Assessing Cost and Outcomes among Veterans Receiving Community Care

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If You Want To Go Fast, Go Alone.
If You Want To Go Far, Go Together

African Proverb

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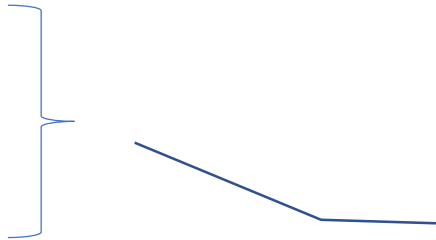
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Acknowledgements

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- All errors are our own.

- Our viewpoints and interpretations of the data do not represent the VA or the Office of Community Care

- No conflicts of interest

- VA HSR&D: SDR 18-318 (10/01/2018-9/30/2021) Make vs. Buy: Examining the Evidence on Access, Utilization and Cost: Are We Buying the Right Care for the Right Amount?

Outline

- Background on Community Care
- Community Care data

- Quality of care
- Cost of care
- Access

- Satisfaction with care

We've focused on cataract surgery because it is a great "mouse model."
- Common high-volume outpatient procedure
- Well-defined complications
- Always done by ophthalmologists
- Limited number of procedure codes
- Low-complication rates, though some may be serious
- Good information on market costs

Background on VA and Community Care

Brief History of VA Care

- Following World War I and II, VA developed capacity to treat Veterans
- Large capital investments that focused on inpatient care
- Not all services were easily provided by VA, so in the 1950s it developed provider agreements that were paid on a fee for service basis
  - This initiated the Fee Basis system.
  - FY2013, Fee comprised 11% of medical care appropriation
- In the 1990s, Kizer modernized VA creating a system of hospitals and outpatient clinics (hubs and spokes).
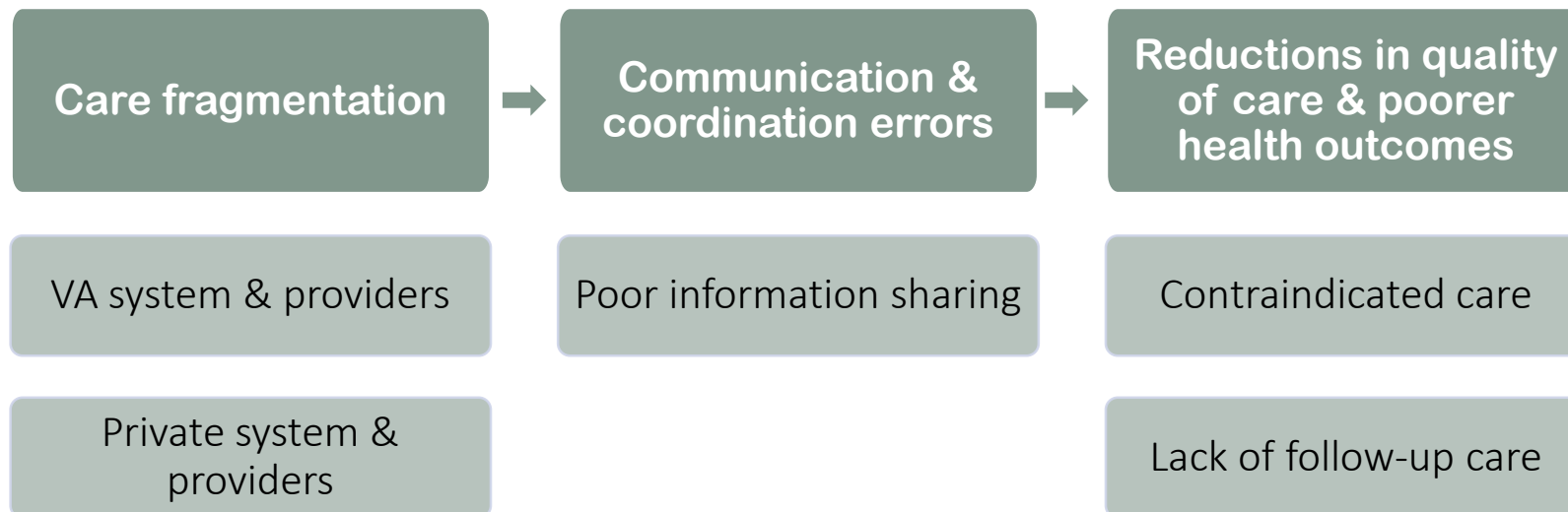
Evolution of Community Care

- Community Care = VA pays for its enrollees to receive care outside VA
- Millennium Bill of 1999
  - Expanded VA's coverage of extended care services
  - Reimbursement for emergency treatment in non-VA facilities.
- Veterans Access, Choice and Accountability Act ("Choice Act") of 2014
  - FY2017, 36% of all VA appointments scheduled in community (OCC 2018)
- VA Maintaining Internal Systems and Strengthening Integrated Outside Networks Act ("MISSION Act") of 2018
  - New access standards (e.g., Veteran's best medical interest, drive time)

Pros and Cons of Community Care

- Increased access to care and coverage
- Potential of care fragmentation (having providers inside & outside VA)

Care fragmentation	→	Communication & coordination errors	→	Reductions in quality of care & poorer health outcomes
VA system & providers		Poor information sharing		Contraindicated care
Private system & providers				Lack of follow-up care

Community Care Data

Paying for non-VA Services

- Prior to FY15, Community Care data was often referred to as Fee Basis.

- Fee Basis care was managed locally and bills were manually adjudicated and paid (about 5% of the claims took two years to adjudicate)

- Choice Act infused $10b into access and caused a large increase in referrals and claims
  - Referrals: the patient is referred to or seeks non-VA care
  - Payments: the patient received non-VA care and a bill is sent to VA

Data Systems

- The influx of new claims broke the Fee Basis system.

- Since 2012, VHA had been testing an IBM platform for claims auditing known as the Program Integrity Tool (PIT).

- Starting in FY2016, PIT became the hub for the Community Care data.
  - Old claims / authorizations managed in Fee
  - New claims managed in PIT

More Recent Analyses include PIT

- Benefits of PIT
  - Designed to replicate commercial claims
  - A lot more information than the Fee
    - Facility National Provider Identifier (NPI), rendering provider NPI
    - Revenue Code

- PIT is challenging
  - Large number of SQL tables
  - New variables appear
  - There are duplicate claims
  - Hard to know which claims are duplicates or valid second claims
  - Weird variables, such as Member ID

PIT Documentation

- https://www.herc.research.va.gov/include/page.asp?id=choice-pit

- This page shows HERC documentation. Also includes intranet links to additional resources

Comparative Assessment of Complications following Cataract Surgery among Veterans Receiving VA and Community Care

Team Rosen

Our Initial Cataract Analyses focused on Fee Data to Examine Early Post-Choice Period

- Retrospective study using FY14-FY15 outpatient VA & CC data from VA's Corporate Data Warehouse

- Baseline data (FY14) and index surgery data (FY15) on Veterans' demographics, comorbidities, preoperative ocular conditions (e.g., glaucoma) and specific medications (e.g., tamsulosin)

- Cohort: all Veterans who had outpatient cataract surgery in VA or CC in FY15 (identified by CPT codes for routine [66984) or complex (66982] cataract surgery)

- Outcomes: 90-day complications defined using a nationally endorsed list of CPT codes (National Quality Forum Measure #192) (e.g., retinal detachment, wound dehiscence)

Study Rationale and Objective

- Rationale: Despite increased utilization of CC, little is known about its impact on Veterans' quality of care

- Objective: Assess differences in postoperative complication rates ("markers of quality") between Veterans receiving cataract surgery in VA and through CC

- Hypotheses?

Methods

- Developed algorithm to link primary cataract surgeries and clinically relevant secondary procedures ("complications") to assess complication rates at eye level

- Calculated t-tests and effect sizes to compare demographic/clinical characteristics between Veterans using VA vs. CC, and between VA and CC groups in eye-level characteristics (e.g., high vs. low-risk eye groups)

- Compared VA and CC complication rates by calculating relative risks (RRs), attributable risks (ARs), and 95% Confidence Intervals (CIs), stratified by eye risk & surgery type (complex vs. routine)

- Ran logistic regression models to predict 90-day complications, adjusting for care setting (VA vs. CC), interactions (e.g., CC & surgery type), eye risk group, and demographic/clinical characteristics

Characteristics of Veterans Undergoing Cataract Surgery in VA or through CC During FY15

	Overall	CC	VA	P-value	Effect size
Patient-level Characteristics					
Number of Patients	61749	17203	44546		
Age, mean (SD)	71.37 (8.91)	71.22 (8.80)	71.43 (8.96)	0.007	0.024
Male, %	96.5	96.8	96.4	0.013	0.023
Race, %					
White	78.7	81.9	77.4	<0.001	0.11
Black	12.7	7.6	14.6	<0.001	0.225
Other/not known	8.7	10.5	8	<0.001	0.089
VA Priority Group, %					
1-2	35.6	36.9	35.2	<0.001	0.036
3	18.5	19.6	18.1	<0.001	0.039
4-6	45.6	43.3	46.5	<0.001	0.064
7-8	0.1	0	0.1	0.006	0.029
Nosos Risk Score, mean (SD)	1.87 (2.40)	1.61 (2.15)	1.97 (2.47)	<0.001	0.156
Comorbidities, %					
Diabetes w/o Complications	24.5	24.2	24.5	0.374	0.008
Chronic Obstructive Pulmonary Disease (C	22.1	22.2	22	0.583	0.005
Diabetes w/ Complications	20.4	18.5	21.1	<0.001	0.064
Eye-level Characteristics					
Number of Surgeries	83879	25826	58053		
Complex Surgeries (CPT Code 66982), %	16.7	14.7	17.5	<0.001	0.075
High-risk Eye, %	2.4	4.4	1.6	<0.001	0.166
N Significant Preoperative Ocular Conditions					
0	79.2	66.9	84.6	<0.001	0.422
1	19.1	29.1	14.7	<0.001	0.353
2	1.6	3.8	0.6	<0.001	0.222
3	0.1	0.2	0.1	0.001	0.023

VA Priority Group- enrollment priority status

Nosos Risk Score- risk-adjustment method specifically developed to capture disease burden of Veteran population

90-day Complications of Cataract Surgery

	Coefficient	RR*	CI Low	CI High	p-value
(Intercept)	-4.544	0.011	0.006	0.020	0.000
Complex Surgery (Reference = routine)	0.786	2.195	1.858	2.586	0.000
CC (Community Care)	-0.114	0.892	0.744	1.065	0.208
High-Risk Eye	1.010	2.745	1.593	4.450	0.001
Race (Reference = white)					
Black	0.547	1.728	1.464	2.031	0.000
Other	0.306	1.358	1.089	1.675	0.007
Nosos Risk Score	0.000	1.000	0.973	1.027	0.975
Number of preoperative ocular conditions (Reference = 0)					
1-2 Conditions	-0.170	0.844	0.702	1.007	0.060
3+ Conditions	0.565	1.760	0.480	4.554	0.348
Age	-0.005	0.995	0.988	1.003	0.229
Male	0.368	1.444	1.001	2.178	0.049
Marital status (Reference = single)					
Married	-0.385	0.680	0.548	0.853	0.001
Divorced or separated	-0.215	0.807	0.647	1.015	0.066
Widowed	-0.333	0.717	0.535	0.960	0.025
Other or unknown	-0.493	0.611	0.195	1.457	0.292
**Priority Group (Reference = 1-2)					
Eligibility 3	0.121	1.129	0.938	1.356	0.199
Eligibility 4-6	0.151	1.163	1.003	1.350	0.045
Eligibility 7-8	0.839	2.314	0.252	9.322	0.383
Eligibility Not Known	-0.814	0.443	0.003	3.857	0.537
Complex Surgery * CC	0.022	1.022	0.730	1.420	0.896
Complex Surgery * High-Risk Eye	0.438	1.550	0.744	3.200	0.238
CC * High-Risk Eye	0.347	1.415	0.745	2.743	0.290
Complex Surgery * CC * High-Risk Eye	-0.400	0.671	0.245	1.830	0.434

Conclusions

- Almost 30% of Veterans underwent cataract surgery in the community—despite this surgery being one of the top procedures performed in VA over time—need to understand why this occurred

- Lower risk patients tended to get cataracts in the community, compared to patients getting cataracts at VA; thus, risk adjustment is critical.

- After adjusting for confounders (e.g., race, # of preoperative ocular conditions), differences in complication rates between VA and CC were not significant

Policy Implications

- As expansion of community care increases with MISSION Act implementation, VA will need to:
  - Identify patient populations best suited for cataract surgery through CC vs. VA to minimize risk of complications

  - Optimize referral patterns to increase care coordination

  - Continue to monitor and track quality of care differences between VA and CC taking into account coding differences between VA and the private sector

  - Balance convenience and ease of access with high-quality care in order to appropriately inform "make vs. buy" decisions

  - Conduct future studies in this area with newer data, different procedures, different methods

Cost of Care

Team Wagner

Community Care Payments

- The PIT data are raw payments

- You need to "clean" them to get an accurate estimate of cost

- You may need to sum payments to calculate the total payment
  - Provider payment (837p)
  - Institutional payment (837i)

Cleaning Data

- There are different rules for cleaning data depending on the location of care (PIT Place of Service)
  - Cataract at a clinic or ambulatory surgical center has one payment (only to a provider)
  - Cataract at an outpatient hospital has two payments (one to a provider and one to an institution)

- These rules suggest that you should start organizing and cleaning the data using the patient, date, CPT code, and place of service.

- However, this implies that place of service is correct.

Multiple Algorithms

- If place of service is incorrect, then your data have been cleaned incorrectly.

- Yet it is not always clear when data are wrong.

- You will likely need to develop alternative cleaning algorithms so that you can compare alternatives
  - Modifiers
  - Costs of care

Example: Patient "A"

MemberID	ServiceFromDate	PITProcedureCode	ModifierCode	ind_prof	ind_inst	PITPlaceOfService	PaidAmount	TotalCharges
A	01NOV2017	66984	RT	0	1	Outpatient Hospital	2172.68	2172.68
A	01NOV2017	66984	RT	1	0	Outpatient Hospital	757.29	2466.87
A	29NOV2017	66984	LT	1	0	Outpatient Hospital	757.29	51.58
A	01DEC2017	66984	LT	1	0	Office	151.46	744.49
A	01DEC2017	66984	RT	1	0	Office	151.46	744.49

Example: Patient "B"

MemberID	ServiceFromDate	PITProcedureCode	ModifierCode	ind_prof	ind_inst	PITPlaceOfService	PaidAmount	TotalCharges
B	10OCT2017	66984	RT	0	1	Outpatient Hospital	1083.11	2498.23
B	10OCT2017	66984	RT	1	0	Office	40.5	40.5
B	10OCT2017	66984	RT	1	0	Outpatient Hospital	125.92	113.15
B	24OCT2017	66984	LT	0	1	Outpatient Hospital	1083.11	2681.31
B	24OCT2017	66984	LT	1	0	Outpatient Hospital	629.58	629.58
B	24OCT2017	66984	LT	1	0	Outpatient Hospital	440.71	57.11

Our Weekly Team Meetings
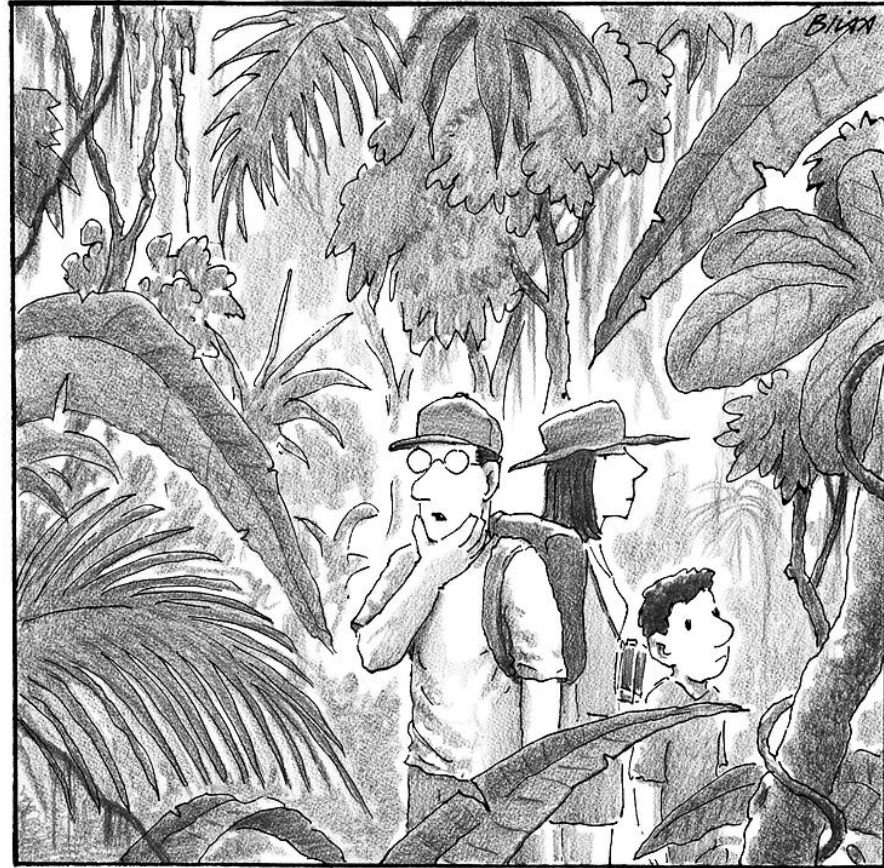
"O.K., I admit it, we're lost, but the important thing is to remain focussed on whose fault it is."

Payments

- The PIT payments do not include the cost of:
  - running the Office of Community Care (OCC)
  - administrative fees paid to third party administrators (approximately 32%)

- Understanding the variance and outliers is critical

Innovation

- Well-functioning markets yield innovations, improvements in quality, and reductions in prices
  - Health care is not a well-functioning market (Arrow, 1963)
  - Better information can spur innovation
- We presented our preliminary results to the VA Ophthalmology Office.
- VA costs were higher than Community Care costs
  - Historically cataracts were conducted in operating rooms (in hospitals).
  - They are now looking to innovate by performing cataract surgeries in ophthalmology clinics which could expand access and lower costs

GIS Mapping

Team Pettey

Geolocations

- PIT data have information on rendering provider and rendering institution, which can be linked to address data

- These data can be mapped and compared to VA locations

VA and CC Facilities Providing Cataract Surgeries, FY15

Alaska

Hawaii

VA Facilities: 125

CC Facilities: 2,668

Puerto Rico
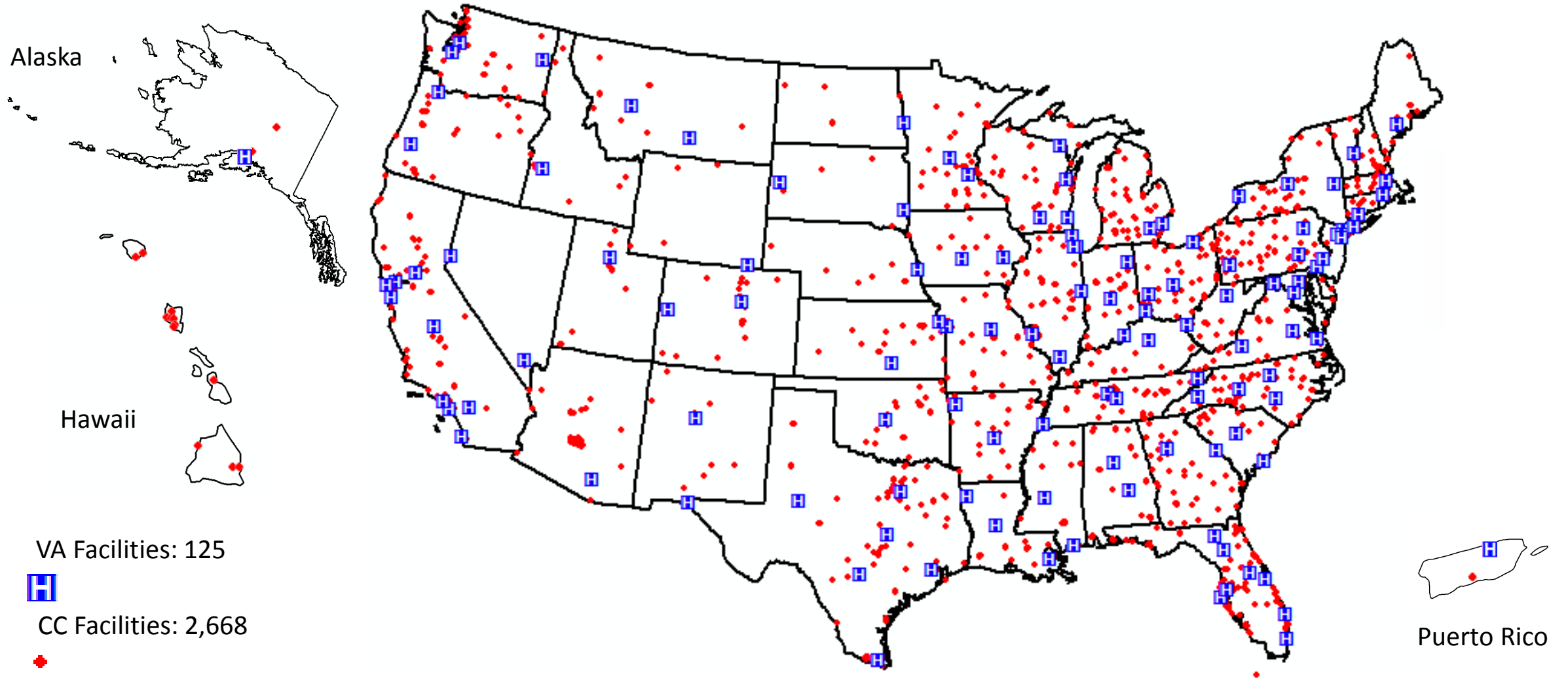
Definitions

- **Closest VA** & **Closest CC**: Miles as measured from home locations for Veterans who received cataract procedures to the closest VA facility and, separately, to the closest CC facility

- **Actual VA**: Miles from home locations for Veterans who received cataract procedures in a VA facility to the VA location where they received care

- **Actual CC**: Miles as measured from home locations for Veterans who received cataract procedures in a CC facility to the most likely facility where care took place (in the case of multiple facilities, the destination facility was determined by hierarchy)

Excess miles: who drove farther for cataract surgeries at VA facilities other than the one closest to their homes

VA Facility

🄷

Drive Miles

- 0 - 20
- 21 - 50
- 51 - 100
- 101 - 200
- 201 +
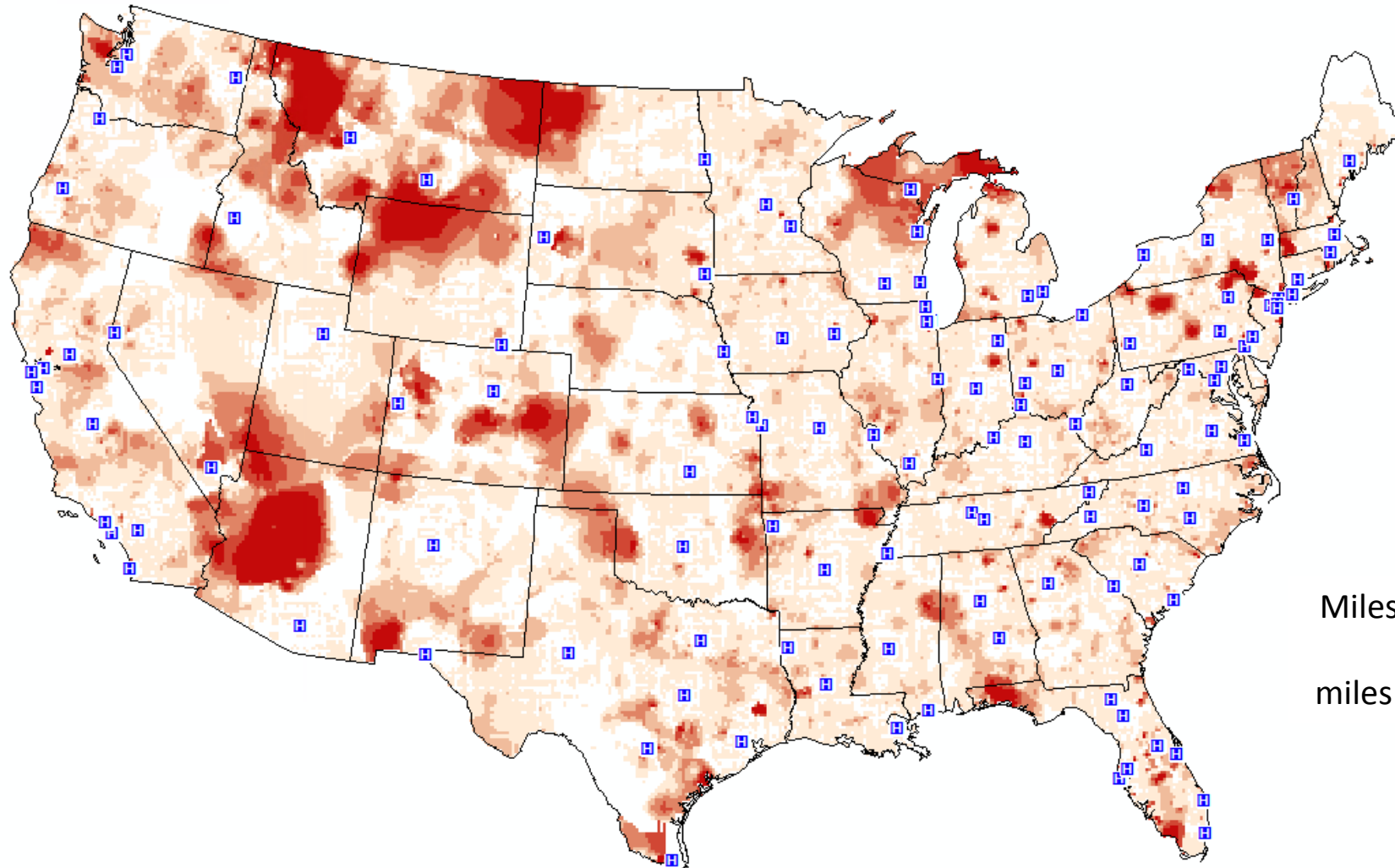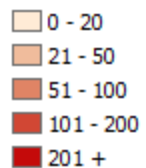
Miles to the **Actual VA** facility
minus
miles to the **Closest VA** facility

Excess miles: who drove farther for cataract surgeries at CC facilities other than the one closest to their homes
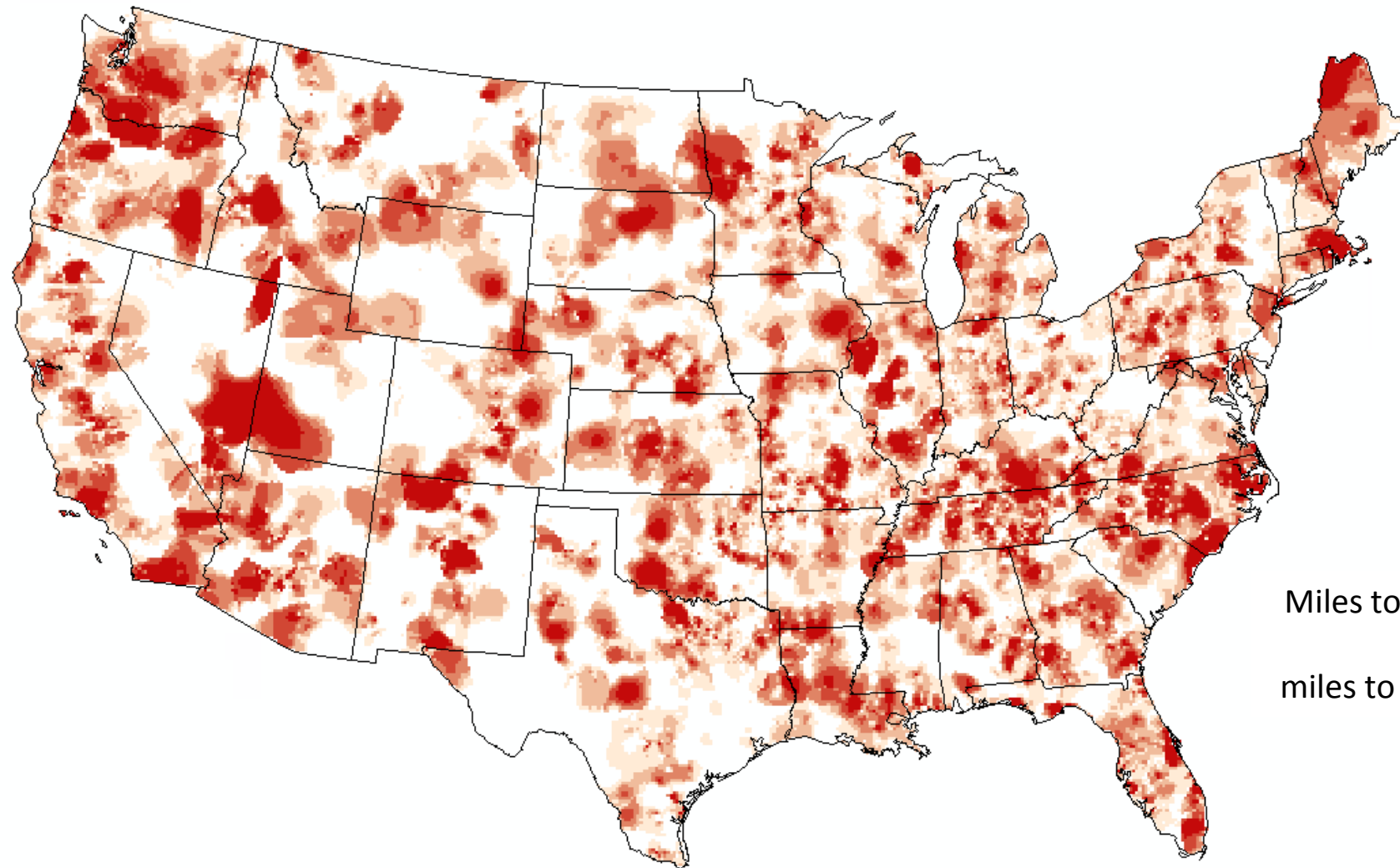
Miles to the **Actual CC** facility
minus
miles to the **Closest CC** facility

Drive Miles

- 0 - 20
- 21 - 50
- 51 - 100
- 101 - 200
- 201 +

Veterans' Experiences with Outpatient Care Delivered in VA vs. through VA Purchased Care in the Community

Team Vanneman

How does VA quality of care compare to non-VA quality of care?

- Compared to non-VA care, VA usually performs **better on process of care** (e.g., HbA1c testing) and **similarly on health outcomes** (e.g., mortality) (systematic review – Trivedi et al. 2011)

- Mixed results on **wait times** (Penn et al. 2019)
  - From 2014 to 2017, wait times decreased in VA while remained stable in private sector
  - For primary care, dermatology, and cardiology, wait times:
    - Similar between VA and private sector in 2014
    - Shorter in VA than in private sector in 2017
  - For orthopedics, shorter in private sector in both 2014 and 2017

- **No studies comparing patient experience** between VA and Community Care

Survey of Healthcare Experiences of Patients (SHEP) Outcome Variables

SHEP is similar to the Agency for Healthcare Research and Quality (AHRQ) Consumer Assessment of Healthcare Providers and Systems (CAHPS)

| |
|---|
| **Composite measure means** |
| Individual questions: 1=Never   2=Sometimes   3=Usually   4=Always |
| **Access composite** |
| Appointment as soon as you needed |
| See your provider within 15 minutes of your scheduled appointment time |
| Answer to medical question same day |
| Contacted after regular hours, answer to medical question as soon as you needed |
| **Communication composite** |
| Explain things in a way that was easy to understand |
| Listen carefully to you |
| Show respect for what you had to say |
| Spend enough time with you |
| **Coordination composite** |
| Know important information about your medical history |
| Seem informed and up-to-date about care you received |
| Follow up with results for blood test, x-ray, other test |
| **Overall provider rating – 0 to 10 [worst to best] provider rating** |

Specialty Care Scores Over Time, Unadjusted
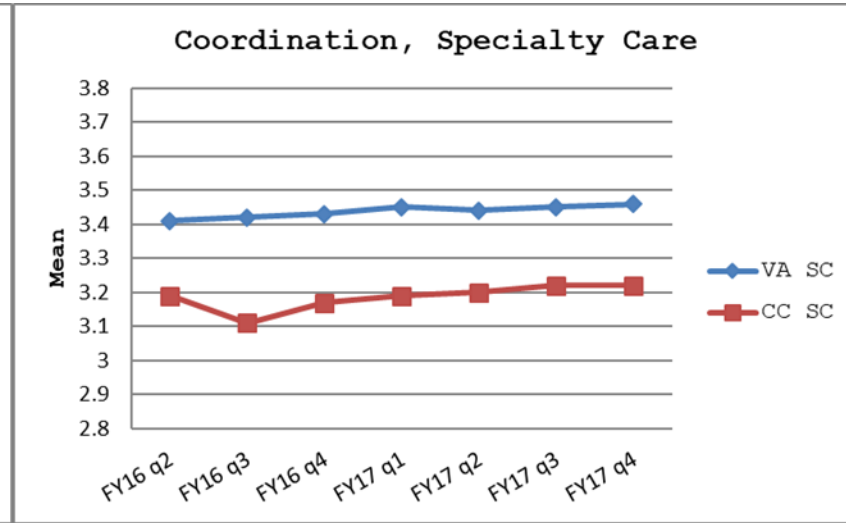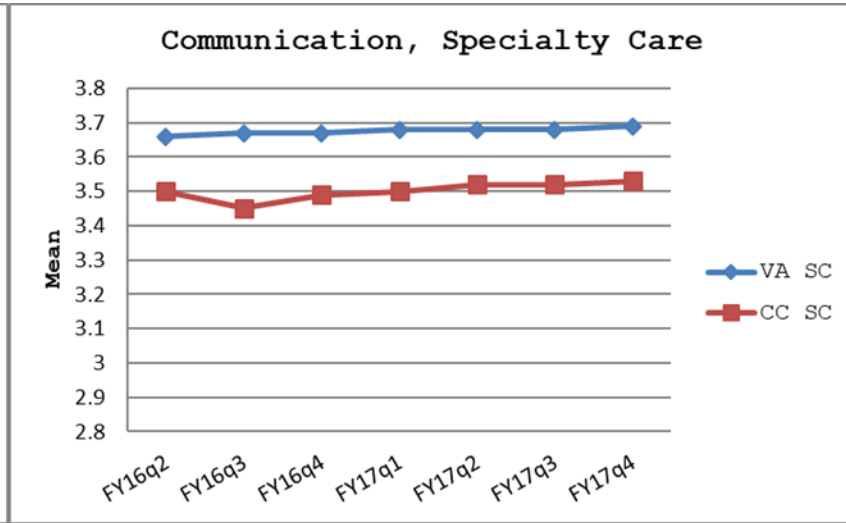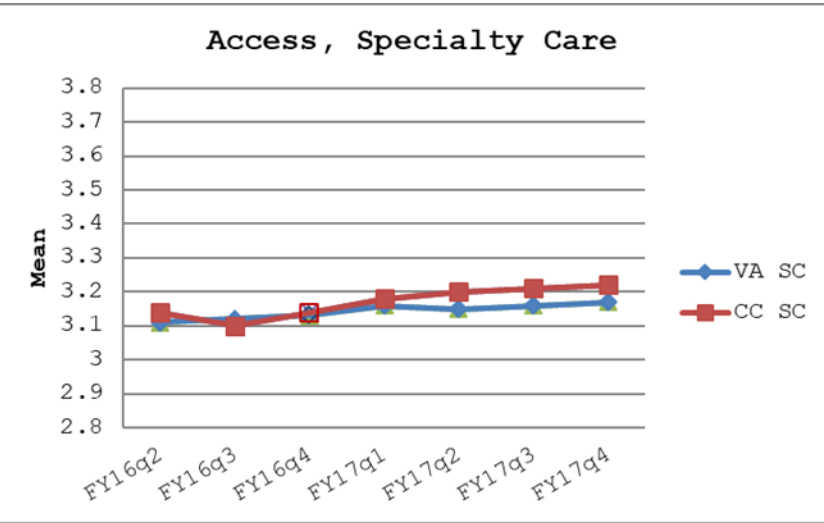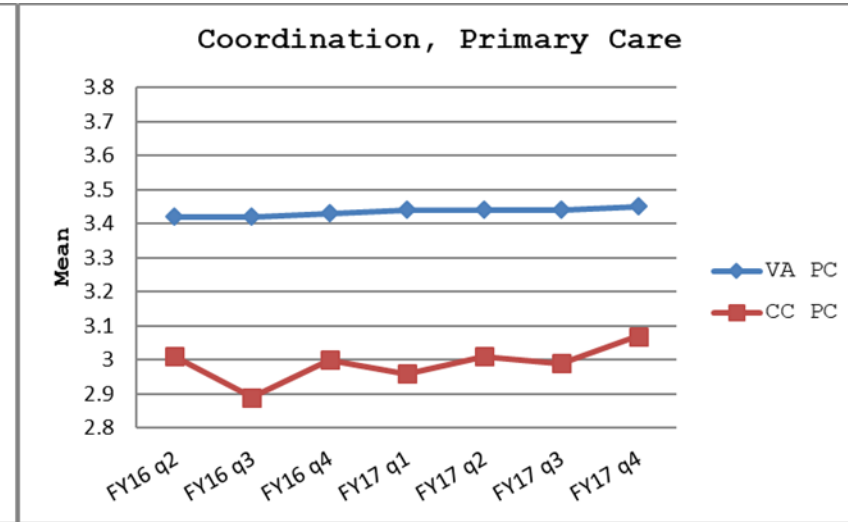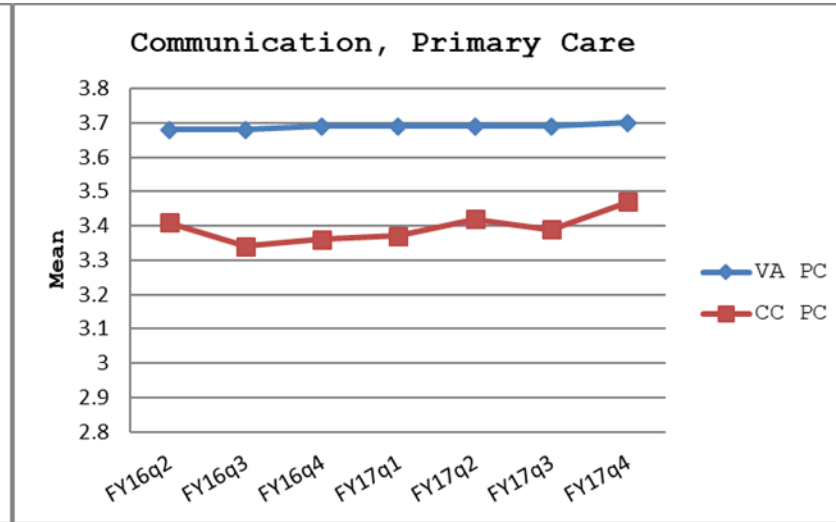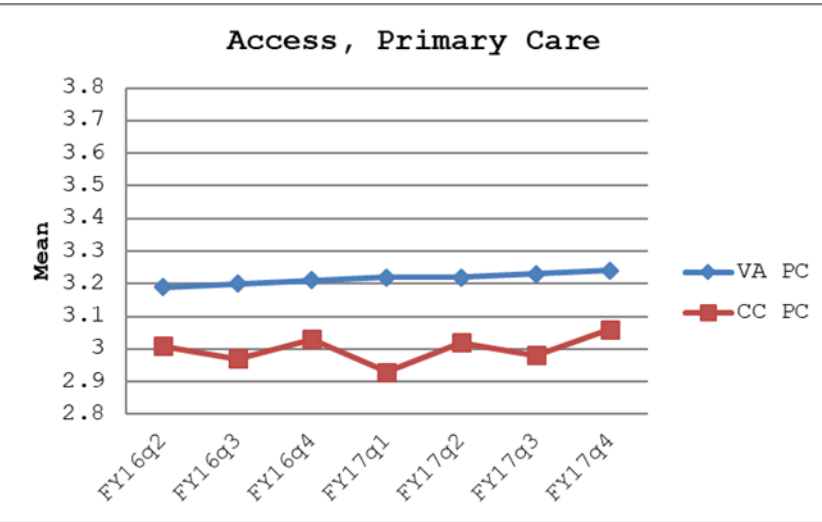

Chart Scales

The scale for the top 3 charts is 1-4:
1=never, 2=sometimes, 3=usually, 4=always

The scale for the bottom chart is 0-10:
0=worst to 10=best
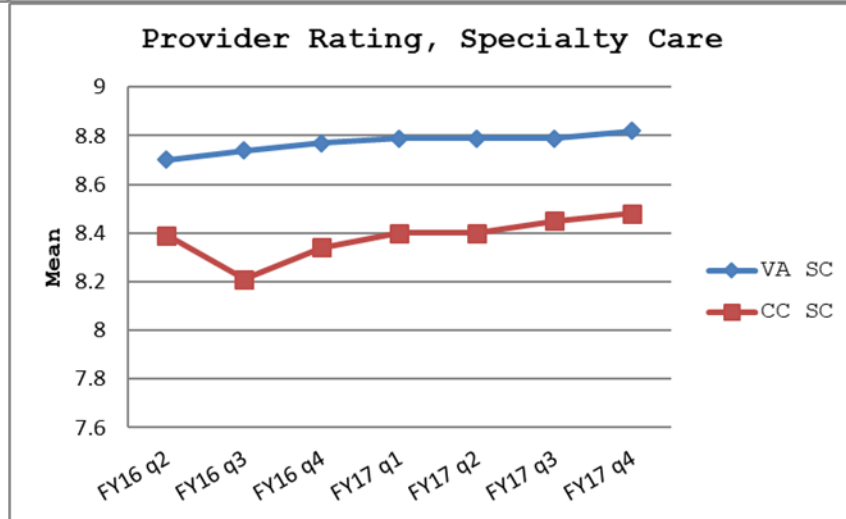
Filled markers signify statistically significant difference (at p<.05 level or less) between VA and CC

CC, Community Care; SC, Specialty Care; VA, Veterans Health Administration
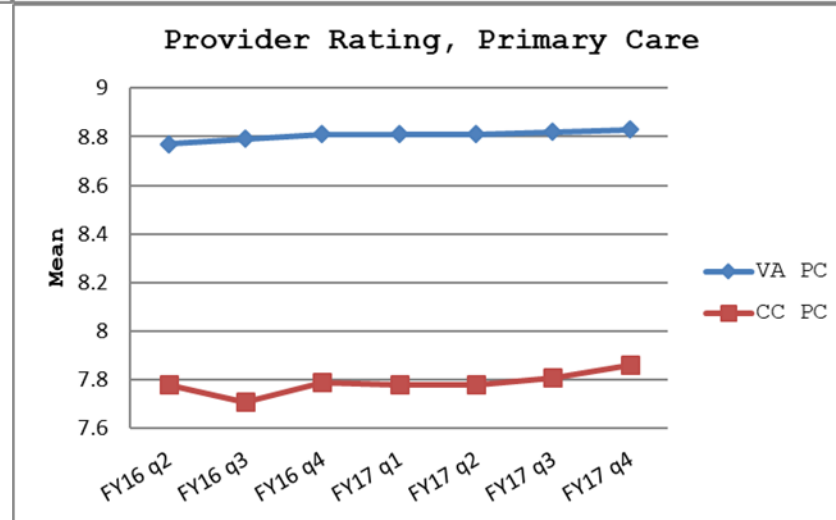
Primary Care Scores Over Time, Unadjusted

Chart Scales

The scale for the top 3 charts is 1-4:
1=never, 2=sometimes, 3=usually, 4=always
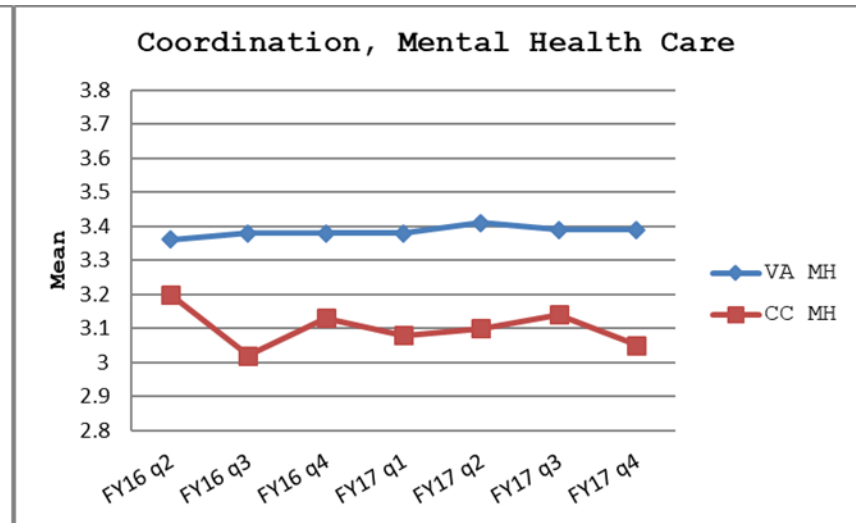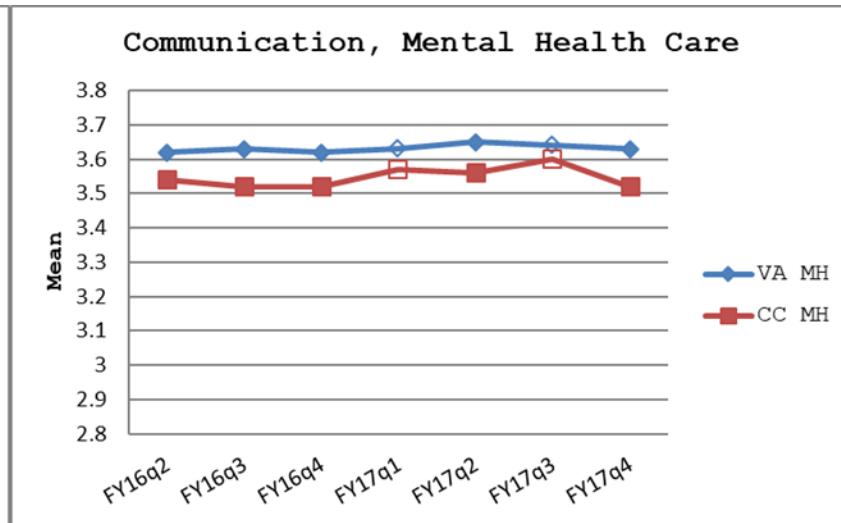
The scale for the bottom chart is 0-10:
0=worst to 10=best

Filled markers signify statistically significant difference (at p<.05 level or less) between VA and CC

CC, Community Care; PC, Primary Care; VA, Veterans Health Administration

Mental Health Care Scores Over Time, Unadjusted

Chart Scales

The scale for the top 3 charts is 1-4:
1=never, 2=sometimes, 3=usually, 4=always
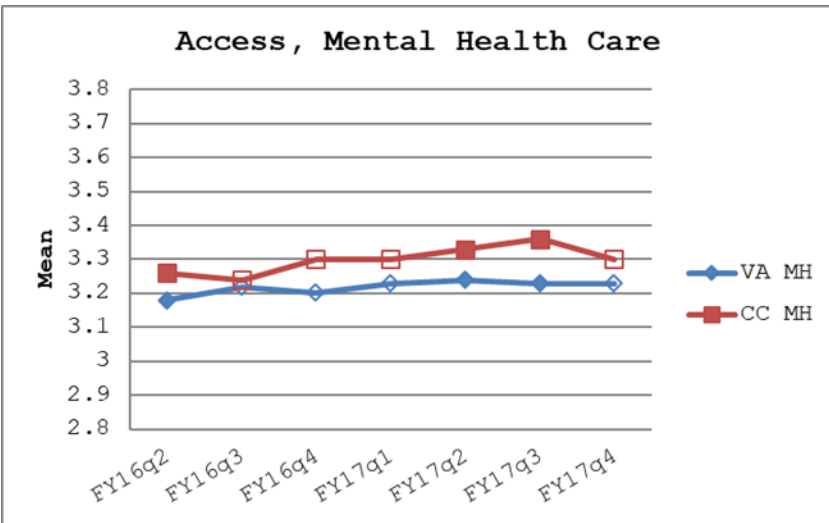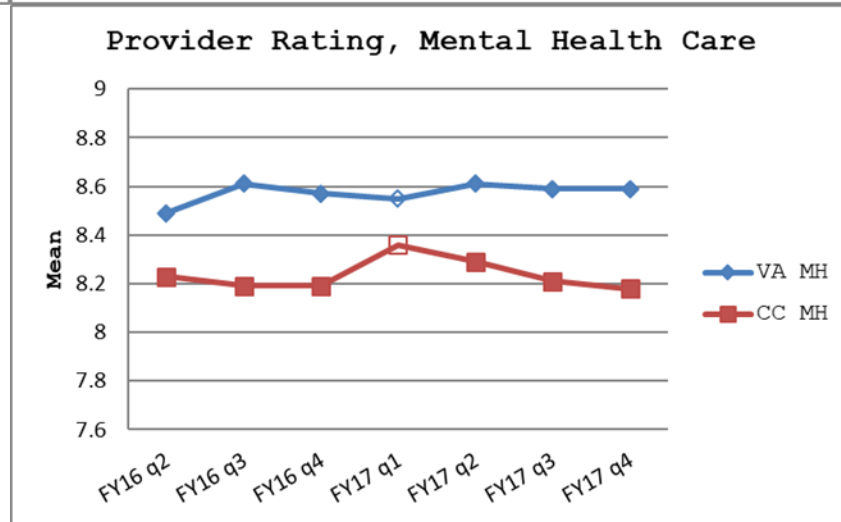
The scale for the bottom chart is 0-10:
0=worst to 10=best

Filled markers signify statistically significant difference (at p<.05 level or less) between VA and CC

CC, Community Care; MH, Mental Health Care; VA, Veterans Health Administration

Specialty Care Model Estimates

Parameters	SC Access Coeff. (Std. Err.) N=415,973	SC Communication Coeff. (Std. Err.) N=416,846	SC Coordination Coeff. (Std. Err.) N=412,897	SC Provider Rating Coeff. (Std. Err.) N=412,435
VA	−.0645*** (.0079)	.1458*** (.0056)	.2046*** (.0076)	.2328*** (.0183)
Time	.0115*** (.0017)	.0059*** (.0012)	.0068*** (.0016)	.0146*** (.0039)
VA*time	−.0036* (.0018)	−.0027* (.0013)	−.0014 (.0017)	−.0013 (.0042)

*** p<.001
** p<.01
* p<.05

CC, Community Care; SC, Specialty Care; VA, Veterans Health Administration

- **At baseline**
  - **Higher** specialty care scores for **communication, coordination, and provider rating at VA** than at Community Care
  - **Lower** score for specialty care **access at VA** than at Community Care
- **Over time**, all specialty care **scores increased in both settings**
- **Difference in scores between VA and CC decreased** over time for **access and communication**

Primary Care Model Estimates

Parameters	PC Access Coeff. (Std. Err.) N=432,714	PC Communication Coeff. (Std. Err.) N=432,856	PC Coordination Coeff. (Std. Err.) N=432,218	PC Provider Rating Coeff. (Std. Err.) N=430,318
VA	.1332** (.0449)	.2880*** (.0340)	.4709*** (.0435)	.9233*** (.1084)
Time	.0085) (.0094)	.0101 (.0072)	.0209* (.0092)	.0192 (.0228)
VA*time	−.0005 (.0095)	−.0081 (.0072)	−.0171 (.0092)	−.0126 (.0228)

CC, Community Care; PC, Primary Care; VA, Veterans Health Administration

*** p<.001
** p<.01
* p<.05

- **At baseline**, all primary care scores **higher at VA** than at Community Care
- **Over time, significant increase** in primary care scores for **coordination in both settings**
- Any change in primary care scores **over time unrelated to the setting of care**

Mental Health Care Model Estimates

Parameters	MH Access Coeff. (Std. Err.) N=29,379	MH Communication Coeff. (Std. Err.) N=29,422	MH Coordination Coeff. (Std. Err.) N=29,251	MH Provider Rating Coeff. (Std. Err.) N=29,095
VA	-.0570 (.0386)	.0886** (.0305)	.1759*** (.0395)	.3687*** (.1017)
Time	.0171 (.0088)	.0095 (.0069)	-.0062 (.0090)	.0336 (.0232)
VA*time	-.0113 (.0091)	-.0079 (.0072)	.0089 (.0093)	-.0271 (.0240)

*** p<.001
** p<.01
* p<.05

CC, Community Care; MH, Mental Health Care; VA, Veterans Health Administration

- At baseline
  - Higher mental health care scores for communication, coordination, and provider rating at VA than at Community Care
  - No significant difference in access scores between VA and Community Care
- Over time, no significant change in mental health scores
- Any change in mental health scores over time was unrelated to the setting of care

Limitations of Comparison

- Question differences, e.g.
  - VA survey: "In the last 6 months"
  - Community Care survey: "In the last 3 months"

- Different design strata
  - VA survey: pulls monthly data, representative at the facility level
  - Community Care: rolling three-month sample, not representative at the facility level
  - Therefore, used fixed effects for facility

Summary of Patient Experience Results

- **Average communication, coordination, and provider rating scores higher in VA** than in Community Care for specialty, primary, and mental health care at **all 7 time points**

- **Access scores were mixed**
  - Significantly higher in Community Care than VA in:
    - 5 out of 7 periods for specialty care
    - 3 out of 7 periods for mental health care
  - Significantly higher in VA than in Community Care primary care at all 7 time points

- In multivariate models, the **largest effect size was related to receiving care in VA (versus Community Care) at baseline**
  - Mean communication, coordination, and provider rating scores higher in VA than Community Care at baseline for all types of care
  - Mean **access** scores lower in VA than Community Care at baseline, except for mental health access, which was not statistically significantly different at baseline

Patient Experience Conclusions

- **VA outperformed Community Care** across all measures and types of care **except access** for specialty and mental health care

- **Specialty care scores improved over time** in both VA and Community Care

- **The gap** between VA and Community Care scores **decreased** for:
  - **Specialty care access and communication**
  - **Primary care coordination**

- Future studies should explore why veterans choose to use Community Care

Policy Implications

With expansion of Community Care through the MISSION Act:

- Patient experience scores of veterans seeking care in VA and Community Care can continue to serve as quality measures

- Anticipate variability in patient experience in and outside VA by type of service and location
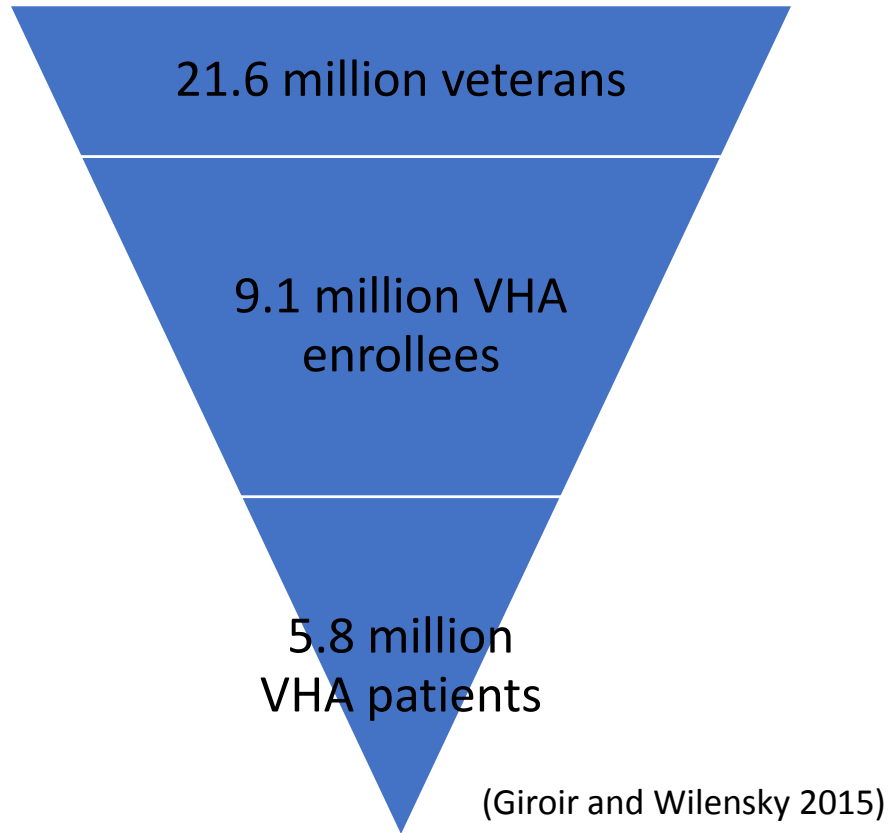
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Trivedi AN, Matula S, Miake-Lye I, Glassman PA, Shekelle P, Asch S. Systematic review: comparison of the quality of medical care in Veterans Affairs and non-Veterans Affairs settings. Med Care. 2011;49(1):76-88.

Extra Material

VHA Summary

21.6 million veterans

9.1 million VHA enrollees

5.8 million VHA patients

(Giroir and Wilensky 2015)

- Largest integrated healthcare system in U.S.
  - VA operates or leases 1926 facilities (all 50 states, PR, Guam, AS, Philippines, VI)
  - 172 medical centers
  - 1,232 outpatient clinics
- On average, patients relied on VA for 50% of care in 2014
- VHA funding
  - $84 billion requested for FY2020
  - $80 billion received in FY2018

Giroir BP, Wilensky GR. Reforming the Veterans Health Administration--Beyond Palliation of Symptoms. *N Engl J Med*. 2015;373(18):1693-5.

VA Patient Population

- Compared to general population, higher:

  - Disease burden, including chronic diseases (Machlin, 2018; Kizer 1999)
    - Related to eligibility for VA health care (Yu 2003)
    - Older patients (Yu 2003)

  - Incidence of substance use disorders (Kizer 1999)

  - Incidence of chronic mental illness (Kizer 1999)

Kizer KW. The "New VA": A National Laboratory for Health Care Quality Management. *Am J Med Qual*. 1999;14(10):3-20.
Machlin S, Muhuri P. Characteristics and Health Care Expenditures of VA Health System Users versus Other Veterans, 2014-2015 (Combined). Rockville, MD: Agency for Healthcare Research and Quality; 2018.
Yu W, Ravelo A, Wagner TH, et al. Prevalence and Costs of Chronic Conditions in the VA Health Care System. *Med Care Res Rev*. 2003;60 Suppl 3:146S-67S.

Relative and Attributable Risks of Complications and their 95% CIs

	Surgery Type and Provider	
	Complex Surgeries	Routine Surgeries
In All Eyes		
90-day Complications		
Relative Risk*	0.95 (0.74, 1.22)	0.89 (0.75, 1.05)
Attributable Risk**	-0.12 (-0.66, 0.43)	-0.11 (-0.26, 0.05)
In Low-risk Eyes		
90-day Complications		
Relative Risk	0.85 (0.64, 1.12)	0.83 (0.70, 0.99)
Attributable Risk	-0.33 (-0.87, 0.22)	-0.17 (-0.32, -0.00)
In High-Risk Eyes		
90-day Complications		
Relative Risk	0.83 (0.43, 1.63)	1.16 (0.63, 2.15)
Attributable Risk	-1.26 (-5.89, 3.38)	0.39 (-1.20, 1.99)

*Relative Risk = CC rate/VA rate

**Attributable Risk = (CC rate - VA rate) x 100

Logistic Regression Model 1: 90-day Complications of Cataract Surgery

	Coefficient	RR*	CI Low	CI High	p-value
(Intercept)	-4.622	0.011	0.009	0.011	0.000
Complex Surgery (Reference = routine)	0.800	2.195	1.886	2.618	0.000
CC (Community Care)	-0.185	0.892	0.695	0.989	0.037
High-Risk Eye	0.950	2.745	1.536	4.060	0.001
Complex Surgery * CC	0.021	1.022	0.730	1.418	0.901
Complex Surgery * High-Risk Eye	0.401	1.550	0.718	3.077	0.279
CC * High-Risk Eye	0.331	1.415	0.734	2.695	0.312
Complex Surgery * CC * High-Risk Eye	-0.366	0.671	0.254	1.890	0.474

*We approximate the RR by the odds ratio

Veteran Experience Objectives and Hypotheses

Goal: To compare veterans' experiences with **access**, **communication**, **coordination**, and **overall provider rating** in VA and Community Care in the second and third years of the Veterans Choice Program – FY16Q2-FY17Q4

- H1: Patient experience scores will be **better (higher) for VA than Community Care for communication, coordination, and provider rating, but worse (lower) for access to specialty care** given that was the focus of the VA legislation and improvements.

- H2: Due to increased attention on the patient experience, both within and outside VA, patient experience scores will **increase over time in both healthcare settings**.

- H3: The **gap between VA and Community Care scores will decrease over time**, as the Veterans Choice Program evolves.

Multivariate Regression Models

- Dependent variables
  - Access composite measure
  - Communication composite measure
  - Coordination composite measure
  - Overall rating of healthcare provider, single item
- Key independent variables
  - Setting of care (VA or Community Care)
  - Time (quarter)
  - Interaction effect, setting*quarter
- Fixed effects for VA facility
- Controls for individual-level characteristics: age, gender, insurance status, race, ethnicity, marital status, education level, rurality, VA enrollment priority status, comorbidities, and perceived physical and mental health status

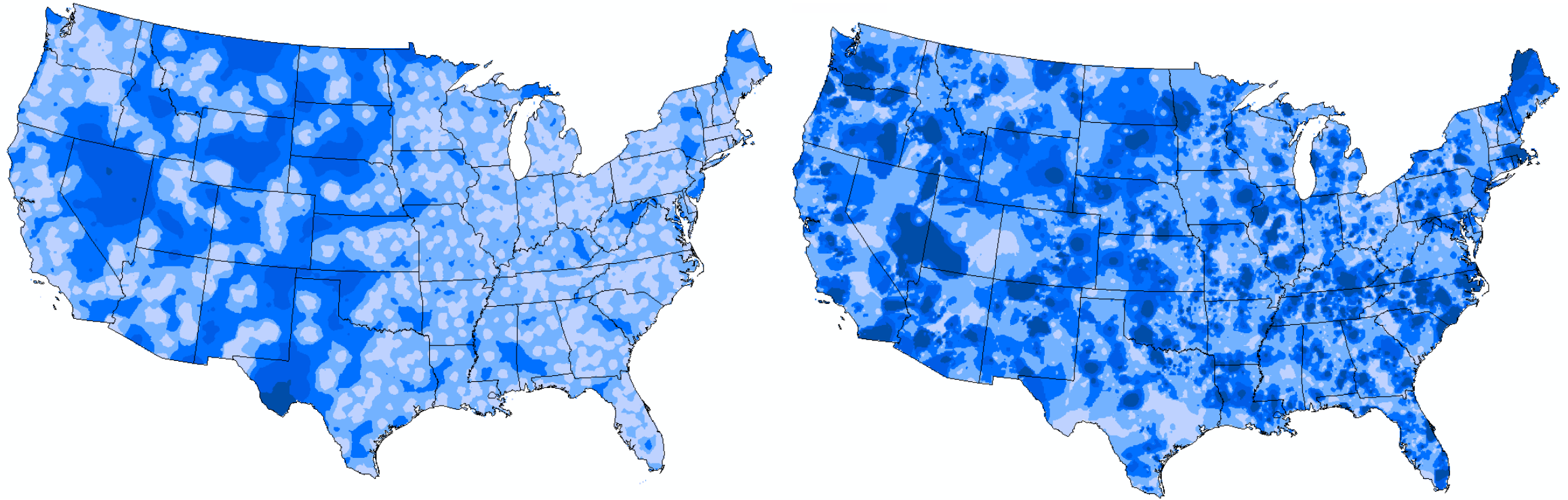Drive Miles for FY15 Cataract Surgeries
Closest VA vs Actual VA
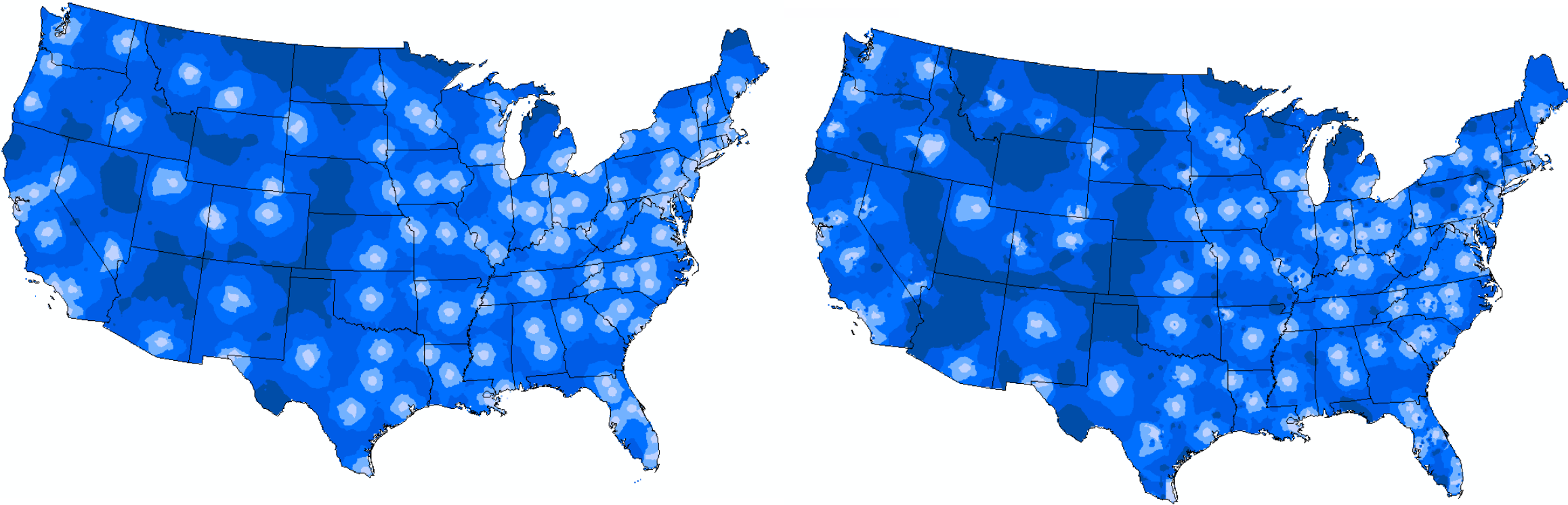
Drive Miles
- 0 - 20
- 21 - 50
- 51 - 100
- 101 - 200
- 201 +

Theory vs Reality

Drive Miles for FY15 Cataract Surgeries
Closest CC vs Actual CC

Drive Miles

- 0 - 20
- 21 - 50
- 51 - 100
- 101 - 200
- 201 +

Theory vs Reality