**National Quality Forum—Evidence (subcriterion 1a)**

**Measure Number** (*if previously endorsed*)**:** 1932

**Measure Title**: Cardiovascular Monitoring for People With Cardiovascular Disease and Schizophrenia (SMC)

**IF the measure is a component in a composite performance measure, provide the title of the Composite Measure here:** N/A

**Date of Submission**: 4/2/2018

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| **Instructions**  *Complete 1a.1 and 1a.2 for all measures. If instrument-based measure, complete 1a.3.*  *Complete* ***EITHER 1a.2, 1a.3 or 1a.4*** *as applicable for the type of measure and evidence.*  *For composite performance measures:*  *A separate evidence form is required for each component measure unless several components were studied together.*  *If a component measure is submitted as an individual performance measure, attach the evidence form to the individual measure submission.*  All information needed to demonstrate meeting the evidence subcriterion (1a) must be in this form. An appendix of *supplemental* materials may be submitted, but there is no guarantee it will be reviewed.   * If you are unable to check a box, please highlight or shade the box for your response. * Contact NQF staff regarding questions. Check for resources at [Submitting Standards webpage](http://www.qualityforum.org/Measuring_Performance/Submitting_Standards.aspx). |

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| **Note: The information provided in this form is intended to aid the Standing Committee and other stakeholders in understanding to what degree the evidence for this measure meets NQF’s evaluation criteria.**   1a. Evidence to Support the Measure Focus The measure focus is evidence-based, demonstrated as follows:   * Outcome: [**3**](#Note3) Empirical data demonstrate a relationship between the outcome and at least one healthcare structure, process, intervention, or service. If not available, wide variation in performance can be used as evidence, assuming the data are from a robust number of providers and results are not subject to systematic bias. * Intermediate clinical outcome: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [**4**](#Note4)that the measured intermediate clinical outcome leads to a desired health outcome. * Process: [**5**](#Note5) a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [**4**](#Note4) that the measured process leads to a desired health outcome. * Structure: a systematic assessment and grading of the quantity, quality, and consistency of the body of evidence [**4**](#Note4) that the measured structure leads to a desired health outcome. * Efficiency: [**6**](#Note6) evidence not required for the resource use component. * For measures derived from patient reports, evidence should demonstrate that the target population values the measured outcome, process, or structure and finds it meaningful. * Process measures incorporating Appropriate Use Criteria: See NQF’s guidance for evidence for measures, in general; guidance for measures specifically based on clinical practice guidelines apply as well.   **Notes**  **3.** Generally, rare event outcomes do not provide adequate information for improvement or discrimination; however, serious reportable events that are compared to zero are appropriate outcomes for public reporting and quality improvement.  **4.** The preferred systems for grading the evidence are the Grading of Recommendations, Assessment, Development and Evaluation [(GRADE) guidelines](http://www.gradeworkinggroup.org) and/or modified GRADE.  **5.** Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multistep process, the step with the strongest evidence for the link to the desired outcome should be selected as the focus of measurement. Note: A measure focused only on collecting PROM data is not a PRO-PM.  **6.** Measures of efficiency combine the concepts of resource use and quality (see NQF’s [Measurement Framework: Evaluating Efficiency Across Episodes of Care](http://www.qualityforum.org/Publications/2010/01/Measurement_Framework__Evaluating_Efficiency_Across_Patient-Focused_Episodes_of_Care.aspx); [AQA Principles of Efficiency Measures](http://www.aqaalliance.org/files/PrinciplesofEfficiencyMeasurementApril2006.doc)). |

**1a.1.This is a measure of**: (*should be consistent with type of measure entered in De.1*)

Outcome

Outcome: Click here to name the health outcome

Patient-reported outcome (PRO): Click here to name the PRO

*PROs include HRQoL/functional status, symptom/symptom burden, experience with care, health-related behaviors.* (*A PRO-based performance measure is not a survey instrument. Data may be collected using a survey instrument to construct a PRO measure.)*

Intermediate clinical outcome (*e.g., lab value*): Click here to name the intermediate outcome

Process: Cardiovascular Monitoring for People With Cardiovascular Disease and Schizophrenia (SMC)

Appropriate use measure: Click here to name what is being measured

Structure: Click here to name the structure

Composite: Click here to name what is being measured

**1a.2** **LOGIC MODEL** Diagram or briefly describe the steps between the healthcare structures and processes (e.g., interventions, or services) and the patient’s health outcome(s). The relationships in the diagram should be easily understood by general, non-technical audiences. Indicate the structure, process or outcome being measured.

Patients diagnosed with schizophrenia and cardiovascular disease>>health care provider monitors patient’s cardiovascular>>proper treatment and management>>reduced poor health outcomes (e.g., premature mortality, serious complications of cardiovascular disease)>>improved long-term clinical outcomes (desired outcome)

**1a.3** **Value and Meaningfulness:**  **IF** this measure is derived from patient report, provide evidence that the target population values the measured ***outcome, process, or structure*** and finds it meaningful. (Describe how and from whom their input was obtained.)

N/A

**\*\*RESPOND TO ONLY ONE SECTION BELOW -EITHER 1a.2, 1a.3 or 1a.4) \*\***

**1a.2** **FOR OUTCOME MEASURES including PATIENT REPORTED OUTCOMES - Provide empirical data demonstrating the relationship between the outcome (or PRO) to at least one healthcare structure, process, intervention, or service.**

N/A

**1a.3.****SYSTEMATIC REVIEW(SR) OF THE EVIDENCE (for intermediate outcome, PROCESS, or STRUCTURE PERFORMANCE measures, including those that are instrument-based) If the evidence is not based on a systematic review go to section 1a.4) If you wish to include more than one systematic review, add additional tables.**

**What is the source of the systematic review of the body of evidence that supports the performance measure? A systematic review is a scientific investigation that focuses on a specific question and uses explicit, prespecified scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. It may include a quantitative synthesis (meta-analysis), depending on the available data. (IOM)**

☐ Clinical Practice Guideline recommendation (with evidence review)

☐ US Preventive Services Task Force Recommendation

☐ Other systematic review and grading of the body of evidence (*e.g., Cochrane Collaboration, AHRQ Evidence Practice Center*)

☐ Other

**Table 1. APA Guidelines**

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| **Source of Systematic Review:**   * **Title** * **Author** * **Date** * **Citation, including page number** * **URL** | American Psychiatric Association (2004). Practice Guideline for the Treatment of Patients With Schizophrenia Second Edition; 2004 Feb. 184 p. <http://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/schizophrenia.pdf> and GUIDELINE WATCH: PRACTICE GUIDELINE FOR THE TREATMENT OF PATIENTS WITH SCHIZOPHRENIA; American Psychiatric Association, 2009 SEP. 10 P.  <https://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/schizophrenia-watch.pdf> |
| Quote the guideline or recommendation verbatim about the process, structure or intermediate outcome being measured. If not a guideline, summarize the conclusions from the SR. | **Acute Phase Treatment [A, A-, B, C, D, E, F, G]**   * General medical health as well as medical conditions that could contribute to symptom exacerbation can be evaluated by medical history, physical and neurological examination, and appropriate laboratory, electrophysiological, and radiological assessments [I]. Measurement of body weight and vital signs (heart rate, blood pressure, temperature) is also recommended [II]. * Other laboratory tests to be considered to evaluate health status include a complete blood count (CBC); measurements of blood electrolytes, glucose, cholesterol, and triglycerides; tests of liver, renal, and thyroid function; a syphilis test; and when indicated and permissible, determination of HIV status and a test for hepatitis C [II].   **Stable Phase [A, A-, B, C, D, E, F, G]**   * Routine monitoring for obesity-related health problems (e.g., high blood pressure, lipid abnormalities, and clinical symptoms of diabetes) and consideration of appropriate interventions are recommended particularly for patients with BMI in the overweight and obese ranges [II]. Clinicians may consider regular monitoring of fasting glucose or hemoglobin A1c levels to detect emerging diabetes, since patients often have multiple risk factors for diabetes, especially patients with obesity [I] |
| Grade assigned to the **evidence** associated with the recommendation with the definition of the grade | The evidence base for practice guidelines is derived from two sources: research studies and clinical consensus. Where gaps exist in the research data, evidence is derived from clinical consensus, obtained through broad review of multiple drafts of each guideline. Both research data and clinical consensus vary in their validity and reliability for different clinical situations; guidelines state explicitly the nature of the supporting evidence for specific recommendations so that readers can make their own judgments regarding the utility of the recommendations. The following coding system is used for this purpose:  [A] Randomized, double-blind clinical trial. A study of an intervention in which subjects are prospectively followed over time; there are treatment and control groups; subjects are randomly assigned to the two groups; and both the subjects and the investigators are “blind” to the assignments.  [A–] Randomized clinical trial. Same as above but not double blind.  [B] Clinical trial. A prospective study in which an intervention is made and the results of that intervention are tracked longitudinally. Does not meet standards for a randomized clinical trial.  [C] Cohort or longitudinal study. A study in which subjects are prospectively followed over time without any specific intervention.  [D] Control study. A study in which a group of patients and a group of control subjects are identified in the present and information about them is pursued retrospectively or backward in time.  [E] Review with secondary data analysis. A structured analytic review of existing data, e.g., a meta-analysis or a decision analysis.  [F] Review. A qualitative review and discussion of previously published literature without a quantitative synthesis of the data.  [G] Other. Opinion-like essays, case reports, and other reports not categorized above |
| Provide all other grades and definitions from the evidence grading system | N/A |
| Grade assigned to the **recommendation** with definition of the grade | [I] Recommended with substantial clinical confidence. [II] Recommended with moderate clinical confidence. |
| Provide all other grades and definitions from the recommendation grading system | [III] May be recommended on the basis of individual circumstances |
| Body of evidence:   * Quantity – how many studies? * Quality – what type of studies? | “Relevant literature was identified through a computerized search of PubMed for the period from 1994 to 2002. Using the keywords schizophrenia OR schizoaffective, a total of 20,009 citations were found. After limiting these references to clinical trials and meta-analyses published in English that included abstracts, 1,272 articles were screened by using title and abstract information. The Cochrane Database of Systematic Reviews was also searched by using the keyword schizophrenia. Additional, less formal literature searches were conducted by APA staff and individual members of the work group on schizophrenia. Sources of funding were considered when the work group reviewed the literature but are not identified in this document. When reading source articles referenced in this guideline, readers are advised to consider the sources of funding for the studies” |
| Estimates of benefit and consistency across studies | “The literature review will include other guidelines addressing the same topic, when available. The work group constructs evidence tables to illustrate the data regarding risks and benefits for each treatment and to evaluate the quality of the data. These tables facilitate group discussion of the evidence and agreement on treatment recommendations before guideline text is written. Evidence tables do not appear in the guideline; however, they are retained by APA to document the development process in case queries are received and to inform revisions of the guideline” |
| What harms were identified? | “The literature review will include other guidelines addressing the same topic, when available. The work group constructs evidence tables to illustrate the data regarding risks and benefits for each treatment and to evaluate the quality of the data. These tables facilitate group discussion of the evidence and agreement on treatment recommendations before guideline text is written. Evidence tables do not appear in the guideline; however, they are retained by APA to document the development process in case queries are received and to inform revisions of the guideline.” |
| Identify any new studies conducted since the SR. Do the new studies change the conclusions from the SR? | To our knowledge, there have been no published studies since the clinical practice guidelines that would impact the recommendations. |

**Table 2. Systematic Review Supporting Cardiovascular Monitoring for People With Cardiovascular Disease and Schizophrenia**

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| **Source of Systematic Review:**   * **Title** * **Author** * **Date** * **Citation, including page number** * **URL** | Ayerbe L, Forgnone I, Foguet-  Boreu Q, González E, Addo J, Ayis S. Disparities  in the management of cardiovascular risk  factors in patients with psychiatric disorders: a  systematic review and meta-analysis.  Psychological Medicine, 2018; 1:1-9. doi: 10.1017/S0033291718000302 <https://www.ncbi.nlm.nih.gov/pubmed/29490716> |
| What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review? | Prospective studies comparing rates of screening, diagnosis, treatment and control of cardiovascular risk factors (CVRFs) for individuals with and without psychotic disorders, including schizophrenia were reviewed. Meta-analyses were done to summarize the findings when possible.  Studies found that patients with schizophrenia were less likely to have their blood pressure recorded and also used antihypertensive and lipid-lowering drugs less frequently than general populations. |
| Grade assigned for the quality of the quoted evidence with definition of the grade | Included studies were all considered to be of good quality, with score ⩾8 in the 14-item quality  checklist (National Institute of Health 2016). |
| Provide all other grades and definitions of the evidence in the grading system | Additional grading was not provided. |
| What is the time period covered by the body of evidence? | Database inception to 25 January 2017 |
| Body of evidence:   * Quantity – how many studies? * Quality – what type of studies? | Quantity: 20  Quality: (1) Observational prospective studies reporting original research data and (2) Studies presenting differences in rates of screening, diagnosis, follow-up, treatment or control of hypertension or dyslipidemia, smoking habit, diabetes for patients with and without each of the following mental disorders: schizophrenia, depression, anxiety, bipolar or personality disorder, identified with a validated scale or clinical assessment. |
| What is the overall quality of evidence across studies in the body of evidence? | Overall, the quality of evidence supporting this measure is strong. There are 20 studies in the evidence review that examine the rates of screening, diagnosis, treatment and control of cardiovascular risk factors for individuals with psychiatric disorders, including schizophrenia. Further, the quality of studies included in the systematic review were well-designed observational studies and studies presenting disparities in care for patients with psychotic disorders. |
| Estimates of benefit and consistency across studies in body of evidence– what are the estimates of benefits? | “The risk of bias and overall methodological quality  of the studies fitting the inclusion criteria was assessed using the Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies of the National Institute of Health (USA) (online Supplement 3) (National Institute of Health 2016).  Studies were excluded if they were:  (1) Conducted in specific patient sub-populations (e.g. patients receiving specific medication);  (2) Interventional studies;  (3) Only presented results of univariate analyses;  (4) Using composite exposures (e.g. affective disorders) unless separate results for each of them were presented;  (5) Exposure analysed as continuous variable (e.g. score in a depression scale instead of a medical diagnosis, or a validated score above a cut-off point, which are the methods for categorization commonly used in clinical practice (National Institute for Health & Care Excellence, 2009, 2011);  (6) Exposure presented as syndromes or symptoms (e.g. psychosis or hallucinations) rather than distinct diagnoses, which are the categories from the commonly used by clinicians who manage CVRFs (World Health Organization, 1978, 2010; American psychiatric Association, 1994, 2013);  (7) Reporting a composite outcome (e.g. metabolic syndrome) unless separate results for each of its component had been provided. The reason not to include composite outcomes is because, according to the guidelines, clinicians have to care for each and every CVRF, therefore understanding the disparities affecting the management of each individual one is clinically  relevant (National Institute for Health & Care  Excellence, 2016a, b; National Institute for Health & Care Excellence, 2017a, b, c).” |
| What harms were studied and how to they affect the net benefit (benefits over harm)? | No harms associated with testing were identified in the evidence reviewed. |

**Table 3. Systematic Review Supporting Cardiovascular Monitoring for People With Cardiovascular Disease and Schizophrenia**

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| **Source of Systematic Review:**   * **Title** * **Author** * **Date** * **Citation, including page number** * **URL** | Vancampfort, D., Stubbs, B., Mitchell, A.J., De Hert, M., Wampers, M., Ward, P.B., Rosenbaum, S., Correll, C.U. Risk of metabolic syndrome and its components in people with schizophrenia and related psychotic disorders, bipolar disorder and major depressive disorder: a systematic review and meta‐analysis. World Psychiatry, 2015; 14:3 (339-347). <https://doi.org/10.1002/wps.20252> |
| What was the specific structure, treatment, intervention, service, or intermediate outcome addressed in the evidence review? | “The primary aim of this systematic review and meta‐analysis was to assess the prevalence of Metabolic Syndrome (MetS) and its components in people with schizophrenia and related psychotic disorders, bipolar disorder and major depressive disorder, comparing subjects with different disorders and taking into account demographic variables and psychotropic medication use. The secondary aim was to compare the MetS prevalence in persons with any of the selected disorders versus matched general population controls.”  People with severe mental illness, including schizophrenia, have a 2-3 times higher risk for premature death than the general population. Cardiovascular disease is attributed to approximately 60% of the excess mortality among people with severe mental illness. A reduced likelihood to receive standard levels of medical care as well as obstacles in access to medical care heighten existing risk factors, including antipsychotic medication use and an unhealthy lifestyle.  “People treated with all individual antipsychotic medications had a significantly (p<0.001) higher MetS risk compared to antipsychotic‐naïve participants. MetS risk was significantly higher with clozapine and olanzapine (except vs. clozapine) than other antipsychotics, and significantly lower with aripiprazole than other antipsychotics (except vs. amisulpride). Compared with matched general population controls, people with severe mental illness had a significantly increased risk for MetS (RR = 1.58; 95% CI: 1.35‐1.86; p<0.001) and all its components, except for hypertension (p = 0.07). These data suggest that the risk for MetS is similarly elevated in the diagnostic subgroups of severe mental illness. Routine screening and multidisciplinary management of medical and behavioral conditions is needed in these patients.” |
| Grade assigned for the quality of the quoted evidence with definition of the grade | This systematic review was conducted in accordance with the M eta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines (<https://jamanetwork.com/journals/jama/fullarticle/192614>) and in line with the Preferred Reporting Items for  Systematic Reviews and Meta-Analyses (PRISMA) standard (http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000097) |
| Provide all other grades and definitions of the evidence in the grading system | This systematic review was conducted in accordance with the M eta-analysis of Observational Studies in Epidemiology (MOOSE) guidelines (<https://jamanetwork.com/journals/jama/fullarticle/192614>) and in line with the Preferred Reporting Items for  Systematic Reviews and Meta-Analyses (PRISMA) standard (<http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1000097>) |
| What is the time period covered by the body of evidence? | Database inception to January 1, 2015 |
| Body of evidence:   * Quantity – how many studies? * Quality – what type of studies? | Quantity: 198  Quality: “observational studies (cross‐sectional, retrospective and prospective studies) in adults that fulfilled the following criteria: a) a diagnosis of schizophrenia or a related psychotic disorder, bipolar disorder or major depressive disorder according to the DSM‐IV or ICD‐10, irrespective of clinical setting (inpatient, outpatient or mixed); and b) a MetS diagnosis according to non‐modified ATP‐III, ATP‐III‐A, IDF or World Health Organization standards. For a randomized control trial, we extracted the variables of interest at baseline. There were no language or time restrictions.” |
| What is the overall quality of evidence across studies in the body of evidence? | Overall, the quality of evidence supporting this measure is strong. There are almost 200 studies in the evidence review that examine the prevalence and effectiveness of cardiovascular disease monitoring for individuals with SMI, including schizophrenia. Further, the quality of studies included in the systematic review were well-designed randomized control trials and observational studies. |
| Estimates of benefit and consistency across studies in body of evidence– what are the estimates of benefits? | “Relative risk meta‐analyses established that there was no significant difference in MetS in studies directly comparing schizophrenia (39.2%, 95% CI: 30.5%‐48.3%; n = 2,338) versus bipolar disorder (35.5%, 95% CI: 27.0‐44.3%; n = 2,077) (N = 10, RR = 0.92, 95% CI: 0.79%‐1.06%; χ2 = 1.33, p = 0.24; Q = 21.3, p<0.011). Similarly, there were no differences in the study directly comparing bipolar disorder (29.2%, 95% CI: 14.5%‐46.2%; n = 137) versus major depressive disorder (34.0%, 95% CI: 19.4%‐50.3%; n = 176) (N = 4; RR = 0.87, 95% CI: 0.48‐ 1.55; χ2 = 0.21, p = 0.64; Q = 7.73, p = 0.0518). Only two studies directly compared MetS in people with schizophrenia and major depressive disorder, precluding meta‐analytic calculations…MetS prevalences were consistently elevated for each of the three diagnostic subgroups compared to the general population, and comparative meta‐analyses found no significant differences across schizophrenia, bipolar disorder and major depressive disorder.” |
| What harms were studied and how to they affect the net benefit (benefits over harm)? | No harms associated with testing were identified in the evidence reviewed. |

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**1a.4 OTHER SOURCE OF EVIDENCE**

*If source of evidence is NOT from a clinical practice guideline, USPSTF, or systematic review, please describe the evidence on which you are basing the performance measure.*

**1a.4.1** **Briefly SYNTHESIZE the evidence that supports the measure.** A list of references without a summary is not acceptable.

**2018 Submission**

The APA 2009 Guideline Watch identified a number of controlled clinical trials examining treatments to prevent or treat weight gain and metabolic changes caused by antipsychotic use. The Guideline Watch additionally cite several randomized control trials (RCTs) related to new antipsychotics used to treat schizophrenia. This report highlights research studies published since the 2004 APA Practice Guidelines for the Treatment of Patients with Schizophrenia and furthers the known link between metabolic side effects and antipsychotics used to treat schizophrenia.

**2012 Submission**

**Summary of Evidence of High Impact:** Individuals with schizophrenia are more likely than the general population to have lifestyle risk factors for cardiovascular disease and mortality (Brown, 1997; Phelan, et al., 2001; McCreadie, 2003; Osborn, et al., 2006; de Leon & Diaz, 2005; Hennekens, et al., 2005). Evidence suggests a higher prevalence of cardiovascular disease, most particularly, in younger people with schizophrenia (Bresee et al., 2010). While some evidence suggests high non-treatment rates for hyperlipidemia in patients with schizophrenia (Nasrallah, et al., 2006), patients with schizophrenia and elevated blood cholesterol levels are 25% less likely to be prescribed statins compared to the general population (Redelmeier, et al., 1998). Cardiovascular health monitoring for individuals with schizophrenia may lead to proper treatment and control of blood lipid levels.

**Directness of Evidence to the Specified Measure:** The evidence suggests that individuals with schizophrenia have a higher prevalence of cardiovascular disease due to a variety of risk factors. Monitoring of cardiovascular health for individuals with schizophrenia will lead to proper treatment, if necessary.

**Quality of Body of Evidence:** This measure is supported by prevalence studies that suggest a higher rate of cardiovascular disease in individuals with schizophrenia.

**Consistency of Results across Studies:** There is consistent evidence that shows individuals with schizophrenia have a higher prevalence of cardiovascular disease than the general population.

**Net Benefit:** Benefit: Monitoring patients with cardiovascular disease and schizophrenia may allow for proper treatment, if warranted. Cost: The monitoring exam

**1a.4.2 What process was used to identify the evidence?**

**2018 Submission**

“This watch highlights key research studies published since that date. The studies were identified by a MEDLINE literature search for meta-analyses and randomized, controlled trials published between 2002 and 2008, using the same key words used for the literature search performed for the 2004 guideline.”

**2012 Submission**

Selected individual studies (rather than entire body of evidence)

**1a.4.3.** **Provide the citation(s) for the evidence.**

**2018 Submission**

GUIDELINE WATCH: PRACTICE GUIDELINE FOR THE TREATMENT OF PATIENTS WITH SCHIZOPHRENIA; American Psychiatric Association, 2009 SEP. 10 P.

<https://psychiatryonline.org/pb/assets/raw/sitewide/practice_guidelines/guidelines/schizophrenia-watch.pdf>

**2012 Submission**

Brown S. Excess mortality of schizophrenia: a meta-analysis. Br J Psychiatry. 1997;171:502-508.

Phelan, M., Stradins, L. & Morrison, S. (2001) Physical health of people with severe mental illness. BMJ, 322, 443– 444.

McCreadie, R. The Scottish Schizophrenia lifestyle group. (2003) Diet, smoking and cardiovascular risk in people with schizophrenia: descriptive study. British Journal of Psychiatry, 183, 534–539.

Osborn, D.J., King, M.B. & Nazareth, I. (2006) Risk for coronary heart disease in people with severe mental illness: cross-sectional comparative study in primary care. Br J Psychiatry, 188, 271–277

De Leon, J. & Diaz, F.J. (2005) A meta-analysis of worldwide studies demonstrates an association between schizophrenia and tobacco smoking behaviors. Schizophr Res, 76, 135-157.

Hennekens, C.H., Hennekens, A.R., Hollar, D., Casey, D.E. (2005). Schizophrenia and increased risks of cardiovascular disease. Am Heart J, 150, 1115-1121.

Bresee, L.C., Majumdar, S.R., Patten, S.B., Johnson, J.A. (2010). Prevalence of cardiovascular risk factors and disease in people with schizophrenia: a population-based study. Schizophr Res. 2010;117:75-82.

Nasrallah H.A., Meyer J.A., Goff DC., McEvoy J.P., Davis S.M., Stroup S., Lieberman J.A. (2006). Low rates of treatment for hypertension, dyslipidemia and diabetes in schizophrenia: Data from the CATIE schizophrenia trial sample at baseline. Schizophr Res, 86, 15-22.

Redelmeier, D.A., Siew, H.T., Booth, G.L. (1998) The treatment of unrelated disorders in patients with chronic medical diseases. N Engl J Med, 160, 313-21.