

SCHIZOPHRENIA

Includes Schizoaffective Disorders

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) 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 personality disorders and other mental health diagnoses.

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 a case defining diagnosis of schizophrenia (see ICD9 and ICD10 code lists below) in the *first or second* diagnostic position; or
- *Four outpatient medical encounters* with a case defining diagnosis 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 lifetime*.

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¹ Armed Forces Health Surveillance Branch. Mental health disorders and mental health problems, active component, U.S. Armed Forces, 2007-2016. *Medical Surveillance Monthly Report (MSMR)*. March 2018; Vol.25 (3): 2- 11.

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	<i>F20 (schizophrenia)</i>	<i>295 (schizophrenic disorders)</i>
	F20.0 (paranoid schizophrenia)	295.3 (paranoid type ...) - 295.30 (unspecified) - 295.31 (subchronic) - 295.32 (chronic) - 295.33 (sub-chronic with acute exacerbation) - 295.34 (chronic with acute exacerbation) - 295.35 (in remission)
	F20.1 (disorganized schizophrenia)	295.1 (disorganized type ...) - 295.10 (unspecified) - 295.11 (subchronic) - 295.12 (chronic) - 295.13 (sub-chronic with acute exacerbation) - 295.14 (chronic with acute exacerbation) - 295.15 (in remission)
	F20.2 (catatonic schizophrenia)	295.2 (catatonic type ...) - 295.20 (unspecified) - 295.21 (subchronic) - 295.22 (chronic) - 295.23 (sub-chronic with acute exacerbation) - 295.24 (chronic with acute exacerbation) - 295.25 (in remission)
		<i>(continued on next page)</i>



	F20.3 (undifferentiated schizophrenia)	295.90 (below)
	F20.5 (residual schizophrenia)	295.6 (residual type ...) - 295.60 (unspecified) - 295.61 (subchronic) - 295.62 (chronic) - 295.63 (sub-chronic with acute exacerbation) - 295.64 (chronic with acute exacerbation) - 295.65 (in remission)
	<i>F20.8 (other schizophrenia)</i>	--
	- F20.81 (schizophreniform disorder)	295.4 (schizophreniform disorder ...) - 295.40 (unspecified) - 295.41 (subchronic) - 295.42 (chronic) - 295.43 (sub-chronic with acute exacerbation) - 295.44 (chronic with acute exacerbation) - 295.45 (in remission)
	- F20.89 (other schizophrenia)	295.0 (simple type ...) - 295.00 (unspecified) - 295.01 (subchronic) - 295.02 (chronic) - 295.03 (sub-chronic with acute exacerbation) - 295.04 (chronic with acute exacerbation) - 295.05 (in remission)
	- F20.89 (above)	295.8 (other specified types of schizophrenia ...) - 295.80 (unspecified) - 295.81 (subchronic) - 295.82 (chronic) - 295.83 (sub-chronic with acute exacerbation) - 295.84 (chronic with acute exacerbation) - 295.85 (in remission) <i>(continued on next page)</i>

	- F20.89 (above)	295.5 (latent schizophrenia ...) - 295.50 (unspecified) - 295.51 (subchronic) - 295.52 (chronic) - 295.53 (sub-chronic with acute exacerbation) - 295.54 (chronic with acute exacerbation) - 295.55 (in remission)
	F20.9 (schizophrenia, unspecified)	295.9 (unspecified schizophrenia ...) - 295.90 (unspecified) - 295.91 (subchronic) - 295.92 (chronic) - 295.93 (sub-chronic with acute exacerbation) - 295.94 (chronic with acute exacerbation) - 295.95 (in remission)
Schizoaffective disorders	<i>F25 (schizoaffective disorders)</i>	295.7 (schizoaffective disorder ...)
	- F25.0 (schizoaffective disorder, bipolar type)	- 295.70 (unspecified) - 295.71 (subchronic)
	- F25.1 (schizoaffective disorder, depressive type)	- 295.72 (chronic)
	- F25.8 (other schizoaffective disorders)	- 295.73 (sub-chronic with acute exacerbation)
	- F25.9 (schizoaffective disorder, unspecified)	- 295.74 (chronic with acute exacerbation) - 295.75 (in remission)

Development and Revisions

- In January of 2015 the case definition was updated to include ICD10 codes.
- 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 case defining diagnosis of schizophrenia in the *first or second* diagnostic position; or
 - *Two outpatient medical encounters, within 180 days* of each other, with any of the case defining diagnosis 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

- In October of 2016, to be consistent with other AFHSB 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 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.
- 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
- *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.
- For the purposes of counting new incident cases, AFHSB uses a *once per lifetime* incidence rule unless a specific timeframe is otherwise specified, (e.g., individuals may be counted as an incident case *once every 365 days*). Historically, a *once per surveillance period* incidence rule was used due to limited data in the Defense Medical Surveillance System (DMSS).

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

AFHSB reports on schizophrenia in the following reports:

- Periodic *MSMR* articles on mental disorders and associated hospitalizations, outpatient medical encounters, and post-deployment illnesses.

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

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.



- 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

May 2019	Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group.
Jan 2016	Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group
Sep 2012	Case definition reviewed and adopted by AFHSC Surveillance Methods and Standards (SMS) working group.
Nov 2010	Case definition developed and reviewed by AFHSC <i>MSMR</i> staff.

Comments

Burden of Disease Reports:

AFHSB 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 ICD9 and ICD10 codes, into 142 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.

The AFHSB 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

Because reports on disease burden are based on the total numbers of medical encounters for specific conditions, a slightly different case definition is used for burden analyses. The case definition requires capturing only the diagnosis in the primary (first) diagnostic position of each record of an inpatient or outpatient medical encounter. Each individual is allowed only one medical encounter per condition per day, and inpatient encounters are prioritized over outpatient encounters on the same day. Case defining codes are any ICD9 codes between 001 and 999, any ICD10 codes between A00 and T88, ICD10 codes beginning with Z37 (outcome of delivery), and DoD unique personal history codes DoD 0101-0105.

Comprehensive AFHSB Mental Health Reports:

For analyses and reports requiring data on *all* mental disorders, AFHSB includes *all* mental health diagnoses that fall within the range of ICD9 codes 290-319 / ICD10 codes F01-F99 (mental disorders) in the first or second diagnostic position. The following diagnoses are excluded from the analysis.

- Codes ICD9 310.2 / ICD10 F07.81 (post-concussion syndrome)

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.

⁷ Armed Forces Health Surveillance Branch. Absolute and relative morbidity burdens attributable to various illnesses and injuries, active component, *Medical Surveillance Monthly Report (MSMR)*. May 2018; Vol.25 (5): 2-9.



- Codes ICD9 305.1 / ICD10 F17* (tobacco use disorder / nicotine dependence) is not included as tobacco-cessation efforts are widespread within primary care clinics in the military and this diagnosis is not treated as a mental health disorder.
- Codes ICD9 317*-319* / ICD10 F70-F79 (mental retardation)
- Codes ICD9 315* / ICD10 F80*-F82*, F88-F89 (specific delays in development)
- Codes ICD9 299* / ICD10 F84* (pervasive developmental disorders)

