Measuring Timely Access to VHA Primary Care

ADAM BATTEN

MY VA ACCESS EVALUATION AND PRIMARY CARE ANALYTICS AND EVALUATION UNIT VA PUGET SOUND

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Objectives

- Review current metrics for "timely access" in VHA and private sector.
- Describe the intent and definition of the Same Day Access (SDA) metric in VHA.
- Propose new methods for measuring "timely care"

Access: Definition

- IOM: "the timely use of <u>personal health services</u> to achieve the best possible health outcomes." Millman M. *Access to health care in America*. National Academy Press; 1993
- New 21st Century Definition (Fortney, et al. JGIM)
- Access to Care represents the potential ease of having virtual or face-to-face interactions with a broad array of healthcare providers including clinicians, caregivers, peers, and computer applications.
 - <u>Actual:</u> represents those directly-observable and objectively measurable dimensions of access.
 - <u>Perceived:</u> represents those self-reported and subjective dimensions of access.

REVIEW

A Re-conceptualization of Access for 21st Century Healthcare

John C. Fortney, PhD^{1,2,3}, James F. Burgess, Jr. PhD^{4,5}, Hayden B. Bosworth, PhD^{6,7}, Brenda M. Booth, PhD^{1,3}, and Peter J. Kaboli, MD^{8,9,10} J Gen Intern Med 26(Suppl 2):639–47

- Set of specific dimensions that characterize the fit between the patient and the healthcare system
- Less focus on patient-to-provider face-to-face encounters
- Perceived (subjective) and Actual (objective) Access
- Dimensions of access:
 - Geographical
 - Temporal
 - Digital
 - Financial
 - Cultural

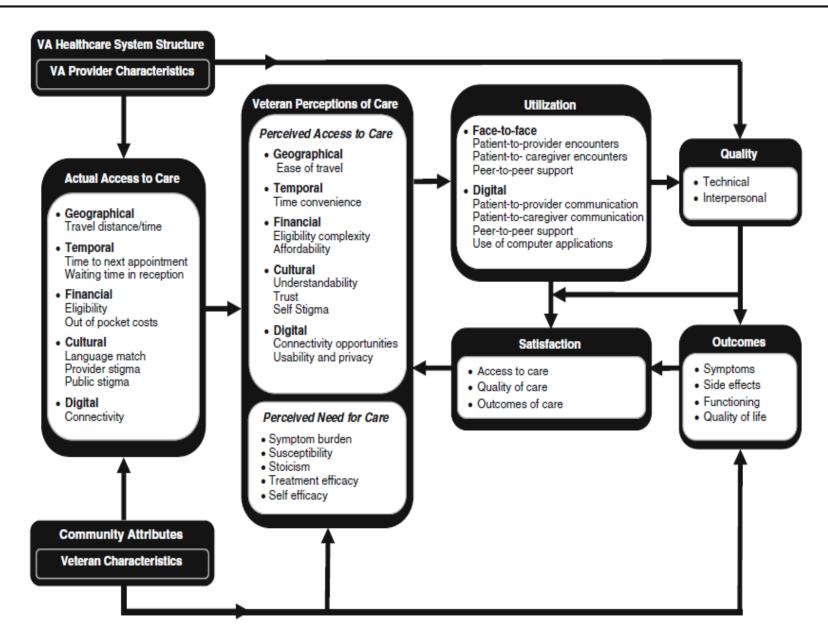


Figure 1. Conceptualization of access.

2015 Institute of Medicine Report



Transforming
Health Care
Scheduling
and Access

Getting to Now

• "The IOM report Crossing the Quality Chasm (2001) identified six fundamental aims for healthcare-that it be: safe, effective, patientcentered, efficient, equitable, and timely. Of these fundamental aims, timeliness is in some ways the least well studied and understood."

How to measure time? Depends on perspective

- Patient: Desired Date to Appointment Date
 - o Problem: patients don't know the urgency of their issue
- <u>Provider</u>: Clinically Indicated Date to Appointment Date
 - o Problem: CPRS requires putting in a date instead of a range
- <u>Scheduler</u>: Create Date to Appointment Date
 - o Problem: doesn't allow for "wait" based on patient preference
- Market: "Secret Shopper" phone calls
 - Problem: time intensive
- Industry Standard: Third next available (TNA)
 - Problem: requires access to scheduling grid; depends on own provider or any provider; doesn't work for "open access".

NOTE: This report is embargoed pending journal publication. It is for internal use by the Department of Veterans Affairs and should not be distributed outside the agency. Once published, a final report will be available on the ESP public website.



Access Management Improvement: A Systematic Review

Access Management Improvement: A Systematic Review ESP Project #05-226; May 2017

- Lit Review: 979 titles->53 pubs->29 pubs assessed 19 primary care Advanced/Open Access interventions w/ 5 Key Questions:
- 1. What definitions and measures of intervention success are used, and what evidence supports use of these definitions and measures?
 - Third Next Available (TNA) used in 14/19 studies
 - Continuity used in 7/19 studies
 - Patient Satisfaction in 3/19 studies
 - No evidence of link to health outcomes

Why TNA?

- More stable than other choices like 1st available.
- "This statistic is used to measure the number of days a patient has to wait to get an appointment. The TNA is featured because the 1st and 2nd available appointments may reflect openings created by patients cancelling appointments and thus does not accurately measure true availability." From Murray and Berwick on Advanced Access
- Serves as an "Anchor Metric" to more reliably reflect when the schedule actually has substantial capacity.

Access Management Improvement: A Systematic Review ESP Project #05-226; May 2017

- 2. What samples or populations of patients are studied, including eligibility criteria?
 - × Not well described.
 - Likely primary care clinics that include family medicine as well as VA clinics that may have internal medicine, family medicine, and non-physician providers.
- 3. What are the salient characteristics of local and organizational contexts studied?
 - Not well described.
 - Many included academically-affiliated clinics, the British system, or VA.

Access Management Improvement: A Systematic Review ESP Project #05-226; May 2017

- 4. What are the key features of successful (and unsuccessful) interventions for organizational management of access?
 - All described as Advanced/Open Access with 15/19 used in title
 - Most common intervention: reducing backlog, using fewer appointment types, and producing regular activity reports.
 - 8 reported results longer than 12 months
 - × 1 reported initial improvements in access, followed by worsening
 - 1 reported a decrease in continuity (of? clinical significance)
 - 2 reported variable impact on access

Access Management Improvement: A Systematic Review

ESP Project #05-226; May 2017

- 5. Are relevant, tested tools, toolkits, or other detailed material available from successful organizational interventions?
 - 6 tools/guides for improving primary care access
 - 4 linked to implementation studies
 - 2 from IHI/Advanced Access group
 - 2 from Canada
 - 1 from National Health Service (UK)
 - o 1 from VA



SURVEY OF PHYSICIAN APPOINTMENT WAIT TIMES SURVEY OF PHYSICIAN

And Medicare and Medicaid Acceptance Rates

A survey examining the time needed to schedule a new patient physician appointment in 15 major metropolitan areas and in 15 mid-sized metropolitan areas, as well as the rates of physician Medicare and Medicaid acceptance in these areas.

Methods



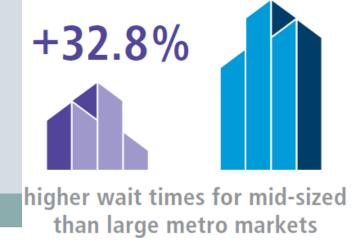
- Survey in 2004, 2009, 2013, and 2017
- "Secret Shopper" Telephone calls
 - o 10-20 offices in 15 large metro (N=1414)
 - 5-10 offices in 15 mid-sized metro markets (N=494)
- 5 medical specialties:
 - Family Medicine (routine physical)
 - Cardiology (heart check up)
 - Dermatology (routine skin exam)
 - o Gynecology (well-woman GYN exam)
 - o Orthopedic Surgery (injury or pain in the knee)
- Physicians names randomly selected from internet-based office listings
- Replicate experience of patient NEW to community seeking non-urgent care
- If physician was "booked out" and no longer taking patients, the wait time defaulted to 365 days

Key findings: Average wait for NEW appointment

Large Metro markets:



Mid-sized markets: 32 days average



Key findings: high and low wait times



- Highest Large Market: Boston. MA
 - o (Dallas lowest at 14.8 days)

52.4 days

average new patient physician wait time, Boston

- Highest Mid-sized: Yakima, WA
 - o (Billings, MT lowest 10.8 days)

48.8 days

average new patient physician wait time, Yakima

Conclusions



- Wait times, in this survey, have gone up since 2004
- A 2-week wait is considered a "tipping point" to hire new providers, per Merritt Hawkins
- Mid-sized markets had longer wait times, in general, than large markets



Balancing Demand and Supply for

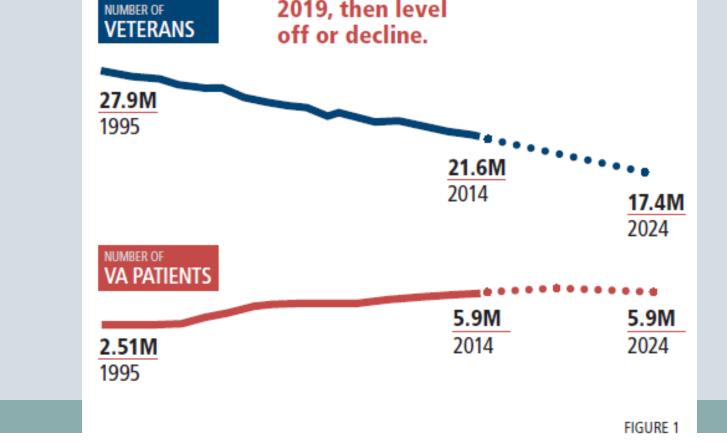
Veterans' Health Care

A Summary of Three RAND Assessments Conducted

Under the Veterans Choice Act

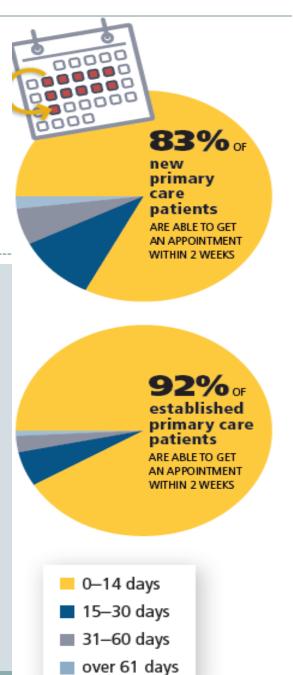
RAND Health

Despite a shrinking population of veterans, the number of veterans who use VA for health care will increase until 2019, then level off or decline.



Primary Care Access

- "The wait time measure used by VA (# of days following the preferred date) makes it difficult to compare it with the other health systems."
- Most use Third Next Available or % of clinics that can offer a same day appointment



Consider alternative standards of timely access to care

VA should examine the utility of alternative benchmarks of timeliness, such as those related to appointment availability. VA should develop methods to routinely compare the timeliness of VA care with non-VA benchmarks and publish these comparisons for transparency.



Every year is getting shorter, never seem to find the time
Plans that either come to naught or half a page of scribbled lines
Hanging on in quiet desperation is the English way
The time is gone the song is over, thought I'd something more to say

David Gilmour, Time, Dark Side of the Moon, 1973

When you love a problem, its contours, obstacles and resistances are all just part of its character. Strogatz

Timely Care

February 21, 2018

- Goal
- Overview: SDA metric VS timely care concept.
- Design & Method
- Data view
- Results

Our Goal

To create both a flexible data model and a simple to comprehend analytical process to accurately monitor factors that lead to a successful My VA Access implementation.

Factors in the model include:

- <u>Patient demand</u>: enrollment growth, reliance, demographics, comorbidity
- <u>Facility supply</u>: facility complexity, after hours care, telehealth, walk-in clinics
- <u>Staffing</u>: Panel size, turnover rates

Models will enable us to not only estimate the importance of various factors for any year or quarter, but also provide estimates for the effects of changes in each factor over time for each healthcare system while controlling for confounding factors.

We will be able to estimate when a system improves their Access metrics and also measure what changes in their system may have lead to such improvements.

Same Day Access (SDA) V1.0

Original SDA Definition

- Numerator:
 - ((Create Date = Desired Date = Appointment Date) + Walk-ins)
- Denominator:
 - ((Create Date = Desired Date) + Walk-ins)
- SDA:
 - ((Create Date = Desired Date = Appointment Date) + Walk-ins)
 ((Create Date=Desired Date) + Walk-ins)

My VA Access Timely Care Concept

- If you need care right away during regular business hours, you are able to get services the same day, or if after hours, by the next day from a VA Medical Center or Health Care Center.
- Options for how that care might be provided include
 - In person
 - Via telephone, smart phone, through video care, secure messaging
 - Or other options
- This care may be delivered by your provider or another appropriate clinical staff member based on availability and your care needs.

My VA Access Timely Care Concept

- Service focused on patient need
- Anywhere
- Any clinician
- By any means
- The Caveat: based on availability
- Can we measure this in CDW?

Timely Care Definition

- Patient requesting same/next day care or walking in to any clinic and receives care within 48 hours.
- CDW Appointments domain
 - [SchedulingRequestType]: Walk-ins and next available requests.
 - [DesiredDate]: For established patients.
 - [AppointmentMadeDate]: For new patients.
- CDW Utilization
 - Outpatient Workload
 - Inpatient
 - FeeBasis
 - Medicare (2016 data request in progress)

Timely Care Definition: Success

- Success. The patient has a completed appointment anywhere within the system within 48 hours from nextday request or walk-in. Care can be received in any of the following locations.
 - Same clinic stop with or without primary PCMM provider
 - Different clinic stop within the same sta6a
 - Different sta6a within the same parent network
 - Community care (Fee/CHOICE/eventually Medicare)
 - Virtual care (at home or in the office)

Timely Care Definition: Failure

Failure

- Patient not seen within 48 hours
- Clinic cancellation
- Patient seen in ED/UC if not an emergency
- Patient seen in ED/UC if need is emergent but treatable in primary care clinic

Timely Care Definition: Exclusions

• Exclusions:

- O Age 18-100
- Death before appointment
- Cancellation due to emergency inpatient admission
- No-show or patient cancellation
- Mobile units (Seattle).

Key Assumptions

- Data capture is timely, accurate, and complete
 - Request (next day, walk-in, other)
 - Cancellation (patient vs clinic)
 - Desired date
 - Visit date
 - Patient need (currently Nosos)
- VA Primary Care governs treatment across VA and non-VA

Research Question

- Primary Hypothesis: Are rural facilities/divisions less likely to provide timely care? Are rural patients less likely to receive timely care?
- Assess
 - Feasibility of data model (queries and ETL)
 - Features (distributions, collinearity, seasonality, etc.)
 - Any significant variability at the division level?

Method

Pre/Post Cohort Design

- Performance incentives end: June 2014
- 1 year prior as baseline (June 2013 June 2014)
- 3 years follow-up (June 2014 June 2017)

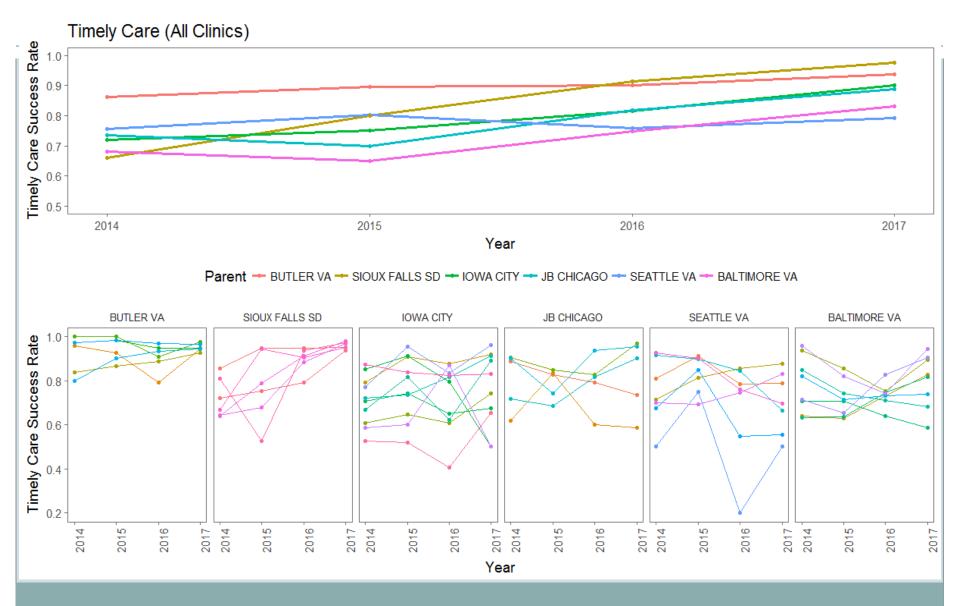
Hierarchical Regression

- Primary Exposure: Urban/Rural (R, H, I) from PSSG.
- Risk adjustment: Nosos from HERC
- Random: intercept/slope
- Nested: Patient | Sta6a | Parent
- Subset analysis in Primary Care and Mental Health
- R packages Ime4, snowfall, and merTools

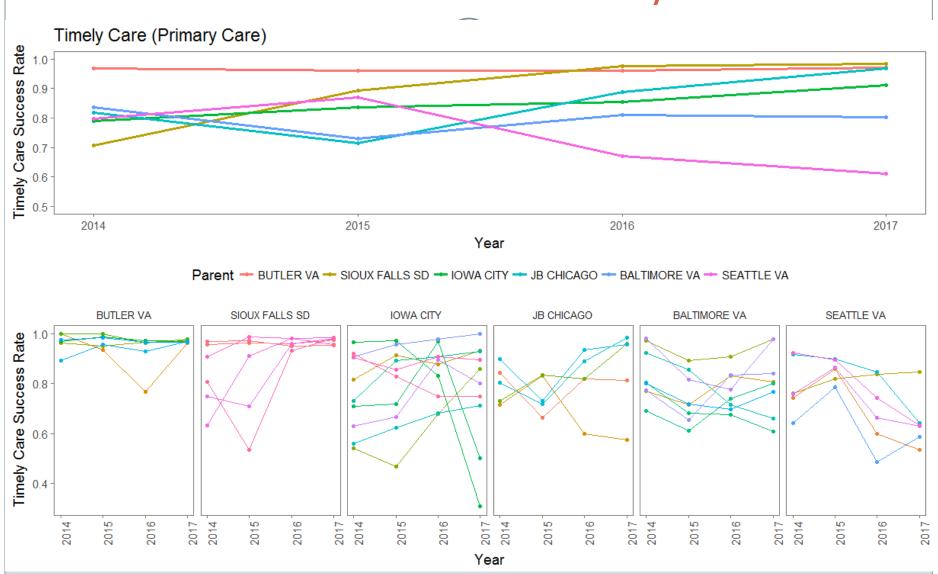
Data View: Parents

Sta5a	Name	Location	Divisions
438	Royal C. Johnson Veterans' Memorial Hospital	Sioux Falls, SD	6
512	Baltimore VA	Baltimore, MD	8
529	Butler VA	Butler, PA	6
537	Jesse Brown	Chicago, IL	5
636A8	Iowa City	Iowa City, IA	10
663	Seattle VA	Seattle, WA	7

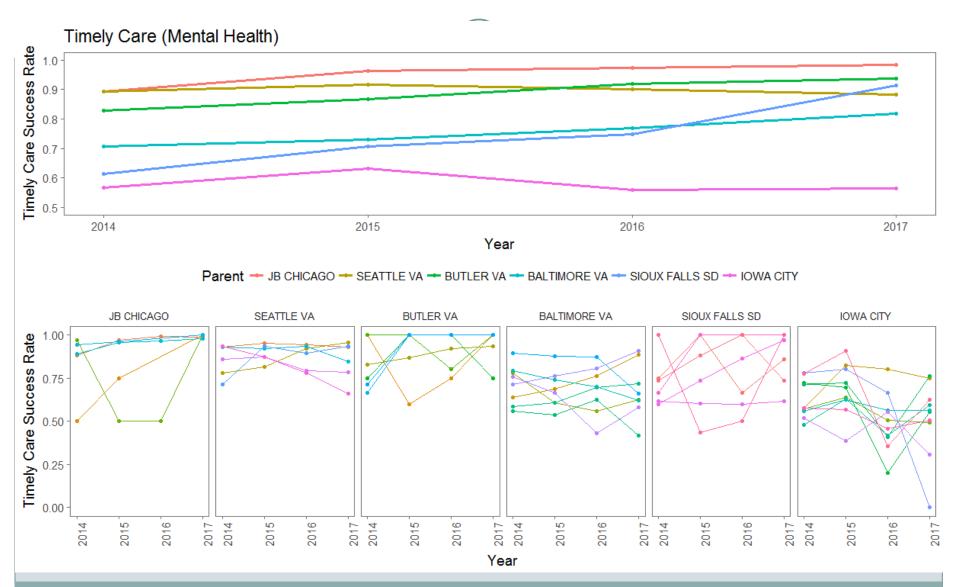
Data View



Data View Subsets: Primary Care



Data View Subsets: Mental Health



Results: Table 1A

	2014	2015	2016	2017
n	1,004,852	1,013,995	1,022,171	1,021,158
Age (mean				
(sd))	63.02 (16.54)	62.93 (16.64)	63.01 (16.70)	63.23 (16.69)
SEX = M (%)	928,087 (92.4)	934,175 (92.1)	939,780 (91.9)	937,197 (91.8)
WHITE	786,857 (80.2)	790,250 (79.9)	7914,13 (79.7)	786,516 (79.6)
NOTHISPANIC (%)	897,189 (95.8)	906,347 (95.6)	912,003 (95.5)	909,106 (95.4)
URH (%)				
Н	22,177 (2.3)	30,935 (3.1)	16,233 (1.6)	16,143 (1.6)
I	0 (0.0)	42 (0.0)	66 (0.0)	74 (0.0)
R	341,560 (34.9)	338,697 (34.3)	333,148 (33.4)	334,451 (33.3)
U	615,360 (62.8)	619,150 (62.6)	649,281 (65.0)	652,822 (65.1)
NososC (mean				
(sd))	1.18 (2.00)	1.17 (1.96)	1.16 (1.96)	1.15 (1.95)

Results: Table 1B

	2014	2015	2016	2017
n	497,713	511,726	532,675	504,548
Age (mean				
(sd))	62.20 (16.14)	62.14 (16.23)	62.37 (16.24)	62.68 (16.25)
SEX = M (%)	455,072 (91.4)	466,816 (91.2)	484,823 (91.0)	457,273 (90.6)
WHITE	363,444 (74.8)	371,624 (74.5)	387,886 (74.8)	366,226 (74.7)
NOTHISPANIC (%)	443,678 (94.9)	456,687 (94.8)	475,966 (94.7)	450,572 (94.7)
URH (%)	, , ,			, , ,
Н	6557 (1.3)	5364 (1.1)	5305 (1.0)	4625 (0.9)
I	0 (0.0)	16 (0.0)	24 (0.0)	23 (0.0)
R	137,599 (28.2)	134,484 (26.8)	142,587 (27.2)	129,340 (26.1)
U	343,128 (70.4)	361,448 (72.1)	375,843 (71.8)	362,047 (73.0)
NososC (mean				
(sd))	1.49 (2.40)	1.46 (2.34)	1.45 (2.31)	1.47 (2.36)

Requests and Exclusions

Year	Requests	Death	Inpat	PCancel	NoShow	Mobile	Total Exc
2014	1,477,259	105	48,765	97,486	52,065	953	149,760 (11%)
2015	1,529,363	109	45,398	95,546	50,644	1,814	147,191 (11%)
2016	1,602,253	132	49,995	100,994	56,938	387	157,468 (11%)
2017	1,422,203	96	37,111	85,026	41,615	291	126,302 (10%)

Exclusions not mutually exclusive

Fulfillment

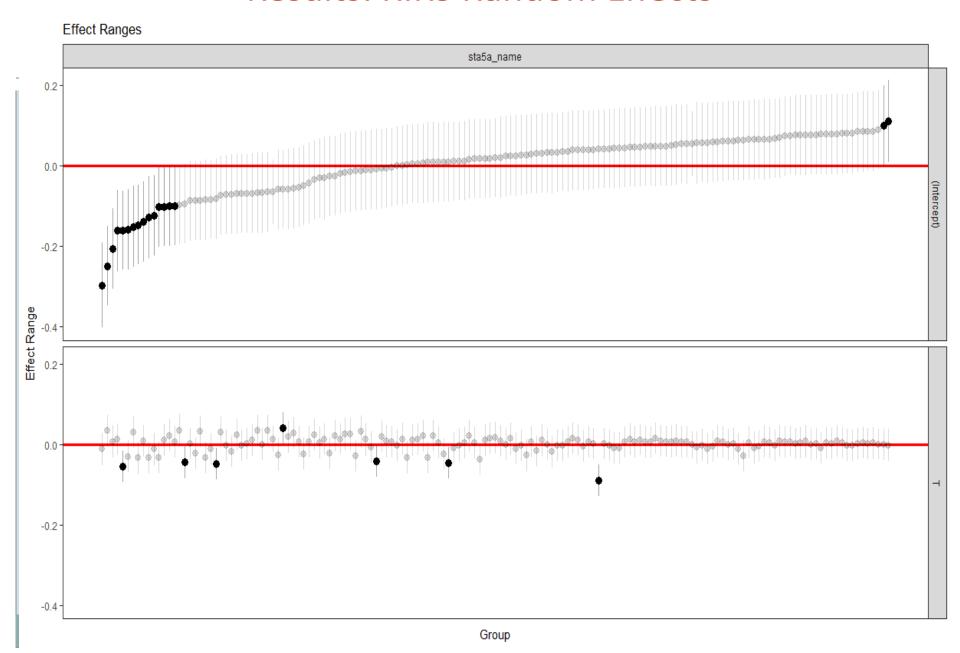
	2014	2015	2016	2017
Requests	1,327,499	1,382,172	1,444,785	1,295,901
Fail	304,645	314,216	240,112	137,176
Success	1,022,854	1,067,956	1,204,673	1,158,725
VA Other	726,527 (71%)	967,221 (69%)	989,925 (68%)	890,414 (69%)
VA PC	190,017 (19%)	230,506 (20%)	265,507 (20%)	249,725 (20%)
VA MH	65,299 (6%)	89,953 (7%)	86,973 (6%)	77,764 (6%)
VA Inpat	19,331 (2%)	50,668 (2%)	54,745 (4%)	49,023 (4%)
Fee Inpat	4,211 (0%)	10,247 (1%)	14,540 (1%)	17,665 (2%)
Fee Opat	16,975 (2%)	25,858 (2%)	25,164 (2%)	5,264 (0%)

Results: RIRS Fixed Effects

Linear	AIC	Intercept	Time	Rural	Nosos
Parent	-224	0.72 (0.05)	0.04 (0.01)	0.03 (0.04)	0.01 (0.02)
Sta5a	-996	0.84 (0.02)	0.01 (0.001)	-0.04 (0.02)	0
PC:Sta5a	-999	0.84 (0.02)	0.01 (0.001)	-0.01 (0.02)	0.02 (0.01)
MH:Sta5a	-433	0.76 (0.03)	0.01 (0.01)	-0.06 (0.03)	0.02 (0.01)

Logistic	AIC	Intercept	Time	Rural	Nosos
Parent	27651	0.03 (0.03)	0.6 (0.02)	0.99 (0.001)	0.68 (0.001)
Sta5a	46811	0.18 (0.04)	0.55 (0.02)	0.96 (0.001)	0.75 (0.001)
PC:Sta5a	18161	0.69 (0.05)	0.53 (0.02)	0.52 (0.06)	0.71 (0.01)
MH:Sta5a	7591	0.52 (0.07)	0.54 (0.02)	0.45 (0.08)	0.66 (0.01)

Results: RIRS Random Effects



Full Data Model



- Enrollment rates/Unique Patients
- Patient Demographics
 - Age
 - Sex
 - Race/Ethnicity
 - Rurality
 - Risk (Nosos)
 - Census Tract SES

Facility (Supply):

- Availability
 - After-hours care
 - Telehealth
 - ED/Urgent care
 - Walk-in clinic in primary care or mental health
- Parent Complexity
- CBOC
- Upstream
 - Number of no shows
 - Overbookings
 - Reschedule rate
 - Cancellations (highly correlated)
 - × Patient
 - × Clinic

The Ideal System

- Patient need
 - First touch
 - Wearable Tech
 - Predictive Analytics to anticipate need
- Accurate time stamps (when and who)
- Patient educated to local healthcare options
 - Nearest ED, Dermatologist, etc.
 - Walk-in clinic at Bartell's
- Clinic staff educated to patient's condition prior to arrival
- Others?

The Ideal Evaluation

Secret shopper

Questions/Comments

Contact Information

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- o Adam J Batten (<u>Adam.Batten@va.gov</u>)

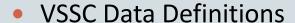
Special Thanks

- Primary Care Analytics and Evaluation Team (formerly the PACT-DLI Analytics Team)
- o CDW architects (Steve Andersen, Richard Pham, Trinity Hall)
- VSSC (Freddy Kirkland, Betsy Lancaster, George Allen, Lenny Aloi, Scot Dingman, Shawn Loftus, Stacey Campbell)
- Steve Fihn

- My VA Access Evaluation Implementation Guidebook (on VA Pulse).
- On Dates
- Per VHA Directive 1230, 07/16: Currently used terms are Clinically Indicated Date (CID) and Preferred Date (PD). These replace the term Desired Date, which referred to a date desired by either the patient or the provider. The new terms split this definition. Clinically Indicated Date is the date that the provider would prefer to see the patient. Preferred Date is the date that the patient would like to be seen. CID is used to measure wait time when possible. If it is not available, PD can be used.
- O Clinically Indicated Dates are submitted by the provider in CPRS. The scheduler then transcribes it into the desired date field (currently this field is just labeled DD, although soon it will be CID/PD). Both preferred and clinically indicated dates are entered into the same field, and the difference is noted with a comment. Appointments should be scheduled within 30 days of the CID. If the clinically indicated date is urgent, and should be a priority appointment, this is also noted with a comment that means the date entered is a "No Later Than" date.
- Patient Indicated Date: The date appointment the provider and/or veteran request a future appointment. When providers discuss a date with a patient for an ongoing visit (follow-up), this is a PID, but will be entered into the VistA field currently labeled CID/Pt Preferred. New patients requesting appointments or established patients requesting new appointments are also PIDs, as are consults.



- Appointment Scheduling Request Type FileMan File Description: This multiple contains information on appointments this patient has had or is scheduled to have. This information includes the date/time of the appointment, the clinic, and the reason for the appointment.
 - N:'NEXT AVAILABLE' APPT.;
 - C:OTHER THAN 'NEXT AVA.' (CLINICIAN REQ.);
 - P:OTHER THAN 'NEXT AVA.' (PATIENT REQ.);
 - W:WALKIN APPT.;
 - M:MULTIPLE APPT. BOOKING;
 - A:AUTO REBOOK;
 - O:OTHER THAN 'NEXT AVA.' APPT.; (Most common)
- CancelNoShowCode
 - N:NO-SHOW;
 - C:CANCELLED BY CLINIC;
 - NA:NO-SHOW & AUTO RE-BOOK;
 - CA:CANCELLED BY CLINIC & AUTO RE-BOOK;
 - I:INPATIENT APPOINTMENT;
 - PC:CANCELLED BY PATIENT;
 - PCA:CANCELLED BY PATIENT & AUTO-REBOOK;
 - NT:NO ACTION TAKE



- Compass
- Completed Appointments
- HERC Nosos: Wagner T, Stefos T, Moran E, Cashy J, Shen ML, Gehlert E, Asch S, Almenoff P. Risk Adjustment: Guide to the V21 and Nosos Risk Score Programs. Technical Report 30. Menlo Park, CA. VA Palo Alto, Health Economics Resource Center; February 2016.
- The R package for statistical computing: R Core Team (2016). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/.
 - o Ime4: Douglas Bates, Martin Maechler, Ben Bolker, Steve Walker (2015). Fitting Linear Mixed-Effects Models Using Ime4. Journal of Statistical Software, 67(1), 1-48. doi:10.18637/jss.v067.i01.
 - o snowfall: Jochen Knaus (2015). snowfall: Easier cluster computing (based on snow).. R package version 1.84-6.1. https://CRAN.R-project.org/package=snowfall
 - o merTools: Jared E. Knowles and Carl Frederick (2016). merTools: Tools for Analyzing Mixed Effect Regression Models. R package version 0.2.1. https://CRAN.R-project.org/package=merTools

- Lowe 2017 describes access and ED use as a joint longitudinal process (ED utilization rates change with temporal changes in access).
 - Policy makers can easily understand that as long as reduction in ED utilization is not achieved through denying access to ED care, reduction in overall ED utilization reflects improved access to primary care.
- Yoon 2015: More same-day access significantly predicted fewer nonemergent and primary care treatable ED visits while continuity was not significantly related to any type of ED visit. Neither measure was related to ED visits for mental health problems.
- Overall ED utilization rates vary with differences in access in different populations and in different geographic regions.
 - Lowe et al. 2005, 2008, 2009;
 - Lowe, Fu, and Gallia 2010;
 - Heavrin et al. 2011;
 - O Cheung et al. 2012

Appendix: Site Visit Parent Systems

516 C.W. Bill Young Department of Veterans Affairs	Bay Pines
402 Togus VA Medical Center	Togus
438 Royal C. Johnson Veterans' Memorial Hospital	Sioux Falls
463 Anchorage VA Medical Center	Anchorage
504 Thomas E. Creek Department of Veterans Affairs	Amarillo
512 Baltimore VA Medical Center	Baltimore
515 Battle Creek VA Medical Center	Battle Creek
519 George H. O'Brien, Jr., Department of Veterans	Big Spring
523 Boston Healthcare System	Boston
526 James J. Peters Department of Veterans Affairs	Bronx
528 Buffalo VA Medical Center	Buffalo
529 Butler VA Medical Center	Butler
531 Boise VA Medical Center	Boise
537 Jesse Brown Department of Veterans Affairs Medi	Chicago
538 Chillicothe VA Medical Center	Chillicothe
540 Louis A. Johnson Veterans' Administration Medic	Clarksburg
541 Louis Stokes Cleveland Department of Veterans A	Cleveland
603 Robley Rex Department of Veterans Affairs Medic	Louisville
630 New York Harbor	New York
657 Marion VA Medical Center	Marion
666 Sheridan VA Medical Center	Sheridan