Using Data & Information Systems in Partnered Research Cyberseminar Series

Presentations from the field focusing on VA data use in quality improvement and operations-research partnerships.

Topics

- Use of VA data and information systems in QUERI Projects and Partnered Evaluation Initiatives
- Operational data resources and QI-related data
- Challenges in using and managing multiple data sources
- VA resources to support data use
- Experiences working within operations/research partnerships

Using Data & Information Systems in Partnered Research – FY21

Third Tuesday of the month | 12:00 – 1:00 PM ET

Date	Topic
11/17/20	Using VA data and information systems to support the ORH TeleSleep Enterprise Wide Initiative (a QUERI/Operational Partnership)
1/19/21	Evaluating the Implementation of VA's TeleWound Practice Program

Select a title to register or visit HSR&D's VIReC Cyberseminar Archive to watch previous sessions:

https://www.hsrd.research.va.gov/cyberseminars/catalog-archive-virec.cfm?SeriesSortParam=y&SeriesIDz=91

Where can I download a copy of the slides?

VA HSR&D CYBERSEMINARS

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Database & Methods Cyberseminar Series

Session 4: Leveraging VA Data and Partnerships to Advance Equity-Guided Improvement

Leslie Hausmann, PhD
Investigator and Director of Equity Capacity Building Core, Center for Health Equity Research and Promotion (CHERP), VA Pittsburgh Healthcare System

John Cashy, PhD
Research Health Scientist, CHERP

Ernest Moy, MD, MPH
Executive Director, VHA Office of Health Equity

Poll #1: What is your **role** in research and/or quality improvement projects?

- Investigator, PI, Co-I
- Statistician, data manager, analyst, or programmer
- Project coordinator
- Other – please describe via the chat function

Session roadmap

- Primary Care Equity Dashboard
  - Background
  - Data acquisition and packaging process
  - Demonstration
- Operations-research partnerships to spread culture of equity across VA

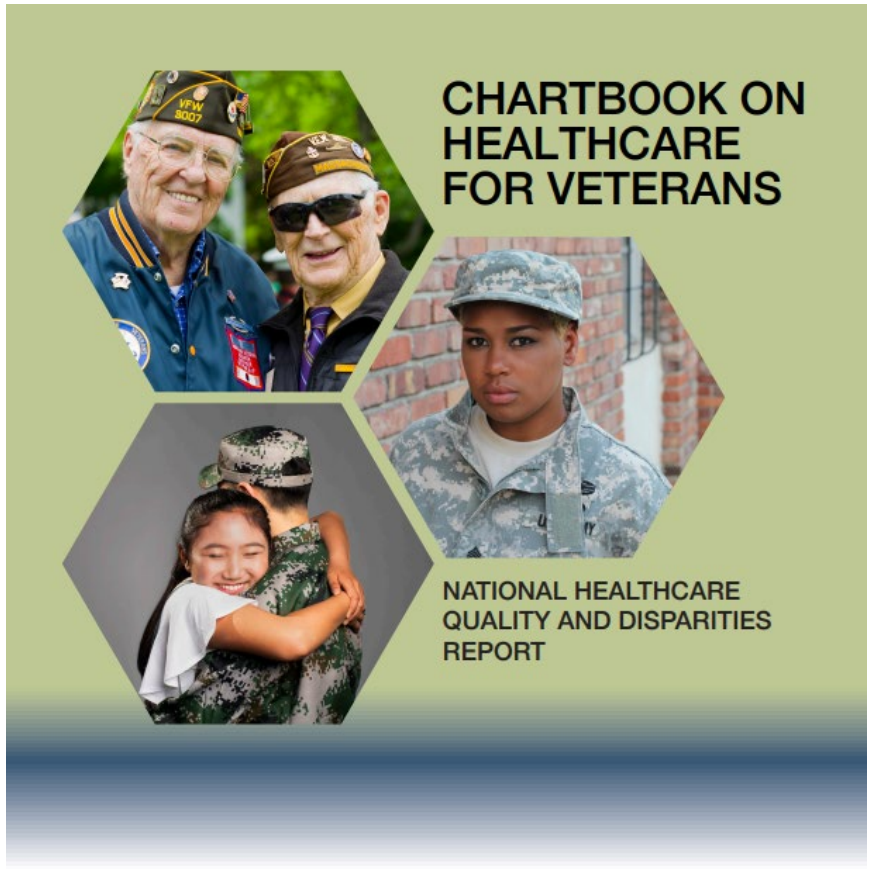
Primary Care Equity Dashboard - Background

Leslie Hausmann, PhD

Health equity: Attainment of the highest level of health for all people…valuing everyone equally with…societal efforts to address **avoidable inequalities**, historical and contemporary injustices, and the elimination of health and health care disparities

Health disparity: A particular type of health difference **that is closely linked** with social, economic, and/or environmental **disadvantage**

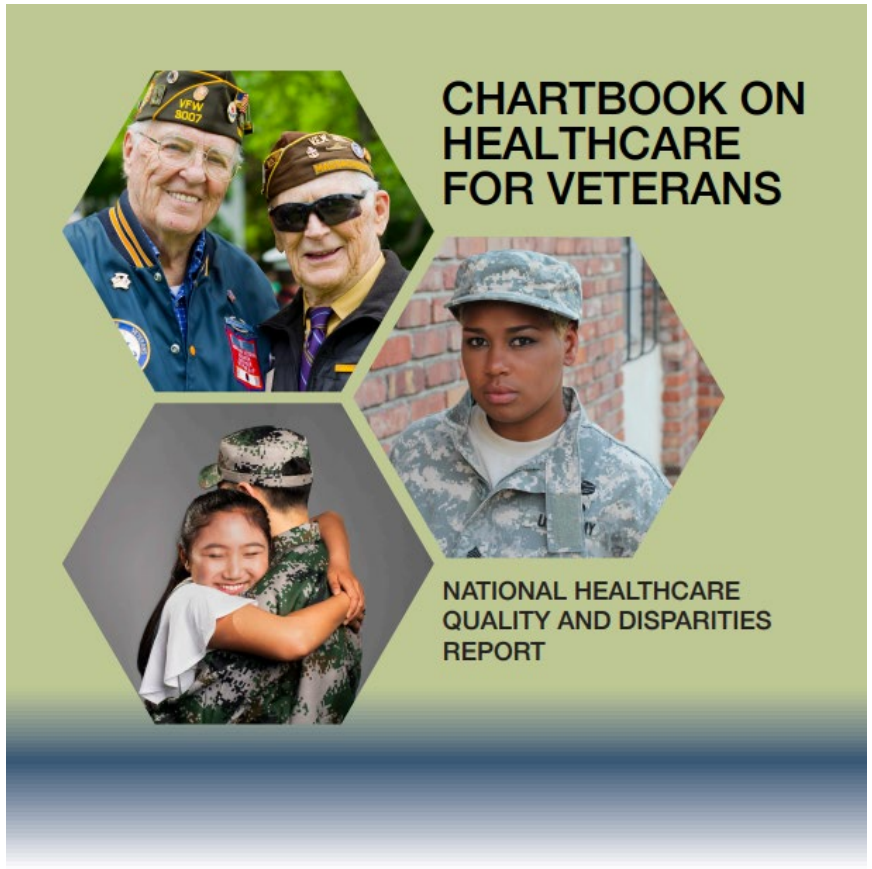
https://health.gov/healthypeople



AHRQ Agency for Healthcare Research and Quality

VA U.S. Department of Veterans Affairs

https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqrdr/chartbooks/veterans/2020qdr-chartbook-veterans.pdf



Agency for Healthcare Research and Quality

VA U.S. Department of Veterans Affairs

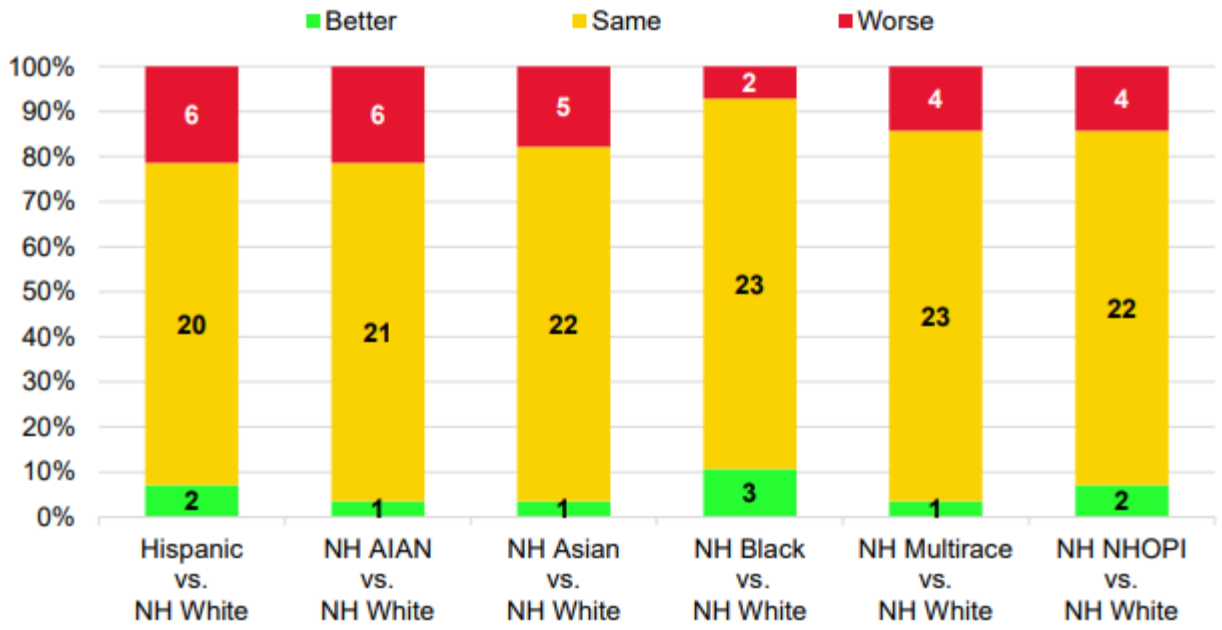
https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqrdr/chartbooks/veterans/2020qdr-chartbook-veterans.pdf

Disparities in Access or Quality Within VHA Users, by Race/Ethnicity

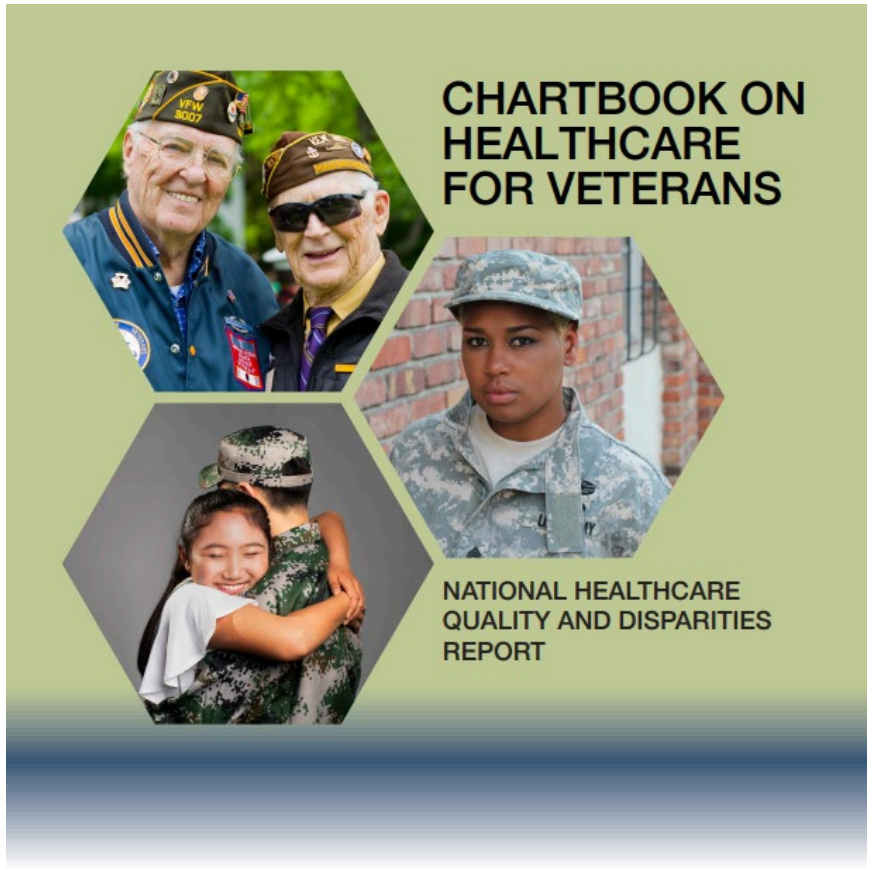
Number and percentage of measures for which VHA users of racial/ethnic groups experienced better, same, or worse access to or quality of care compared with non-Hispanic White VHA users, 2015

AHRQ

VA U.S. Department of Veterans Affairs



Key: NH = Non-Hispanic; AIAN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Veterans Health Administration, Survey of Healthcare Experience of Patients, 2015.

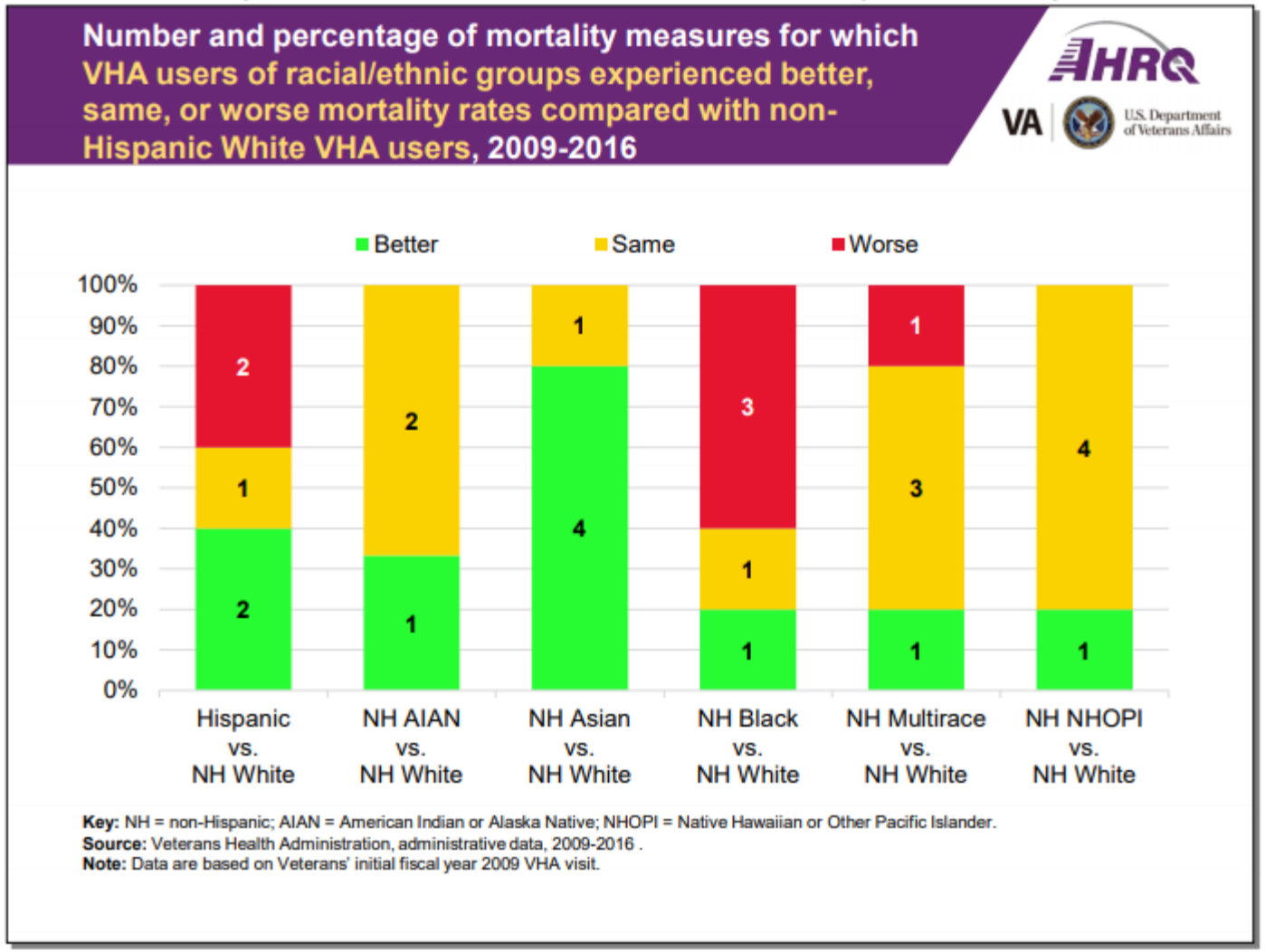


Agency for Healthcare Research and Quality

VA U.S. Department of Veterans Affairs

https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/nhqrdr/chartbooks/veterans/2020qdr-chartbook-veterans.pdf

Number of Mortality Measures With Disparities Within VHA Users, by Race/Ethnicity



Veterans Health Administration

Office of Health Equity

CHERP

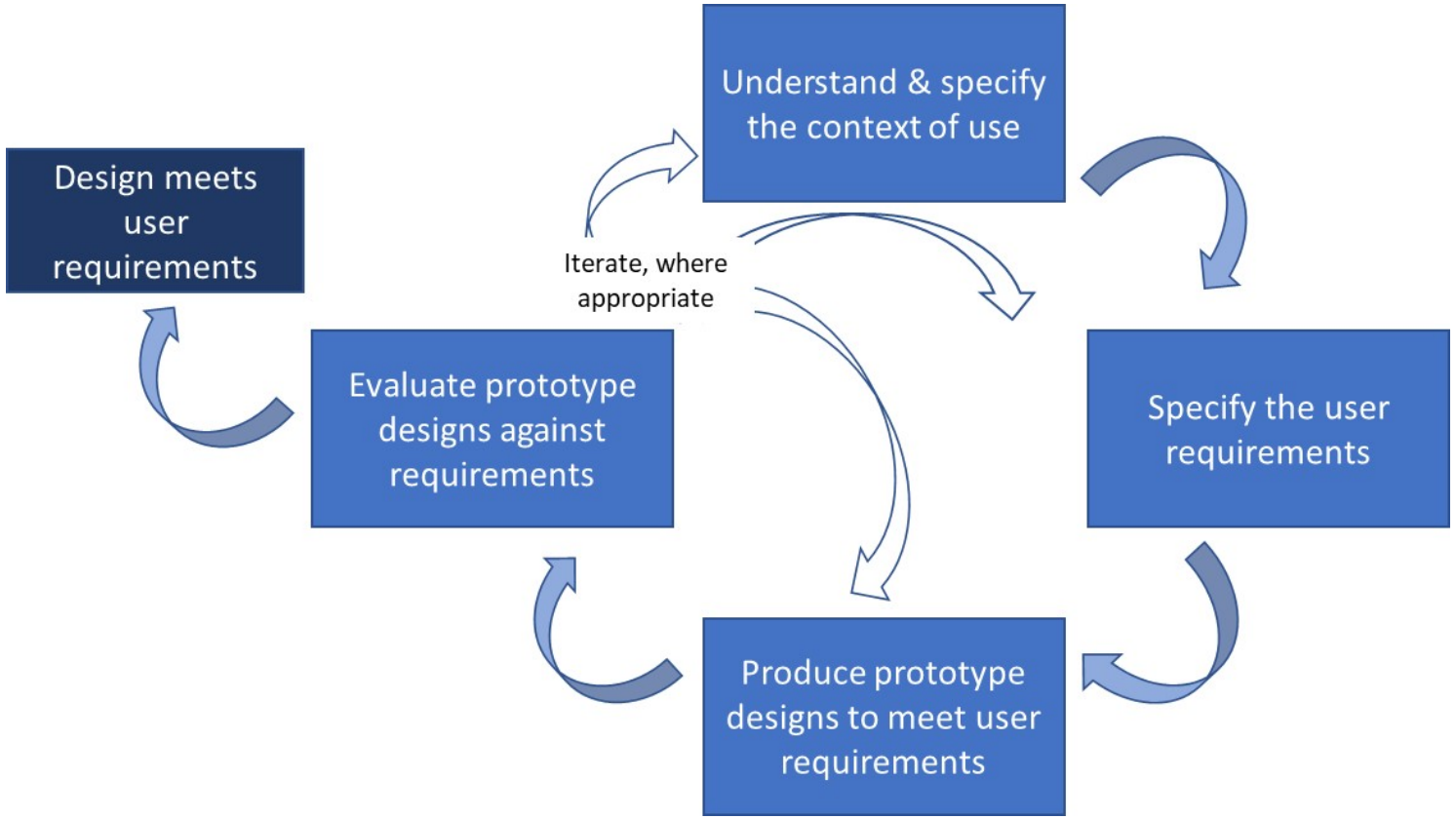
CENTER FOR HEALTH EQUITY RESEARCH AND PROMOTION

VA HSR&D CENTER OF INNOVATION

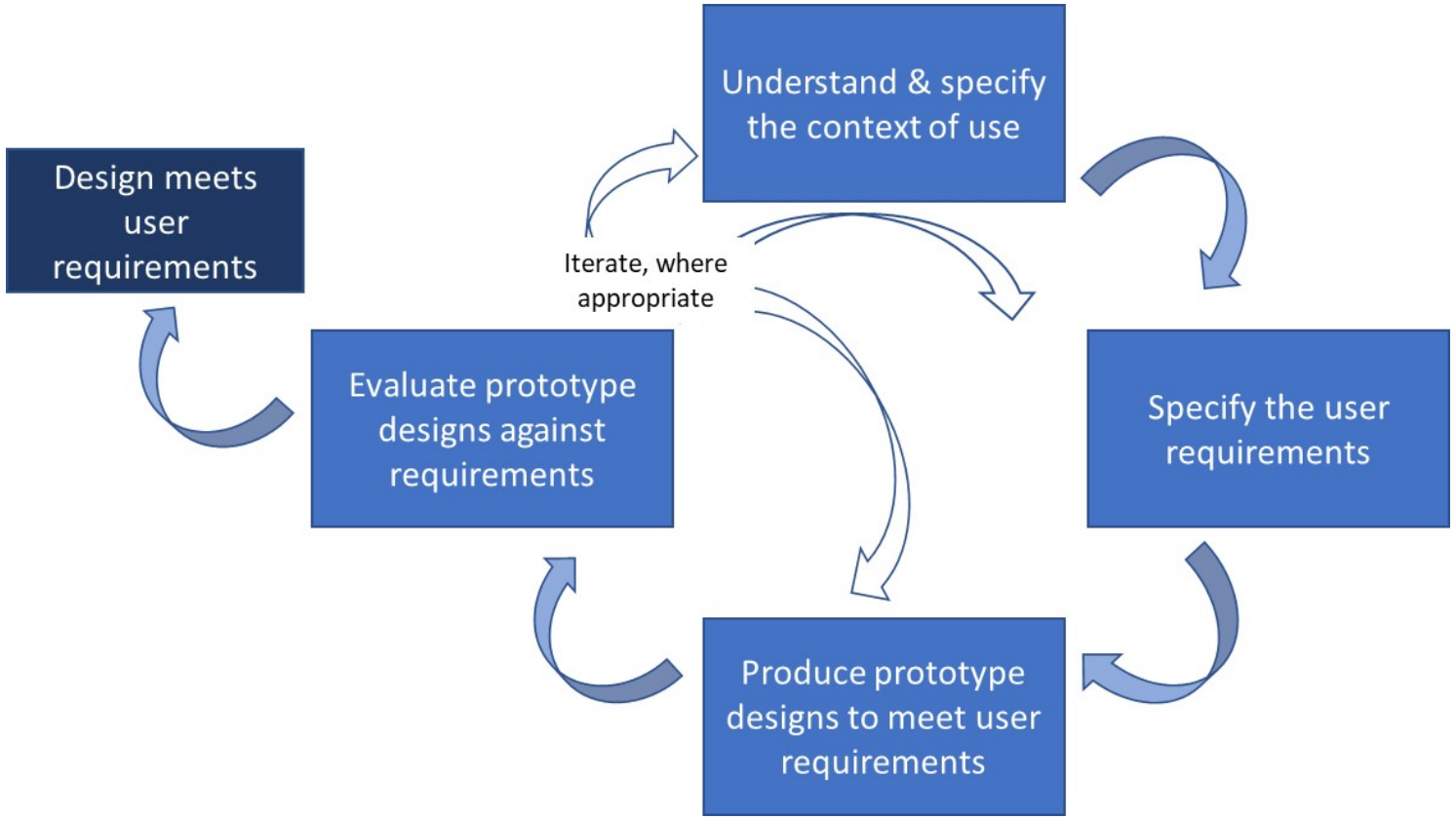
VA HSR&D Research to Impact for Veterans (RIVR) Program
(July 2019-June 2024)

Develop a process to **integrate** a **national equity dashboard** into clinical workflow, starting in VISN4

User-Centered Design



User-Centered Design



Target End Users:

QI Champions working in or with Primary Care (e.g., nurse care managers, pharmacists, Whole Health Coordinators, Patient Safety Fellows, etc.)

Poll #2: How many **years of experience** do you have working with VA data?

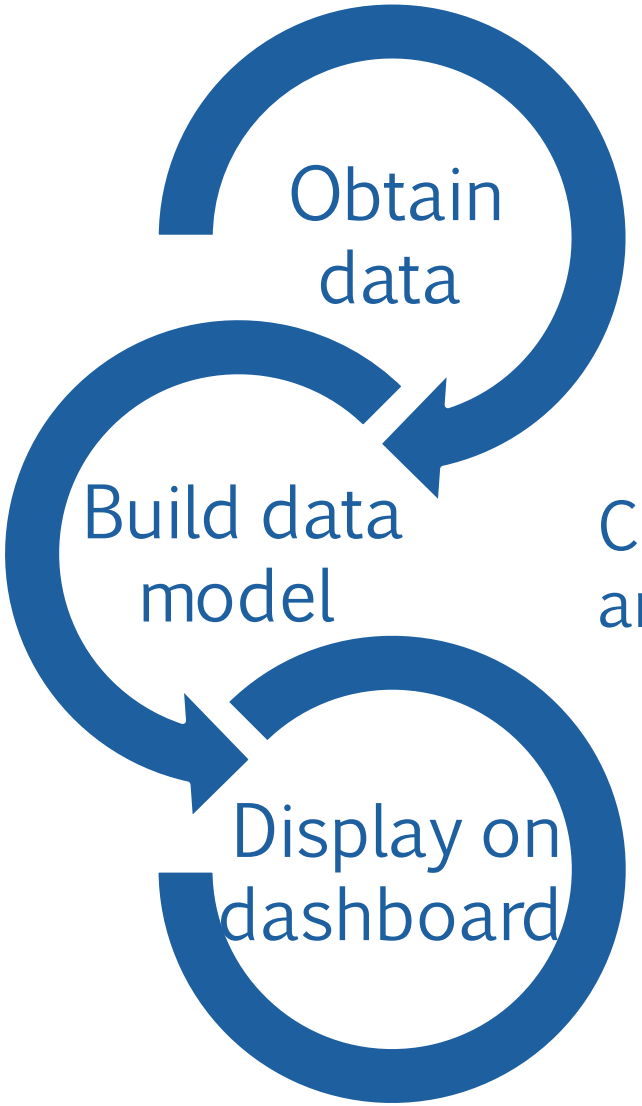
- None – I'm brand new to this!
- One year or less
- More than 1, less than 3 years
- At least 3, less than 7 years
- At least 7, less than 10 years
- 10 years or more

Data acquisition and packaging process

John Cashy, PhD

Realities and Constraints

- **Quality metrics:** HEDIS measures captured by VA Electronic Quality Measurement (eQM) Program
- **Target:** "National Score" – computed from entire dataset, for each time period
- **Demographic data:** race/ethnicity, rural/urban, sex
- **VA-approved software:** Microsoft Power BI
- **Small numbers:** Suppress values for groups <20
- **Access:** PHI data stored on operations server; restricted access based on VA credentials; no hyperlink in CPRS or VSSC



Merge quality measures from eQM with demographics from VA Corporate Data Warehouse (refreshed monthly)

Calculate differences between each group's score and national score; link patients to teams/providers

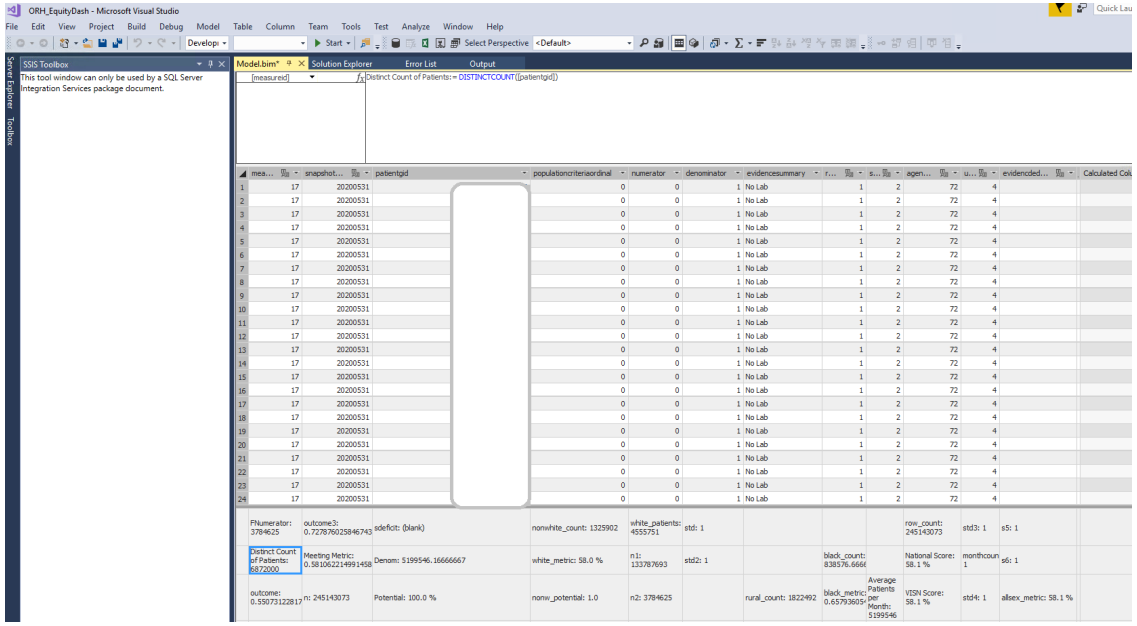
Set up interactive platform for users to interface with the data

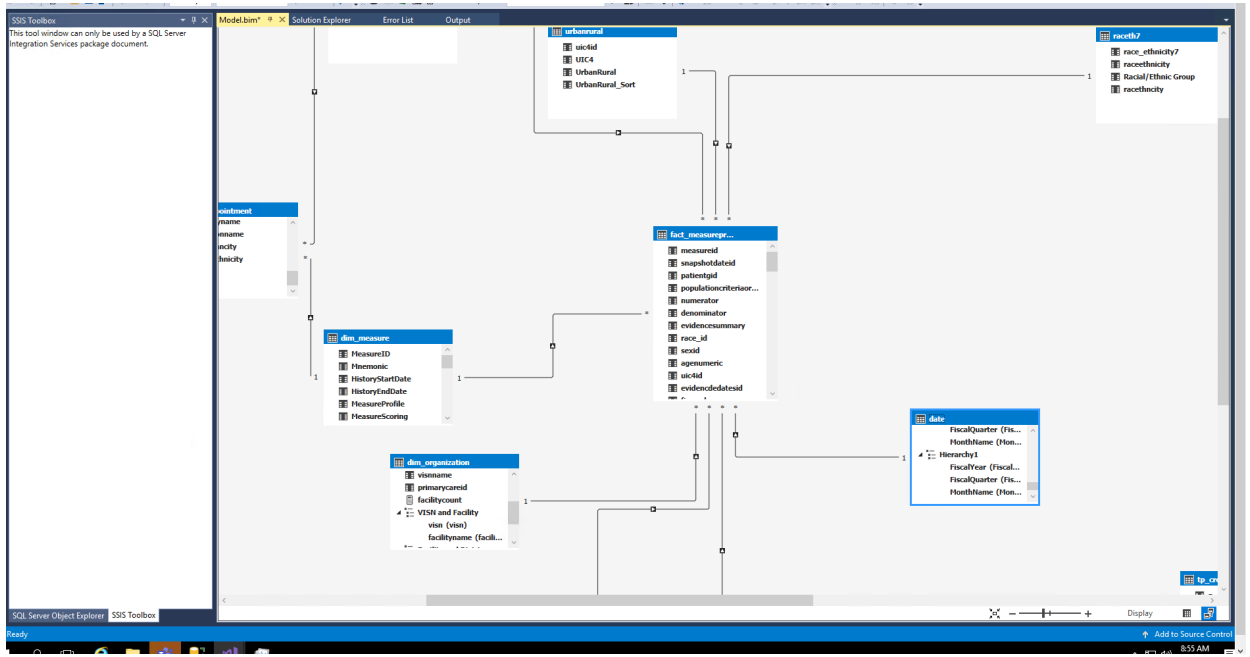
Initial Setup

- Worked with CDW Project Support to create CDW Workgroup and SQL Server Database
- Requested ETL Resources and SSAS Database*
- Obtained permission (DUA) from EQM to access their data
- Initial transfer of data from EQM Server to our CDW Database
- Creation of Tabular Data Model*

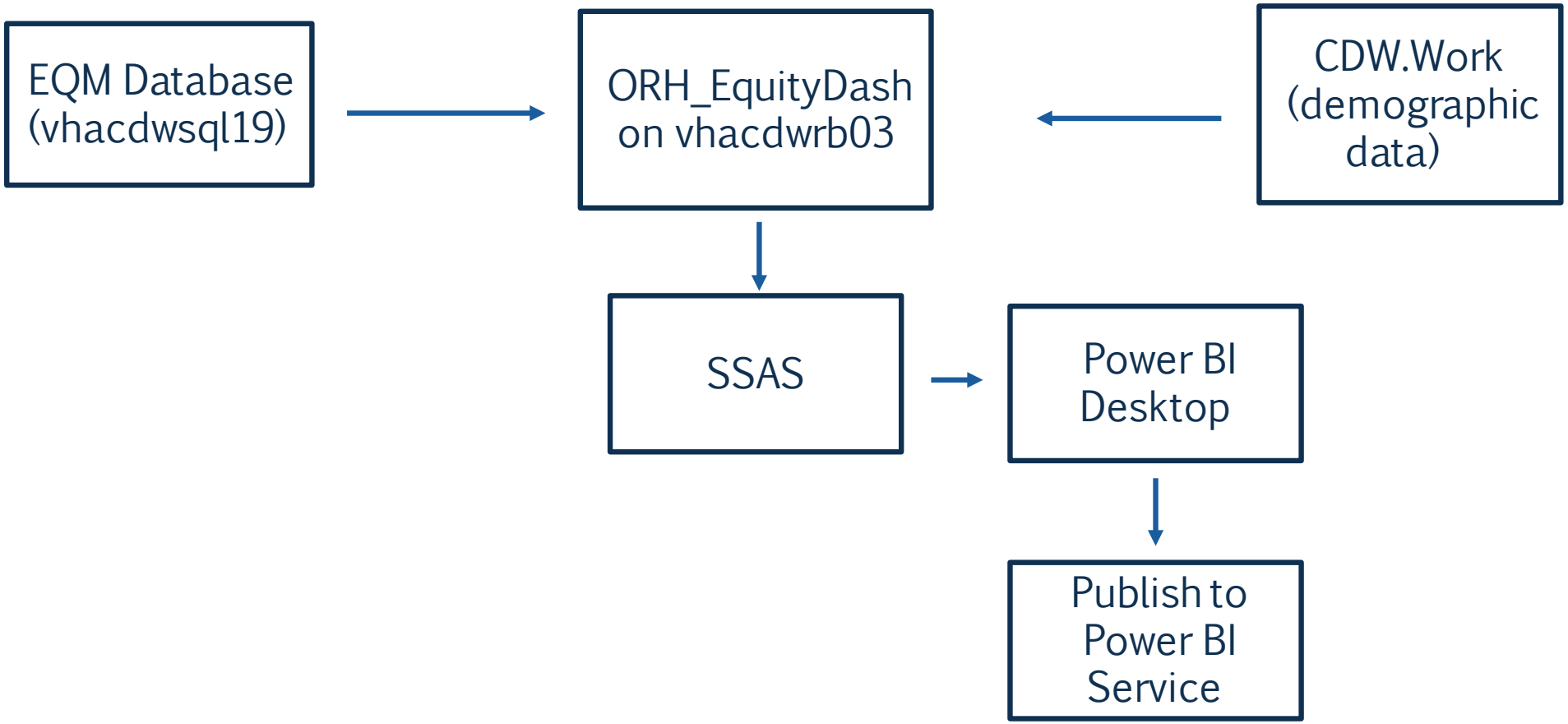
*Can be skipped and done entirely in Power BI or Pyramid for smaller sets

Tabular Model



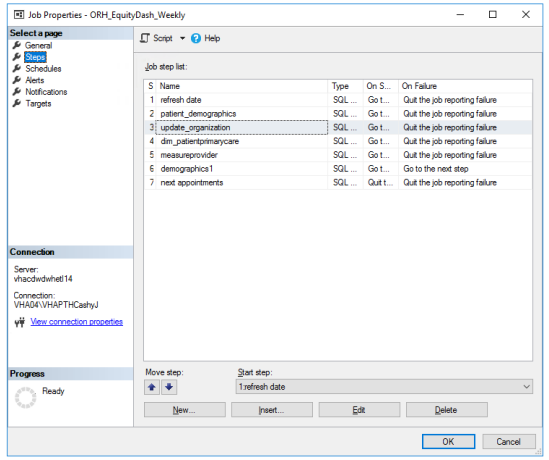


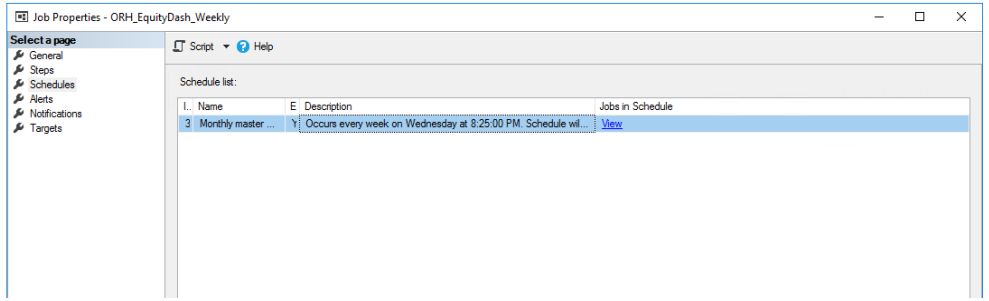
Steps to Combine EQM and CDW data



Weekly Scheduled Jobs (ETL)

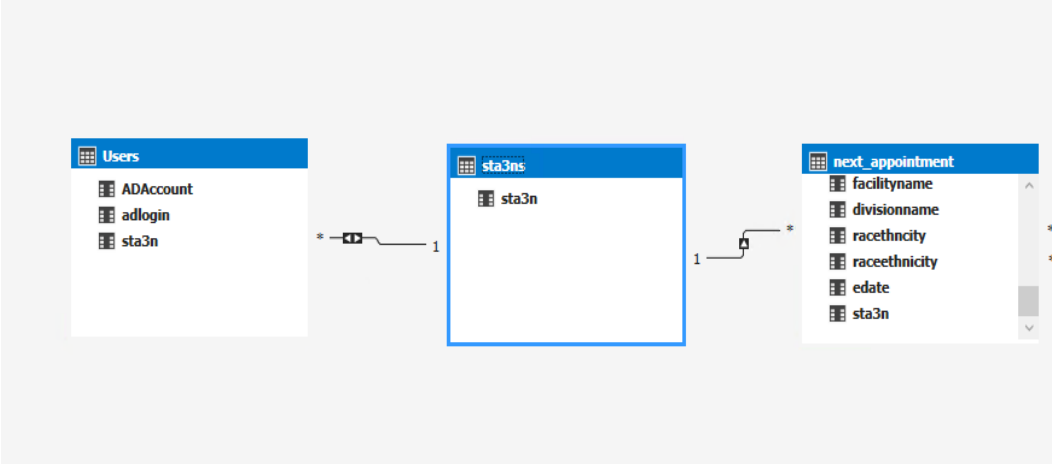
- Transfer new data from EQM Server to RB03
- Merge again with demographic data (sex, race, urban/rural) from CDW
- Update Data Model





Row Level Security

- Users are allowed to see patient names only for those stations for which they have NDS access. We currently further limit this to only the user's home station.



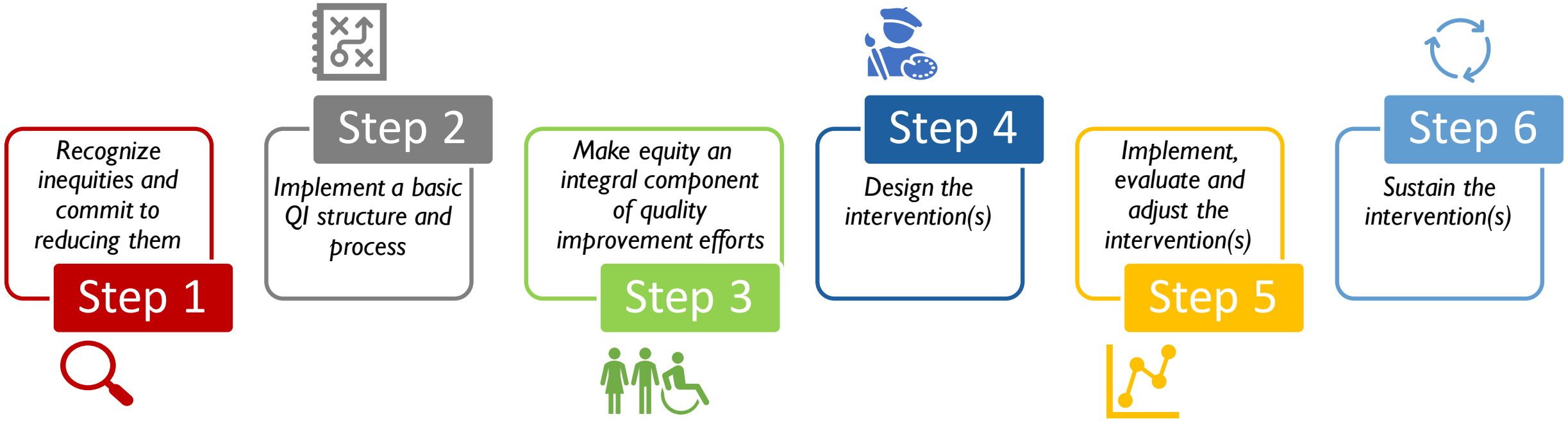

```
create view [App].[user_permissions] as
    Select   distinct ap.adaccount, lc.adlogin, ap.sta3n
    from [CDWwork].[LCustomer].[AllPermissions] ap
    inner join cdwwork.lcustomer.lcustomer lc on lc.LCustomerID=ap.LCustomerID
    and  ap.sta3n=lc.InferredSta3n and phipii=1 and ap.sta3n>0
```

Demonstration

Leslie Hausmann, PhD

STEPS FOR REDUCING RACIAL AND ETHNIC DISPARITIES IN HEALTHCARE SETTINGS

Chin MH et al. A roadmap and best practices for organizations to reduce racial and ethnic disparities in health care. *Journal of General Internal Medicine.* 2012;278(8):992-1000.



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The Primary Care Equity Dashboard is designed to facilitate these steps

Step 1
Recognize inequities and commit to reducing them

Step 2
Implement a basic QI structure and process

Step 3
Make equity an integral component of quality improvement efforts

Step 4
Design the intervention(s)

Step 5
Implement, evaluate and adjust the intervention(s)

Step 6
Sustain the intervention(s)

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Step 6
Sustain the intervention(s)

Involve Veterans and other key stakeholders throughout the process

Step 1

RECOGNIZE INEQUITIES AND COMMIT TO REDUCING THEM

Step 1

eQM Electronic Quality Measurement

eQM portal (VA intranet): https://eqm.va.gov/COR/#/home

HEDIS Measures Determined from EHR	Mnemonic
Hypertension: Blood pressure controlled	lhd53h_ec
Cardiovascular disease: Statin prescribed	statn1_ec
Cardiovascular disease: Statin received for ≥80% of days prescribed	statn4_ec
Diabetes: Annual HbA1c testing	c9h_ec
Diabetes: HbA1c >9% or not tested (poor control)	dmg23h_ec
Diabetes: HbA1c <7 in patients with diabetes	dmg11h_ec
Diabetes: Renal testing in patients with diabetes	dmg34h_ec
Diabetes: Statin therapy for patients with diabetes	statn7_ec
Diabetes: Statin adherence for patients with diabetes	statn8_ec
Diabetes: Blood pressure <140/90 in patients with diabetes	dmg27h_ec
Influenza Immunization: Flu immunization in patients 66 years and older	p28h_ec
Influenza Immunization: Flu immunization in patients age 19 to 65 years	p29h_ec
Prostate cancer: Unnecessary PSA testing in men over 70	psa1_ec

Step 1 CONSULT THE PRIMARY CARE EQUITY DASHBOARD

Red = Potential for overall improvement

Equity Dashboard

Health Equity Dashboard

- Performance Snapshot
- Equity Deep Dive
- Equity QI Resources
- Patient Outliers
- Performance Trends

Facility

Timeframe: FY2020 Q4

Measure Category: All Measures

Distance from National Score by Facility and Division

Facility and Division Data by Measure	National	Preferred Direction	Score	Average Patients per Month	Absolute Difference from National
HbA1c testing in patients with diabetes (c9h_ec)	85.9 %	Higher	83.3 %	2643	2.6%
HbA1c less than 7 in patients with diabetes (dmg11h_ec)	38.5 %	Higher	39.2 %	903	0.7%
Poor control of HbA1c in patients with diabetes (dmg23h_ec)	26.6 %	Lower	27.7 %	2643	1.1%
Blood pressure less than 140/90 in patients with diabetes (dmg27h_ec*)	66.7 %	Higher	60.0 %	2643	6.7%
Renal testing in patients with diabetes (dmg34h_ec*)	89.6 %	Higher	85.0 %	2643	4.6%
Controlling high blood pressure in patients with hypertension (ihd53h_ec*)	72.9 %	Higher	69.1 %	7975	3.9%
Influenza immunizations 66 years of age and older (p28h_ec)	7.3 %	Higher	8.0 %	18272	0.7%
Influenza immunizations 19-65 years of age (p29h_ec)	3.1 %	Higher	3.5 %	16655	0.3%
Non-recommended PSA screening in men 70 years and older (psa1_ec)	24.3 %	Lower	7.5 %	12820	16.8%
Statin therapy for patients with cardiovascular disease (statn1_ec*)	84.4 %	Higher	88.5 %	936	4.1%
Statin adherence for patients with cardiovascular disease (statn4_ec)	82.3 %	Higher	83.3 %	778	1.0%
Statin therapy for patients with diabetes (statn7_ec*)	74.4 %	Higher	77.2 %	2244	2.8%
Statin adherence for patients with diabetes (statn8_ec)	78.0 %	Higher	78.3 %	1618	0.3%

NOTE: eQM measures that affect SAIL are highlighted with an asterisk.

Step 1 REVIEW THE METRICS FOR POTENTIAL DISPARITIES

Equity Dashboard

- Health Equity Dashboard
  - Performance Snapshot
  - Equity Deep Dive
  - Equity QI Resources
  - Patient Outliers
  - Performance Trends

Reset facility list

Facility

Division: All

Timeframe: FY2020 Q4

Measure: dmg27h_ec*

Measure Details

Description: Blood pressure less than 140/90 in patients with diabetes

National Score: 66.7%

Preferred Direction: Higher

Distance from National Score and Population Size by Patient Demographics

RACE

	Average Patients per Month	Score	Absolute Difference from National
White	2029	60.6 %	6.2%
Black	376	54.9 %	11.8%
Hispanic	92	66.2 %	0.6%
Asian	25	69.7 %	3.0%

GENDER

	Average Patients per Month	Score	Absolute Difference from National
Female	126	54.1 %	12.6%
Male	2413	60.2 %	6.5%

GEOGRAPHICAL LOCATION

	Average Patients per Month	Score	Absolute Difference from National
Urban	2466	59.9 %	6.8%
Rural	72	60.0 %	6.8%

NOTE: If the tables are blank, there were not sufficient observations for the Facility and Division you selected.

Step 1 COMMIT TO REDUCING DISPARITIES THROUGH EQUITY-GUIDED IMPROVEMENT

Equity Dashboard

- Health Equity Dashboard
  - Performance Snapshot
  - Equity Deep Dive
  - Equity QI Resources
  - Patient Outliers
  - Performance Trends

Reset facility list

Facility: [redacted]

Division: All

Timeframe: FY2020 Q4

Measure: dmg27h_ec*

Measure Details

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Urban	2466	59.9 %	6.8%
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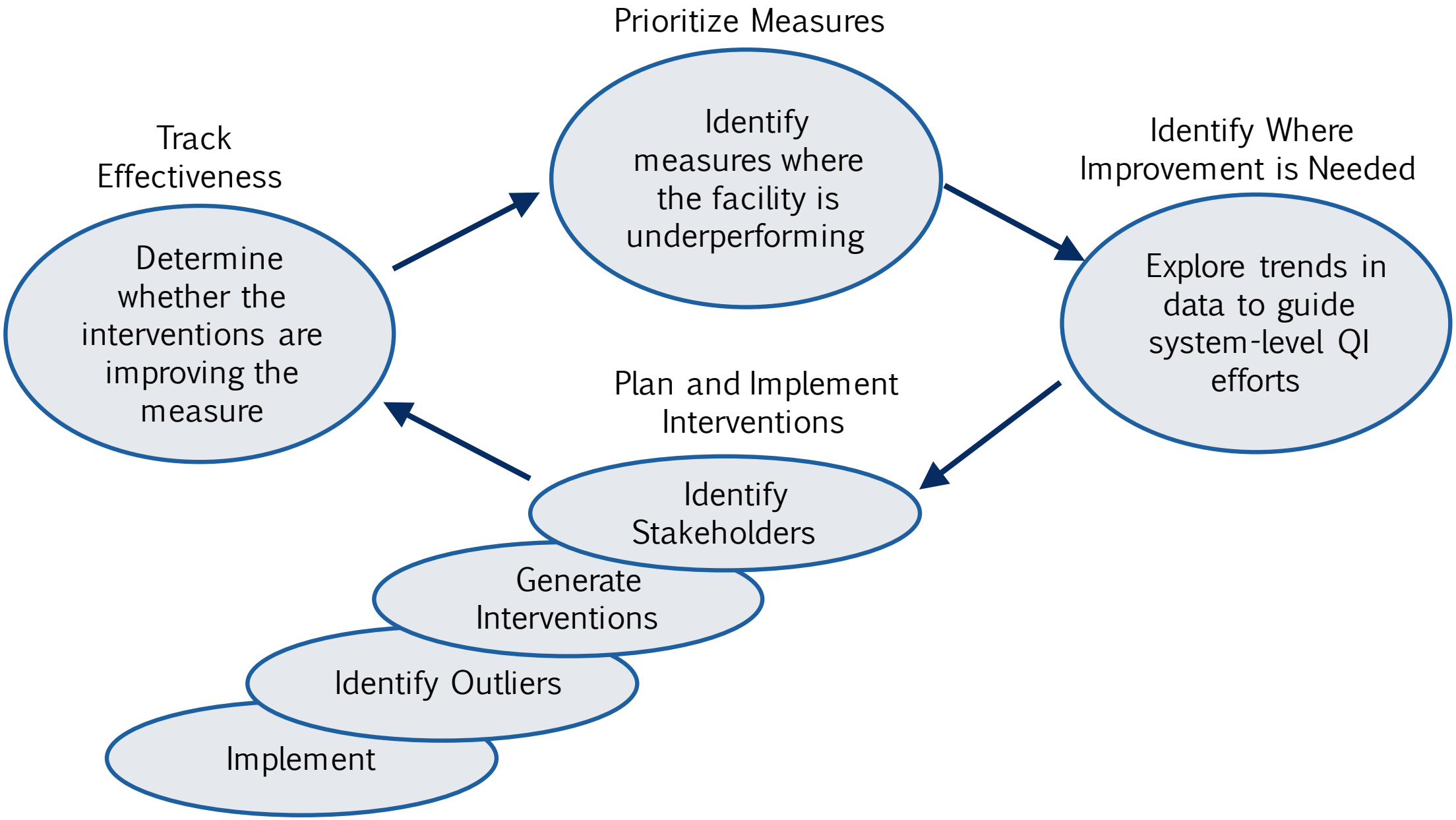
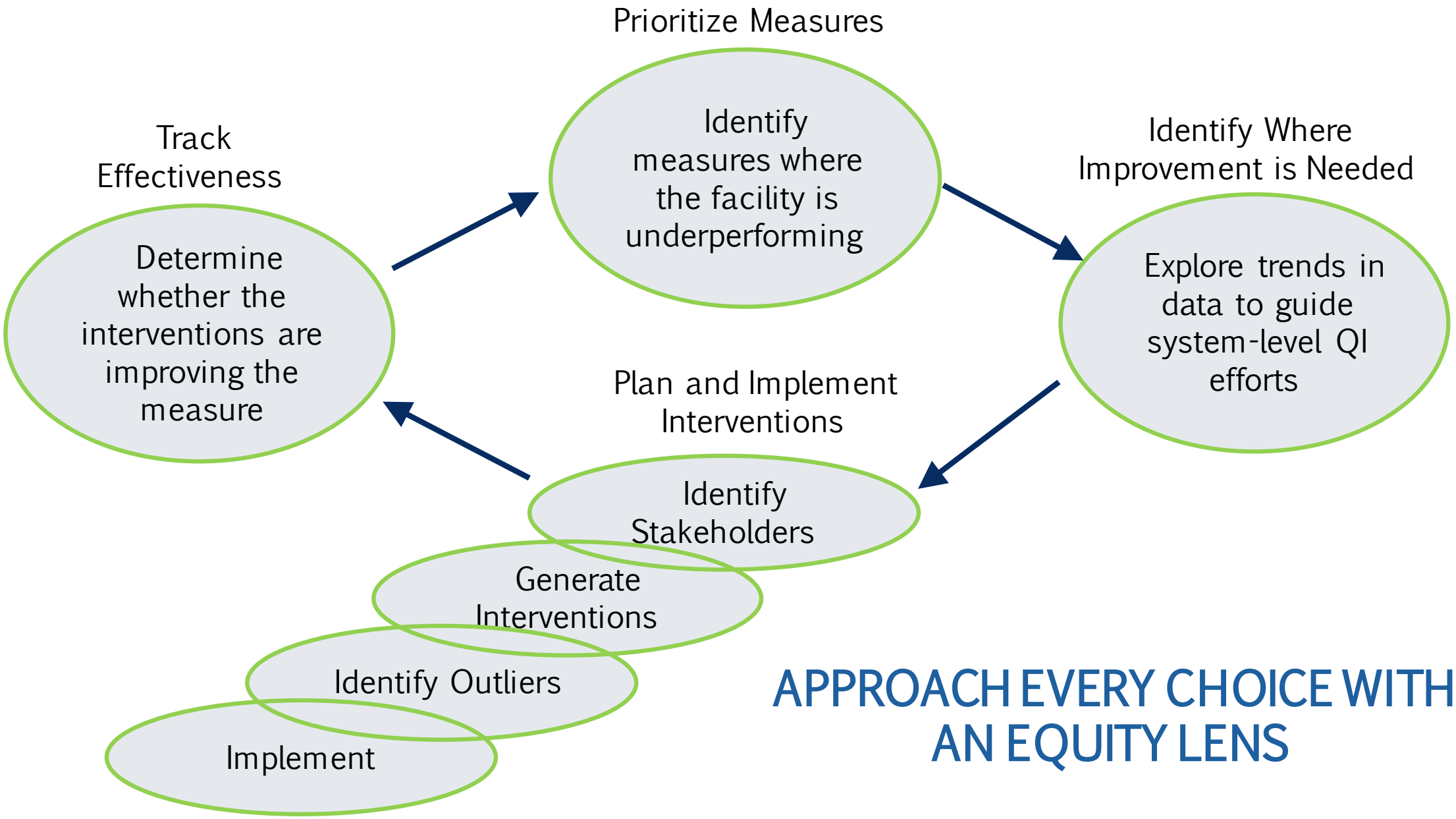
NOTE: If the tables are blank, there were not sufficient observations for the Facility and Division you selected.

Step 2 IMPLEMENT A BASIC QI STRUCTURE AND PROCESS



Step 3 MAKE EQUITY AN INTEGRAL COMPONENT OF QI EFFORTS



APPROACH EVERY CHOICE WITH AN EQUITY LENS

Step 4 DESIGN THE INTERVENTION(S)

Step 4 ENGAGE YOUR STAKEHOLDERS

Equity Stakeholders

Leadership

- Seek their support early on
- Keep them informed of the progress

Champion

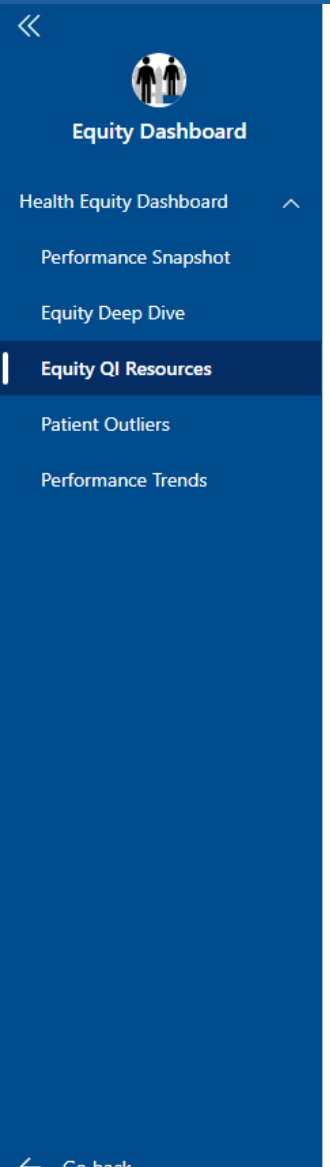
- Communicate with stakeholders
- Document the team's plans
- Track progress and provide feedback

Team

- Multidisciplinary members
- Veteran stakeholders
- Community partners

We are in this together. It takes input from everyone to develop sustainable solutions.

Step 4 IDENTIFY AND ADAPT EFFECTIVE STRATEGIES



Filter By Resource Category

Addressing Social Determinants of Health

Health Equity Quality Improvement Resources

Category	Demographic Variable	Disease	Brief Description	Link to additional information
Addressing Social Determinants of Health	Gender	Any	Prevalence of food insufficiency and impact on health outcomes for women Veterans. (2018, WHI)	https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S104938671730419X?returnurl=null&referrer=null
Addressing Social Determinants of Health	Gender	Any	Role of nurses as leaders and change agents in advancing health equity for women by screening for social determinants. (2020, Nursing for Women's Health)	https://www.sciencedirect.com/science/article/pii/S1751485119302284
Addressing Social Determinants of Health	Region	Any	SDOH barriers and challenges that rural residents experience and the impact on health. (2020, RHI Hub)	https://www.ruralhealthinfo.org/topics/social-determinants-of-health
Addressing Social Determinants of Health	Any	Any	Six drivers for successful integration of social determinants of health in clinical settings. (2019, CF & HL)	https://www.commonwealthfund.org/blog/2019/evolving-roadmap-address-social-determinants-health?omnicid=EALERT1545961&mid=swrnet@bu.edu
Addressing Social Determinants of Health	Any	Any	Six steps towards addressing social determinants of health that includes guidance, milestones and supporting resources at each step. (2019, The Commonwealth Fund & HealthLeads)	https://healthleadsusa.org/resource-library/roadmap/
Addressing Social Determinants of Health	Any	Any	Toolkit for hospitals that reviews SDOH topics, the impact of each on health and provides key and related resources. (2020, AHA)	https://www.aha.org/social-determinants-health
Addressing Social Determinants of Health	Any	Any	Virtual Modules that help clinicians address social determinants of health and give an introduction to the approach of Upstream Quality Improvement. (2019, AHA & HealthBegins)	https://www.aha.org/physicians/SDOH

Step 4 ENGAGE, LEARN FROM, AND IDENTIFY PROMISING STRATEGIES WITH YOUR OWN PATIENTS

Equity Dashboard

Testing Model - 0513

- Performance Snapshot
- Equity Deep Dive
- Equity QI Resources
- Patient Outliers
- Performance Trends

Go back

Reporting Month	Facility	Division	Team	Measure
APR 2020		All	All	statn4_ec

Patient Outliers by Measure

Patient Name	SSN	Phone	Gender	Race	Geographical Location	Outlier Reason	Outlier Date	Next Primary Care Appointment	Primary Care Clinic Name	Provider Name
Lee, Jennifer	0123	412-555-1234	F	Asian	Urban	BP 142/84	06/15/20	NONE	A	George
Jefferson, Mary	4567	412-555-2345	F	Black	Urban	BP [illegible]	[illegible]	None	C	George
Lewis, Jordan	8910	412-555-6789	F	Black	Urban	BP [illegible]/70	03/12/20	12/14/[illegible]	[illegible]	George
Brown, Margaret	2345	412-555-0123	F	White	Urban	BP 160/99	[illegible]	[illegible]/15/21	D	George
Garcia, Susan	6789	412-555-4567	F	Hispanic	Urban	BP [illegible]	11/08/19	None	A	George
Jones, Heather	3456	412-555-8901	F	White	Urban	BP 145/75	09/01/20	12/14/20	n/a	George
Smith, Rebecca	7890	412-555-9876	F	White	Rural	BP 143/78	02/12/20	None	n/a	George
Grant, Troy	1234	412-555-5432	M	White	Rural	BP 152/90	04/17/20	11/10/20	D	George
Smith, Ralph	5678	412-555-4321	M	White	Urban	BP 135/86	12/19/19	12/10/20	C	George
Wilson, David	9012	412-555-7890	M	White	Urban	BP 140/79	03/09/20	None	C	George
Williams, Terrance	0012	412-555-1230	M	Black	Urban	BP 146/83	04/27/20	12/14/20	F	George

NOT ACTUAL PATIENTS
(and this is NOT the intervention)

Step 5 IMPLEMENT, EVALUATE, AND ADJUST

Equity Dashboard

- Health Equity Dashboard
  - Performance Snapshot
  - Equity Deep Dive
  - Equity QI Resources
  - Patient Outliers
  - **Performance Trends**

Reset facility list

Facility

Division: All

Measure: dmg27h_ec*

Measure Details

Description: Blood pressure less than 140/90 in patients with diabetes

Preferred Direction: Higher

Charting Options

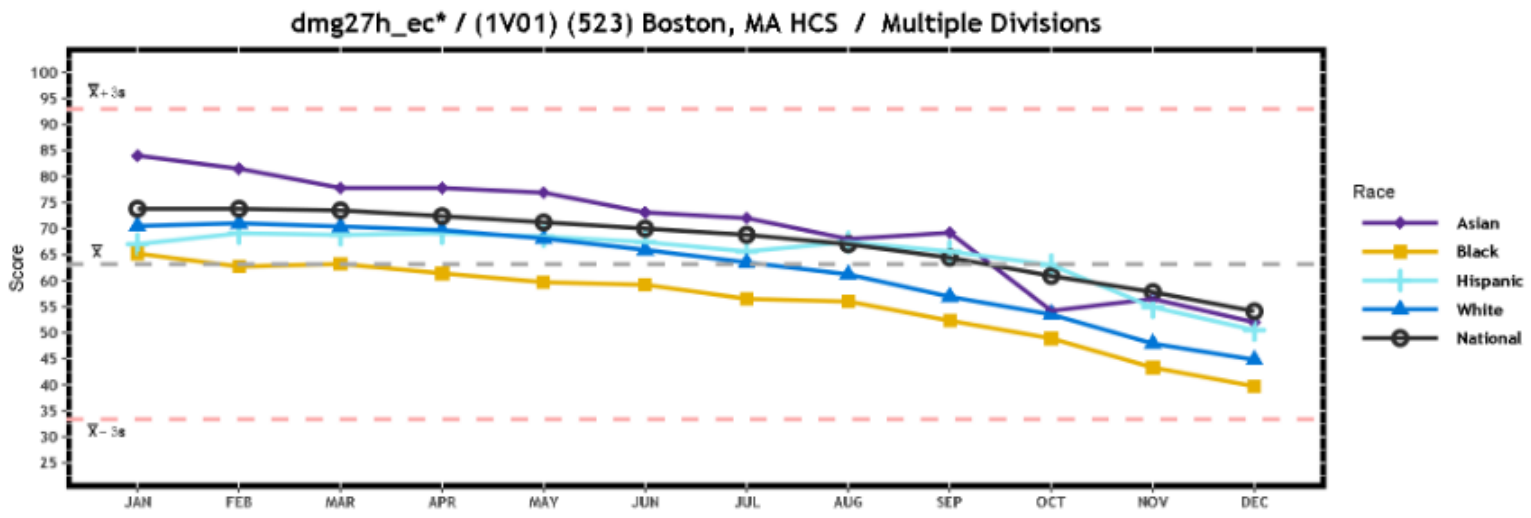
Show Trends Prior To: December 2020

Show VISN/National Trends (optional): National

Stratify Trends By:

- Race
- Gender
- Geographical Location

Performance Over Time



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Asian	84.0	81.5	77.8	77.8	76.9	73.1	72.0	68.0	69.2	54.2	56.5	52.0
Black	65.2	62.7	63.2	61.4	59.7	59.2	56.5	56.0	52.3	48.9	43.3	39.7
Hispanic	67.0	69.1	68.8	69.1	68.5	67.4	65.6	67.4	65.6	63.0	54.9	50.5
White	70.5	71.0	70.4	69.7	68.1	65.9	63.5	61.2	56.9	53.5	47.9	44.8
National	73.8	73.8	73.5	72.4	71.2	70.0	68.8	67.0	64.4	60.9	57.8	54.1

Step 6

SUSTAIN THE INTERVENTION(S)

Operations-research partnerships to spread culture of equity across VA

Ernest Moy, MD, MPH

Getting to Scale

- Health Equity is a Top Priority for VISN4 & Office of Health Equity.
- We love the Primary Care Equity Dashboard because it reduces disparities in health outcomes.

- But Health Equity is 1 of many priorities in other parts of VHA.
- How do we get them to recognize Health Equity as a Top Priority?
- How do we get them to use the Primary Care Equity Dashboard to reduce disparities?

Equity Guided Improvement Strategy (EGIS) leverages existing Quality Improvement Infrastructure

Traditional Quality Improvement

Redesigns processes to move a homogeneous population closer to target

Equity Guided Improvement Strategy (EGIS) leverages existing Quality Improvement Infrastructure

Traditional Quality Improvement

Redesigns processes to move a homogeneous population closer to target

Equity-Guided Improvement Strategy

Customizes processes to move an underperforming subset of a heterogeneous population closer to target

Equity Guided Improvement Strategy is more focused & efficient if heterogeneous population problem

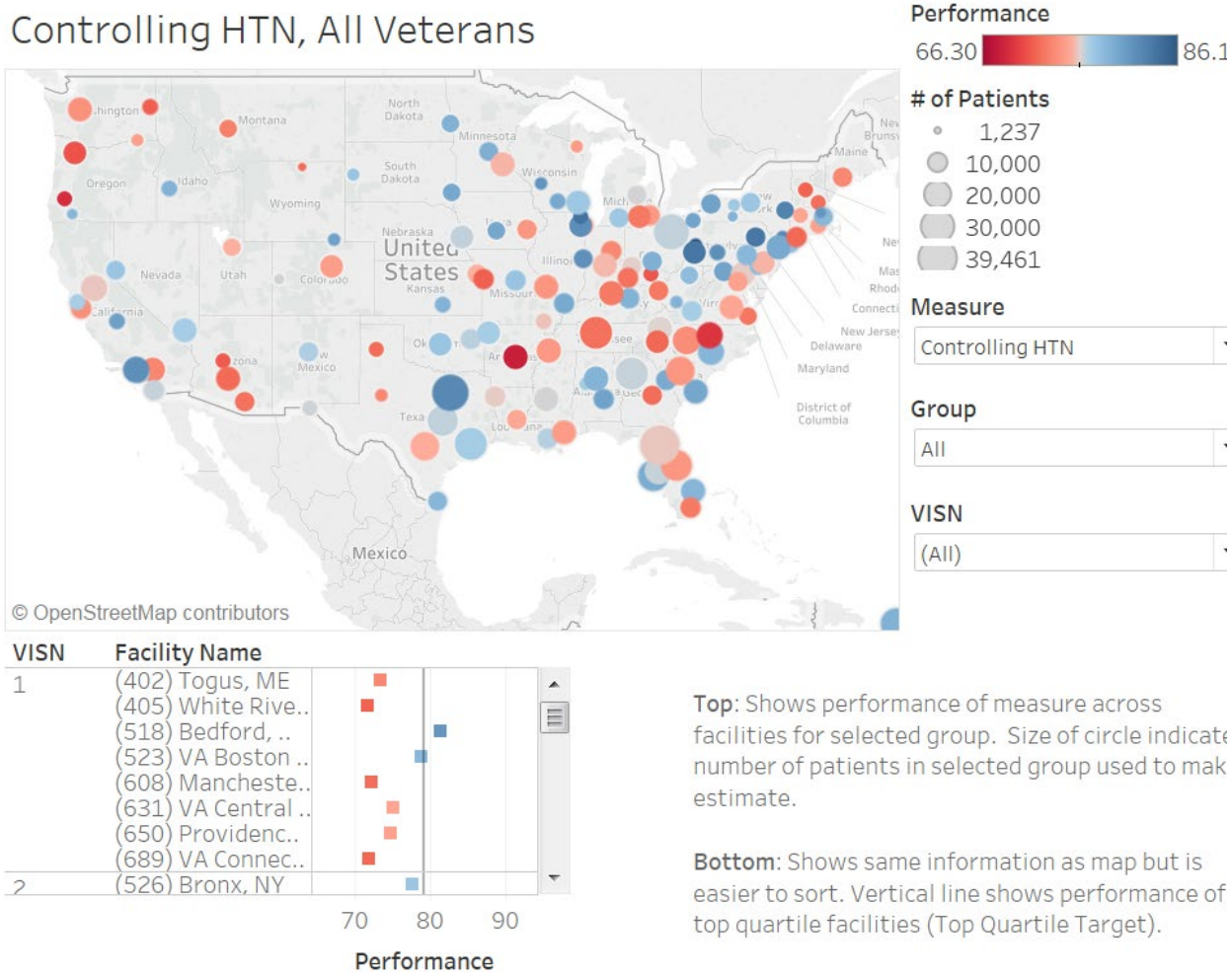
Quality vs. Equity Problem

- Care may be fine for many, disruption should be avoided
- Care may benefit from tweaking for some

Equity-Guided Improvement Strategy

- Smaller number of patients have to be moved
- Focus on this population
  - Common barriers?
  - Common geography?

Typical QI: Identify VAs with underperformance

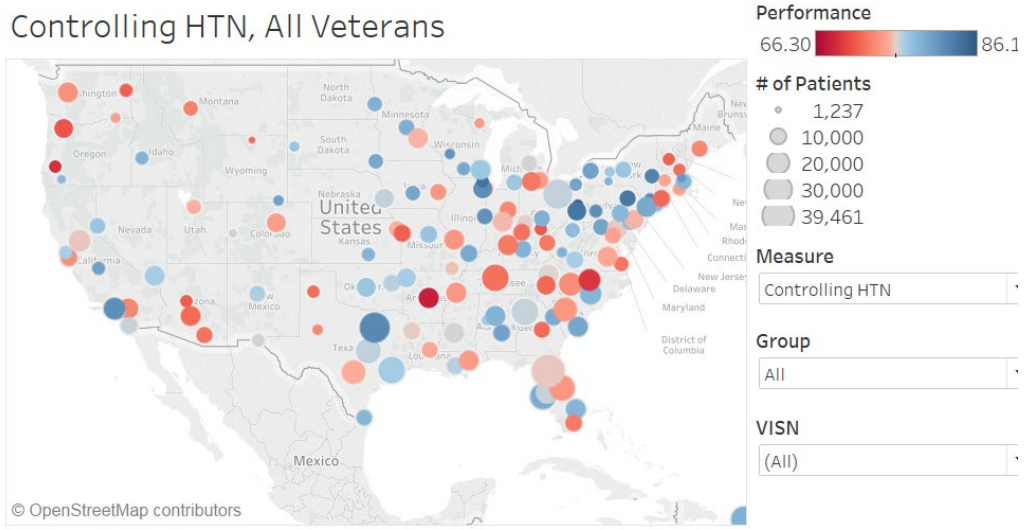


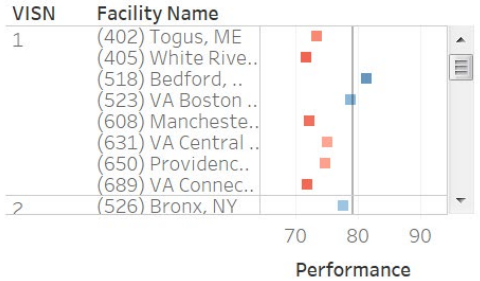
Top: Shows performance of measure across facilities for selected group. Size of circle indicate number of patients in selected group used to mak estimate.

Bottom: Shows same information as map but is easier to sort. Vertical line shows performance of top quartile facilities (Top Quartile Target).

Equity Guided Improvement: Identify VAs with underperformance & populations accounting for disproportionate share of performance gap

Controlling HTN, All Veterans





Top: Shows performance of measure across facilities for selected group. Size of circle indicate number of patients in selected group used to mak estimate.

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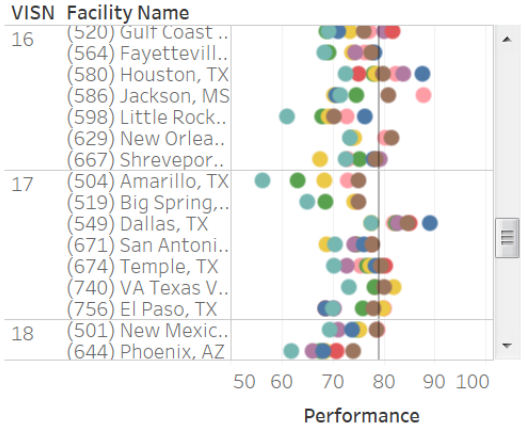
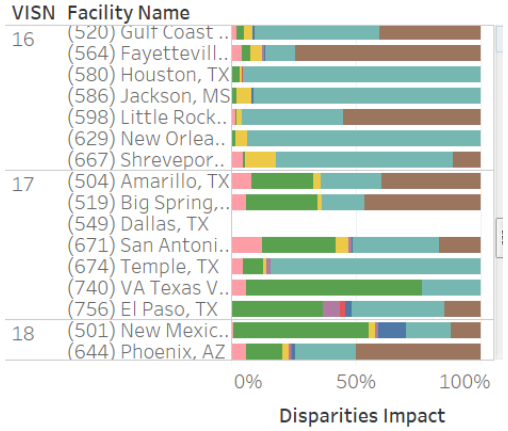
Controlling HTN by Race/ Ethnicity

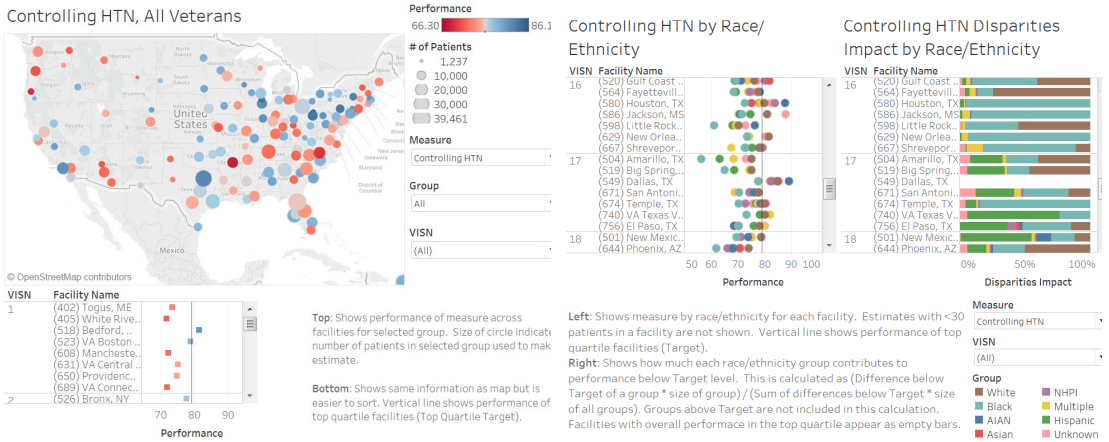


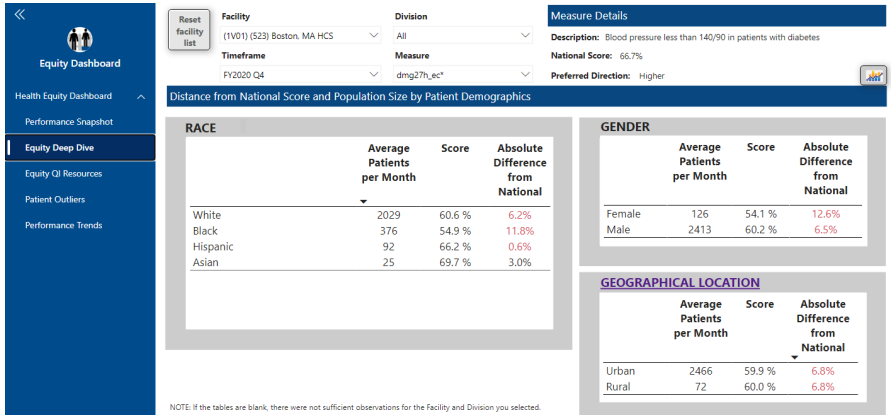
Controlling HTN Disparities Impact by Race/Ethnicity



Left: Shows measure by race/ethnicity for each facility. Estimates with <30 patients in a facility are not shown. Vertical line shows performance of top quartile facilities (Target).
Right: Shows how much each race/ethnicity group contributes to performance below Target level. This is calculated as (Difference below Target of a group * size of group) / (Sum of differences below Target * size of all groups). Groups above Target are not included in this calculation. Facilities with overall performace in the top quartile appear as empty bars.

Measure
Controlling HTN
VISN
(All)
Group
White
Black
AIAN
Asian
NHPI
Multiple
Hispanic
Unknown





Identifying and Engaging VISN/VAMC Leadership

+

Engaging and Supporting QI Champions/ Teams

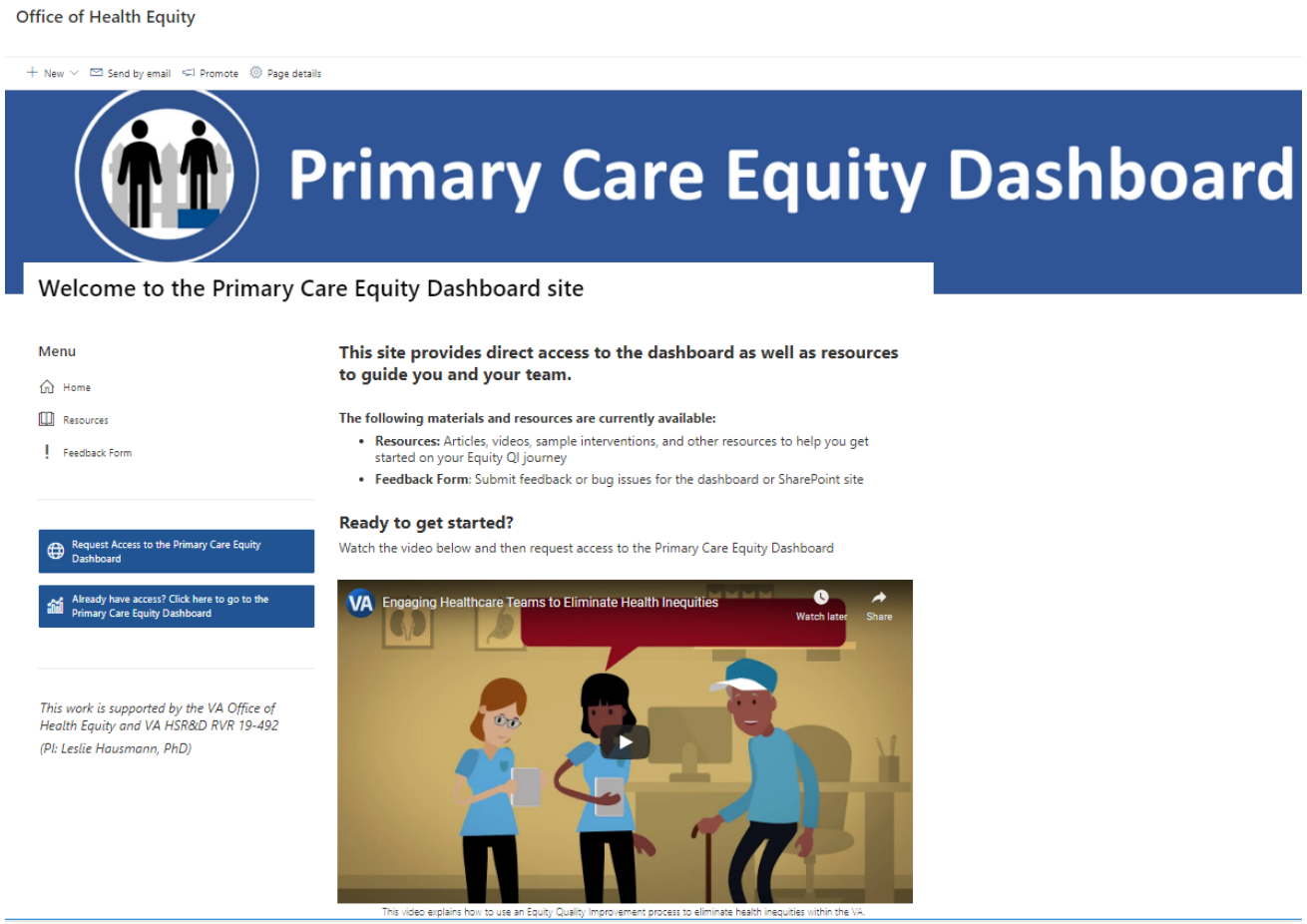
→

Equity Guided Improvement

Bring equity guided improvement to your VA

https://dvagov.sharepoint.com/sites/VACOVHAOHE/SitePages/Test.aspx

- Learn more about Equity QI
- Find evidence-based interventions to reduce disparities and address social determinants of health
- Request access to the Primary Care Equity Dashboard



Next Steps

- Socialize Equity Guided Improvement Strategy & Primary Care Equity Dashboard across VHA
- Facilitate access through sharepoint (https://dvagov.sharepoint.com/sites/VACOVHAOHE/SitePages/Data-and-Tools.aspx)
- Expand Primary Care Equity Dashboard sites & measures
- Conduct evaluation & implementation research?
- Develop High Equity & Reliability Organization (HERO) curriculum?
- Imbed in Diversity, Equity, & Inclusion lane of effort?
- Build into Performance Plans?

Additional Resources

VIReC Options for Specific Questions

HSRData Listserv

- Community knowledge sharing
- ~1,400 VA data users
- Researchers, operations, data stewards, managers

– Subscribe by visiting https://vaww.virec.research.va.gov/Support/HSRData-L.htm (VA Intranet)

HelpDesk

- Individualized support

virec@va.gov

(708) 202-2413

Quick links for VA data resources

Quick Guide: Resources for Using VA Data:
http://vaww.virec.research.va.gov/Toolkit/QG-Resources-for-Using-VA-Data.pdf (VA Intranet)

VIReC: http://vaww.virec.research.va.gov/Index.htm (VA Intranet)

Archived cyberseminar: *Meet VIReC: The Researcher's Guide to VA Data*
https://www.hsrd.research.va.gov/for_researchers/cyber_seminars/archives/video_archive.cfm?SessionID=3696&Seriesid=22

VIReC Cyberseminars (overview of series and link to archive):
http://www.virec.research.va.gov/Resources/Cyberseminars.asp

VHA Data Portal (data source and access information): http://vaww.vhadataportal.med.va.gov/Home.aspx
(VA Intranet)

Quality Enhancement Research Initiative (QUERI): https://www.queri.research.va.gov

QUERI Implementation Network Archived Cyberseminars:
https://www.hsrd.research.va.gov/cyberseminars/catalog-archive.cfm?SeriesSortParam=y&SeriesIDz=83

Implementation Research Group (IRG) Archived Cyberseminars:
https://www.gotostage.com/channel/implementresearchgrpchristinekowalski

Center for Evaluation and Implementation Resources (CEIR): https://www.queri.research.va.gov/ceir/default.cfm

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