

SCHIZOPHRENIA

Includes Schizoaffective Disorders

Background

This case definition was developed by the Armed Forces Health Surveillance Center (AFHSC) Medical Surveillance Monthly Report (MSMR) staff for the purpose of descriptive epidemiological reports on mental disorders and mental health problems among active duty Service members.¹ The reports provide a comprehensive look at the status of mental health in the Services and provide in depth information on numbers, rates, and trends of schizophrenia and other mental health diagnoses that fall within the range of ICD-9-CM codes 290-319 (mental disorders).

Clinical Description

Schizophrenia is a severe, frequently unremitting mental illness that involves symptoms of hallucinations, delusions, paranoia, disorganized speech, and other disorganized behavior. The etiology is unknown although genetic and environmental risk factors have been identified. Symptom onset is insidious, often beginning in adolescence and progressing until symptoms become severe enough to require medical attention. The syndrome usually significantly affects occupational and social interactions, and earlier age at onset is associated with greater morbidity.² Complete remission of the disorder is rare.

Case Definition and Incidence Rules

For surveillance purposes, a case of schizophrenia is defined as:

- *One hospitalization* with any of the defining diagnoses of schizophrenia (see ICD9 and ICD10 code lists below) in the *first or second* diagnostic position; or
- *Four outpatient medical encounters* with any of the defining diagnoses of schizophrenia (see ICD9 and ICD10 code lists below) in the *first or second* diagnostic position.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a diagnosis of schizophrenia.
- An individual is considered an incident case *once per surveillance period*.

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¹ Armed Forces Health Surveillance Center. Mental Disorders and Mental Health Problems, Active Component, U.S. Armed Forces, January 2000 – December 2009. *Medical Surveillance Monthly Report (MSMR)*. 2010 November; Vol.17 (11): 6- 12.

² Armed Forces Health Surveillance Center. Mental Health Diagnosis During the Year Prior to Schizophrenia, U.S. Armed Forces, 2001-2010. *Medical Surveillance Monthly Report (MSMR)*. 2012 March; Vol.19(3): 10-13.



Case Definition and Incidence Rules *(continued)*

Exclusions:

- Schizophrenia cases that remained in active service for more than two years after meeting the surveillance case definition.

Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Schizophrenic Disorders	F20 (Schizophrenia)	295 (Schizophrenic disorders)
	F20.0 (paranoid schizophrenia)	295.3 (paranoid type) <ul style="list-style-type: none"> - 295.30 (paranoid type, unspecified) - 295.31 (paranoid type, subchronic) - 295.32 (paranoid type, chronic) - 295.33 (paranoid type, sub-chronic with acute exacerbation) - 295.34 (paranoid type, chronic with acute exacerbation) - 295.35 (paranoid type, in remission)
	F20.1 (disorganized schizophrenia)	295.1 (disorganized type) <ul style="list-style-type: none"> - 295.10 (disorganized type, unspecified) - 295.11 (disorganized type, subchronic) - 295.12 (disorganized type, chronic) - 295.13 (disorganized type, sub-chronic with acute exacerbation) - 295.14 (disorganized type, chronic with acute exacerbation) - 295.15 (disorganized type, in remission)
F20.2 (catatonic schizophrenia)	295.2 (catatonic type) <ul style="list-style-type: none"> - 295.20 (catatonic type, unspecified) - 295.21 (catatonic type, subchronic) - 295.22 (catatonic type, chronic) - 295.23 (catatonic type, sub-chronic with acute exacerbation) 	

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		<ul style="list-style-type: none"> - 295.24 (catatonic type, chronic with acute exacerbation) - 295.25 (catatonic type, in remission)
	F20.3 (undifferentiated schizophrenia)	295.90 (below)
	F20.5 (residual schizophrenia)	295.6 (residual type) <ul style="list-style-type: none"> - 295.60 (residual type, unspecified) - 295.61 (residual type, subchronic) - 295.62 (residual type, chronic) - 295.63 (residual type, sub-chronic with acute exacerbation) - 295.64 (residual type, chronic with acute exacerbation) - 295.65 (residual type, in remission)
	F20.8 (other schizophrenia)	--
	<ul style="list-style-type: none"> - F20.81 (schizophreniform disorder) 	295.4 (schizophreniform disorder) <ul style="list-style-type: none"> - 295.40 (schizophreniform disorder, unspecified) - 295.41 (schizophreniform disorder, subchronic) - 295.42 (schizophreniform disorder, chronic) - 295.43 (schizophreniform disorder, sub-chronic with acute exacerbation) - 295.44 (schizophreniform disorder, chronic with acute exacerbation) - 295.45 (schizophreniform disorder, in remission)
	<ul style="list-style-type: none"> - F20.89 (other schizophrenia) 	295.0 (simple type) <ul style="list-style-type: none"> - 295.00 (simple type, unspecified) - 295.01 (simple type, subchronic) - 295.02 (simple type, chronic) - 295.03 (simple type, sub-chronic with acute exacerbation) - 295.04 (simple type, chronic with acute exacerbation) - 295.05 (simple type, in remission)
	<ul style="list-style-type: none"> - F20.89 (above) 	295.8 (other specified types of schizophrenia) <ul style="list-style-type: none"> - 295.80 (other specified types of schizophrenia, unspecified)
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		<ul style="list-style-type: none"> - 295.81 (other specified types of schizophrenia, subchronic) - 295.82 (other specified types of schizophrenia, chronic) - 295.83 (other specified types of schizophrenia, sub-chronic with acute exacerbation) - 295.84 (other specified types of schizophrenia, chronic with acute exacerbation) - 295.85 (other specified types of schizophrenia, in remission)
	- F20.89 (above)	295.5 (latent schizophrenia) <ul style="list-style-type: none"> - 295.50 (latent schizophrenia, unspecified) - 295.51 (latent schizophrenia, subchronic) - 295.52 (latent schizophrenia, chronic) - 295.53 (latent schizophrenia, sub-chronic with acute exacerbation) - 295.54 (latent schizophrenia, chronic with acute exacerbation) - 295.55 (latent schizophrenia, in remission)
	F20.9 (schizophrenia, unspecified)	295.9 (unspecified schizophrenia) <ul style="list-style-type: none"> - 295.90 (unspecified schizophrenia, unspecified) - 295.91 (unspecified schizophrenia, subchronic) - 295.92 (unspecified schizophrenia, chronic) - 295.93 (unspecified schizophrenia, sub-chronic with acute exacerbation) - 295.94 (unspecified schizophrenia, chronic with acute exacerbation) - 295.95 (unspecified schizophrenia, in remission)
Schizoaffective disorders	F25 (schizoaffective disorders)	295.7 (schizoaffective disorder)
	F25.0 (schizoaffective disorder, bipolar type)	295.70 (below)
	F25.1 (schizoaffective disorder, depressive type)	295.70 (below)
	F25.8 (other schizoaffective disorders)	295.70 (below)
	F25.9 (schizoaffective disorder, unspecified)	295.7 (schizoaffective disorder)
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		<ul style="list-style-type: none"> - 295.70 (schizoaffective disorder, unspecified) - 295.71 (schizoaffective disorder, subchronic) - 295.72 (schizoaffective disorder, chronic) - 295.73 (schizoaffective disorder, subchronic with acute exacerbation) - 295.74 (schizoaffective disorder, chronic with acute exacerbation) - 295.75 (schizoaffective disorder, in remission)
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Development and Revisions

This case definitions described was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses. The most recent is used in a MSMR article on schizophrenia among active duty Service members² and for routine mental health reports that include schizophrenia¹.

- In October of 2016, to be consistent with other AFHSC mental health conditions, the case definition was updated to require the medical encounters be in the *first or second* diagnostic position only as opposed to *any* diagnostic position. Analyses done in 2012 comparing the two case definitions showed a difference of 181 case over a ten year period.
- In January of 2015 the case definition was updated to include ICD10 codes.
- In March of 2012 the case definition was updated to require *one hospitalization or four outpatient medical encounters* in *any* diagnostic position. The criterion of *one outpatient medical encounter in a psychiatric or mental health care specialty setting* was removed.
- The original case definition was developed in November of 2010 by the AFHSC Medical Surveillance Monthly Report (MSMR) staff for the purpose of descriptive epidemiological reports on mental disorders and mental health problems among active component service members. The definition used the following case finding criteria: *One inpatient medical encounter* with any of the defining diagnoses of schizophrenia in the *first or second* diagnostic position; or *Two outpatient medical encounters, within 180 days* of each other, with any of the defining diagnoses of schizophrenia in the *first or second* diagnostic position; or *One outpatient medical encounter in a psychiatric or mental health care specialty setting*, defined by Medical Expense and Performance Reporting System (MEPRS) code BF, with any of the defining diagnoses of schizophrenia in the *first or second* diagnostic position.

Case Definition and Incidence Rule Rationale

- This case definition requires four outpatient encounters to define a case. Exploratory analysis of the Defense Medical Surveillance System (DMSS) data revealed that individuals hospitalized with schizophrenia have multiple follow-up visits. The assumption was made, on a population level, that individuals initially diagnosed in an outpatient setting would have similar numbers of follow-up visits as those diagnosed in an inpatient setting. Analysis showed that individuals with at least four outpatient encounters had numbers of follow-up visits similar to most inpatients, thus yielding optimal specificity.³

³ Detailed information on this analysis is available through AFHSC MSMR staff; reference DMSS Request# R120079 (schizophrenia among active component – case definition update), 2012.



- *Exclusions:* Schizophrenia cases that remained in active service for more than two years after meeting the surveillance case definition were assumed to be misdiagnosed and excluded from the analysis. Experts from the Department of Psychiatry at the Uniformed Services University of Health Sciences (USUHS) consulted during the development of this case definition believed that an individual with schizophrenia would not be able to remain in active service and would be inevitably separated. Millikan and colleagues also reported that the median time between diagnosis of schizophrenia and medical evaluation board (MEB) was 1.6 years and the median time between MEB and discharge from service was an additional 4 months.⁴ Thus, a period of two years was used.

Code Set Determination and Rationale

- The code set and groupings of mental health disorder-specific diagnoses used in this case definition are based on code sets developed by the Agency for Healthcare Research and Quality (AHRQ).⁵ The final code set was selected after a review of the scientific literature and of the relevant codes in the International Classification of Diseases, 9th Revision.

Reports

AFHSC reports on schizophrenia in the following reports:

- Periodic MSMR articles on mental disorders and associated hospitalizations, outpatient medical encounters, and post-deployment illnesses. For periodic MSMR articles “Mental Disorders and Mental Health Problems, Active Component, US Armed Forces” schizophrenia is reported separately from psychoses using this case definition.
- Annually: MSMR article on the “Absolute and relative morbidity burdens attributable to various illnesses and injuries U.S. Armed Forces” (see *Comments* section below).

Review

Jan 2015	Case definition reviewed and updated by the AFHSC Surveillance Methods and Standards (SMS) working group.
July 2012	Case definition reviewed and adopted by AFHSC Surveillance Methods and Standards working group.
Nov 2010	Case definition developed and reviewed by AFHSC MSMR staff.

Comments

Burden of Disease Reports: AFHSC articles and reports on the “burden” of illness and injury in the U.S. Armed Forces group all illness and injury-specific diagnoses, defined by ICD-9-CM codes, into 139 burden of disease-related conditions and 25 categories based on a modified version of the classification system developed for the Global Burden of Disease (GBD) Study.⁶ In general, the GBD system groups diagnoses with common pathophysiologic or etiologic bases and/or significant international health policymaking importance.

⁴ Millikan AM, Weber NS, Niebuhr DW, et al. Evaluation of data obtained from military disability medical administrative databases for service members with schizophrenia or bipolar disorder. *Mil Med.* Oct 2007;172(10):1032-1038.

⁵ Agency for Healthcare Research and Quality website.

<http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp>; last accessed July 2012.

⁶ The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Murray, CJ and Lopez, AD, eds. Harvard School of Public Health (on behalf of the World Health Organization and The World Bank), 1996:120-2.



The AFHSC disaggregates some diagnoses that are grouped into single categories in the GBD system (e.g., mental disorders) to increase the military relevance of the results. The category of mental health disorders is separated into the following sub-categories of “disorders”: anxiety, substance abuse, adjustment, mood, tobacco dependence, psychotic, personality, somatoform, and all other mental disorders.⁷ For the purposes of the burden analysis, schizophrenia is grouped under psychotic disorders. ICD9 codes 293.82 and 293.81 are not included in the psychotic category. They are grouped in the “All other mental disorders” category.

Because reports on disease burden are based on the total number of medical encounters for a specific condition, a slightly different case definition is used for these analyses. The case definition requires only “one inpatient or outpatient medical encounter with any defining ICD9 codes between 001 and 999” and uses the diagnosis in the *primary* diagnostic position only. An individual is allowed one medical encounter per condition per day.

⁷ Armed Forces Health Surveillance Center. Absolute and Relative Morbidity Burdens Attributable to Various Illnesses and Injuries, U.S. Armed Forces, 2011. *Medical Surveillance Monthly Report (MSMR)*. 2012 April; Vol.19 (4): 4-9.

