences in treatment. Healthcare utilisation (number of doctor visits in past 2 years) was examined	Women with depression were more likely to die in the 3-year follow-up period after adjustment	Those with depression had more doctor visits ($P = 0.0001$) (high utilisation)	Mental illness (depression) received lower levels of care	Not measured	Not measured

HRT, hormone replacement therapy; OR, odds ratio; BMI, body mass index; PTCA percutaneous coronary angioplasty; CABG coronary artery bypass graft; RR, relative risk; ACE inhibitors, angiotensin converting enzyme inhibitors; HR, hazard ratio; SMR, standardised mortality ratio; IHD, ischaemic heart disease; HAART, highly active antiretroviral treatment.