

VIReC Database & Methods Cyberseminar Series

A Practical Guide to Using Mental Health Assistant Data: The CDW Mental Health Domain

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Agenda

- What is the Mental Health Domain?
 - Source of data
- What data are available in the Mental Health domain?
 - Included measures
 - Available data elements
 - Data extraction issues
- How can the data be used?
 - Data limitations and challenges
- Research example
- Helpful resources

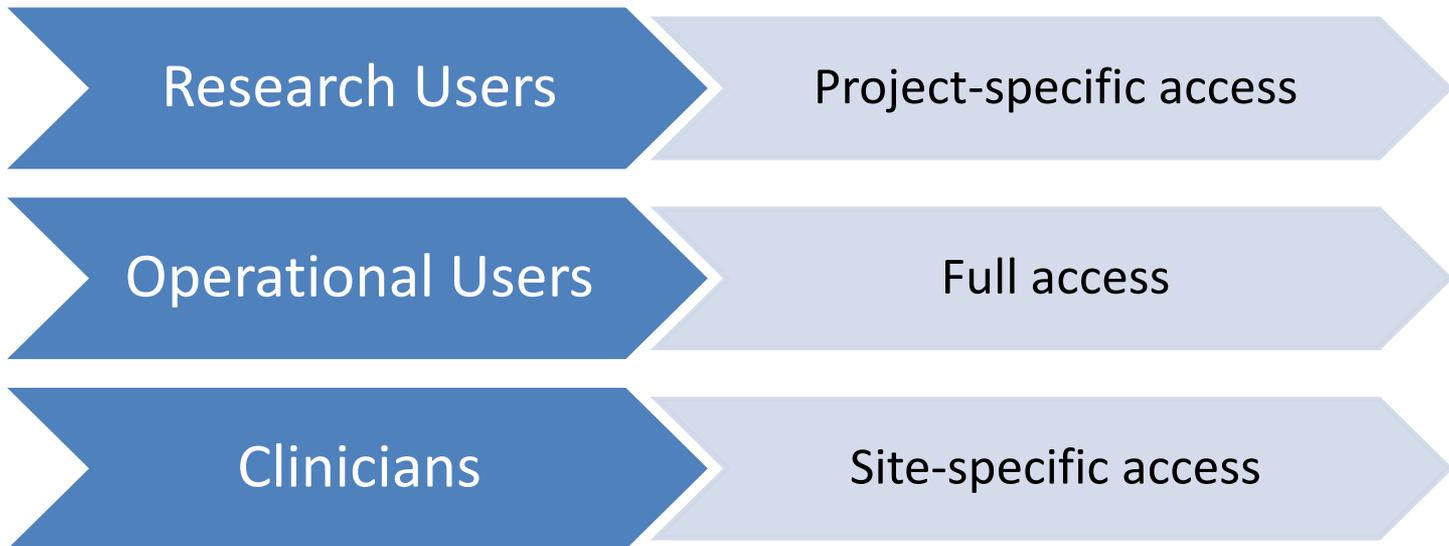
Poll Question #1

What best describes your role as a user of the CDW Mental Health Domain?

- Researcher
- Clinician
- Administrator/ Policymaker
- Quality improvement
- Other (including non-VA)

Presentation Focus

Information presented is relevant to:



Poll Question # 2

Have you ever used the CDW Mental Health Domain data?

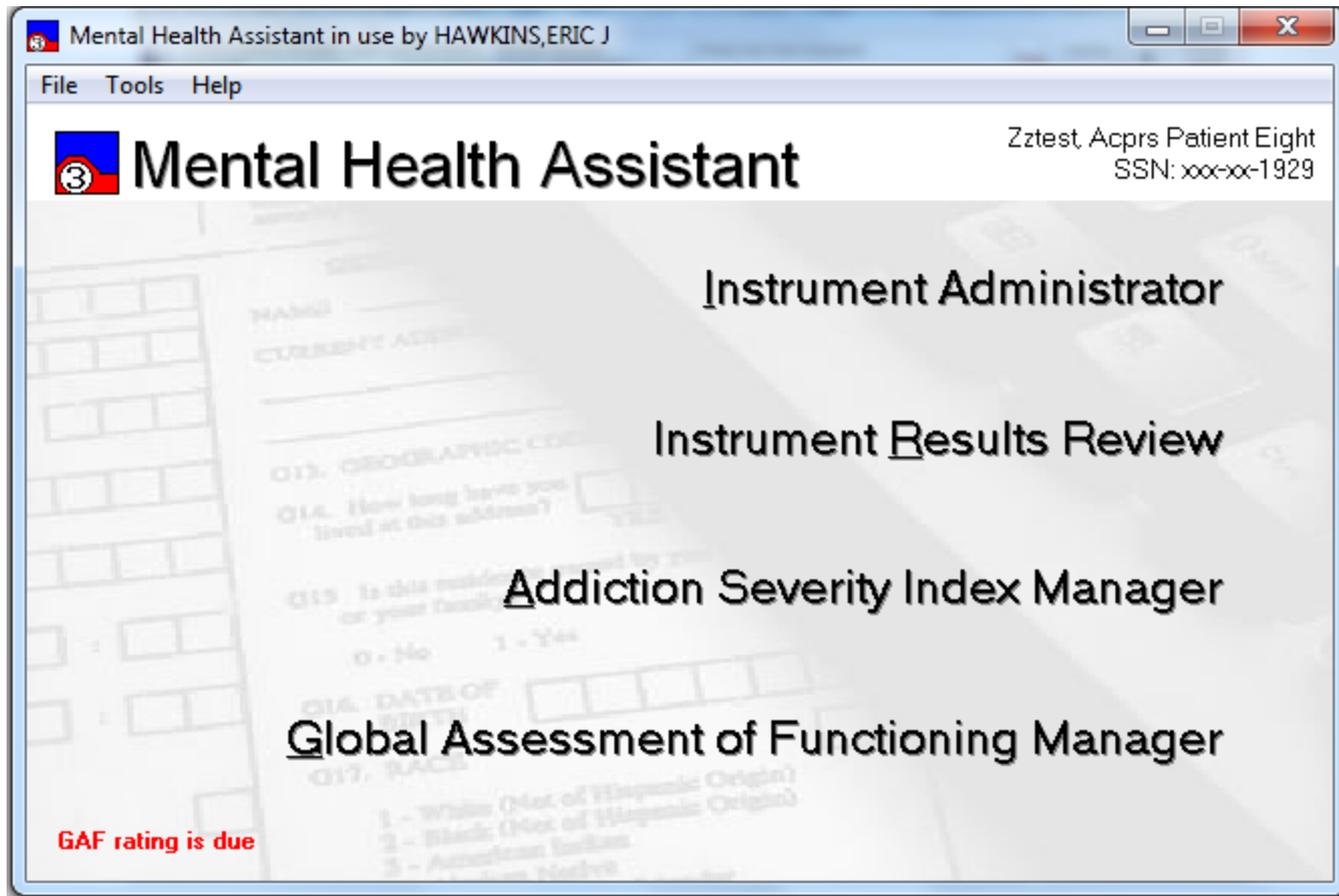
- Yes
- No

WHAT IS THE CORPORATE DATA WAREHOUSE (CDW) MENTAL HEALTH DOMAIN?

CDW Mental Health Domain

- Information related to mental health assessments and assessment instruments
 - Typically completed as part of standard clinical care
- Collected via the Mental Health Assistant
- VINCI documentation indicates
 - Entry of information began October 2007 by some regions
 - Information from all 4 regions occurred in March 2011
 - Earlier data collected via health factors in some cases (PHQ-2, PC PTSD Screen, AUDIT-C)

Mental Health Assistant Software



Mental Health Assistant Software

- Source: information collected via the Mental Health Assistant in CPRS
 - Released in 2002
 - Graphical user interface for the Mental Health testing package
 - Provides secure computer environment for patient administered testing
- Information also collected via clinical reminders and dialogue templates
 - Includes instruments associated with annual screening in VA
 - AUDIT-C, PHQ-2, PC-PTSD

Mental Health Assistant Administrator

 Instrument Administrator

Instruments Ordered By: **HAWKINS, ERIC J**

Interviewer: HAWKINS, ERIC J

Date of Administration: 8/16/2016

Visit Location: Pug Mhs At Cesate Ind

Link With Consult (Optional):

Instructions:

Available Instruments and Batteries:

Show: All

-  **SUD_Battery**
-  AAQ-2
-  AIMS
-  ASSIST
-  ATQ
-  AUDC
-  AUDIT
-  AUIR
-  BAI
-  BAM
-  BAM-C
-  BAM-HOP
-  BAM-R
-  BARTHEL INDEX
-  BASIS-24
-  BDI2
-  BHS
-  BOMC
-  BPRS
-  BRADEN SCALE
-  BSI
-  BSI18
-  BUSS
-  CAGE
-  CDR
-  CESD
- CESD

Clinical Reminder

Reminder Resolution: Alcohol Use Screening

A standardized tool to screen for hazardous or problem drinking should be administered to all patients. The AUDIT-C is a sensitive tool for identifying those patients who may be at risk of problems due to drinking. The risk of being alcohol dependent and experiencing problems due to drinking increases as AUDIT-C scores increase. AUDIT-C screening questions should be asked verbatim, in private setting and with a nonjudgmental manner.

AUD-C

Perform AUDC

Unable to S

Due to A

Refused

PROVIDER scored 'severe

patient factor

Clear

Cancel

AUDC: ZZTEST,ACPRS PATIENT EIGHT

Please read each item carefully and select the correct answer for you.

1. How often did you have a drink containing alcohol in the past year?

- 1. Never
- 2. Monthly or less
- 3. Two to four times a month
- 4. Two to three times per week
- 5. Four or more times a week

2. How many drinks containing alcohol did you have on a typical day when you were drinking in the past year?

- 1. 0 drinks
- 2. 1 or 2
- 3. 3 or 4

Use speed tab

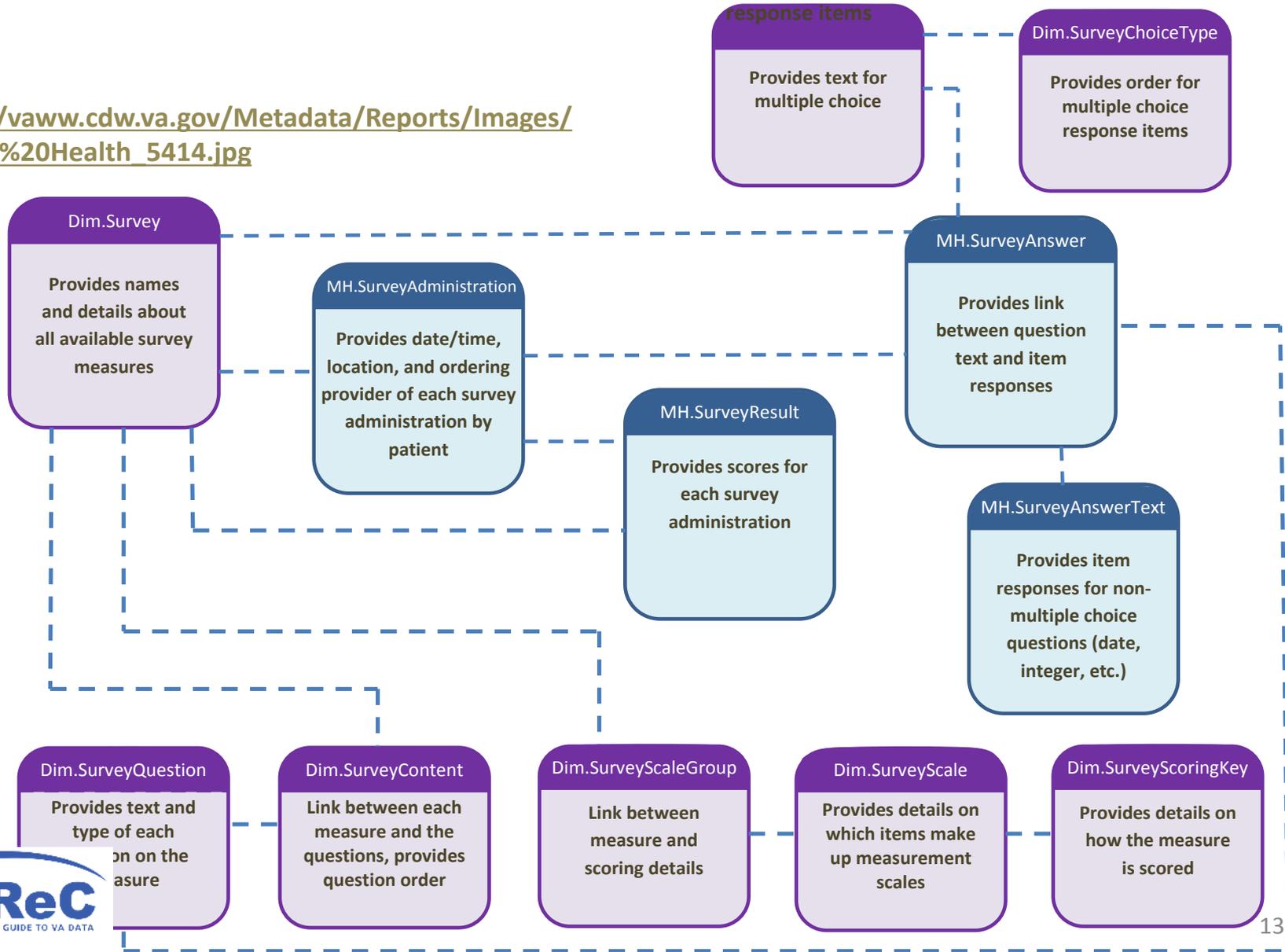
Hint: Use the number key of the item to speed data entry.

WHAT DATA ARE IN THE CDW MENTAL HEALTH DOMAIN?

Tables in the CDW

Mental Health Domain

https://vaww.cdw.va.gov/Metadata/Reports/Images/Mental%20Health_5414.jpg



Available Measures

Query the Dim.Survey domain table for list of measures

- May be multiple versions of the same measure

Over 200 measures listed

- Administration data available on 97 measures

The screenshot shows a SQL Server Enterprise Manager interface. On the left, a tree view displays the 'Dim.Survey' table structure with columns such as SurveySID, SurveyIEN, Sta3n, SurveyName, Operational, HasBeenOperationalFlag, RequiresLicenseFlag, Purpose, NormSample, TargetPopulation, EnteredBy, EntryDateTime, LastEditedBy, LastEditDateTime, PrintTitle, Version, Author, Publisher, PublicationDateTime, Reference, APrivilege, RPrivilege, IsNationalTestFlag, LicenseCurrentFlag, CopyrightText, RequiresSignatureFlag, IsLegacyFlag, SubmitToNationalDBFlag, IsCopyrightedFlag, WriteFullTextFlag, DaysToRestart, ETLBatchID, VistaCreateDate, and VistaEditDate.

The main window displays a SQL query:

```
SELECT distinct [SurveyName]
, [PrintTitle]
FROM [CDMWork].[Dim].[Survey]
order by [SurveyName]
```

The results pane shows a table with two columns: SurveyName and PrintTitle. The results are as follows:

SurveyName	PrintTitle
13 ASSIST	The Alcohol, Smoking and Substance Involvement Screening Test
14 ASSIST NIDA	Alcohol Smoking and Substance Involvement Screening - NIDA modified version
15 ATQ	Automatic Thoughts Questionnaire
16 AUDC	Alcohol Use Disorders Identification Test Consumption
17 AUDCR	NULL
18 AUDIT	Alcohol Use Disorders Identification Test
19 AUIR	Alcohol Use Inventory (Revised)
20 BAI	Beck Anxiety Inventory
21 BAM	Brief Addiction Monitor
22 BAM-C	Brief Addiction Monitor - Consumption Items
23 BAM-IOP	Brief Addiction Monitor - IOP version
24 BAM-R	Brief Addiction Monitor - Revised
25 BARTHEL INDEX	Barthel Index of Activities of Daily Living
26 BASIS-24	Behavior and Symptom Identification Scale - 24
27 BASIS-R	Behavior and Symptom Identification Scale - Revised
28 BDI	Beck Depression Inventory
29 BDI2	Beck Depression Inventory--Second Edition
30 BECK	-- BECK DEPRESSION SCALE --
31 BHS	Beck Hopelessness Scale
32 BOMC	The Six-Item Blessed Orientation-Memory-Concentration Test
33 BPRS	Brief Psychiatric Rating Scale
34 BRADEN SCALE	Braden Scale for Predicting Pressure Ulcer Risk
35 BRS	Brief Resiliency Scale
36 BSI	Beck Scale for Suicide Ideation
37 BSI18	Brief Symptom Inventory 18
38 BSL-23	Borderline Symptom List 23
39 BUSS	Buss-Durke Hostility Inventory
40 CAGE	CAGE
41 CAM	Confusion Assessment Method
42 CCSA-DSM5	Cross-Cutting Symptom Assessment for DSM-5
43 CDR	Clinical Dementia Rating

Measure Administrations

- Some measures rarely administered or used by few sites
- Others frequently used by all sites – PTSD Screen, PHQ-2, AUDIT-C
 - AUDIT-C: most administered, all sites using
 - Brief Addiction Monitor:
 - fewer administrations
 - not all sites using
 - need to account for different versions of the measure

	SurveyName	PrintTitle	CountSta3n	TotalAdministrations
1	DOM80	Depression Outcome Module 8.0	3	14
2	ISMI	Internalized Stigma of Mental Illness Inventory	3	28
3	RLOC	Rotter Locus of Control	5	12
4	DOMG	Depression Outcomes Module: Geriatric Screen	7	20
5	MHLB	Multidimensional Health Locus of Control: Form B	7	34
6	HLOC	Health Locus of Control Scale	8	26
7	SSF	Status of Suicide Form	8	65
8	CDR	Clinical Dementia Rating	10	21
9	GPCOG	General Practitioner Assessment of Cognition	10	23
10	STMS	Short Test of Mental Status	11	18
11	VALD	Validity Scale	11	20
12	BARTHEL INDEX	Barthel Index of Activities of Daily Living	11	24
13	NEO-PI-3	NEO Personality Inventory-3	22	97
14	WHYMPI	West Haven-Yale Multidimensional Pain Inventory	29	79
15	BAM-IOP	Brief Addiction Monitor - IOP version	39	6038
16	BAM-C	Brief Addiction Monitor - Consumption Items	47	625
17	BAM-R	Brief Addiction Monitor - Revised	51	10255
18	BAM	Brief Addiction Monitor	117	68673
19	AUDIT	Alcohol Use Disorders Identification Test	126	14199
20	BAI	Beck Anxiety Inventory	126	26397
21	AIMS	Abnormal Involuntary Movement Scale	127	174044
22	PCLM	PTSD Checklist M	129	33434
23	BDI2	Beck Depression Inventory--Second Edition	130	59743
24	PCLC	PTSD Checklist C	130	171157
25	PHQ9	Patient Health Questionnaire Depression Scale	130	657226
26	PC PTSD	Primary Care PTSD Screen	130	1786872
27	PHQ-2	Patient Health Questionnaire-2	130	4287481
28	AUDC	Alcohol Use Disorders Identification Test Consumption	130	5322591

Administrations of Selected Measures

Survey Name	Title	2015	2014	2013	2012	2011	2010	2009	2008
AUDC	Alcohol Use Disorders Identification Test-C	5,237,680	5,100,471	4,835,281	4,854,579	4,877,203	4,808,024	4,580,434	3,766,025
PHQ-2	Patient Health Questionnaire-2	4,217,074	4,175,717	4,041,059	4,025,075	4,008,732	3,947,290	3,738,477	2,831,044
PC PTSD	Primary Care PTSD Screen	1,779,721	1,840,999	1,960,029	2,397,325	1,901,788	1,587,516	1,417,361	1,023,717
PCLC	PTSD Checklist C	184,361	201,072	209,724	186,831	157,005	132,803	56,651	44,792
PCLM	PTSD Checklist M	38,231	53,185	72,703	59,599	45,014	32,863	21,409	8,483
CIWA-AR	Clinical Institute Withdrawal Assessment - Alcohol Revised	90,088	52,155	24,190	7,604	1		1	
GAD-7	Generalized Anxiety Disorder, 7 items	71,429	36,321	23,407	5,983	9	1		
BAM	Brief Addiction Monitor	70,603	74,584	78,514	27,257	193			1
BAM-R	Brief Addiction Monitor - Revised	7,867	4,313	66					

- The dates of data availability are measure dependent
- Consistent data for long-standing measures (AUD-C, PHQ2, PTSD Screen) starting in 2008
- Other measures available for fewer years/select cohorts

Know the Data!

QUESTIONS TO CONSIDER

Why was the data collected?

Associated with performance measures/metrics?

How was the data collected?

Was it systematic?
National clinical reminders or local initiatives?

Is the timing of the data important?

Did VA quality initiatives influence data collection?

Did changes to data collection occur over time?

Main Tables Mental Health Domain

SurveyAdministration joins to other tables in the MH Domain and other CDW Domains

- Patient details, location, ordering provider

MH.SurveyAdministration	
SurveyAdministrationSID (PK)	int
SurveyAdministrationIEN	varchar(50)
SurveyIEN	varchar(50)
SurveySID (FK)	int
SurveyName	varchar(50)
Sta3n	smallint
PatientsID (FK)	int
TransmissionStatus	varchar(50)
TransmissionTime	smalldatetime
LocationSID (FK)	int
SurveyGivenDateTime	smalldatetime
SurveySavedDateTime	smalldatetime
OrderedBySID (FK)	int
AdministeredBySID (FK)	int
IsSignedFlag	char(1)
IsCompleteFlag	char(1)
NumberOfQuestionsAnswered	smallint
FileManFileName: 601.84	
FileManFileName: MH ADMINISTRATIONS	

MH.SurveyResult	
SurveyResultSID (PK)	int
SurveyResultIEN	varchar(50)
Sta3n	smallint
SurveyAdministrationIEN	varchar(50)
SurveyAdministrationSID (FK)	int
PatientsID (FK)	int
SurveySID (FK)	int
SurveyName	varchar(50)
SurveyGivenDateTime	smalldatetime
SurveyScale	varchar(99)
RawScore	smallint
TransformedScore1	varchar(50)
TransformedScore2	varchar(50)
TransformedScore3	varchar(50)
FileManFileName: 601.92	
FileManFileName: MH RESULTS	

MH.SurveyAnswer	
SurveyAnswerSID (PK)	bigint
SurveyAnswerIEN	varchar(50)
Sta3n	smallint
SurveyAdministrationSID (FK)	int
PatientsID (FK)	int
SurveySID (FK)	int
SurveyName	varchar(50)
SurveyGivenDateTime	smalldatetime
SurveyQuestionSID (FK)	int
SurveyChoiceSID (FK)	int
FileManFileName: 601.85	
FileManFileName: MH ANSWERS	

MH.SurveyAnswerText	
SurveyAnswerTextSID (PK)	bigint
SurveyAnswerTextIEN	varchar(50)
SurveyAnswerSID (FK)	bigint
SurveyAnswerIEN	varchar(50)
Sta3n	smallint
PatientsID (FK)	int
SurveyGivenDateTime	smalldatetime
SurveyAnswerText	varchar(8000)
FileManFileName: 601.853	
FileManFileName: ANSWERS	

Main Tables Continued

Joining SurveyAdministration and SurveyResult tables provides administration details and raw scores

- May be adequate but check the data! (we'll run through an example)
- Survey Answer table joins to item level responses

MH.SurveyAdministration	
SurveyAdministrationSID (PK)	int
SurveyAdministrationIEN	varchar(50)
SurveyIEN	varchar(50)
SurveySID (FK)	int
SurveyName	varchar(50)
Sta3n	smallint
PatientSID (FK)	int
TransmissionStatus	varchar(50)
TransmissionTime	smalldatetime
LocationSID (FK)	int
SurveyGivenDateTime	smalldatetime
SurveySavedDateTime	smalldatetime
OrderedBySID (FK)	int
AdministeredBySID (FK)	int
IsSignedFlag	char(1)
IsCompleteFlag	char(1)
NumberOfQuestionsAnswered	smallint
FileManFileNumber: 601.84	
FileManFileName: MH ADMINISTRATIONS	

MH.SurveyResult	
SurveyResultSID (PK)	int
SurveyResultIEN	varchar(50)
Sta3n	smallint
SurveyAdministrationIEN	varchar(50)
SurveyAdministrationSID (FK)	int
PatientSID (FK)	int
SurveySID (FK)	int
SurveyName	varchar(50)
SurveyGivenDateTime	smalldatetime
SurveyScale	varchar(99)
RawScore	smallint
TransformedScore1	varchar(50)
TransformedScore2	varchar(50)
TransformedScore3	varchar(50)
FileManFileNumber: 601.92	
FileManFileName: MH RESULTS	

MH.SurveyAnswer	
SurveyAnswerSID (PK)	bigint
SurveyAnswerIEN	varchar(50)
Sta3n	smallint
SurveyAdministrationSID (FK)	int
PatientSID (FK)	int
SurveySID (FK)	int
SurveyName	varchar(50)
SurveyGivenDateTime	smalldatetime
SurveyQuestionSID (FK)	int
SurveyChoiceSID (FK)	int
FileManFileNumber: 601.85	
FileManFileName: MH ANSWERS	

MH.SurveyAnswerText	
SurveyAnswerTextSID (PK)	bigint
SurveyAnswerTextIEN	varchar(50)
SurveyAnswerSID (FK)	bigint
SurveyAnswerIEN	varchar(50)
Sta3n	smallint
PatientSID (FK)	int
SurveyGivenDateTime	smalldatetime
SurveyAnswerText	varchar(8000)
FileManFileNumber: 601.853	
FileManFileName: ANSWERS	

Example of scoring challenges

AUDIT CONSUMPTION QUESTIONNAIRE (AUDIT-C)

AUDIT Consumption Questionnaire (AUDIT-C)

- Alcohol Use Disorders Identification Test (AUDIT)
 - 10-item questionnaire developed by World Health Organization
 - Alcohol consumption, drinking behaviors and alcohol-related problems
- AUDIT-C represents the alcohol consumption questions of the AUDIT
 - Valid screener for alcohol misuse

AUDIT-C

- 1. Frequency:** How often did you have a drink containing alcohol in the past year? (0-4 points)
- 2. Quantity:** How many drinks did you have on a typical day when you were drinking in the past year? (0-4 points)
- 3. Heavy Drinking Episodes:** How often did you have 6 or more drinks on one occasion in the past year?(0-4 points)

Scoring: Total AUDIT-C score 0-12

Prior to 2008

Adopted in 2004 for alcohol screening

Used to screen drinkers only (2004-2008)

- AUDIT-C data not reliably available for non-drinkers

2008 to present

All patients asked question 1 of AUDIT-C

If patient reports 'never' to question 1

- Responses to questions 2-3 automatically entered

Clinical reminder for AUDIT-C standardized across VA

History of the AUDIT-C in VA

AUDIT-C Data Collection

AUDIT-C
systematically
collected via
a national
clinical
reminder

Reminder Resolution: Alcohol Use Screening

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PROVIDER scored 'severe

patient factor

Clear

Cancel

AUDC: ZZTEST,ACPRS PATIENT EIGHT

Please read each item carefully and select the correct answer for you.

1. How often did you have a drink containing alcohol in the past year?

1. Never

2. Monthly or less

3. Two to four times a month

4. Two to three times per week

5. Four or more times a week

2. How many drinks containing alcohol did you have on a typical day when you were drinking in the past year?

1. 0 drinks

2. 1 or 2

3. 3 or 4

Quit Use speed tab

Hint: Use the number key of the item to speed data entry.

Done

Relying on the Raw Score

Relying on the raw score in the SurveyResult Table may result in invalid total scores

- Appears to be more of a problem with older measures
- May be caused by incorrect questions/response options at some sites

Range on
the AUDIT-C
is 0 to 12



SurveyName	RawScore
AUDC	0
AUDC	1
AUDC	2
AUDC	3
AUDC	4
AUDC	5
AUDC	6
AUDC	7
AUDC	8
AUDC	9
AUDC	10
AUDC	11
AUDC	12
AUDC	13
AUDC	14
AUDC	15
AUDC	16
AUDC	17
AUDC	18
AUDC	19
AUDC	20
AUDC	22
AUDC	24
AUDC	25
AUDC	28
AUDC	29
AUDC	30
AUDC	32
AUDC	35
AUDC	36
AUDC	39
AUDC	57

Relying on the Raw Score

Invalid entries will have a score in the SurveyResult table

- Need to pull item level responses to determine validity

Raw Score	Question 1 Frequency Any Use	Question 2 Quantity	Question 3 Frequency 6+ Drinks
0	Never	Not asked (due to responses on other questions)	Not asked (due to responses on other questions)
4	4 or more times a week	Not asked (due to responses on other questions)	Not asked (due to responses on other questions)
4	2 to 3 times per week	3 or 4	Skipped
3	Skipped	3 or 4	Monthly
7	4 or more times a week	7 to 9	Never
5	Never	3 or 4	Daily or almost daily

OK

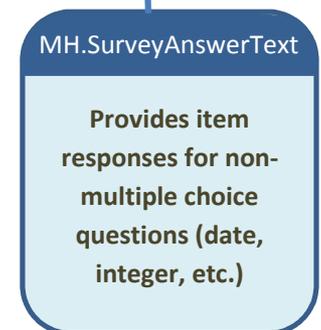
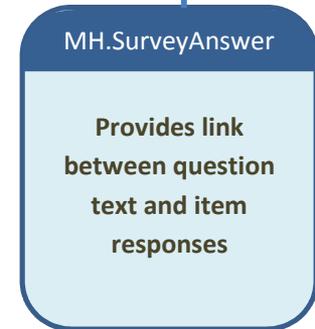
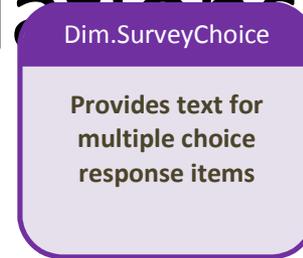
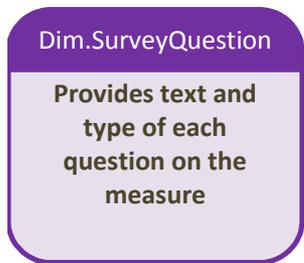
Should not be scored

May want to exclude

Scoring Recommendations

- Reliability of the raw score varies by measure, date of administration, and site
 - Older measures tend to have more noise
- Recommend using responses to individual items of measures to calculate total scores
 - You'll use the SurveyAnswer table to join:
 1. question text
 2. multiple choice answer text
 3. free answer text

(We'll run through an example below)



Obtaining item level responses

BRIEF ADDICTION MONITOR (BAM)

History of the BAM in VA

- Initially implemented in 2012
- VA specialty-care addiction programs **encouraged but not required** to administer at baseline and follow-up
- Designed to facilitate measurement-based care for substance use disorders
 - Measurement-based care in Mental Health Initiative

(2016)



The Office of Mental Health Operations and Mental Health Services in VA Central Office are excited to announce the start of the Measurement Based Care in Mental Health Initiative.

What is measurement based care (MBC)?

MBC is the use of patient-reported information, collected in a planned manner as part of routine care, to inform clinical care and shared decision-making and to individualize ongoing treatment.



MBC can use many kinds of data such as lab results or vital signs. The MBC in Mental Health Initiative is focusing on Veteran-reported outcomes related to mental health.

What is the MBC in Mental Health Initiative?

The MBC initiative is a new national effort to establish a standard of care in VA mental health, using MBC principles, that supports Veterans and clinicians in treatment planning and in setting recovery goals.

The program is currently in the first phase of development. A pilot program will be launched soon to learn from MBC efforts that have already been implemented and to inform broader national implementation.

How does MBC work?

- **Collect:** Veterans complete reliable, validated, clinically appropriate measures at regular intervals.
- **Use:** Together, clinicians and Veterans use that information to make decisions about care.

MBC Initiative
announced by
Dr. Shulkin

"Several changes
and initiatives are
being
announced...they
include establishing a

Measure Details

- 17-item questionnaire developed by Philadelphia VA CESATE
- Assesses areas relevant to substance use and recovery
 - Responses to individual items, rather than a total score, may be of interest
- Four versions of BAM
 - BAM: categorical responses (e.g., “excellent” to “poor”)
 - BAM-R: categorical and continuous responses (e.g., 1-30)
 - BAM-IOP: 7-day assessment window
 - BAM-C: consumption-related questions only

BAM-R (Items 1-6)

File View Tools Help

BAM-R Zztest, Acprs Patient Eight
SSN: xxx-xx-1929

A. Date of administration:

B. Method of administration:

1. Clinician Interview 2. Self Report 3. Phone

Instructions
This is a standard set of questions about several areas of your life such as your health, alcohol and drug use, etc. The questions generally a about the past 30 days. Please consider each question and answer as accurately as possible.

1. In the past 30 days, how would you say your physical health has been?

0. Excellent 3. Fair
 1. Very good 4. Poor
 2. Good

2. In the past 30 days, how many nights did you have trouble falling asleep or staying asleep?

3. In the past 30 days, how many days have you felt depressed, anxious, angry or very upset throughout most of the day?

4. In the past 30 days, how many days did you drink ANY alcohol?

5. In the past 30 days, how many days did you have at least 5 drinks (if you are a man) or at least 4 drinks (if you are a woman)? [One drink is considered one shot of hard liquor (1.5 oz.) or 12-ounce can/bottle of beer or 5-ounce glass of wine.]

6. In the past 30 days, how many days did you use any illegal or street drugs or abuse any prescription medications?

Measure Response Type

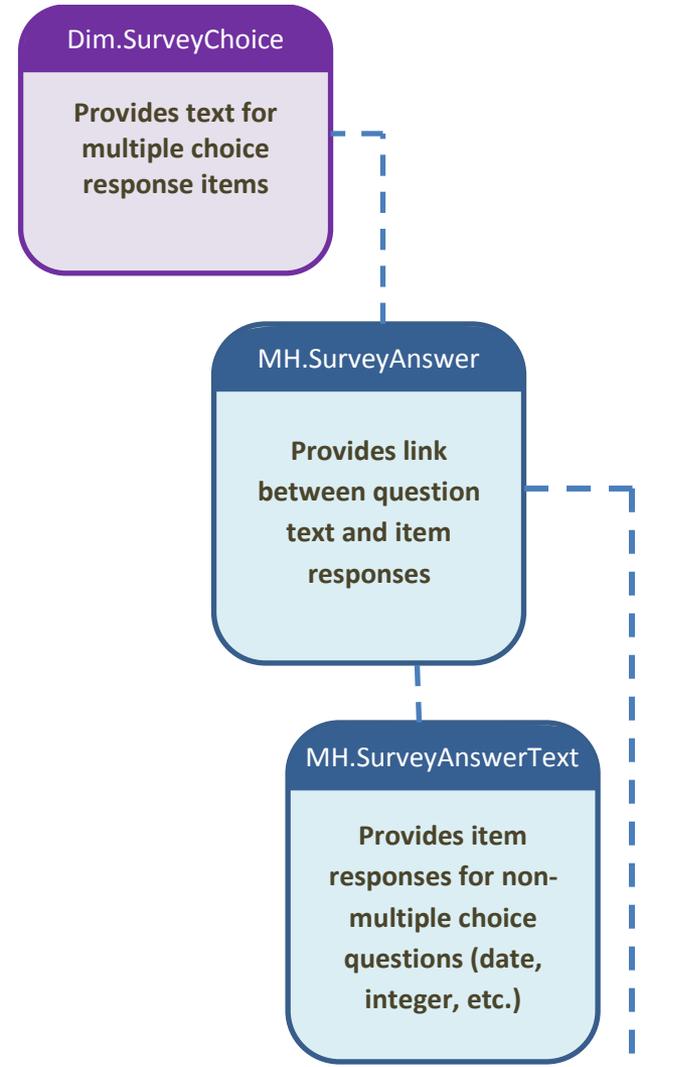
- Dim.SurveyQuestion provides information about the response type for each measure item
 - The BAM-R has date, multiple choice and integer response types

SurveyName	SurveyQuestionText	SurveyResponseType
BAM-R	Date of administration:	DATE
BAM-R	Method of administration:	MCHOICE
BAM-R	In the past 30 days, how would you say your physical health has been?	MCHOICE
BAM-R	In the past 30 days, how many nights did you have trouble falling asleep or staying asleep?	INTEGER
BAM-R	In the past 30 days, how many days have you felt depressed, anxious, angry or very upset throughout most of the day?	INTEGER
BAM-R	In the past 30 days, how many days did you drink ANY alcohol?	INTEGER
BAM-R	In the past 30 days, how many days did you have at least 5 drinks (if you are a man) or at least 4 drinks (if you are a woman)? [One drink is considered one shot of...	INTEGER
BAM-R	In the past 30 days, how many days did you use any illegal or street drugs or abuse any prescription medications?	INTEGER
BAM-R	Marijuana (cannabis, pot, weed)?	INTEGER
BAM-R	Sedatives and/or Tranquilizers (benzos, Valium, Xanax, Ativan, Ambien, barbs, Phenobarbital, downers, etc.)?	INTEGER
BAM-R	Cocaine and/or Crack?	INTEGER
BAM-R	Other Stimulants (amphetamine, methamphetamine, Dexedrine, Ritalin, Adderall, speed, crystal meth, ice, etc.)?	INTEGER
BAM-R	Opiates (Heroin, Morphine, Dilaudid, Demerol, Oxycotin, oxy, codeine (Tylenol 2,3,4), Percocet, Vicodin, Fentanyl, etc.)?	INTEGER
BAM-R	Inhalants (glues, adhesives, nail polish remover, paint thinner, etc.)?	INTEGER
BAM-R	Other drugs (steroids, non-prescription sleep and diet pills, Benadryl, Ephedra, other over-the-counter or unknown medications)?	INTEGER
BAM-R	In the past 30 days, how much were you bothered by cravings or urges to drink alcohol or use drugs?	MCHOICE
BAM-R	How confident are you that you will NOT use alcohol and drugs in the next 30 days?	MCHOICE
BAM-R	In the past 30 days, how many days did you attend self-help meetings like AA or NA to support your recovery?	INTEGER
BAM-R	In the past 30 days, how many days were you in any situations or with any people that might put you at an increased risk for using alcohol or drugs (i.e., around risk...	INTEGER
BAM-R	Does your religion or spirituality help support your recovery?	MCHOICE
BAM-R	In the past 30 days, how many days did you spend much of the time at work, school, or doing volunteer work?	INTEGER
BAM-R	Do you have enough income (from legal sources) to pay for necessities such as housing, transportation, food and clothing for yourself and your dependents?	MCHOICE
BAM-R	In the past 30 days, how much have you been bothered by arguments or problems getting along with any family members or friends?	MCHOICE
BAM-R	In the past 30 days, how many days did you contact or spend time with any family members or friends who are supportive of your recovery?	INTEGER
BAM-R	How satisfied are you with your progress toward achieving your recovery goals?	MCHOICE

Obtaining Item Level Responses

- Join MH.SurveyAnswer and Dim.SurveyChoice tables for multiple choice responses
- Join MH.SurveyAnswer and MH.SurveyAnswerText tables for date, integer and text responses

```
select distinct SA.SurveyName, SA.PatientSID,  
SA.SurveyGivenDateTime, SQ.SurveyQuestionText,  
SQ.SurveyResponseType, SC.SurveyChoiceText,  
ST.SurveyAnswerText  
from [CDWork].[MH].[SurveyAnswer] SA  
join [CDWork].[Dim].[SurveyQuestion] SQ  
on SA.SurveyQuestionSID=SQ.SurveyQuestionSID  
join [CDWork].[Dim].[SurveyChoice] SC  
on SA.SurveyChoiceSID=SC.SurveyChoiceSID  
left join [CDWork].[MH].[SurveyAnswerText] ST  
on SA.SurveyAnswerSID=ST.SurveyAnswerSID  
where SA.SurveyName like 'BAM-R'
```



Output from Item Level Query

Survey Question Text	Survey Response Type	Survey Choice Text (Dim.SurveyChoice)	Survey Answer Text (MH.SurveyAnswerText)
Date of administration:	DATE	*Missing*	1/1/2016
In the past 30 days, how would you say your physical health has been?	MCHOICE	Excellent	NULL
In the past 30 days, how many nights did you have trouble falling asleep...?	INTEGER	*Missing*	0
In the past 30 days, how many days have you felt depressed/anxious/angry...?	INTEGER	*Missing*	0
In the past 30 days, how many days did you drink ANY alcohol?	INTEGER	*Missing*	3
In the past 30 days, how many days did you have at least 5 drinks...?	INTEGER	*Missing*	2
In the past 30 days, how many days did you use any illegal or street drugs ... Marijuana (cannabis, pot, weed)?	INTEGER	*Missing*	3
Sedatives and/or Tranquilizers?	INTEGER	*Missing*	0
Cocaine and/or Crack?	INTEGER	*Missing*	0
Other Stimulants (amphetamine, methamphetamine...)?	INTEGER	*Missing*	0
Opiates (Heroin, Morphine, Dilaudid...)?	INTEGER	*Missing*	0
Inhalants (glues, adhesives, nail polish remover, paint thinner, etc.)?	INTEGER	*Missing*	0
Other drugs (steroids, non-prescription sleep and diet pills...)?	INTEGER	*Missing*	0
In the past 30 days, how much were you bothered by cravings or urges...?	MCHOICE	Not at all	NULL
How confident are you that you will NOT use alcohol/drugs next 30 days?	MCHOICE	Extremely	NULL
In the past 30 days, how many days did you attend self-help meetings/AA...?	INTEGER	*Missing*	0
In the past 30 days, how many days in a situation that increased risk...?	INTEGER	*Missing*	30
Does your religion or spirituality help support your recovery?	MCHOICE	Not at all	NULL
In the past 30 days, how many days ... at work, school, [volunteering]?	INTEGER	*Missing*	20
Do you have enough income (from legal sources) to pay for necessities...?	MCHOICE	Yes	NULL
In the past 30 days, how ...bothered [by problems with family/friends]?	MCHOICE	Not at all	NULL
In the past 30 days, how many days ... with supportive family/friends?	INTEGER	*Missing*	20
How satisfied are you with your progress toward ...recovery goals?	MCHOICE	Considerably	NULL

What is the prevalence of alcohol misuse among OEF/OIF Veterans with and without mild traumatic brain injury?

RESEARCH EXAMPLE WITH AUDIT-C

Brief Background

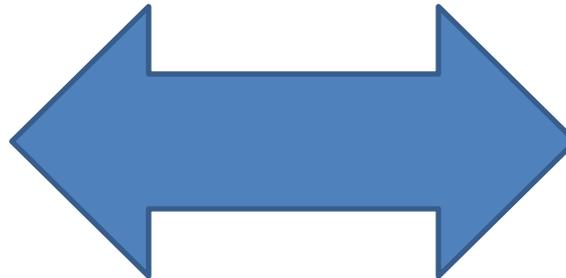
- High rates of alcohol misuse among OEF/OIF Veterans
 - Rates higher among men than women
 - Rates higher among younger Veterans
- 10%-15% of OEF/OIF Veterans have sustained at least 1 TBI during deployment
- Many negative outcomes associated with alcohol use among those with TBI
 - May impair recovery from TBI
 - Increased risk of recurrent TBI and development of alcohol use disorder
- Early detection and intervention is important

What is Alcohol Misuse?

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Spectrum ranging from:

Drinking above
recommended
drinking limits



Meeting diagnostic
criteria for alcohol use
disorders

AUDIT-C Alcohol Misuse Screening Groups

AUDIT-C Score	Interpretation	Action
0	Non-Drinker	<ul style="list-style-type: none"> No action required
1-2 Women 1-3 Men	Low level use	<ul style="list-style-type: none"> No action required
3-4 Women 4 Men	At risk of alcohol misuse	<ul style="list-style-type: none"> No action required Brief intervention may be helpful
5-7	Moderate misuse	<ul style="list-style-type: none"> Associated with alcohol misuse VA requires brief intervention and/or referral to specialty treatment for scores ≥ 5
	Severe misuse	<ul style="list-style-type: none"> Associated with use disorders Referral to specialty treatment recommended

Using AUDIT-C Data for Research

Steps we performed

Step 1: Identify study population



Step 2: Look for outliers in the data



Step 3: Examine individual items



Step 4: Link AUDIT-C data to other VA data

Step 1: Identify Study population

- All OEF/OIF Veterans enrolled in the VA with an AUDIT-C screen in 2012

Step 2: Look for outliers in the data

- Sites with below average number of patients with AUDIT-Cs
- Consider use of health factors to identify non-drinkers?
 - Especially relevant for measures that existed prior to MHA
 - PHQ-2, PC-PTSD, AUDIT-C

Step 3: Examine individual items closely and decide how to address

- Missing data
 - If AUDIT-C question 1 = 0, then questions 2 & 3 can be scored as 0
 - Decide how to address missing questions (Discard?)
- Responses to items that do not make sense

Raw Score	Q1 Response	Q2 Response	Q3 Response
0	Never	Not asked (due to responses on other questions)	Not asked (due to responses on other questions)
4	4 or more times a week	Not asked (due to responses on other questions)	Not asked (due to responses on other questions)
4	2 to 3 times per week	3 or 4	Skipped
3	Skipped	3 or 4	Monthly
8	4 or more times a week	10 or more	Never
5	Never	3 or 4	Daily or almost daily

Considerations for Step 3 – how decisions potentially impact research questions

- Duplicate AUDIT-Cs
 - How to address AUDIT-Cs documented on same day
 - What if the scores are different?
- More than 1 AUDIT-C in time frame of interest
 - Use the earliest, latest

Step 4: Link AUDIT-C data to other VA demographic and clinical measures

- TBI diagnoses
- Gender, age, marital status, race, service connection disability, ethnicity
- Substance use and mental health diagnoses

Results

Age-specific prevalence of heavy episodic drinking and alcohol misuse among OEF/OIF patients with and without TBI

	Women (N =47,411)		Men (N =310,736)	
	TBI (N = 1,836)	No TBI (N = 45,575)	TBI (N = 28,361)	No TBI (N = 282,375)
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Heavy episodic drinking				
<30	10.1 (7.7-13.1)	8.0 (7.5-8.5)	28.5 (27.6-29.4)	23.1 (22.8-23.4)
30-39	8.9 (6.5-12.4)	5.9 (5.5-6.4)	22.3 (21.3-23.4)	17.7 (17.4-18.0)
≥40	6.9 (4.3-10.8)	5.0 (4.6-5.6)	17.8 (16.6-19.0)	11.5 (11.2-11.7)
AUDIT-C ≥5				
<30	8.3 (6.5-10.5)	7.2 (6.8-7.6)	25.4 (24.6-26.1)	22.6 (22.3-22.8)
30-39	6.0 (4.4-8.1)	5.1 (4.8-5.5)	18.2 (17.4-19.0)	16.3 (16.1-16.6)
≥40	5.9 (4.0-8.4)	4.1 (3.8-4.4)	13.7 (12.9-14.6)	10.4 (10.2-10.6)

Helpful Resources

- **VIREC Factbook Corporate Data Warehouse (CDW) Mental Health 1.0 Domain** November, 2014
 - <http://vaww.virec.research.va.gov/CDW/Factbook/FB-CDW-Mental-Health-Domain.pdf> (VA Intranet Only)
- **VIREC Clinical Informatics Cyberseminar: Mental Health Assistant** presented by Drs. Katie Lysell and Rick Owens, November 20, 2007
 - http://www.hsrd.research.va.gov/for_researchers/cyber_seminars/archives/video_archive.cfm?SessionID=116

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QUESTIONS?

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