APPENDIX A. SEARCH STRATEGIES

Database: PubMed

Search date: February 17, 2014

Set #	Search String	Results
#1	"Mental Disorders"[Mesh:noexp] OR "Bipolar Disorder"[Mesh] OR "Schizophrenia"[Mesh] OR "Stress Disorders, Post-Traumatic"[Mesh] OR "Depressive Disorder, Major"[Mesh] OR "Psychotic Disorders"[Mesh] OR bipolar[tiab] OR schizophrenia[tiab] OR schizophrenic[tiab] OR schizoaffective[tiab] OR mdd[tiab] OR "major depressive disorder"[tiab] OR ptsd[tiab] OR "post traumatic stress disorder"[tiab] OR "posttraumatic stress disorder"[tiab] OR "psychotic disorder"[tiab] OR "psychotic disorders"[tiab] OR "substance abuse"[tiab] OR "drug abuse"[tiab] OR "alcohol abuse"[tiab] OR alcoholism[tiab] OR "alcohol misuse"[tiab] OR "alcohol dependence"[tiab] OR ((heavy[tiab] OR hazardous[tiab] OR harmful[tiab] OR excessive[tiab] OR problem[tiab] OR binge[tiab] OR controlled[tiab] OR risky[tiab] OR "at risk"[tiab] OR "at-risk"[tiab] OR use[tiab]) AND drink*[tiab] AND (Alcohol[tiab] OR "Alcoholic Beverages"[Mesh]))	393,361
#2	"Diabetes Mellitus"[Mesh] OR "diabetes"[tiab] OR "Hemoglobin A, Glycosylated"[Mesh] OR "Diagnostic Techniques, Ophthalmological"[Mesh] OR "Blood Glucose"[Mesh] OR "Blood Pressure"[Mesh] OR "Hypertension/prevention and control"[Mesh] OR "diabetes care"[tiab] OR "diabetes control"[tiab] OR hbaic[tiab] OR "hemoglobin a1c"[tiab]OR ldl[tiab] OR "Cholesterol, LDL"[Mesh]OR ldl-c[tiab] OR "glucose control"[tiab] OR "glycemic control"[tiab] OR "foot exam"[tiab] OR "foot exams"[tiab] OR "foot examination"[tiab] OR "foot examinations"[tiab] OR "eye exam"[tiab] OR "eye exams"[tiab] OR "eye examination"[tiab] OR "eye examinations"[tiab] OR retinopathy[tiab] OR retinopathies[tiab] OR nephropathy[tiab] OR nephropathies[tiab] OR "Hypertension"[Mesh] OR "hypertension"[tiab] OR "Myocardial Ischemia"[Mesh] OR "Ischemic heart disease"[tiab]	1,432,903
#3	(("Breast Neoplasms"[Mesh] OR "breast cancer"[tiab] OR "Colorectal Neoplasms"[Mesh] OR "colorectal cancer"[tiab] OR "colon cancer"[tiab] OR "Uterine Cervical Neoplasms"[Mesh] OR "cervical cancer"[tiab]) AND ("Early Detection of Cancer"[Mesh] OR "Mass Screening"[MeSH] OR "Risk Assessment"[Mesh] OR screening[tiab] OR screened[tiab])) OR "Mammography"[Mesh] OR "Sigmoidoscopy"[Mesh] OR "Colonoscopy"[Mesh] OR "Vaginal Smears"[Mesh] OR "Human Papillomavirus DNA Tests"[Mesh] OR mammogram[tiab] OR mammograms[tiab] OR mammography[tiab] OR sigmoidoscopy[tiab] OR "Occult Blood"[Mesh] OR "fecal occult blood test"[tiab] OR FOBT[tiab] OR colonoscopy[tiab] OR "pap smear"[tiab] OR "pap smears"[tiab] OR hpv[tiab]	127,557
#4	"Immunization"[Mesh] OR immunization[tiab] OR immunizations[tiab] OR immunize[tiab] OR immunized[tiab] OR vaccinate[tiab] OR vaccinated[tiab] OR vaccination[tiab] OR vaccinations[tiab]	243,734
#5	("Tobacco Use"[Mesh] OR tobacco[tiab])AND (screening[tiab] OR screened[tiab] OR mass screening[mesh]) OR "Tobacco Use Cessation"[Mesh]	25,163
#6	#2 OR #3 OR #4 OR #5	1,815,682
#7	#1 AND #6	14,200

Set #	Search String	Results
#8	"delivery of health care"[MeSH Terms:noexp] OR "healthcare disparities"[MeSH Terms] OR "health behavior"[MeSH Terms] OR "health knowledge, attitudes, practice"[MeSH Terms] OR "health services accessibility"[MeSH Terms] OR "Health Status"[MeSH] OR "health services needs and demand"[MeSH] OR "patient acceptance of health care"[MeSH Terms] OR "patient selection"[MeSH Terms] OR "quality of health care"[MeSH:noexp] OR "Outcome and Process Assessment (Health Care)"[Mesh] OR "Quality Indicators, Health Care"[Mesh] OR "Quality Assurance, Health Care"[Mesh] OR "socioeconomic factors"[MeSH] OR socioeconomic factor[TIAB] OR socioeconomic factors[TIAB] OR disparity[tiab] OR disparities[tiab] OR inequity[tiab] OR inequities[tiab] OR inequitable[tiab] OR inequality[tiab] OR inequalities[tiab]OR undertreat[tiab] OR undertreated[tiab] OR undertreatment[tiab]	1,673,781
#9	#7 AND #8	2,480
#10	#9 NOT (animals[mh] NOT humans[mh]) NOT (Editorial[ptyp] OR Letter[ptyp] OR Case Reports[ptyp] OR Comment[ptyp])	2,294
#11	#10, Limits: 1994 – present, English	1,923

Database: Embase

Search date: February 19, 2014

Set #	Search String	Results
#1	'mental disease'/de OR 'bipolar disorder'/exp OR 'posttraumatic stress disorder'/exp OR 'major depression'/exp OR 'psychosis'/exp OR bipolar:ab,ti OR schizophrenia:ab,ti OR schizophrenic:ab,ti OR schizoaffective:ab,ti OR mdd:ab,ti OR 'major depressive disorder':ab,ti OR ptsd:ab,ti OR 'post traumatic stress disorder':ab,ti OR 'posttraumatic stress disorder':ab,ti OR 'psychotic disorder':ab,ti OR 'psychotic disorders':ab,ti OR 'substance abuse':ab,ti OR 'drug abuse':ab,ti OR 'alcohol abuse':ab,ti OR alcoholism:ab,ti OR 'alcohol misuse':ab,ti OR 'alcohol dependence':ab,ti OR ((heavy:ab,ti OR hazardous:ab,ti OR harmful:ab,ti OR excessive:ab,ti OR problem:ab,ti OR binge:ab,ti OR controlled:ab,ti OR risky:ab,ti OR 'at risk':ab,ti OR 'at-risk':ab,ti OR use:ab,ti) AND drink*:ab,ti AND (Alcohol:ab,ti OR 'alcoholic beverage'/exp))	576,664
#2	'diabetes mellitus'/exp OR 'diabetes':ab,ti OR 'hemoglobin A1c'/exp OR 'eye examination'/exp OR 'glucose blood level'/exp OR 'blood glucose monitoring'/exp OR 'blood pressure'/exp OR 'blood pressure monitoring'/exp OR 'diabetes care':ab,ti OR 'diabetes control':ab,ti OR hbaic:ab,ti OR 'hemoglobin a1c':ab,ti OR ldl:ab,ti OR 'low density lipoprotein cholesterol'/exp OR ldl-c:ab,ti OR 'glucose control':ab,ti OR 'glycemic control':ab,ti OR 'foot exam':ab,ti OR 'foot exams':ab,ti OR 'foot examination':ab,ti OR 'foot examinations':ab,ti OR 'eye exam':ab,ti OR 'eye exams':ab,ti OR 'eye examination':ab,ti OR 'eye examinations':ab,ti OR retinopathy:ab,ti OR retinopathies:ab,ti OR nephropathy:ab,ti OR nephropathies:ab,ti OR 'hypertension'/exp OR 'hypertension':ab,ti OR 'heart muscle ischemia'/exp OR 'Ischemic heart disease':ab,ti	1,655,117

Set #	Search String	Results
#3	((‘breast cancer’/exp OR ‘breast cancer’:ab,ti OR ‘colon tumor’/exp OR ‘colorectal cancer’:ab,ti OR ‘colon cancer’:ab,ti OR ‘uterine cervix cancer’/exp OR ‘cervical cancer’:ab,ti) AND (‘early diagnosis’/exp OR ‘mass screening’/exp OR ‘risk assessment’/exp OR screening:ab,ti OR screened:ab,ti)) OR ‘mammography’/exp OR ‘sigmoidoscopy’/exp OR ‘colonoscopy’/exp OR ‘Papanicolaou test’/exp OR ‘Human papillomavirus DNA test’/exp OR mammogram:ab,ti OR mammograms:ab,ti OR mammography:ab,ti OR sigmoidoscopy:ab,ti OR ‘occult blood’/exp OR ‘fecal occult blood test’:ab,ti OR FOBT:ab,ti OR colonoscopy:ab,ti OR ‘pap smear’:ab,ti OR ‘pap smears’:ab,ti OR hpv:ab,ti	183,910
#4	‘immunization’/exp OR immunization:ab,ti OR immunizations:ab,ti OR immunize:ab,ti OR immunized:ab,ti OR vaccinate:ab,ti OR vaccinated:ab,ti OR vaccination:ab,ti OR vaccinations:ab,ti	311,311
#5	((‘tobacco use’/exp OR tobacco:ab,ti) AND (screening:ab,ti OR screened:ab,ti OR ‘screening’/exp)) OR ‘smoking cessation’/exp	48,342
#6	#2 OR #3 OR #4 OR #5	2,168,928
#7	#1 AND #6	34,010
#8	‘health care delivery’/de OR ‘health status’/exp OR ‘health behavior’/exp OR ‘patient abandonment’/exp OR ‘health service’/de OR ‘patient attitude’/exp OR ‘patient selection’/exp OR ‘health care quality’/de OR ‘clinical indicator’/exp OR ‘outcome assessment’/exp OR ‘socioeconomics’/exp OR ‘socioeconomic factor’:ab,ti OR ‘socioeconomic factors’:ab,ti OR disparity:ab,ti OR disparities:ab,ti OR inequity:ab,ti OR inequities:ab,ti OR inequitable:ab,ti OR inequality:ab,ti OR inequalities:ab,ti OR undertreat:ab,ti OR undertreated:ab,ti OR undertreatment:ab,ti	1,323,993
#9	#7 AND #8	7,479
#10	#9 AND [humans]/lim AND [english]/lim NOT (‘case report’/exp OR ‘case study’/exp OR ‘editorial’/exp OR ‘letter’/exp OR ‘note’/exp)	5,932
#11	#10 AND [embase]/lim NOT [medline]/lim	1,642
#11	#10, Limits: 1994 – present	1,635

Database: PsycINFO

Search date: February 21, 2014

Set #	Search String	Results
S1	MM “Mental Disorders” OR DE “Affective Disorders” OR DE “Bipolar Disorder” OR DE “Schizophrenia” OR DE “Schizoaffective Disorder” OR DE “Posttraumatic Stress Disorder” OR DE “Major Depression” OR DE “Psychosis” OR bipolar OR schizophrenia OR schizophrenic OR schizoaffective OR mdd OR “major depressive disorder” OR ptsd OR “post traumatic stress disorder” OR “posttraumatic stress disorder” OR “psychotic disorder” OR “psychotic disorders”	286,723
S2	DE “Drug Abuse” OR DE “Drug Dependency” OR DE “Inhalant Abuse” OR DE “Polydrug Abuse” OR DE “Drug Addiction” OR DE “Heroin Addiction” OR DE “Alcoholism” OR DE “Alcoholic Psychosis” OR DE “Alcoholic Beverages” OR DE “Alcohol Drinking Patterns” OR DE “Alcohol Abuse” OR DE “Alcohol Intoxication” OR DE “Social Drinking” OR “substance abuse” OR “drug abuse” OR “alcohol abuse” OR alcoholism OR “alcohol misuse” OR “alcohol dependence”	137,933
S3	S1 OR S2	406,813

Set #	Search String	Results
S4	DE "Diabetes" OR DE "Diabetes Insipidus" OR DE "Diabetes Mellitus" OR diabetes OR DE "Glucose" OR DE "Blood Sugar" OR DE "Blood Pressure" OR DE "Diastolic Pressure" OR DE "Systolic Pressure" OR "diabetes care" OR "diabetes control" OR hbaic OR "hemoglobin a1c" OR "glucose control" OR "glycemic control" OR "foot exam" OR "foot exams" OR "foot examination" OR "foot examinations" OR "eye exam" OR "eye exams" OR "eye examination" OR "eye examinations" OR retinopathy OR retinopathies OR nephropathy OR nephropathies	27,949
S5	S3 AND S4	3,936
S6	DE "Cardiovascular Disorders" OR "Hypertension" OR "Myocardial Ischemia" OR "Ischemic heart disease" OR ldl OR DE "Cholesterol" OR ldl-c	19,873
S7	S3 AND S6	3,177
S8	DE "Cancer Screening" OR DE "Mammography" OR mammogram OR mammograms OR mammography OR Colonoscopy OR Sigmoidoscopy OR FOBT OR "fecal occult blood test" OR "Vaginal Smears" OR "pap smear" OR "pap smears" OR hpv	4,631
S9	S3 AND S8	112
S10	DE "Immunization" immunization OR immunizations OR immunize OR immunized OR vaccinate OR vaccinated OR vaccination OR vaccinations	4,580
S11	S3 AND S10	265
S12	((DE "Nicotine" OR DE "Tobacco Smoking" OR DE "Smokeless Tobacco" OR cigarettes OR smoking) AND (DE "Screening" OR screening OR screened)) OR DE "Smoking Cessation"	9,781
S13	S3 AND S12	2,662
S14	S5 OR S7 OR S9 OR S11 OR S13	9,216
S15	DE "Health Disparities" OR DE "Health Care Delivery" OR DE "Health Care Seeking Behavior" OR DE "Health Care Utilization" OR DE "Health Service Needs" OR DE "Quality of Care" OR DE "Treatment Barriers" OR DE "Health Behavior" OR DE "Health Knowledge" OR DE "Health Literacy" OR DE "Health Care Services" OR DE "Continuum of Care" OR DE "Mental Health Services" OR DE "Primary Health Care" OR "socioeconomic factor" OR "socioeconomic factors" OR disparity OR disparities OR inequity OR inequities OR inequitable OR inequality OR inequalities OR undertreat OR undertreated OR "under treatment"	137,042
S16	S14 AND S15 Limiters - Publication Year: 1994-2014; English; Language: English; Age Groups: Adulthood (18 yrs & older); Population Group: Human; Exclude Dissertations Search modes - Find all my search terms	490

Database: The Cochrane Library

Search date: February 21, 2014

Set #	Search String	Results
#1	mental disease:ti,ab,kw (Word variations have been searched)	592
#2	mental illness:ti,ab,kw (Word variations have been searched)	952
#3	bipolar affective disorder:ti,ab,kw (Word variations have been searched)	83
#4	schizophrenia:ti,ab,kw (Word variations have been searched)	8,445
#5	schizophrenic disorder:ti,ab,kw (Word variations have been searched)	75

Set #	Search String	Results
#6	schizoaffective:ti,ab,kw (Word variations have been searched)	727
#7	major depressive disorder:ti,ab,kw (Word variations have been searched)	2,496
#8	post traumatic stress disorder:ti,ab,kw (Word variations have been searched)	373
#9	psychotic disorder:ti,ab,kw (Word variations have been searched)	1,534
#10	[mh “Mental Disorders” [mj]] or [mh “Bipolar Disorder”] or [mh Schizophrenia] or [mh “Stress Disorders, Post-Traumatic”] or [mh “Depressive Disorder, Major”] or [mh “Psychotic Disorders”]	10,344
#11	{or #1-#10} in Cochrane Reviews (Reviews only)	247
#12	[mh “health knowledge, attitudes, practice”] or [mh “health services accessibility”] or [mh “Health Status”] or [mh “health services needs and demand”] or [mh “patient acceptance of health care”] or [mh “patient selection”] or [mh “quality of health care” [mj]] or [mh “Outcome and Process Assessment (Health Care)”] or [mh “Quality Indicators, Health Care”] or [mh “Quality Assurance, Health Care”] or [mh “socioeconomic factors”] or “socioeconomic factor” or “socioeconomic factors” or disparity or disparities or inequity or inequities or inequitable or inequality or inequalities or undertreat or undertreated or “under treatment” or “health status”:ti,ab,kw or “health services research”:ti,ab,kw or “primary care”:ti,ab,kw	129,822
#13	#11 and #12	39
#14	[mh “Diabetes Mellitus”] or diabetes or [mh “Hemoglobin A, Glycosylated”] or [mh “Diagnostic Techniques, Ophthalmological”] or [mh “Blood Glucose”] or [mh “Blood Pressure”] or “diabetes care” or “diabetes control” or hbaic or “hemoglobin a1c” or ldl or [mh “Cholesterol, LDL”] or ldl-c or “glucose control” or “glycemic control” or “foot exam” or “foot exams” or “foot examination” or “foot examinations” or “eye exam” or “eye exams” or “eye examination” or “eye examinations” or retinopathy or retinopathies or nephropathy or nephropathies or [mh Hypertension] or “hypertension” or [mh “Myocardial Ischemia”] or “Ischemic heart disease”	104,682
#15	[mh “Breast Neoplasms”] or “breast cancer” or [mh “Colorectal Neoplasms”] or “colorectal cancer” or “colon cancer” or [mh “Uterine Cervical Neoplasms”] or “cervical cancer” or [mh “Early Detection of Cancer”] or [mh Mammography] or [mh Sigmoidoscopy] or [mh Colonoscopy] or [mh “Vaginal Smears”] or [mh “Human Papillomavirus DNA Tests”] or mammogram or mammograms or mammography or sigmoidoscopy or [mh “Occult Blood”] or “fecal occult blood test” or FOBT or colonoscopy or “pap smear” or “pap smears” or hpv	27,880
#16	[mh Immunization] or immunization or immunizations or immunize or immunized or vaccinate or vaccinated or vaccination or vaccinations	9,917
#17	[mh “Tobacco Use”] or tobacco or [mh “Tobacco Use Cessation”] or cigarette or cigarettes or smoking or nicotine	17,248
#18	#13 and {or #14-#17} from 1994 to 2014	22

APPENDIX B. NEWCASTLE-OTTAWA SCALE CODING MANUAL FOR COHORT STUDIES

The Newcastle-Ottawa Scale quality instrument is scored by awarding a point for each answer that is marked with an asterisk below. Possible total points are 4 points for Selection, 2 points for Comparability, and 3 points for Outcomes.

SELECTION

1) Representativeness of the Exposed Cohort

a. Truly representative of the average patient with mental illness *(eg,* severity of illness, comorbidities) in the community*

b. Somewhat representative of the average *(eg,* severity of illness, comorbidities)in the community*

c. Selected group of users eg HIV+, pregnant, elderly, significant physical disabilities

d. No description of the derivation of the cohort

2) Selection of the Non-Exposed Cohort

a. Drawn from the same community as the exposed cohort*

b. Drawn from a different source

c. No description of the derivation of the non-exposed cohort

3) Ascertainment of Exposure

a. Secure record *(eg,* medical records)*

b. Structured interview *

c. Written self-report

d. No description

4) Demonstration that Outcome of Interest Was Not Present at Start of Study

a. Yes*

b. No

COMPARABILITY

1) Comparability of Cohorts on the Basis of the Design or Analysis

a. Study controls for SES (or some reasonable proxy of SES), age, race, gender*

b. Study controls for any additional factor* (this criteria could be modified to indicate specific control for a second important factor)

c. Inadequate degree of control

OUTCOME

1) Assessment of Outcome

a. Independent or blind assessment stated in the paper, or confirmation of the outcome by reference to secure records (x-rays, medical records, etc)*

b. Record linkage *(eg,* identified through ICD codes on database records)*

c. Self-report *(ie,* no reference to original medical records or x-rays to confirm the outcome)

d. No description

2) Was Follow-up Long Enough for Outcomes to Occur?

a. Yes (select an adequate follow up period for outcome of interest)*

b. No

3) Adequacy of Follow-up of Cohorts

a. Complete follow-up—all subjects accounted for*

b. Subjects lost to follow-up unlikely to introduce bias—small number lost (LESS than 20% follow-up, or description provided of those lost)*

c. Follow-up rate MORE than 20% and no description of those lost

d. No statement

APPENDIX C. PEER REVIEW COMMENTS/AUTHOR RESPONSES

Reviewer	Comment	Response
Question 1: Are the objectives, scope, and methods for this review clearly described?		
1	Yes. No comments.	Thank you.
2	Yes. No comments.	Thank you.
3	Yes. No comments.	Thank you.
4	Yes. No comments.	Thank you.
5	Yes. No comments.	Thank you.
6	Yes. No comments.	Thank you.
7	Yes. No comments	Thank you.
Question 2: Is there any indication of bias in our synthesis of the evidence?		
1	No. No comments.	Thank you.
2	No. No comments.	Thank you.
3	No. No comments.	Thank you.
4	No. No comments.	Thank you.
5	No. No comments.	Thank you.
6	No. No comments.	Thank you.
7	No. No comments.	Thank you.
Question 3: Are there any published or unpublished studies that we may have overlooked?		
1	No. No comments.	Thank you.
2	No. No comments.	Thank you.
3	No. No comments.	Thank you.
4	No. No comments.	Thank you.
5	No. No comments.	Thank you.
6	No. No comments.	Thank you.
7	No. No comments.	Thank you.

Reviewer	Comment	Response
Question 4: Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report		
1	Overall this is a good report, highlighting the need for more studies in this area. I do have two suggestions for improving the report: 1) In several places in the report (I will use the Summary section as an example) the section introduction indicates that there are health disparities for people with mental illness (page 73, lines 10-12). Yet, this is not consistent with the report findings (page 74, lines 11-14 and page 74, lines 21-22). Both of these statements note mixed results. 2) On page 40, line 29, the authors note that "Smokers with psychiatric disorders were "slightly" but significantly more likely to be referred to tobacco cessation programs..... The term slightly should be deleted given that it is not used consistently in the report when the OR is a difference of 0.1 above or below 1.0	Thank you. 1) We have addressed the inconsistences in language in the final report. 2) We have deleted "slightly" from this sentence.
2	This is an excellent report, clear and without bias. The design is excellent, focusing on evidence-based performance measures for chronic disease management and preventive care for individuals with mental illness. The only suggestions I have involve minor editorial issues. These would be probably discovered at some point, but I'm including them just in case. I noticed a number of these in the Executive Summary, and stopped noting them - the errors seem to be replicated in the main text of the report. P. 3 line 16 should mental diagnosis be diagnoses? Line 33 is there a word missing - should it be: focus ON key differences? Line 42 should read "After applyING eligibility criteria..."	Thank you. We have addressed these editorial issues in the final report.
2	P 4 line 41 should be "...patients with psychiatric..." Line 51 extra "in" at end of line Line 55 is 'outcomes' supposed to be after 'pharmacotherapies'? I think it would work without that word.	We have addressed these editorial issues in the final report.
2	P 5 line 36 'patient' should be patients Line 58 fragment: 'All studies with VA health care users.' Huh?	We have addressed these editorial issues in the final report.
2	P 6 line 42 patient should be patients P 7 line 36 finding should be findings P 13 Table 1 líne 14 include should be included p. 16 line 53 - should be diagnoses instead of diagnosis ...and so on.	We have addressed these editorial issues in the final report.

Reviewer	Comment	Response
3	In this clearly written, comprehensive, and methodologically sound evidence-based synthesis, authors examine data related to disparities in quality of care for common medical illnesses among those with mental health disorders. Individuals suffering from mental illness frequently carry concurrent chronic medical diagnoses. In such individuals, the clinical and economic effects of these comorbid medical conditions tend to be more pronounced. In light of the relatively high prevalence of both chronic medical conditions and mental health illnesses in the VA population, quantifying disparities in quality of care and understanding the mechanism of such disparities is a topic of great importance to the health of the Veteran population.	Thank you.
3	The authors performed a systematic review of studies examining performance on process and outcome measures of quality for common preventive services and chronic medical conditions among individuals with and without mental illness. They also identified studies examining predictors of these disparities. Across 25 identified studies, they found relatively weak support for disparities in quality of care, though studies conducted in VA were more likely to show a negative effect of mental illness on quality indicators. Few studies were available to examine predictors of variation in quality of care. Overall, the literature was deemed to be of low methodological quality.	Thank you.
3	The work is timely, with clearly stated objectives, a well-defined scope, and appropriate methods. The review is comprehensive, and the data are clearly presented. I detect no evidence of bias. It is notable that VA studies were qualitatively more likely to report disparities than non-VA studies. One wonders if this might be due to differences in the severity of mental illness in VA versus non-VA population. Additionally, as the authors allude to in their discussion of policy implications (p. 75, line 56), the quality measures that were examined differ considerably in whether they assess simple processes of care (e.g., check hemoglobin A1C) versus relatively complex outcomes (completion of a screening colonoscopy). I have only minor comments for your consideration.	Thank you.
3	Methods: 1) Page 2, line 31 (and p. 12, line 35): The search strategy only included articles published between 1994-2014. Why were older articles not included? I suspect this has to do with the limited use of performance measures prior to the mid-1990s, but it would be valuable to clarify the reason here. 2) Why was the work limited to articles published in English?	1) We have clarified our rationale for restricting the search to articles published from 1994 onward (which does have to do with the limited use of performance measures before the mid-1990s). It is noteworthy that we did not identify any eligible studies published prior to 2002. 2) We limited the scope to U.S.-based studies to increase the applicability of the findings.

Reviewer	Comment	Response
3	Results: 3) The authors do not present results according to performance measure type (process, intermediate outcome, outcome, etc). If data in individual studies are available for such an analysis, it could shed light on the relative role of patient- versus provider-level factors in contributing to disparities. For instance, are disparities less apparent for process measures (such as prescription of anti-hypertensives, which is largely under the control of the provider) than for linked outcome measures (blood pressure control, which depends on the patient filling the prescription and regularly taking the medication)? The authors do allude to this on pp. 76 (line 56) when discussing how the complexity of care can affect performance on quality measures. The data on diabetes management also present these data, though it is not framed in terms of the type of quality measure.	3) We had too few studies to conduct such an analysis. We have, however, organized the (newly added) Summary of Findings tables (Appendix F in the final report) by type of outcome.
4	The review itself was fine. My comments are addressed to the summary of clinical and policy implications which I found to be rather generic. Perhaps this starts with the analytic framework (p12) which mentions some modifying factors but in only a very superficial way. In short, there is little attention to context at any of the multiple levels in the process. For example, the reviewed studies were conducted in an environment of changing performance measures, whether HEDIS or VA. It would help to have a timeline to put the studies into their own context. In discussing the evidence gaps, it is not clear how additional studies of the type already undertaken will help other than making us more certain about the modesty of the effects. I guess that the main policy implication at this point is that there shouldn't be effort given to this topic. Perhaps this is what they author means when she states on p78 "VA and other healthcare systems should consider their clinical and policy needs when deciding whether to invest in research to address gaps in evidence." I think that there are other research gaps that relate more to outcomes as well as how care is actually given. This might require very different kinds of studies.	Thank you for these comments. We agree that these studies were conducted in a changing environment. We limited our search to include those studies most relevant to the current context and did not identify any eligible studies before 2002. As all studies were clustered in the same timeframe, we did not have adequate studies to assess time trends.
5	It is impressive, and unfortunate, how few papers (N=26) on the subject met criteria for inclusion in this meta-analysis/review article. That is the first major finding of the paper - that much work remains simply to determine if there are health disparities in the populations of interest.	Thank you.
5	With the possible, limited, exception of diabetes, the body of literature on health disparities in mentally ill persons (screening, obtaining medical care, access to medical care, etc) is inadequate to make many definitive statements. This is an important contribution of this review article.	Thank you.

Reviewer	Comment	Response
5	In the entire set of papers reviewed, only 14 were conducted with Veterans. Again, this speaks volumes about how this area of inquiry has been understudied in VA.	Slightly more than half of the studies reviewed in the final report (12/23) were conducted by VA researchers using VA data. We think this is a strength of our review and enhances the applicability of our findings to the VA context.
5	75% of the selected studies utilized data on broad ranges of mental disorders collapsed into presence/absence data (i.e., mental illness present or absent). Unfortunately, this is not adequate granularity for many of the clinical questions of import. This is not the fault of the ESP review, but rather a problem of researchers looking at mental illnesses as monolithic. Imagine if we did the same for "medical illnesses" and collapsed terminal cancers with mild hypertension and acne rosacea. What sense could we make out of such collapsed data? The same applies for these studies, most of which excluded SMI (a group of diagnoses that have in common severity and persistence of one or more mental illnesses) or collapsed those conditions with depression and other disorders which share little in common with the SMI group of conditions.	We agree that this is a considerable limitation of the literature we identified and have now highlighted this in the Limitations section.
5	This paper demonstrates that even though there were 16 studies on diabetes and mental illnesses, many gaps remain and the results of the analyses may be clinically uninterpretable. For example, VA screens for HbA1c and LDL in those at risk, which includes patients treated with second generation antipsychotics, but what about the medical treatment for, and compliance with, treatment for those schizophrenic patients who screen positive? The literature is not illuminating in this regard, leaving open significant clinical research questions that should be pursued.	Thank you for this observation. While beyond the scope of this review, these are important clinical questions.
5	This paper does a fine job of pointing out the substantial weaknesses of the English literature to date on most of the questions posed for the review. An additional limitation that I don't believe I saw listed is that the least "connected" patients with one or more mental illnesses are not enrolled in primary care at VA facilities at all, and a majority of those are believed not to be seen by anyone outside VA for their basic medical care and screenings. The data reported in most of the 26 papers do not take this important issue into account, which may explain some of the conflicting or counterintuitive results.	This is an excellent point, but we are unable to explore it in the current review. We only included studies that recruited patients from non-mental health primary care settings and selected specialty medical care settings. We also limited the review to studies of insured populations. If a study included mixed populations of insured and uninsured individuals, it could still be included if the analysis controlled for insurance status, results were reported separately by insurance status, or ≥80% of the total population had insurance. These eligibility requirements may have excluded some studies; however, we sought to include studies that were of greatest applicability to the VA Health Care System.

Reviewer	Comment	Response
5	The authors are to be commended for their work on this difficult project and for shedding light on this important and understudied topic. Some believe that the basic step of identifying health disparities in patients with one or more mental illnesses is adequate to move on to "solving" the disparities problem for the 1/3 of patients in VA care who have at least one psychiatric diagnosis. The paragraph on gaps in the research on page 14 dispels this myth. This is coupled with the overall rating of the strength of the evidence (in either direction) as "low." I particularly appreciated the importance of the following statement in the review: "Though several of the included studies were conducted in VA user populations, there are notable gaps in research which the use of VA data may be well positioned to address."	Thank you.
5	Typos: Line 36, page 5; line 17, page 8	We have addressed these editorial issues in the final report.
5	I am pleased to see that the limitation on the data in all papers for sexual orientation and gender identity is specifically mentioned in this review. Our own work in OHE has demonstrated substantial disparities in both medical and psychiatric disorders (listed separately and not collapsed) for transgender Veterans. This is another potential confounder in the studies selected for review. This was part of "key question 2" and the authors appropriately note that various demographic parameters of import to the study of disparities in health care went unaddressed in the literature reviewed.	Thank you.
5	This article provides the basis to chart a course for the study of disparities in medical care in Veterans with one or more mental illnesses. It is an excellent synthesis of the overall weak existing literature on this important topic, and it should be the basis for developing projects that have not been done to fill the research gap in this heterogeneous, vulnerable population. A prime example is the lack of information on cancer screening in Veterans with SMI, case examples of which were drivers for the request to do this meta-analysis.	Thank you.
5	The authors note that there were no studies of immunization in the SMI population. The only study that may have included them was from 12 years ago and simply used a composite for all Veterans with any psychiatric diagnosis (excluding SUD), therefore this important area of health inequity has not been addressed for these Veterans.	Thank you. We have included this in the section on Research Gaps.

Reviewer	Comment	Response
5	The tobacco screening and referral information is unfortunately very sparse, given the national focus on smoking cessation. There were insufficient homogeneous studies to conduct a meta-analysis. No studies reported outcomes of treatments for any groups, a wide gap in the research on this important topic. With the limited data, it appears that a disparity may exist for those Veterans without mental illnesses in that they may be less likely to be screened, but screening may not result in referral for care as demonstrated in the only other study to examine this issue. Therefore, little can be said about a high profile program that has mandatory screenings and mandatory referral options for VA clinicians conducting such screenings, and nothing can be said about disparate health outcomes of these efforts (e.g., smoking cessation as an outcome) comparing Veterans with and without mental illnesses.	Thank you for this observation.
5	Typo on page 51, line 8; “for” should be “of” Typo on page 60, line 40; “a” should be “an” Page 62, end of line 32-33, does not seem complete; hard to make sense of the end of the sentence. Typo page 70, line 19	We have addressed these editorial issues in the final report.
5	The authors note that studies addressing the key question 2 regarding the interaction or moderation of health status, mental illness, and key subgroups of interest were virtually lacking. Only one study examined disparities in those with mental illness who lived in rural vs urban areas and that one study included only one health measure (HTN). It should be noted that VA has invested considerable funds into rural access for Veterans with and without mental illnesses, including a major telehealth initiative, and no outcomes papers on these issues in Veterans with mental illnesses were available or adequate for review in this analysis.	Thank you for this observation.
5	The authors appropriately advise caution with respect to the limited and conflicting results of this analysis. There is a good discussion on the potential limitations in the Clinical and Policy Implications. They are correct in assuming that once someone is identified as belonging to the “SMI” category in VA, that many additional opportunities for screening become available for those patients who remain engaged in care; what is missing in the studies across the board are patients with mental illnesses who are not engaged in, or minimally engaged in, primary and medical subspecialty care. These studies can be done in VA, at least for those who have accessed VA care, but for the most part, such studies are absent.	We agree. Please see the response above about limitations in our eligibility criteria to address people who are not able to access primary care for medical issues.

Reviewer	Comment	Response
5	Typo page 77, line 10. Typo page 77, line 38; “induced” should be “included”	We have addressed these editorial issues in the final report.
5	Table 9 is an excellent summary of the evidence/research gaps in understanding health disparities in Veterans with mental illnesses. Many of these gaps can be addressed by using existing VA databases to create retrospective cohort studies and cross-sectional studies as suggested in the table.	We agree and have suggested the use of VA data to address these pressing gaps in the literature.
6	The report is well written and its primary value is to pose further research activity to provide a more accurate reflection of disparities among individuals with mental illness. The problem with this area of research is that there is a broad spectrum of severity of illness in patients with the target conditions of Schizophrenia, BPAD and PTSD. The population is quite heterogeneous and within those diagnoses, disparities may be much more prominent only in the more severe illnesses. This report itself would be improved by making this distinction. It does mention Serious Mental Illness but does not distinguish it from mental illness.	We agree that severity of mental illness is likely an important moderator of effects; however, the existing literature did not provide the necessary granularity in reporting diagnosis or severity to facilitate such analysis.
7	Reviewer 7 did not have any comments for this section.	Noted

APPENDIX D. CHARACTERISTICS OF INCLUDED STUDIES

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Desai, 2002[1] Retrospective cohort	Chronic disease: DM	National VA Healthcare System databases N=36,528	Age (mean [SD]): MI=62.2 (12.0) NMI=65.9 (10.6) % Female: MI=18.9 NMI=11.1 % White: MI=67.9 NMI=61.2	Composite of mental health conditions: psychiatric disorders (excluding SUD and dual diagnosis) ICD-9 codes	VA computerized medical records: 1999 VA EPRP; Patient encounter files; Patient treatment files (January 1998 to December 1999)	HbA1c testing; Diabetic foot exam; Eye exam
Dolder, 2005[2] Retrospective cohort	Chronic disease: HTN	San Diego, CA VAMC facility-level clinic database N=178	Age (mean [SD]): MI=57.1 (9.1) NMI=57.9 (9.0) % Female: MI=5.6 NMI=3.4 % White: MI=58.4 NMI=53.9	Composite SMI: psychotic disorders (schizophrenia, schizoaffective disorder, or psychosis not otherwise specified) ICD-9 codes	Chart review of VA healthcare system database, calendar year 2001	BP at goal
Druss, 2002[3] Cross-sectional	Preventive services: Cancer screening* Immunization Smoking cessation	National VA Healthcare systems (general and specialty) N=113,495	Age (mean [SD]): MI=60.8 (12.9) NMI=66 (11.5) % Female: MI=20.1 NMI=13.1 % White: MI=67.6 NMI=62.1	Composite of mental health conditions: psychiatric disorders (excluding substance abuse) ICD-9 codes	EPRP chart review, 1998-1999; Patient Encounter, OP, and Patient Treatment files	*Cancer screening:* Breast cancer screening; Cervical cancer screening; Colorectal cancer screening: FOBT, sigmoidoscopy, or colonoscopy *Immunization:* Influenza vaccine past year; Pneumococcal vaccine ever *Smoking cessation:* Proportion screened for tobacco use; Proportion referred for smoking cessation treatments

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Druss, 2008[4] Cross-sectional	Preventive services: Cancer screening Immunization	National National-level survey data N=30,081	Age (mean [SD]): MI=42.2 (0.41) NMI=46.9 (0.18) % Female: MI=70 NMI=55 % White: MI=76 NMI=76	Major depression Score ≥3 on CIDI-SF	NHIS, 1999	*Cancer screening:* Breast cancer screening; Cervical cancer screening; Colorectal cancer screening: FOBT *Immunization:* Influenza vaccination in past year
Druss, 2012[5] Retrospective cohort	Chronic disease: DM	National National-level database N=657,628	Age (mean [SD]): MI=48.2 (0.4) NMI:=47.7 (0.6) % Female: MI=63.7 NMI=68.2 % White: MI=56.8 NMI=51.7	Composite of mental health conditions: any mental health diagnosis excluding dementia/ delirium ICD-9 codes	Medicaid eligibility, service utilization, and payment database (2003-2004)	HbA1c testing; Eye exam; Nephropathy screening; At least 2 HEDIS quality indicators completed in a year
Duffy, 2012[6] Cross-sectional	Preventive service: Smoking cessation	National National-level VHA outpatient survey N=224,193	Age (category): <45: 3.4% 45-64: 37.4% ≥65: 59.2% % Female: 3.5 % White: 83.1	Schizophrenia Bipolar disorder Depressive disorder PTSD ICD-9 codes	VHA Outpatient SHEP (fiscal year 2007)	Proportion prescribed tobacco cessation pharmacotherapies

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Egede, 2010[7] (Companion: Egede, 2009[8]) Cross-sectional	Preventive services: Cancer screening Immunization Chronic disease: DM	National Randomized survey N=16,754	Age (category): MI: 18-34: 8.1% 35-49: 28.3% 50-64: 42.5% 65+: 21.1% NMI: 18-34: 4.6% 35-49: 17.4% 50-64: 38.4% 65+: 39.6% % Female: MI=61.6 NMI=46.3 % White: MI=63 NMI: 62	Major depression among those with diabetes PHQ-8	BRFSS 2006	*Cancer screening:* Breast cancer screening; Cervical cancer screening; Colorectal cancer screening: FOBT, sigmoidoscopy, or colonoscopy *Immunization:* Flu shot in past year; Pneumonia vaccine ever *DM:* HbA1c testing; Diabetic foot exam; Eye exam
Frayne, 2005[9] Cross-sectional	Chronic disease: DM	National VA databases and survey N=313,586	Age (category; n): MI: <55: 28,339 55-64: 16,051 65-74: 20,429 ≥75: 11,981 NMI: <55: 39,780 55-64: 47,357 65-74: 94,241 ≥75: 55,645 % Female: MI=3.3 NMI=1.8 % White: MI=73.4 NMI=74.5	Composite of mental health conditions: depressed mood, anxiety, psychosis, manic symptoms, SUD, personality disorders, dissociative symptoms, somatoform symptoms, impulse control disorders, eating disorders ICD-9 codes	6 sources (October 1997-September 1999): DEpiC; Medicare claims; VA National Patient Care Database; VHA Health Care Analysis Information Group (lab data); VHA Pharmacy Database; 1999 Large Health Survey of Veteran Enrollees	No HbA1c testing;† No eye exam;† LDL-C not at goal;† Composite diabetes outcome: no monitoring for diabetes (no HbA1c test done, no LDL-C-test done, and no eye exam done)†

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Green, 2010[10] Retrospective cohort	Chronic disease: DM	Atlanta, GA Facility-level database N=8,817	Age (mean [SD]): MI=49.4 (10.2) NMI=55.6 (11.8) % Female: MI=61.4 NMI=64.3 % White: MI=11.7 NMI=4.3	Schizophrenia Mood disorders ICD-9 codes	ER, urgent care, and PC records (OP), 2004-2005, from urban, public hospital	HbA1c testing; Eye exam; Nephropathy screening
Jones, 2004[11] Retrospective cohort	Chronic disease: DM	Iowa State-level population-based database N=26,020	Age (mean [SD]): MI=47.1 (9.4) NMI=48.4 (10.2) % Female: MI=50.2 NMI=46.0 % White: NR	Mood disorders Psychotic disorders ICD-9 codes	Administrative claims data from BCBS of Iowa (January 1996 to December 2001)	HbA1c testing; Eye exam; Nephropathy screening
Kilbourne, 2008[12] (Companion: Morden, 2010[13]) Cross-sectional	Chronic diseases: DM HTN	National VA Healthcare system databases N=24,016 for HTN N=10,943 for DM	Age (mean [SD]): Total=67.0 (11.8) % Female: 3.2 % White: NR	Composite SMI: schizophrenia, bipolar disorder, other psychosis Depression: unipolar depression, depressive disorders ICD-9 codes	VA National Registries for (1) Psychosis; and (2) Depression; EPRP national quality of care databases, fiscal year 2005	*DM:* BP under control; LDL-C at goal; Diabetic foot exam; Eye exam; HbA1c testing not received† *HTN:* BP adequately controlled

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Kodl, 2010[14] Retrospective cohort	Preventive service: Cancer screening (colorectal only)	Minneapolis, MN Facility-level VA Healthcare system N=855	Age (mean [SD]): MI=59.4 (6.6) NMI=63.8 (7.6) % Female: MI=20.3 NMI=35.6 % White: MI=48 NMI=68.7	PTSD Composite of mental health conditions: unipolar or bipolar depression, bipolar disorder, MDD, depressive disorders SMI composite: schizophrenia, delusional disorders, nonorganic psychoses ICD-9 codes	Electronic medical record (1996-2006)	Colorectal cancer screening: FOBT, sigmoidoscopy, or colonoscopy
Krein, 2006[15] Cross-sectional	Chronic disease: DM	National VA Healthcare System registries N=36,546	Age (mean [SD]): Total=58 (12) % Female: MI=4.0 NMI=: 14.0 % White: MI=64.0 NMI=69.0	Composite SMI: schizophrenia, schizoaffective disorder, bipolar disorder, other nonorganic psychoses, paranoid states, affective psychoses ICD-9-CM codes	VA National Psychosis Registry & Healthcare Analysis and Information Group/QUERI-DM (diabetes registry), October 1997 to September 1998	HbA1c testing; LDL-C at goal
Lasser, 2003[16] Retrospective cohort	Preventive service: Cancer screening (breast only)	Cambridge & Somerville, MA Local-level database from PC centers N=526	Age range: 40 to 70 % Female=100 % White=52.1	-PTSD -Composite of mental health Psychotic disorders Mood disorders (depressive disorders) PRIME-MD (modified)	PRIME-MD records, 1998 to “present” (precise year/ date not specified), from CHA administrative files	Breast cancer screening;
Leung, 2011[17] Cross-sectional	Chronic disease: DM	Massachusetts State-level database N=10,6174	Average age range: 52 to 65 yr % Female: MI=64.0 NMI=68.2 % White: MI=79.2 NMI=82.4	Schizophrenia Bipolar disorder Depression/ anxiety Other MI ICD-9 codes	Massachusetts Medicaid & Medicare, 2004-2005	HbA1c testing; Eye exam; Nephropathy screening

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Lin, 2004[18] Prospective cohort	Chronic disease: DM	Seattle, WA HMO member survey N=4,385	Age (mean [SD]): Total=63.3 (13.4) % Female=48.7 % White=NR	Major depression Depressive disorders PHQ-9	GHC diabetes registry, 2001-2003	No HbA1c testing;† No eye exam;† No nephropathy screening within past year among patients not taking ACEI†
McGinty, 2012[19] Retrospective cohort	Chronic disease: IHD	Baltimore or eastern shore, MD State-level, population-based database N=633	Age (mean [SD]): MI=51.7 (NR) NMI=54.1 (NR) % Female: MI=63.5 NMI=61.5 % White: MI=46.7 NMI=41.9	Composite of mental health disorders: schizophrenia, bipolar disorder, MDD, other psychoses, organic psychosis, OCD, anxiety disorders ICD-9 codes	Maryland administrative claim files for disabled participants on Medicaid (fiscal years 1994-2004)	*30 days after hospitalization:* Cardiac catheterization rate; PTCA (includes catheterization); ACEI/ARB therapy % of patients on statin therapy *1 year after hospitalization:* ACEI/ARB therapy: % of patients on statin therapy
Nelson, 2011[20] Cross-sectional	Chronic disease: DM	Kansas City, KS Facility-level VAMC database N=124	Age (mean [SD]): MI=57.9 (7.0) NMI=57.9 (2.2) % Female=0 % White: MI=35.5 NMI=69.5	Composite SMI: schizophrenia, schizoaffective disorder, and psychosis NOS) ICD-9 codes	Computerized patient record system (CPRS) for 2008	LDL-C at goal
Pirraglia, 2004[21] Prospective cohort	Preventive service: Cancer screening (breast and cervical only)	Boston, MA; Chicago, IL; Detroit, MI; Los Angeles & Oakland, CA; Hudson County, NJ; Pittsburgh, PA Databases N=3,297	Age (category): >50 years: (10.2%) % Female=100 % White=47	Major depression (high ≥21) Depressive disorder (moderate 16-20) CES-D	SWAN longitudinal Cohort, 1996-1997	Breast cancer screening; Cervical cancer screening

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Taveira, 2008[22] (Companion: Cohen, 2010[23]) Cross-sectional	Chronic disease: DM	Providence, RI VAMC facility-level database N=297	Age (mean [SD]): MI=59.9 (9.4) NMI=68.5 (9.3) % Female: MI=4.1 NMI=1.1 % White: MI=49.6 NMI=39.8	Schizophrenia Mood disorders (including depression and bipolar disorder) Depressive disorder Anxiety Dissociative and somatoform disorders PTSD ICD-9 codes	VAMC electronic medical records from CRRC January 2001-January 2002‡	Composite diabetes outcome: achieve at goal levels for at least 2 of these 3 values: SBP, LDL-C, or HbA1c
Trief, 2006[24] Retrospective cohort	Chronic disease: DM	New York (state) VA Healthcare Network Upstate New York facility-level database N=14,438	Average age range:§ MI: 59.6 to 64.3 NMI: 69.5 % Female: 0 % White: NR	PTSD with depression PTSD without depression Depression without PTSD ICD-9 codes	Veterans Health Information Systems and Technology Architecture (VistA) for PC visits (July 1, 2003 to October 4, 2004)	LDL-C at goal
Weiss, 2006[25] Cross-sectional	Chronic disease: DM	Boston, MA 5 internal medicine practices N=3,808	Age (mean [SD]): MI=62 (15) NMI=65 (13) % Female: MI=57.9 NMI=48.6 % White: MI=72.0 NMI=71.2	Schizophrenia and other psychotic disorders ICD-9 codes	Review of charts or electronic medical records (January 1, 2000 to July 31, 2003)	Proportion with hyperlipidemia prescribed a statin; LDL-C at goal; BP under control

Article; Study Design	Targeted Preventive Service or Chronic Disease	Geographic Location; Data Source; Total N	Population: Age in Years; % Female; % White	Mental Health Diagnoses; Measurement	Data Sources	Outcomes
Yee, 2011[26] Retrospective cohort	Preventive service: Cancer screening	New Mexico State-level VA Healthcare system N=606	Age (mean [SD]): MI=57.2 (5.1) NMI=57.7 (5.7) % Female=100 % White: MI=42 NMI=20	Composite of mental health conditions: anxiety, depressed mood, dissociative symptoms, eating disorders, impulse control or somatoform disorders, manic symptoms, personality disorders, psychosis, and SUD ICD-9 codes	NMVAHCS database (includes any clinic type), October 1, 2003 to September 30, 2006	Breast cancer screening; Cervical cancer screening; Colorectal cancer screening: FOBT, sigmoidoscopy, or colonoscopy

*Cancer screening implies breast, cervical, and colorectal unless otherwise indicated.

†Inversions for BP under control, HbA1c tested, eye exam received, nephropathy screen performed, and LDL-C at goal will be derived mathematically.

‡Range of years for data source differed in companion study, Cohen 2010,[23] where they were listed as 2001 to 2003.

§Age range given for MI because this represents several different categories (PTSD with and without depression, depression alone); age range NOT given for NMI because only one category.

Abbreviations: ACEI=angiotensin converting enzyme inhibitor; ARB=angiotensin receptor blocker; BCBS=Blue Cross Blue Shield; BP=blood pressure; BRFSS=Behavioral Risk Factor Surveillance Survey; CES-D=Center for Epidemiologic Studies Depression Scale; CHA=Cambridge Health Alliance; CIDI-SF=Composite International Diagnostic Interview-Short Form; CPRS=Computerized Patient Record System; CRRC=Community Resource and Referral Center; DEpiC=Diabetes Epidemiology Cohort; DM=diabetes mellitus; EPRP=External Peer Review Program; ER=emergency room; FOBT=fecal occult blood test; GHC=Group Health Cooperative; HbA1c=glycated hemoglobin; HEDIS=Healthcare Effectiveness Data and Information Set; HMO=health maintenance organization; HTN=hypertension; ICD-9=*International Classification of Diseases, 9th revision*; ICD-9-CM=*International Classification of Diseases, 9th Revision, Clinical Modification*; IHD=ischemic heart disease; LDL-C=low density lipoprotein cholesterol; MDD=major depressive disorder; MI=mental illness; N=number of participants; NHIS=National Health Interview Survey; NMI=no mental illness; NMVAHCS=New Mexico VA Health Care System; NR=not reported; OCD=obsessive-compulsive disorder; OP=outpatient; PC=primary care; PHQ-8=Patient Health Questionnaire-8; PHQ-9=Patient Health Questionnaire-9; PRIME-MD=Primary Care Evaluation of Mental Disorders; PTCA=percutaneous transluminal coronary angioplasty; PTSD=posttraumatic stress disorder; QUERI-DM=Diabetes Mellitus Quality Enhancement Research Initiative; SBP=systolic blood pressure; SD=standard deviation; SHEP=Survey of Healthcare Experiences of Patients; SMI=serious mental illness, usually schizophrenia, schizoaffective disorder, and bipolar disorder; SUD=substance use disorder; SWAN=Study of Women's Health Across the Nation; VA=Veterans Affairs; VAMC=Veteran Affairs Medical Center; VHA=Veterans Health Administration; VistA=Veterans Health Information Systems and Technology Architecture (electronic health record system)

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APPENDIX E. NEWCASTLE-OTTAWA SCALE COHORT RATINGS

Study	Selection	Comparability	Outcome	Targeted Preventive Service or Chronic Disease
Desai, 2002[1]	✓✓✓✓	–	✓✓✓	Chronic disease: DM
Dolder, 2005[2]	✓✓✓✓	–	✓✓✓	Chronic disease: HTN
Druss, 2002[3]	✓✓✓	–	✓✓	Preventive services: CA screening* Immunization Smoking cessation
Druss, 2008[4]	✓✓✓	✓✓	–	Preventive services: CA screening Immunization
Druss, 2012[5]	✓✓✓✓	✓✓	✓✓✓	Chronic disease: DM
Duffy, 2012[6]	✓✓✓	✓✓	–	Preventive service: Smoking cessation
Egede, 2010[7] (Companion: Egede, 2009[8])	✓✓✓	✓✓	✓✓	Preventive services: CA screening Immunization Chronic disease: DM
Frayne, 2005[9]	✓✓✓✓	✓✓	✓✓✓	Chronic disease: DM
Green, 2010[10]	✓✓✓✓	–	✓✓✓	Chronic disease: DM
Jones, 2004[11]	✓✓✓	–	✓✓	Chronic disease: DM
Kilbourne, 2008[12] (Companion: Morden, 2010[13])	✓✓✓✓	–	✓✓	Chronic diseases: DM, HTN
Kodl, 2010[14]	✓✓✓✓	–	✓✓✓	Preventive service: CA screening (colorectal only)
Krein, 2006[15]	✓✓✓✓	–	✓✓	Chronic disease: DM
Lasser, 2003[16]	✓✓✓	–	✓✓	Preventive service: CA screening (breast only)
Leung, 2011[17]	✓✓✓✓	–	✓✓✓	Chronic disease: DM
Lin, 2004[18]	✓✓✓	✓✓	✓✓✓	Chronic disease: DM
McGinty, 2012[19]	✓✓✓	–	✓✓✓	Chronic disease: IHD
Nelson, 2011[20]	✓✓✓✓	–	✓✓✓	Chronic disease: DM
Pirraglia, 2004[21]	✓✓✓	✓✓	✓	Preventive service: CA screening (breast and cervical only)
Taveira, 2008[22] (Companion: Cohen, 2010[23])	✓✓✓	–	✓✓✓	Chronic disease: DM
Trief, 2006[24]	✓✓✓	–	✓✓	Chronic disease: DM
Weiss, 2006[25]	✓✓✓	–	✓✓	Chronic disease: DM
Yee, 2011[26]	✓✓✓✓	–	✓✓✓	Preventive service: CA screening

*CA screening implies breast, cervical, and colorectal unless otherwise indicated.

Abbreviations: CA=cancer; DM=diabetes mellitus; HTN=hypertension; IHD=ischemic heart disease

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APPENDIX F. SUMMARY OF FINDINGS TABLES

Appendix Table F-1. Preventive Services: Summary of Findings for Differences in Receipt of Services for Those With Versus Those Without a Mental Health Disorder

Outcome; (Number of Studies); Conclusion	Mental Health Diagnoses	Main Findings	Differences in Study Findings: VA vs Non-VA studies
Cancer Screening : Process Outcomes			
Breast cancer screening: Mammography (n=6) ***Limited evidence for small to large disparities***	-Depressive disorders: 4 studies -PTSD: 1 study -Psychotic disorders: 1 study -Composites of mental health conditions: 2 studies	-Depressive disorders (3 of 4 studies): significant negative differences (OR range: 0.48 to 0.82) -PTSD (1 study): statistically significantly lower rate (37% vs 56%) -Psychotic disorders (1 study): no significant difference in rates -Composite groups (2 of 2 studies): negative trends; only 1 was statistically significant (OR range: 0.78 to 0.79)	Both VA and non-VA studies displayed negative associations between mental health diagnoses and receipt of mammography; however, not all comparisons were statistically significant.
Cervical cancer screening: Pap smear (n=5) ***Limited evidence for small to moderate disparities***	-Depressive disorders: 3 studies -Composite groups of mental health conditions: 2 studies	-Depressive disorders (meta-analysis of 3 studies): significantly lower odds (OR 0.87; 95% CI, 0.77 to 0.98) -Composite groups (1 of 2 studies): a statistically significant negative effect (OR 0.87; 95% CI, 0.78 to 0.96)	Both VA and non-VA displayed negative associations between mental health diagnoses and receipt of Pap smears; however, not all comparisons were statistically significant.
Colorectal cancer screening: FOBT, flexible sigmoidoscopy, colonoscopy (n=5) ***Limited evidence for small to large disparities***	-Depressive disorders: 3 studies -PTSD (1 study) -Psychotic disorders (1 study) -Composite groups of mental health conditions (3 studies)	-Depressive disorders (2 of 3 studies): significant negative associations (OR range: 0.43 to 0.90; median OR=0.85) -PTSD (1 VA study): no significant difference -Psychotic disorders (1 VA study): a negative and significant association (p-value<0.001) -Composite groups (2 of 3 VA studies): negative, significant associations (OR range: 0.85 to 0.95 and p<0.01)	Both VA and non-VA studies showed a significant and negative association of depression on receipt of colorectal cancer screenings. For persons diagnosed with depressive disorders, the impact of these disparities were greater in the VA (OR=0.43 in VA study vs OR=0.90 in non-VA study)

Outcome; (Number of Studies); Conclusion	Mental Health Diagnoses	Main Findings	Differences in Study Findings: VA vs Non-VA studies
Immunizations: Process Outcomes			
Influenza vaccinations (n=3) ***Limited evidence for small to moderate disparities***	-Depressive disorders: 2 studies -Composite group of mental health conditions (excluding substance use): 1 study	-Depressive disorders (1 of 2 studies): a positive, significant association not to receive vaccination (OR=1.24) -Composite groups (1 VA study): a significant negative association (OR 0.90; 95% CI, 0.87 to 0.94)	One VA study reported significant negative association. The 2 non-VA studies reported mixed results.
Pneumococcal vaccinations (n=2) ***Limited, inconsistent evidence for small disparities***	-Depressive disorders: 1 study -Composite group of mental health conditions (excluding substance use): 1 study	-Depressive disorders (1 VA study): a negative, significant association (OR=0.95) -Composite groups (1 study): no significant association	One VA study reported a negative, significant association. One non-VA study found no association.
Screening and Referral for Tobacco Use: Process Outcomes			
Screening for tobacco use (n=1) ***Limited evidence for no health disparities***	Composite group of mental health conditions: 1 study	Composite group (1 VA study): a significant, positive association (OR=1.17)	Not applicable, both to screening and referral for tobacco use: only 1 VA study
Referral for tobacco use (n=2) ***Limited, inconsistent evidence of disparities***	-Composite group of mental health conditions: 1 study -Depressive disorders, schizophrenia, bipolar disorder and PTSD: 1 VA study	-Composite groups (1 VA study): a significant positive association (OR=1.1) -Separate estimates for different mental health diagnoses (1 study): mixed results	Not applicable, both to screening and referral for tobacco use: both were VA studies

Outcome; (Number of Studies); Conclusion	Mental Health Diagnoses	Main Findings	Differences in Study Findings: VA vs Non-VA studies
Prescriptions for tobacco cessation pharmacotherapy (n=1) ***Limited, inconsistent evidence for disparities***	-Depressive disorders, PTSD, schizophrenia and bipolar disorder: 1 VA study	-Separate estimates (1 study): depressive disorders, a significant positive association (OR=1.07); PTSD, a significant positive association (OR=1.14); schizophrenia and bipolar disorder, no association	Not applicable, both to screening and referral for tobacco use: only 1 VA study

Abbreviations: CI=confidence interval; FOBT=fecal occult blood test; n=number of studies; OR=odds ratio; PTSD=posttraumatic stress disorder; VA=Veterans Affairs

Appendix Table F-2. Chronic Disease Management Services: Summary of Findings for Differences in Receipt of Services for Those With Versus Those Without a Mental Health Disorder

Outcome; (Number of Studies); Conclusion	Mental Health Diagnoses	Main Findings	Differences in Study Findings: VA vs Non-VA studies
Diabetes Care: Process Outcomes			
Composite measure of care (n=3) ***Limited, inconsistent evidence for small disparities***	Composite group of mental health conditions: 3 studies	Composite group (2 of 3 studies): a significant, negative association (OR range: 0.72 to 0.83)	One non-VA study: a negative, significant association 2 VA studies: mixed results
HbA1c testing (n=10) ***Limited, inconsistent evidence for small disparities***	-Depressive disorders: 4 studies -SMI: 4 studies -Composite groups of mental health conditions: 5 studies	-Depressive disorders (1 of 4 studies): a statistically significant, negative association (OR=0.53) -SMI (3 of 4 studies): positive trends (OR range: 1.02 to 1.51); 2 of these were statistically significant -Composite groups (5 of 5 studies): 4 negative associations; 1 positive association (OR range: 0.81 to 1.20; median OR=0.89). Four estimates were statistically significant (3 negative, 1 positive).	Depression: VA and non-VA studies reported inconsistent results SMI: VA studies showed positive trends for more HbA1c monitoring; one non-VA study's results were inconsistent Composite groups: Most VA and non-VA studies displayed a small, negative impact of mental illness on HbA1c testing. One non-VA study reported a statistically significant, positive effect.

Outcome; (Number of Studies); Conclusion	Mental Health Diagnoses	Main Findings	Differences in Study Findings: VA vs Non-VA studies
Eye examinations (n=9) ***Limited, inconsistent evidence for small to moderate disparities***	-Depressive disorders: 4 studies	-Depressive disorders (meta-analysis of 3 studies): No difference (OR 0.89; 95% CI, 0.56 to 1.41; I^2=62.2%).	Depressive disorders: No differences
	-SMI: 3 studies	-SMI (3 studies): Results were mixed; 1 statistically significant negative effect (OR 0.65; 95% CI, 0.55 to 0.76); 2 positive effects, but only 1 statistically significant (OR 1.19; 95% CI, 1.06 to 1.33)	SMI: One VA study reported a statistically significant, negative effect; two non-VA studies showed positive associations, although only one was statistically significant
	-Composite groups of mental health disorders: 5 studies	-Composite groups (5 studies): Results were mixed, ranging from negative and statistically significant (n=2) to positive and not significant (OR range: 0.73 to 1.13; median OR=0.93).	Composite groups: In both non-VA and VA studies, there were statistically significant negative results; other results not significant. Of note, disparities were less in the VA versus the non-VA study (OR=0.93 vs 0.73).
Nephropathy screening (n=5) ***Limited evidence for health disparities***	-Depressive disorders: 2 studies	-Depressive disorders (2 of 2 studies):no significant associations	Not applicable; all were non-VA studies
	-SMI: 2 studies	-SMI (2 studies): results were mixed; one study found no significant differences (HR 0.94; 99.9% CI, 0.65 to 1.36); other study found significant, positive associations for schizophrenia/paranoia (OR 1.39; 95% CI, 1.28 to 1.50) and bipolar disorder (OR 1.34; 95% CI, 1.23 to 1.45)	
	-Composites of mental health conditions: 3 studies	-Composite group: effects were mixed (OR range: 0.96 to 1.10; median OR=1.04), indicating no clear effect or association	
Foot exam (n=3) ***Limited, inconsistent evidence for small to moderate disparities***	-Depressive disorders: 2 studies	-Depressive disorders (1 of 2 studies): a statistically significant, negative effect (OR 0.85; 95% CI, 0.71 to 0.99)	Across all conditions, VA and non-VA studies showed negative associations, but the effect was significant only for the VA studies.
	-SMI: 1 study	-SMI (1 study): a negative, statistically significant effect (OR 0.68; 95% CI, 0.56 to 0.82)	
	-Composite group: 1 study	-Composite group (1 study): no difference	

Outcome; (Number of Studies); Conclusion	Mental Health Diagnoses	Main Findings	Differences in Study Findings: VA vs Non-VA studies
Statin prescription for hyperlipidemia (n=1) ***Very limited evidence; no support for disparities***	-Schizophrenia: 1 study	-Schizophrenia (1 study): no differences	Not applicable; only 1 non-VA study
Diabetes Care: Intermediate Outcomes			
LDL-C at goal level (n=6) ***Limited, inconsistent evidence for disparities***	-Depressive disorders: 2 studies -SMI: 4 studies -PTSD: 1 study -Composite groups: 2 studies	-Depressive disorders (2 of 2 studies): no significant association -SMI (meta-analysis of 4 studies): no difference (OR 0.94; 95% CI, 0.70 to 1.26) -PTSD (1 study): no differences -Composite groups (2 of 2 studies): statistically significantly negative effects for poor control (OR range: 1.20 to 1.41)	For depression, not applicable For SMI, the non-VA study reported a significant, negative association, while 3 VA studies were not statistically significant. For PTSD, not applicable For composite groups, the 2 VA studies reported significant, negative associations.
Blood pressure control (n=3) ***Limited evidence; no support for disparities***	-SMI: 1 study -Composite groups: 2 studies	-SMI (1 study): No statistically significant differences -Composite groups (2 of 2 studies): No statistically significant differences	Not applicable; SMI was a non-VA study, and both composite groups were VA studies
Hypertension Care: Intermediate Outcomes			
Blood pressure control (n=2) ***Limited evidence; no support for disparities***	-Composite groups of mental health conditions: 2 studies	-Composite groups (1 of 2 studies): less likelihood of adequate control (35% vs 49%) for individuals with psychotic disorders; reported as statistically significant (test statistic not provided)	Not applicable; both were VA studies.

Outcome; (Number of Studies); Conclusion	Mental Health Diagnoses	Main Findings	Differences in Study Findings: VA vs Non-VA studies
Ischemic Heart Disease Care: Process Outcomes			
Statin therapy (n=1) ***Limited evidence; no support for disparities***	-Composite group of mental health conditions: 1 study	-Composite group (1 study): no significant association (1 month: 10.8% to 12.9%; 1 year: 22.8% to 29.3%)	Not applicable; only 1 non-VA study
ACEI or ARB therapy ***Limited evidence; no support for disparities***	-Composite group of mental health conditions: 1 study	-Composite group (1 study): no significant association (1 month: 19.3% to 22.3%; 1 year: 40.0% to 38.5%)	Not applicable; only 1 non-VA study
Cardiac catheterization rate (n=1) ***Limited evidence; no support for disparities***	-Composite group of mental health conditions: 1 study	-Composite group (1 study): no significant differences in rates during index hospitalization or at 1 month post hospitalization	Not applicable; only 1 non-VA study

Abbreviations: ACEI=angiotensin converting enzyme inhibitor; ARB=angiotensin receptor blocker; CI=confidence interval; HbA1c=glycated hemoglobin; HR=hazard ratio; LDL-C=low density lipoprotein cholesterol; n=number of studies; OR=odds ratio; PTSD=posttraumatic stress disorder; SMI=serious mental illness, usually schizophrenia, schizoaffective disorder, and bipolar disorder; VA=Veterans Affairs