VHA Mental Health Dashboards: Background, Creation and Practical Considerations

Jodie Trafton, PhD
Director, OMHSP Program Evaluation and Resource Center (PERC)

Nicholas W. Bowersox, PhD, ABPP
Director, QUERI Center for Evaluation and Implementation Resources (CEIR)
Investigator, Serious Mental Illness Treatment Resource Evaluation Center

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QUERI
VA Quality Enhancement Research Initiative

CEIR
QUERI Center for Evaluation and Implementation Resources

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Dashboards: Background

- *"The (VA) budget process will place a priority on . . . proposals that will further develop agencies' capacity to use evidence, evaluation, and data as tools to improve program outcomes." (Fiscal Year 2017 Budget Summary and Background Information)*

- Increasing expectations that programmatic decisions related to quality and safety will be based on established metrics and measures, and that patient care will be proactive, policy and guideline driven, and focused on functional outcomes.

- Data used for quality improvement, program evaluation, and population management are often not accessible to key stakeholders due to limitations in interface, expertise, or resources

- Dashboards proposed as a potential solution to this problem, with persons with expertise in data management creating tools to package and present treatment data in a manner that is more easily accessed and understood by stakeholders

Proliferation of dashboards in VA

- Dashboards have been developed to present information at multiple levels of analysis:
  - Structurally: national, VISN, health care system
  - Organizationally: site, clinic, provider, team/panel, individual Veteran patients
  - Temporally: annually, quarterly, daily
  - Clinical priority areas: safety, quality, satisfaction, capacity, access, process, outcomes

- Dashboards have been well-received by stakeholders as a way to disseminate program information, and have been formally tied into quality monitoring expectations at a national level supported by VACO leadership
  - E.g., SAIL dashboard; PDSI dashboard; STORM

- Efforts have been undertaken to provide technical assistance to stakeholders, enhancing their ability to understand and apply information from dashboards

- Combination of factors have led to a proliferation of dashboards within VHA.

Do we need more dashboards?

- Like any tool, dashboards are very effective at performing certain functions, and less effective at performing others

- The recent drive to develop and adopt dashboards for all things related to quality monitoring has led to some overdevelopment and misapplication of these tools
  - **Duplicative tools with non-aligned rules at facility, VISN, national level**
  - **Clinical misapplication of information, generally focused on moving numbers rather than the care concept they were designed to assess**
  - **Clinical confusion around what dashboard to use when**
  - **Misinterpretation of presented data due to usability issues, lack of stakeholder education on the product, or under-documentation of dashboard elements**

- Because of this, it can be useful to consider situations where the development of a dashboard is the most appropriate response

When might a new dashboard be warranted?

- Dashboards are ideal tools for enhancing access to programmatic data which
  - Stakeholders could not easily access via other means
  - Is linked to care monitoring and the formation of care decisions in well-defined ways
  - Needs to be reviewed/updated over time
  - Can be abstracted from information available via other data sources
  - Needs to be reviewed/shared by multiple stakeholders at different levels/locations
  - Is not available via other products or sources
  - Can be understood and effectively used by stakeholders without accompanying interpretative text and discussion of limitations and proper use
  - Will have on-going support for dissemination, field/help-desk response, education, content updates/management, and technical maintenance

- In other words, dashboards are effective at re-packaging existing information and creating a forum for easier dissemination and interpretation of this information

- However, the effective creation and maintenance of a dashboard is an effortful and time consuming process which requires specialized data and programming expertise as well as available technical support to support stakeholders

When might a new dashboard be ill-advised?

- Dashboards may be a poor fit to situations where there are:
    - Static data needs are limited to one particular time or context
    - Interests in primary data collection
    - Other venues through which the information could be easily obtained
    - A limited number of stakeholders who will use the information
    - A lack of available technical support to respond to questions raised by review and application of dashboard information
    - A lack of maintenance support
    - Unclear expectations for how information can/should be applied to care delivery
    - Conceptually complex information that could be easily misunderstood and/or misapplied

- Most common mistake in dashboard creation is the formation of a product which is redundant to gold-standard information already available via other channels

Why do people create dashboards if they are not a good fit to their needs?

- Lack of awareness of other available products which already present information
  - Check with VIReC; RAMP, VACO Operations for available products

- Underestimating value of one-time data request to address programmatic needs

- Underestimating effort needed to properly create and maintain dashboard

- Overestimation of need to share information in "raw" form with other stakeholders on a recurring basis

- Management pressure or grant aim

Steps in the creation of a dashboard

1. Define a use case: "As a XXX, I need XXX to do XXX"

    a. Identify stakeholders who will be target audience for information

    b. Identify data-related needs after consultation with stakeholders

    c. Identify setting, situation, or process in which data should be accessed by a stakeholder and how it should be used to inform a decision or facilitate a task

2. Check to see if information is available via other channels

3. Design and iterate a mock-up

    a.   Propose data elements and their specifications; design, functionality, and look of the interface

    b.   Obtain feedback from stakeholders and redesign as needed

4. Generate needed data tables

    a.   Identify source of data

    b.   Create measures/data elements of interest from data source

    c.   Optimize architecture for adequate dashboard performance

Steps in the creation of a dashboard, continued

5. Convert mock-up design into online version
   (E.g. SSRS report)

6. Ensure appropriate access controls are in place
   (E.g. LSV)

7. Design and implement a help-desk/feedback process

8. Conduct usability tests or pilot use of the demo dashboard

9. Revise dashboard information based on stakeholder feedback

10. Automate dashboard updates

11. Update dashboard specifications and content as needed
    (E.g. as coding practices or stakeholder needs change)

Case study: Development of the SMI patient-level dashboard

- VHA users with Serious Mental Illness (SMI) can be a challenging and complicated group for whom to provide care
  - "SMI" includes users with schizophrenia spectrum disorders, bipolar spectrum disorders, and other psychotic disorders

  Note: This definition of SMI is the same that is used for SAIL and other OMHO products

- In response to the needs of this complex and potentially vulnerable population, VHA has developed multiple specialty care programs designed to address the needs of Veterans with SMI
  - Mental Health Intensive Case Management, Psychosocial Rehabilitation and Recovery Clinics, Supported Employment, Clozapine support and monitoring

- Sites which provide care for Veterans with SMI have a variety of administrative data needs to help inform decisions related to the development of SMI specialty care clinics, targeting of services to SMI Veterans, and monitoring the performance of SMI specialty care programs.

Background: The National Psychosis Registry

- Since 2000, SMITREC has created and maintained a dataset created from healthcare information abstracted from the records of Veterans with serious mental illness – the National Psychosis Registry
  - The NPR is used to create multiple products which summarize care for ~ 250,000 Veterans with SMI per year, including counts of unique SMI Veterans per site, service utilization characteristics of SMI Veterans, and cost of care provision to this group

- Products have traditionally been created to assess fidelity of care to national guidelines (as presented in the Uniform Mental Health Handbook) and have focused on the national and site level of data presentation

- SMITREC has also been available to respond to requests from sites related to care-related information for individual Veterans

Unmet needs: Requests from the field for additional information on SMI Veteran care

- Between 5/22/15 and 7/15/17, SMITREC received 32 requests for lists of specific VHA users with SMI from sites to supplement standard overview NPR products
  - Requests related to
    - Desire to allow for targeted outreach to vulnerable subgroups
    - Improve performance on SMI population-based SAIL measure
    - Information to inform decisions related treatment expansion
  - In response to these requests, sites were provided with lists of SMI users who received the majority of their care at that site for given fiscal years

- The approach to providing this information to sites on an individual basis upon request was labor intensive, inefficient, and limited in scope, with each new request requiring a new data pull and product creation process.

Evolution of product in response to need: Development of SMI patient-level dashboard

- Conceptual approach
  - Intent was to create a product to allow authorized users to independently access treatment information for the specific SMI users seen at their site.
  - Information was intended to assist sites with monitoring their SMI programming as well as allow for targeting of areas of concern within their SMI population
    - E.g., screening A1C for users on antipsychotics; targeted outreach to users at risk for homelessness
    - This would include monitoring of users who contribute to performance on SMI-related SAIL measures

- Measure creation
  - Measures were chosen for inclusion based on currently established SMI quality monitoring metrics in MHMS/SAIL/MHIS dashboards and measures included in the National Psychosis Registry annual reports, mirroring the definitions methods used to create these measures
  - 56 measures created for inclusion in the first iteration of the dashboard
  - Initially created based on timeframe of FY15Q2 – FY16Q1
    - Dashboard updated to display information for the FY16Q2 – FY17Q1 and FY17Q2 – FY18Q1 timeframes

Modification of approach relative to current national quality metrics for SMI care

- **Information was structured in a manner to allow for the presentation of both individual Veteran and overall site cohort information for all measures**

- Site-level performance measures adapted to reflect individual user-level status. This means that utilization measures now focus on number of encounters rather than clinic engagement status over time period

- Measures focus on SMI population as a whole rather than on subpopulations. This often meant an expansion of measures relative to the version used in other OMHO products
  - A1C screening status for all SMI users, and not just those prescribed antipsychotics. Conversely, sites are able to isolate to only those users prescribed antipsychotics
  - Mood stabilizer prescription status for all SMI users, and not just those with bipolar disorder. Conversely, sites are able to isolate to only those users with bipolar disorder

Continuity of methods relative to previous National Psychosis Registry and national quality monitoring products

- Inclusion criteria mirror the National Psychosis Registry report, based on presence of 1+ psychotic diagnoses during period of interest

- Site assignment based on same methods as used for other OMHSP products
  - Location of Mental Health Treatment Coordinator
  - Location of Primary Care Physician
  - Location of most care received during period
  - Location of last care encounter during period
  - Each SMI user is attached to a single site, even if they received care elsewhere during a period of interest

- This approach resulted in a final dashboard SMI patient count of 256,699 patients for FY15Q2-FY16Q1 and 229,839 patients for FY16Q2 – FY17Q1

- Dashboard to reflect care in four-quarter snapshots (consistent with previous NPR products), updated quarterly (consistent with OMHSP dashboards)

Dashboard access and permissions

- In the process of creating the dashboard, we realized that we would need to include sensitive individual patient healthcare information

- We incorporated restrictions which limited dashboard access to personnel who had been vetted and formally given permission to access Veteran PHI
  - LSV schema, developed by National Data Systems (NDS), maintains permissions approvals for VHA network users
  - NDS autogenerates permissions based on local VISTA/CPRS permissions, with an application/approval process for others
    - The process of obtaining permission to access PHI/PII is accomplished via an online application submitted to NDS, which is reviewed and approved/rejected by the supervisor, and Information Security Officer at the site where the person is requesting access
  - This approach is also used for other OMHSP dashboards

- Instructions for obtaining and checking current access status is available online.
https://vaww.dev.fre.cdw.va.gov/sites/D05_VISN21/DashboardDevelopment/Updating%20Network%20UserName%20in%20VistA%20to%20obtain%20LSV%20Permissions.aspx

Creation of online interface/structure

- National Psychosis Registry information used for the creation of measures was collected from multiple Corporate Data Warehouse (CDW) locations

- An individual patient-level dataset was created which contained all measures of interest for all SMI Veterans, broken down by primary site of care coordination

- Table templates were created in Excel to develop desired online structure and appearance of dashboard

- CDW database was linked to SQL Reporting Services and an online interface was created using SQL Report Builder which mirrored the Excel template

- LSV permissions restricted access to only those sites that users had been given permission to access, directing them to select from those sites

Dashboard interface and structure

- Information was structured to present both individual patient and site cohort overview levels for each measure on the dashboard

  - Patient-level information in columns
  - Columns collapse to provide counts of users who meet measures, providing additional information to assist with tracking of screening, service utilization, and care concerns

- Link to methods, SMITREC contacts, and electronic technical manual included in the main dashboard launch page

  - Methods and electronic technical manual formatted to be a single attached file that contains information on SMI status determination, site of most care determination, measure definitions, and lists of qualifying diagnoses

- Dashboard information can also be exported to Excel files for easier manipulation of measures of interest

Parent Facility	Facility of most use	VHA Site of Last Care Encounter	Number Patients / SSN (last 4)	Last Name	First Name
			1202		
(V10) (506) Ann Arbor, MI HCS	FY17Q2 - FY18Q1		1202		
	(V10) (506) Ann Arbor, MI		1202		
		(3V10) (506) Ann Arbor, MI	1234	AAAA	AAAA
		(3V10) (506) Ann Arbor, MI	1234	BBBB	BBBB
		(3V10) (506) Ann Arbor, MI	1234	CCCC	CCCC
		(3V10) (506) Ann Arbor, MI	1234	DDDD	DDDD
		(3V10) (506) Ann Arbor, MI	1234	EEEE	EEEE
		(3V10) (506) Ann Arbor, MI	1234	FFFF	FFFF
		(3V10) (506) Ann Arbor, MI	1234	GGGG	GGGG
		(3V10) (506) Ann Arbor, MI	1234	HHHH	HHHH
		(3V10) (515) Battle Creek, MI	1234	IIII	IIII
		(3V10) (506) Ann Arbor, MI	1234	JJJJ	JJJJ
		(3V10) (506) Ann Arbor, MI	1234	KKKK	KKKK
		(3V10) (506) Ann Arbor, MI	1234	LLLL	LLLL
		(3V10) (506) Ann Arbor, MI	1234	MMMM	MMMM
		(3V10) (506) Ann Arbor, MI	1234	NNNN	NNNN

Age	Date of Birth	Gender	Race	Hispanic Ethnicity Indicator	Service Connected Status (Yes/No)	Percent Service Connection	Country	Driving Distance to Nearest Primary Care Site
47	.	Male	Unknown	-	Yes	70	LIVINGSTON	32.4
68	.	Male	White	-	No	.	WAYNE	21.1
61	.	Male	White	-	No	.	WASHTENAW	2.6
61	.	Male	White	-	Yes	30	OAKLAND	21.5
48	.	Male	White	-	Yes	100	JACKSON	8.5
69	.	Male	White	-	Yes	70	WASHTENAW	2.3
51	.	Male	White	-	No	.	WASHTENAW	4.2
69	.	Male	White	-	Yes	100	WASHTENAW	20.3
69	.	Male	White	-	Yes	100	CALHOUN	7.5
49	.	Male	White	-	No	.	WAYNE	19.1
37	.	Male	White	-	Yes	10	BAY	30.7
50	.	Female	White	-	Yes	70	OAKLAND	16.4
71	.	Male	White	-	Yes	100	WAYNE	15.3
66	.	Female	White	-	No	.	MONROE	26.3

Number of Encounters in Homeless Clinic	Homeless Indication Status (Yes/No)	Risk of Loss to Care: Care Encounter in Last 3 Quarters (Yes/No)	Most Frequently Diagnosed SMI Condition	Number Outpatient Encounters With Diagnosed SMI	PTSD Diagnosis Status in Period (Yes/No)	Substance Use Disorder Diagnosis Status (Yes/No)
5241	211	15	-	19268	300	422
5241	211	15	-	19268	300	422
5241	211	15	-	19,268	300	422
0	No	No	Schizophrenia	16	Yes	No
0	No	No	Bipolar	7	No	No
12	Yes	No	Schizophrenia	48	No	Yes
0	No	No	Schizophrenia	1	No	No
0	No	No	Bipolar	3	Yes	No
0	No	No	Bipolar	11	No	No
14	Yes	No	Schizophrenia	5	Yes	No
0	No	No	Schizophrenia	7	Yes	Yes
0	No	No	Bipolar	2	No	No
0	No	No	Bipolar	4	No	No
0	No	No	Bipolar	92	No	No
0	No	No	Bipolar	4	Yes	No
0	No	No	Bipolar	13	Yes	No
0	No	No	Schizophrenia	34	No	Yes

Body Mass Index	Diabetes Diagnosis Status (Yes/No)	Glucose/A1C Monitoring (Yes/No)	Congestive Heart Failure Diagnosis Status (Yes/No)	Hypertension Diagnosis Status (Yes/No)	Tardive Dyskinesia Diagnosis Status (Yes/No)	Tobacco Use Status
-	278	1073	65	538	3	355
-	278	1073	65	538	3	355
-	278	1073	65	538	3	355
29.5	No	Yes	No	No	No	No
28.4	Yes	Yes	No	No	No	No
22.6	No	Yes	No	No	No	Yes
38.9	Yes	Yes	No	No	No	Yes
37.3	No	Yes	No	Yes	No	No
30.7	Yes	Yes	No	Yes	No	No
NA	No	Yes	No	No	No	No
23.4	Yes	Yes	No	Yes	No	No
28.6	Yes	Yes	No	Yes	No	No
21.2	No	No	No	No	No	No
41.1	No	Yes	No	No	No	No
32.2	No	Yes	No	Yes	No	No
50.4	Yes	Yes	No	No	No	No
28.8	No	Yes	No	No	No	No

Number Antipsychotics Medications in Past Year	Number Mood Stabilizers Medications in Past Year	Clozapine prescription Status in Past 5 Years (Yes/No)	Lithium prescription Status in Past 5 Years (Yes/No)	Number Antipsychotic Medications in Past 5 Years	Number Mood Stabilizer Medications in Past 5 Years
928	1066	39	249	1862	2001
928	1066	39	249	1862	2001
928	1066	39	249	1862	2001
2	3	0	1	3	4
0	1	0	0	0	1
1	1	0	1	4	4
0	0	0	0	0	0
0	1	0	0	0	1
1	1	0	0	3	3
1	2	0	0	2	3
1	1	0	0	1	2
0	2	0	0	2	3
0	1	0	1	2	3
1	3	0	1	2	4
0	2	0	0	1	4
2	1	0	1	2	1
0	2	0	0	0	2

Clozapine Prescription (Yes/No)	Antipsychotic Prescription (Yes/No)	Mood Stabilizer Prescription (Yes/No)	Opiate Prescription (Yes/No)	Opioid Medication Replacement (Yes/No)	Prescription of 3+ Antipsychotics During Same Day Frame (Yes/No)
29	752	731	470	61	15
29	752	731	470	61	15
29	752	731	470	61	15
No	Yes	Yes	No	No	No
No	No	Yes	No	No	No
No	Yes	Yes	Yes	No	No
No	No	No	Yes	No	No
No	No	Yes	Yes	No	No
No	Yes	Yes	No	No	No
No	Yes	Yes	No	No	No
No	Yes	Yes	Yes	No	No
No	No	Yes	Yes	No	No
No	No	Yes	No	No	No
No	Yes	Yes	Yes	No	No
No	No	Yes	No	No	No
No	Yes	Yes	No	No	No
No	No	Yes	No	No	No

Number Non-Psychiatric Inpatient Stays	Total Days Non-Psychiatric Inpatient Care	Number Psychiatric Inpatient Stays	Total Days Psychiatric Inpatient Care
233	1,275	272	3,060
233	1275	272	3060
151	1256	143	3056
0	0	0	0
0	0	0	0
0	0	2	4
0	0	0	0
1	1	0	0
0	0	0	0
0	0	0	0
1	3	0	0
0	0	1	22
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	16

Use of Emergency Room Care (Yes/No)	Number of Supported Employment Encounters	Number Primary Care Clinic Encounters	Number PTSD Clinic Encounters	Number General Mental Health Clinic Encounters	Number PCMHI Clinic Encounters	Number Substance Use Disorder Clinic Encounters	Number Compensated Work Therapy Clinic Encounters	Number MHICM Clinic Encounters	Number PRRC Clinic Encounters
1674	140	5503	0	14401	279	3539	185	3194	2278
1674	140	5503	0	14401	279	3539	185	3194	2278
1674	140	5503	0	14401	279	3539	185	3194	2278
0	0	5	0	14	3	0	0	0	0
1	0	13	0	10	0	0	0	0	0
4	0	6	0	11	0	4	0	1	1
0	0	1	0	0	0	0	0	0	0
7	0	3	0	3	0	0	0	0	0
1	0	5	0	8	0	1	0	0	0
0	0	1	0	11	0	0	0	0	0
3	0	5	0	4	0	0	0	0	0
0	0	14	0	38	0	0	0	6	0
0	0	1	0	4	0	0	0	0	0
1	0	5	0	92	0	0	0	0	0
1	0	6	0	2	0	0	0	0	0
0	0	7	0	14	0	0	0	0	0
2	0	3	0	43	0	1	0	0	0

Piloting of dashboard to stakeholders

- Dashboard initially proposed and edited based on feedback from:
  - OMHSP stakeholders: OMHSP PEC partners; OMHSP National technical assistance leadership
  - Administrative leadership stakeholders: VISN MH leads
  - Frontline provider stakeholders: MHICM national call; PRRC national call; LRC national call

- Targeted outreach to sites who requested information from NPR (14 sites across 7 VISNs)
  - Initial outreach to VISN MH leads discussing product and requesting permission to pilot test
  - Follow-up outreach to site contacts from previous requests, discussing product and requesting permission to pilot test

- Pilot lasted 3 months, with all sites participating providing feedback related to :
  - Measure design and conceptualization
  - Dashboard interface and structure
  - Perceived accuracy of information
  - Utility of dashboard tool in supporting quality improvement efforts

Feedback from pilot and expansion of dashboard

- Based on feedback from pilot sites, three major changes to dashboard:
  - 1. Creation of several additional measures reflecting areas of care priority
    - Focus on areas of national priority and care coordination
  - 2. Development of hands-on demonstrations/trainings of how to export the dashboard and use the dashboard to answer QI questions
    - Requests for applied demonstrations of dashboard use to address site questions
  - 3. Creation of guide materials summarizing dashboard use and step-by-step instructions
    - These materials increase access to instruction for stakeholders unable to schedule hands-on demonstration with SMITREC dashboard support staff

- Plans for follow-up with stakeholders to assess utility of dashboard information and discuss expansion of measures to address other areas of care priority

Measures added after feedback from pilot sites

Behavioral Risk Flag During Period (Yes/No)	Suicide Risk Flag During Period (Yes/No)	Active Flag On Last Day of Period (Yes/No)	OUD Diagnosis Status in Period (Yes/No)	Veteran Death During Time Period	Use of Non-VA Inpatient Care (Yes/No)	Institutional Admission at End of Period (Yes/No)	Use of Non-VA Outpatient Care (Yes/No)
31	50	40	75	36	60	0	216
31	50	40	75	36	60	0	216
31	50	40	75	36	60	0	216
No	No	No	No		No	No	0
No	No	No	No		No	No	0
No	No	No	No		No	No	0
No	No	No	No		No	No	0
No	No	No	No		No	No	0
No	No	No	No		No	No	0
No	No	No	No		No	No	0
No	No	No	No		No	No	1
No	No	No	No		No	No	1
No	No	No	No		No	No	0
No	No	No	No		No	No	1
No	No	No	No		No	No	0
No	No	No	No		No	No	0
No	No	No	Yes		No	No	0

Lessons learned: SMI patient-level dashboard

- Stakeholders are interested in engaging in self-directed quality improvement but do not feel they have the expertise to access data needed to ask basic questions about their SMI population

- National quality metrics (i.e., SAIL, PDSI) provide powerful motivators for engaging in quality improvement efforts

- The main goal of stakeholders using the dashboard is a desire for the development of SMI subgroups for detailed review and targeted outreach

- Individual stakeholders are often only interested in a subset of dashboard measures, suggesting the potential value of dashboard reduction or the creation of multiple, smaller dashboards
  - This can be addressed by including "slicers" to enable customization of dashboards; enabling users to create custom designed links is also helpful

Recommendations for dashboard creation

- Consider your end-users for the dashboard:
  - Who will be using this product?
  - What will be their motivation for using this product?
  - What problems will they be trying to solve via the use of this dashboard?
  - What specific information will they need to solve their problem?
  - How will the information included in this dashboard support stakeholder effectiveness?
  - How much support will your stakeholders need to effectively use the dashboard?
  - How will this information be used to inform practice?
    - Actionable (data-as of current) versus retrospective data
    - Is there an existing process that use of the dashboard fits in? If not, will there be an effort to implement a new process that includes the product? If not, even highly impressive, stakeholder admired and requested products may not get used.
      - Examples:
        - » Measurement-based care dashboard
        - » Patient cohort/metric denominator lists

Additional recommendations for dashboard creation

- Determine whether a dashboard is needed to answer the questions of interest
  - Is this information available elsewhere?
  - Is there a recurring need and clinical application for this information?

- Develop plans related to maintenance and upkeep of dashboard
  - Who will update the dashboard? How often will it be updated?
  - How much effort is needed to keep dashboard relevant and functional?

- Consider how this dashboard will interface with other products and priorities
  - How can dashboard information support other programs and stakeholders?
  - How can dashboard information be used to address areas of national priority?
  - How can this dashboard interface with other existing products (e.g., other dashboards?)

Additional recommendations for dashboard creation

- Draft plans related to data security and dashboard access
  - How will you ensure that only the intended stakeholders are accessing the dashboard?
  - Who will manage data access and permissions for new users?

- Develop mechanisms to assess dashboard effectiveness and revise dashboard based on feedback from stakeholders
  - How will you know if the dashboard is accomplishing its intended goals?
  - How will you know if/when the dashboard needs revision or expansion to continue to meet its goals?

Check with relevant program offices before starting from scratch!

- **OMHSP has a huge amount of MH relevant data** in secondary/processed data tables in their project folders in CDW, as well as look-up tables for many M-relevant concepts (e.g. ICD codes for diagnostic categories, pharmacy definitions for psychotropic drug classes, etc).
  - Patient level data for retrospective metrics
  - Nightly updated data for clinical decision support/actionable patients

- We can set up data shares with other users for operational purposes (e.g. DoEx)

- Extremely helpful to have any new dashboards aligned with official definitions where possible and should facilitate maintenance

Examples and lessons learned

- **Development of a Measurement-based Care Dashboard**
  - Requested by the field to support an evidence-based and programmatically prioritized clinical practice, that had been rarely implemented clinically
  - Identified by clinicians as needed to facilitate use of measurement-based care information
  - Designed based on stakeholder request and feedback

- Dashboard pulled MH assessment data and graphed it over time, with psychotropic prescribing (medication possession) indicated as bars beneath the graph. Enabled a quick view of clinical symptom trajectories as they related to changes in psychotropic prescribing.
  - Received nothing but rave reviews from stakeholders and clinicians recruited to pilot test it.
  - Deployed within VISN and essentially never used.
  - It had been optimized to facilitate a clinical process that was desired but was never implemented.
    - It was the perfect dashboard to support a process that didn't exist (e.g. a unicorn saddle).

Examples and lessons learned

- **Retrospective population access measure patient drill-down data**
  - Individual patient indicators of whether they met assessment criteria for metric
  - Based on experience with process measures, QI teams have been trained to ask for patient lists for high priority metrics so that they can review "process failure" to understand system weaknesses
    - But not all measures are process measures, and this strategy is not effective for other types.
    - MH Domain of SAIL includes population access measures that assess capacity of the local MH program to meet population needs. Populations are huge and targets are often low (e.g. 8%).
  - QI teams, local data analysts, and service chiefs endlessly and persistently request patient lists for the population access measures.
  - Provided as password protected excel files to requestor
  - Based on suspicion that the lists were not being effectively used, we stopped providing the password along with the file, and waited for end-users to contact us for it, giving us opportunity to inquire about how it was being used and follow-up on benefits of use.
  - End-users never asked for the password.
    - Management driven requests were to obtain data, but with no plan to use it.

Tools

- Tools for those learning to develop dashboards:
  - OMHSP Developers Toolbox
    - https://vaww.portal2.va.gov/sites/PERC/PEC_Portal/SitePages/Developer%20Toolbox.aspx (VA IntraNet)
    - Includes trainings developed for PharmD clinical informatics
  - Wiki with solutions identified by developers
  - Standard OMHSP data definitions
    - http://vaww.rs.rtp.med.va.gov/ReportServer/Pages/ReportViewer.aspx?/Performance+Reports/Measure+Management/MeasureCatalog&rs:Command=Render (VHA IntraNet)

  - Links to other trainings
  - PEC Portal with library of commonly used MH relevant dashboards and educational material
    - https://vaww.portal2.va.gov/sites/PERC/PEC_Portal/SitePages/MH%20Balanced%20Scorecard.aspx (VA IntraNet)

- Link to NPR Dashboard
  - https://spsites.dev.cdw.va.gov/sites/OMHO_NPR/_layouts/15/ReportServer/RSViewerPage.aspx?rv:RelativeReportUrl=/sites/OMHO_NPR/NPR/NPR/Home%20Page.rdl (VA IntraNet)

Thank you!

Nicholas W. Bowersox, PhD, ABPP

Ph: (734) 222 - 7447

nickbowe@umich.edu or Nicholas.Bowersox@va.gov

https://www.queri.research.va.gov/programs/ceir/

http://vaww.smitrec.va.gov/

Jodie Trafton, Ph.D.

Jodie.Trafton@va.gov