Experiences with Access in the Patient-Centered Medical Home and Preventable Hospitalization

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VA HEALTH CARE | Defining EXCELLENCE in the 21st Century

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- Disclosures
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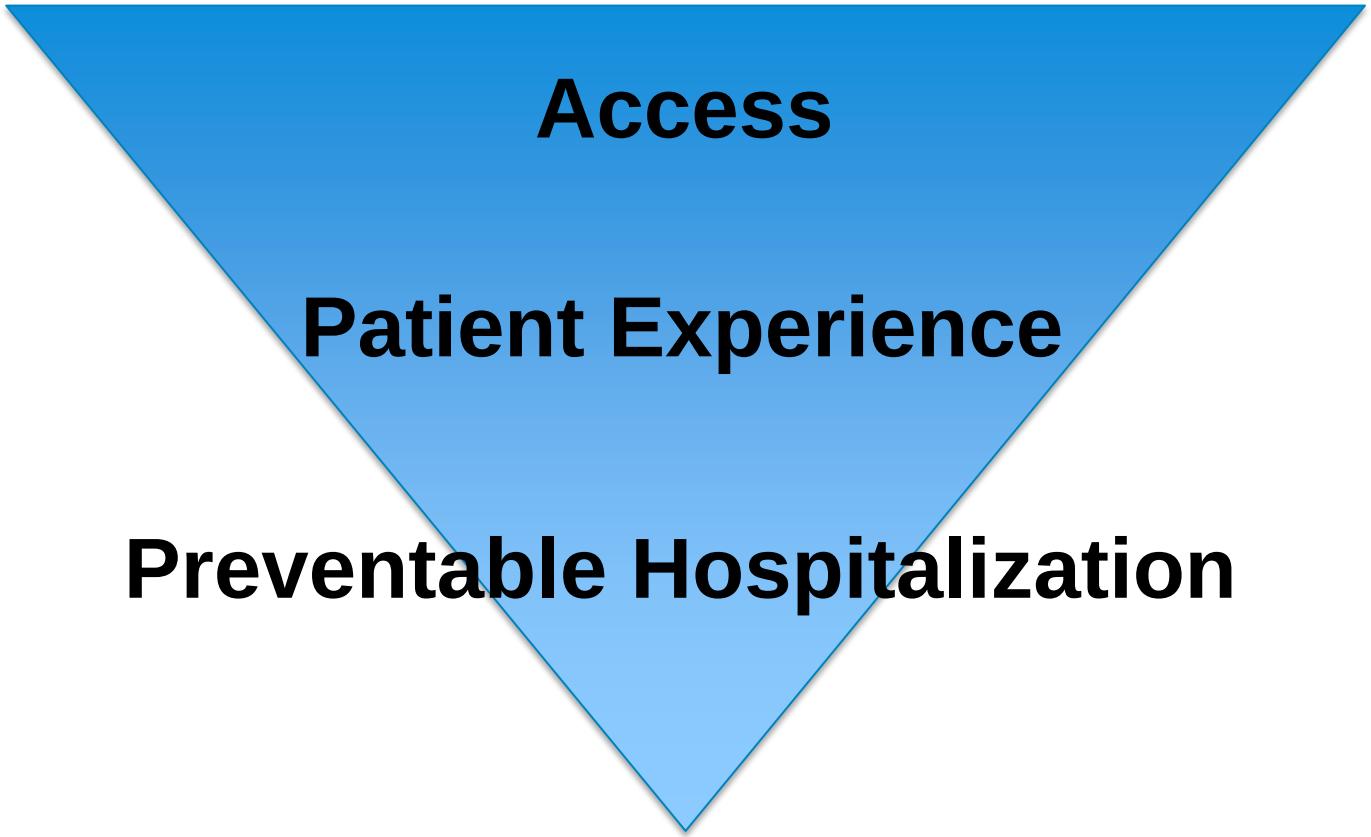
  - The views expressed in this presentation are of Dr. Augustine and do not necessarily reflect the position or policy of the United States Government, Department of Veterans Affairs, the University of Washington, or the Mount Sinai School of Medicine.

Agenda



Poll Question #1

- What is your primary role in VA?
  - student, trainee, or fellow
  - clinician
  - researcher
  - Administrator, manager or policy-maker
  - Other

Access: Definition

"… potential ease of obtaining care or information via virtual or face-to-face interactions with a healthcare providers including clinicians, caregivers, peers, and computer applications throughout the episode of care."

Fortney JC, et al. (2011). *JGIM*

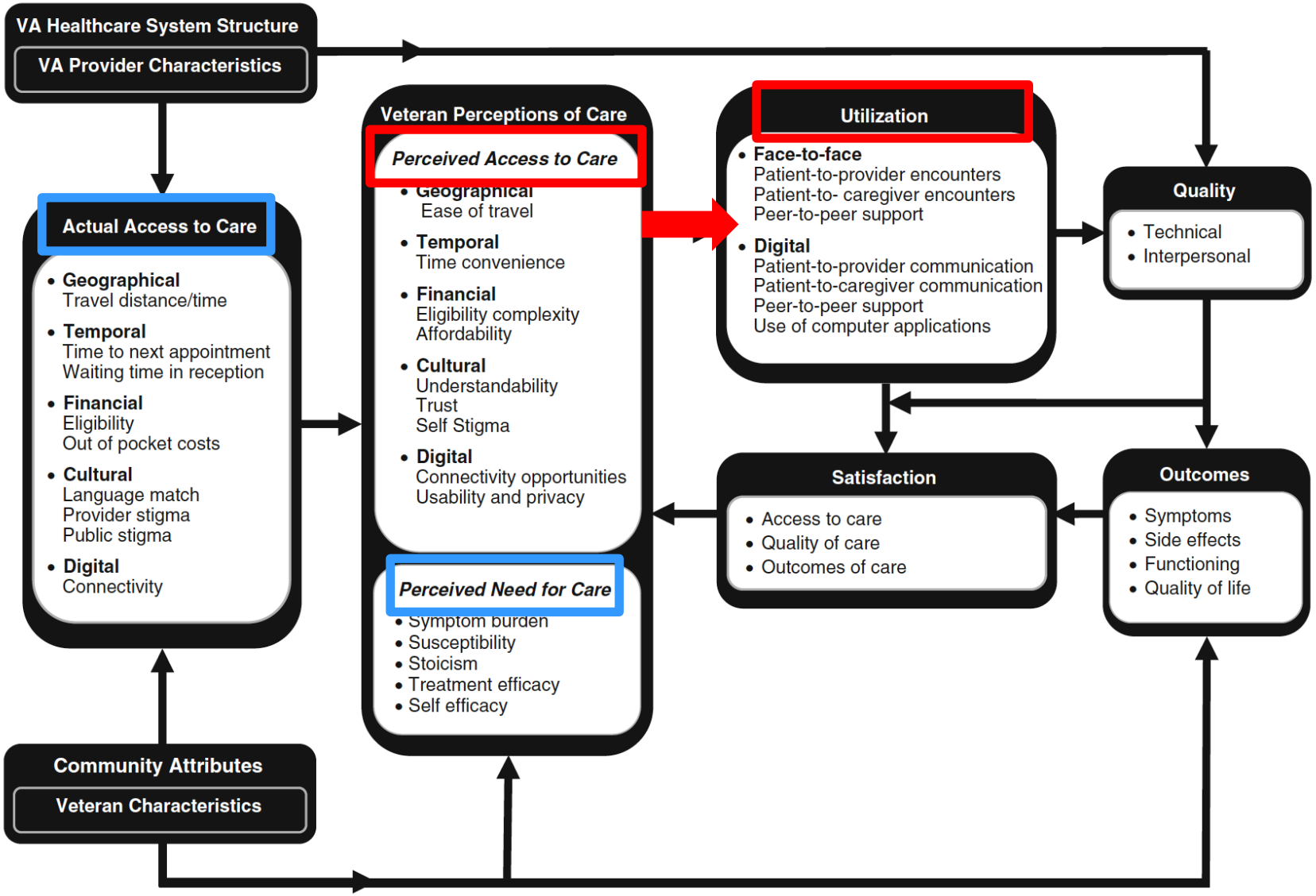
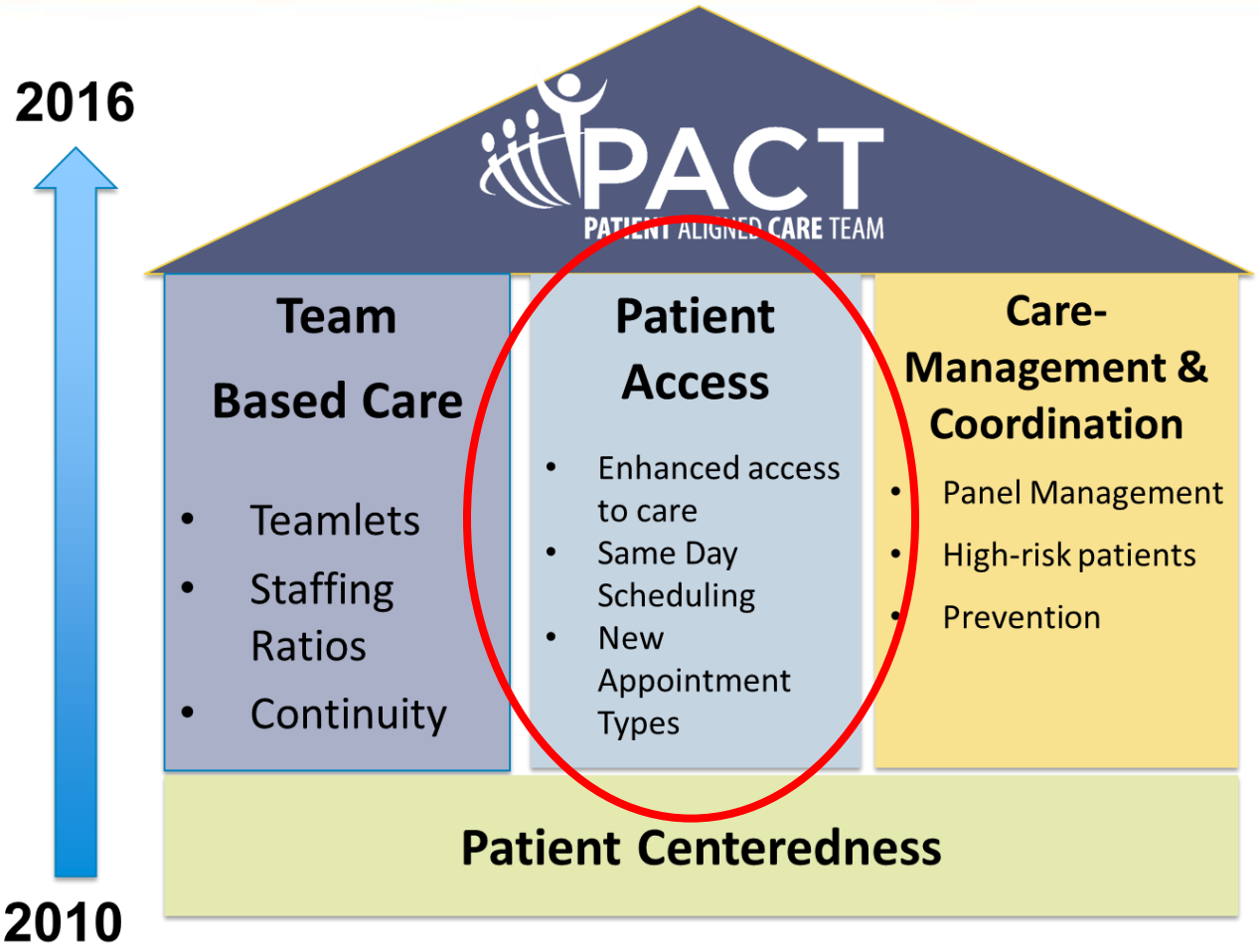


Figure 1. Conceptualization of access.

[1]Fortney JC, et al. (2011). *JGIM*

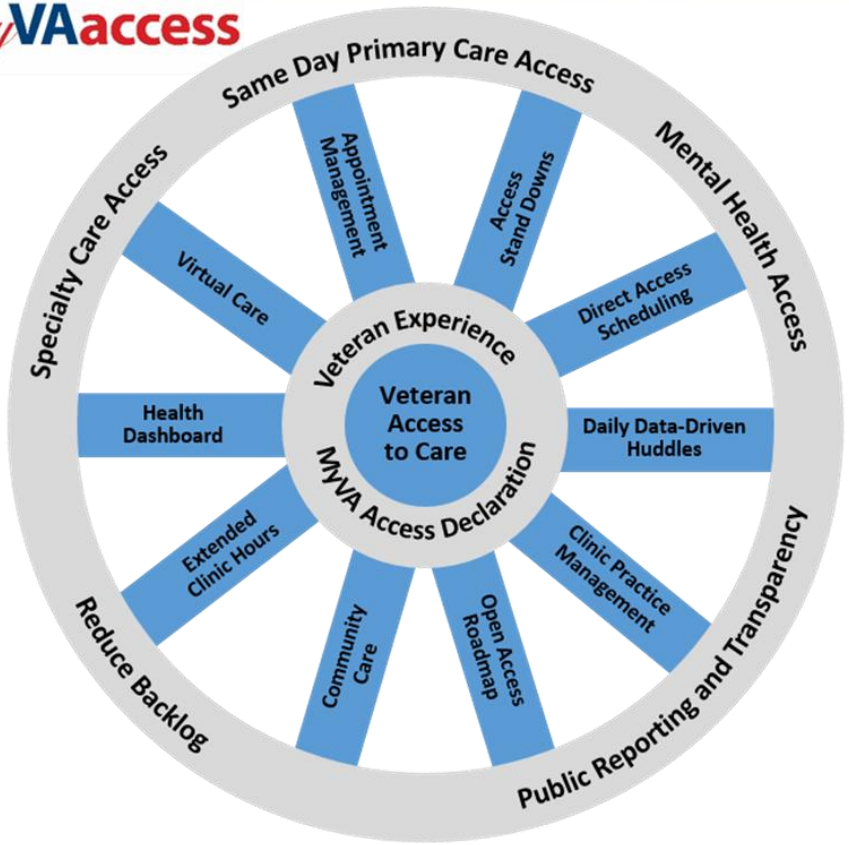
Access: Central Goal of the PCMH / PACT



With permission, Nelson KM

Access: VHA Priority

myVAaccess



Driving systematic improvements To enhance Veteran satisfaction

MyVA Access Declaration

We aspire to provide access to care based on the following core principles:

1. Provide timely care, including same-day services in Primary Care, as needed
2. Provide timely Mental Health care, including same day services, as needed
3. Provide Veterans medically necessary care from another VA Medical Center, while away from their primary facility
4. Respond to routine clinical inquiries within 2 business days
5. Offer appointments and other follow-up options upon leaving clinic
6. Actively engage Veterans for timely follow-up if a clinic is canceled due to unforeseen circumstances
7. Integrate community providers as appropriate to enhance access
8. Offer Veterans extended clinic hours, and/or virtual care options, such as Telehealth, when appropriate
9. Transparently report access to care data

Measures of [Actual] Access

- Wait-time
  - Patient Satisfaction[4]; Improved diabetes control[3]; Reduction in hospitalizations for ambulatory care sensitive conditions[2]; Reduction in Mortality[1]
- Third Next Available appointment
- PCMH Certification[6]
- ACP Medical Home Builder[7]

1Prentice, 2014, *Am J Qual*; 2Prentice, 2011, AJMC; 3Prentice, 2008, *H Serv Outc Res Meth*; 4Prentice, 2007, HSR; 6Aysola J et al, 2015, *Med Care*; 7Yoon J et al, 2015*, Am J Manag Care*

Patient Experience & the PCMH

- Consumer Assessment of Healthcare Providers and Systems, Clinician and Group Survey (**CG-CAHPS**)
  - 2011 update, version 2.0[1,2]
  - Patient Centered Medical Home (**PCMH**) item set
- Domains:
  - Access to Care
  - Comprehensiveness
  - Self-management support
  - Shared decision-making
  - Coordination of care
  - Information about care and appointments

1http://www.ahrq.gov/cahps/surveys-guidance/item-sets/PCMH/index.html
2Scholle SH, 2012, *Med Care*

Measuring Access in the PCMH

CG-CAHPS, PCMH item set: Access measures

- Wait-time (<15 min in clinic & days to appointment)
- **Services**:
  - Routine Care
  - Immediate Care
  - After-hours Care
  - Answers by phone during regular hours
  - Answers by phone afterhours

Experiences with 5 ways to access care (perceived access?)

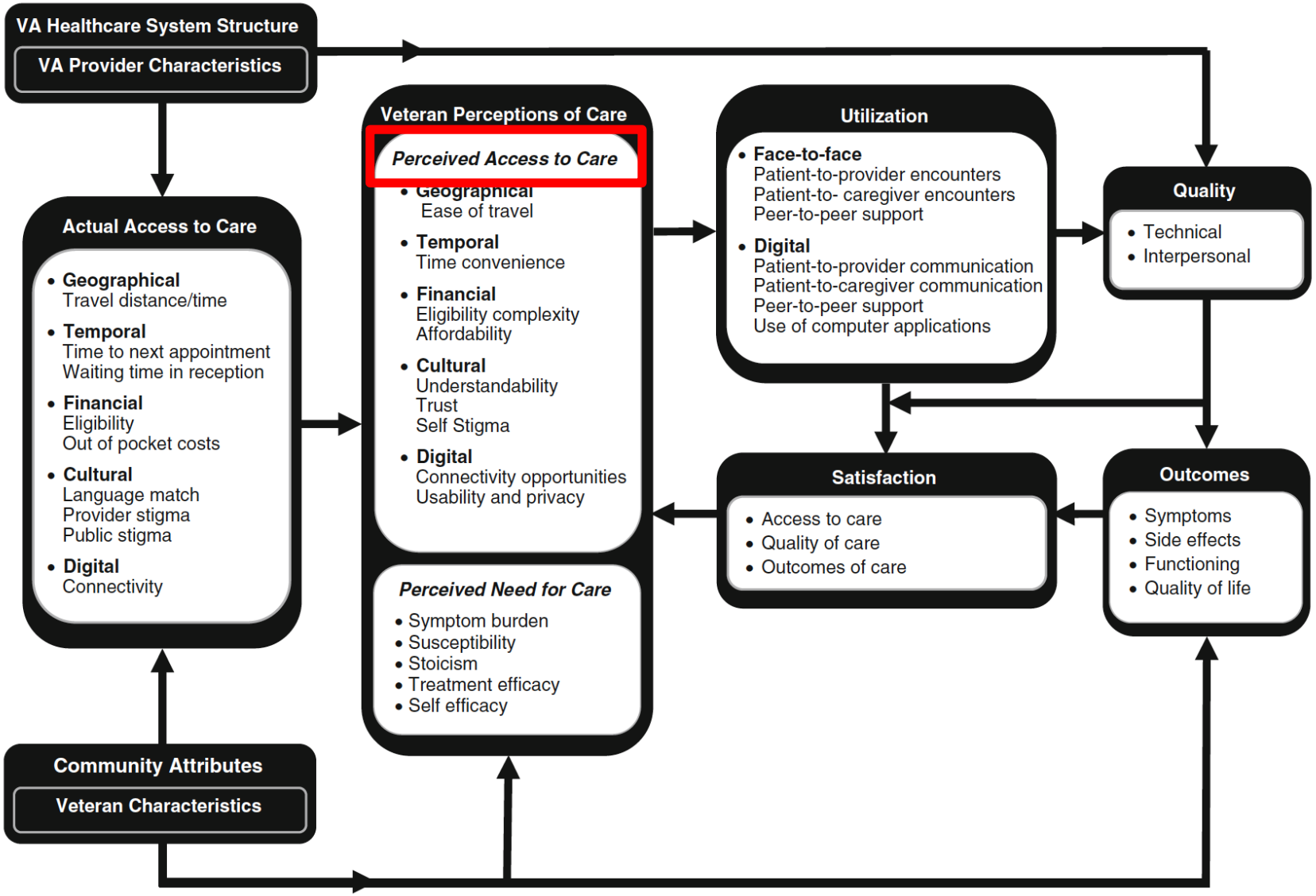


Figure 1. Conceptualization of access.

[1]Fortney JC, et al. (2011). *JGIM*

Patient Experience: Example CAHPS-PCMH

"Routine Care"

Contingent question:

In the last 12 months, did you make any appointments for a check-up or routine care with this provider?

☐Yes ☐No

Question:

In the last 12 months, when you made an appointment for a check-up or routine care with this provider, how often did you get an appointment as soon as you needed?

☐Always ☐Usually ☐Sometimes ☐Never

The Veteran Experience & SHEP-PCMH

- **Survey of Health Care Experiences, PCMH (SHEP-PCMH)**
  - Derived from CAHPS-GG, PCMH item set
  - Implemented in March 2012
  - Delivered to ~65,000 patients per month[1,2]
  - ~45% response rate[1,2]

- **Current Use**:
  - Facility level Reporting
    - SAIL (Strategic Analytics for Improvement and Learning)
    - Attributable Effects Report
  - National PACT Implementation evaluation[3]

1VA White Paper, SHEP-PCMH, Oct 2012;
2VA Tech Specs, SHEP-PCMH, Oct 2012
3Nelson et al, *JAMA Int Med*, 2014

Patient Experience: Research

- Access responses used as composite[1]
  - PCMH implementation with only modest impact on experience
  - Experienced access remains poor
- Racial disparities[2-3]
  - Blacks and Hispanic veterans more likely to report difficultly and less likely to report ease of access[2]
- Heterogeneity in the demand for these services[4]
- Limited data on outcomes

1Reddy, 2015, Am J Manag Care; 2Hausman, 2013, Med Care; 3Jones, 2016, JGIM; 4Augustine, 2018, J Amb Care Manag

Preventable Hospitalization: Ambulatory Care Sensitive Conditions

- Potential preventable with access to appropriate primary (ambulatory) care
- Associated with:
  - Availability of primary care resources*
  - Factors correlative with limited or inequitable access*
- VHA: modest decrease, geographic variation*
- PCMH / PACT
  - No association with ACP Medical Home Builder*
  - Reductions with PACT implementation (Pi^2)*

*see last slide for references

Preventable Hospitalization

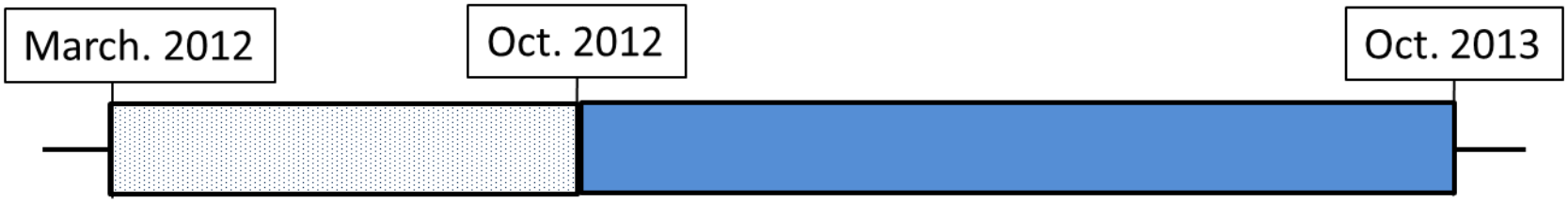
	Ambulatory Care Sensitive Conditions
Acute[1]	Dehydration
	Bacterial Pneumonia
	Urinary Tract Infection
Chronic[2]	Hypertension
	*Angina without Procedure**
	Heart Failure
	Chronic Obstructive Pulmonary Disease
	Asthma
	Diabetes Short-Term Complications
	Diabetes Long-Term Complications
	Uncontrolled Diabetes
	Lower-Extremity Amputation w/ Diabetes

1PQI 91, AHRQ Quality Indicators, Version 4.5, 2013, link; 2PQI 92, Version 4.5, 2013, link
*eliminated in 2017, version 7.0 link

Objective

- To examine whether improved patient experiences with access is associated with:
  - Preventable Hospitalizations
    - Overall composite ACSCs
    - Acute composite ACSCs
    - Chronic composite ACSCs

Methods: Design



SHEP-PCMH

Access Questions

Routine Care

Call office hours

Immediate Care

Care After Hours

Call After hours

Any Hospitalization due to ACSC

Composite, Acute, Chronic

(Defined by the AHRQ)

VHA administrative databases &
CMS claims data

Methods: Explanatory Variables

Question #1: “Routine Care”

Contingent question:

In the last 12 months, did you make any appointments for a check-up or routine care with this provider?

☐Yes ☐No

Question:

In the last 12 months, when you made an appointment for a check-up or routine care with this provider, how often did you get an appointment as soon as you needed?

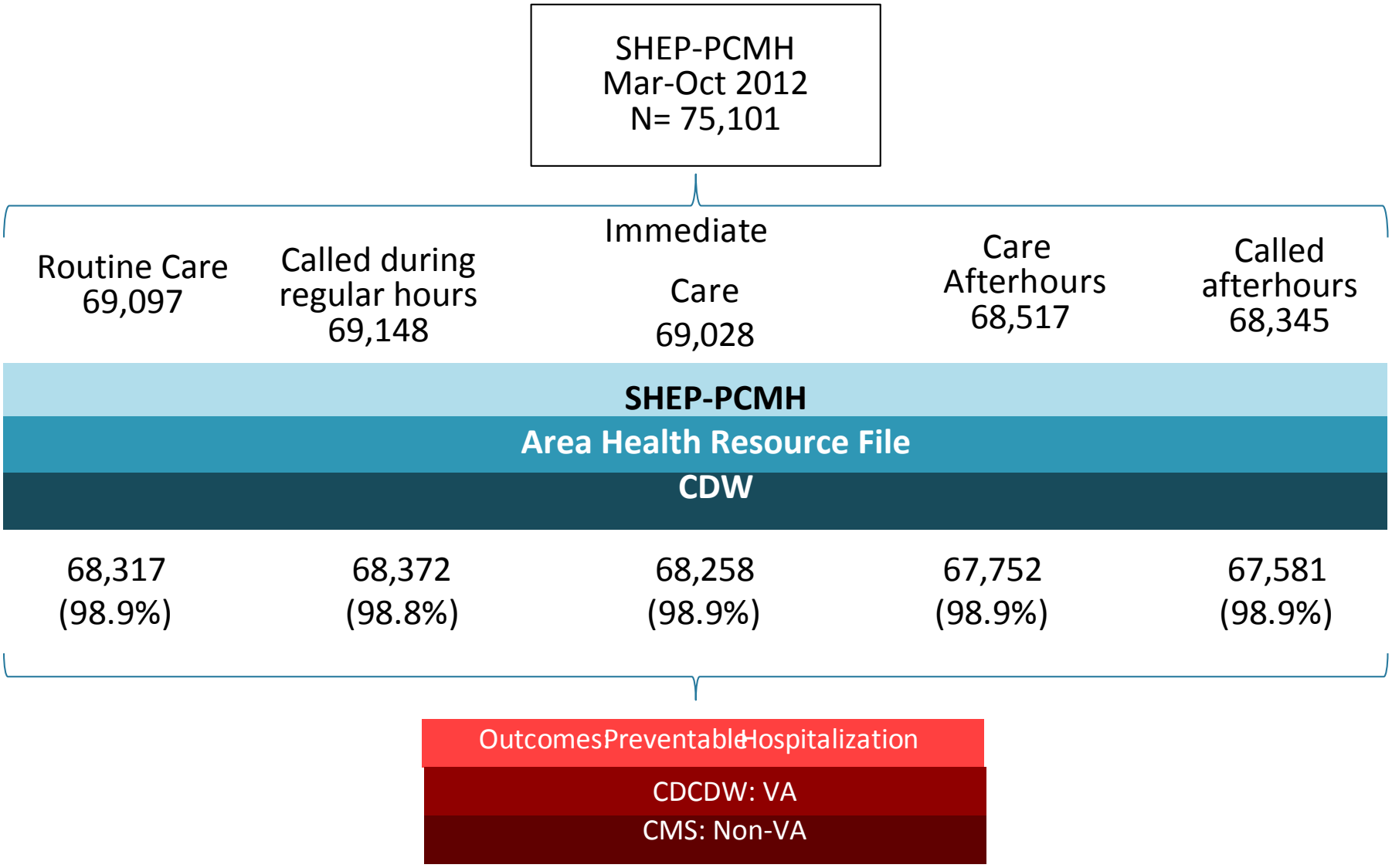
☐Always ☐Usually ☐Sometimes ☐Never

	In the last 12 months, . . .	Response
Routine Care	. . . when you made an appointment for a **check-up or routine care** with this provider, how often did you get an appointment as soon as you needed?	Never Sometimes Usually Always
Answers by phone regular hours	. . . when you **phoned this provider's office during regular office hours**, how often did you get an answer to your medical question that same day?	Never Sometimes Usually Always
Immediate Care	. . . when you phoned this provider's office to get an appointment for **care you needed right away**, how often did you get an appointment as soon as you needed?	Never Sometimes Usually Always
After-hours Care	how often were you able to get the care you needed from this provider's office **during evenings, weekends, or holidays**?	Never Sometimes Usually Always
Answers by phone after hours	. . . when you **phoned this provider's office after regular office hours**, how often did you get an answer to your medical question as soon as you needed?	Never Sometimes Usually Always

Methods:

- **Patient-reported access categories (5)**:
  - ❑ *Not Needed*
  - ❑ *Always*
  - ❑ *Usually*
  - ❑ *Sometimes*
  - ❑ *Never* - reference category

Hospitalization due to ACSC


SHEP-PCMH
Mar-Oct 2012
N= 75,101
Routine Care
69,097
Called during regular hours
69,148
Immediate Care
69,028
Care Afterhours
68,517
Called afterhours
68,345
SHEP-PCMH
Area Health Resource File
CDW
68,317
(98.9%)
68,372
(98.8%)
68,258
(98.9%)
67,752
(98.9%)
67,581
(98.9%)
Outcomes
Preventable Hospitalization
CDCDW: VA
CMS: Non-VA

Methods: Covariates

- Individual level covariates
  - Demographics: Age, Sex, Race/Ethnicity, Marital Status, Education
  - Copayment exemption
  - Community-based Outpatient Clinic (CBOC)
  - Distance to nearest VA facility
  - Residence location: Urban, Rural, Highly Rural
  - County unemployment rate & poverty area designation
  - Outpatient visits in previous year, FY 2011
  - Health status: *Gagne* risk score
  - Behavioral Health Diagnoses: PTSD, Depression, Substance Abuse

Methods: Statistical approach

- **Weighted** for clinic, age, gender to national VA population
- **Mixed effects** multivariable logistic regression models
  - Calculated OR for outcome comparing patient-reported categories
    - Reference category: “Never”
  - Random intercept to account for correlated clinic-level effects upon hospitalization for ACSCs

Results: Selected Descriptive Statistics

	Overall N = 69,955	H-ACSC N = 2,036	No H-ACSC N = 67,919
Age (mean/SD)	62.6	73.2	62.3 (0.12)
Male (%)	92.8	97.1	92.6
Race/Ethnicity:			
White (%)	70.3	74.35	70.2
Black (%)	14.6	12.6	14.7
Latino/Hispanic (%)	7.2	3.3	7.3
Other (%)	7.9	9.8	7.9
Gagne Score	0.637	1.96	0.60
Depression (%)	6.3	6.4	6.3
PTSD (%)	20.9	14.9	21.0

Results: **Immediate/Urgent Care**

	ACSC Hospitalization 2013		
	Composite OR (95% CI)	Acute OR (95% CI)	Chronic OR (95% CI)
Never	Ref	Ref	Ref
Sometimes	1.22 (0.76-1.97)	1.02 (0.58-1.80)	1.36 (0.78-2.37)
Usually	1.10 (0.71-1.70)	1.55 (0.89-2.68)	0.94 (0.56-1.58)
Always	0.80 (0.53-1.21)	1.05 (0.63-1.75)	0.77 (0.47-1.28)
Not Needed	0.90 (0.61-1.35)	1.37 (0.84-2.23)	0.77 (0.48-1.24)

*p<0.05; **p<0.01;***p<0.001

Results: **Care Afterhours**

	ACSC Hospitalization 2013		
	Composite OR (95% CI)	Acute ACSCs OR (95% CI)	Chronic ACSCs OR (95% CI)
Never	Ref	Ref	Ref
Sometimes	0.73 (0.50-1.05)	0.72 (0.37-1.40)	0.77 (0.50-1.18)
Usually	0.92 (0.63-1.33)	0.96 (0.58-1.58)	0.94 (0.60-1.49)
Always	0.86 (0.59-1.25)	1.47 (0.77-2.81)	**0.62 (0.44-0.89)****
Not Needed	0.56 (0.47-0.68)***	0.76 (0.57-1.01)	0.50 (0.40-0.63)***

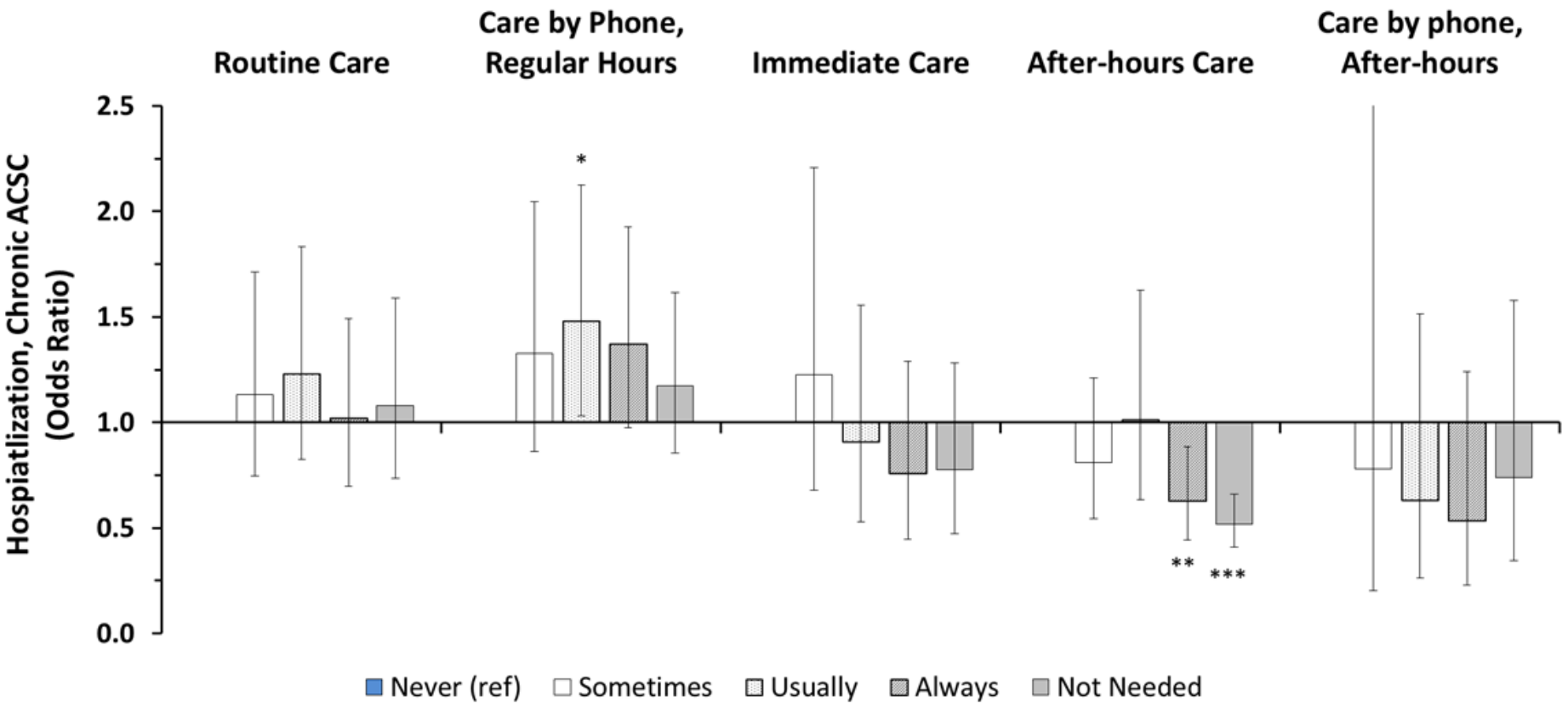
*p<0.05; **p<0.01;***p<0.001

Results: **Call during office hours**

	ACSC Hospitalization 2013		
	Composite OR (95% CI)	Acute ACSCs OR (95% CI)	Chronic ACSCs OR (95% CI)
Never	Ref	Ref	Ref
Sometimes	1.38 (0.94-2.02)	1.42 (0.82-2.45)	1.39 (0.90-2.16)
Usually	1.28 (0.93-1.76)	1.07 (0.65-1.77)	1.49 (1.03-2.17)*
Always	1.17 (0.87-1.57)	1.01 (0.64-1.58)	1.35 (0.95-1.93)
Not Needed	1.02 (0.78-1.35)	0.91 (0.60-1.38)	1.14 (0.82-1.59)

*p<0.05; **p<0.01;***p<0.001

Perceived Access & Preventable Hospitalization



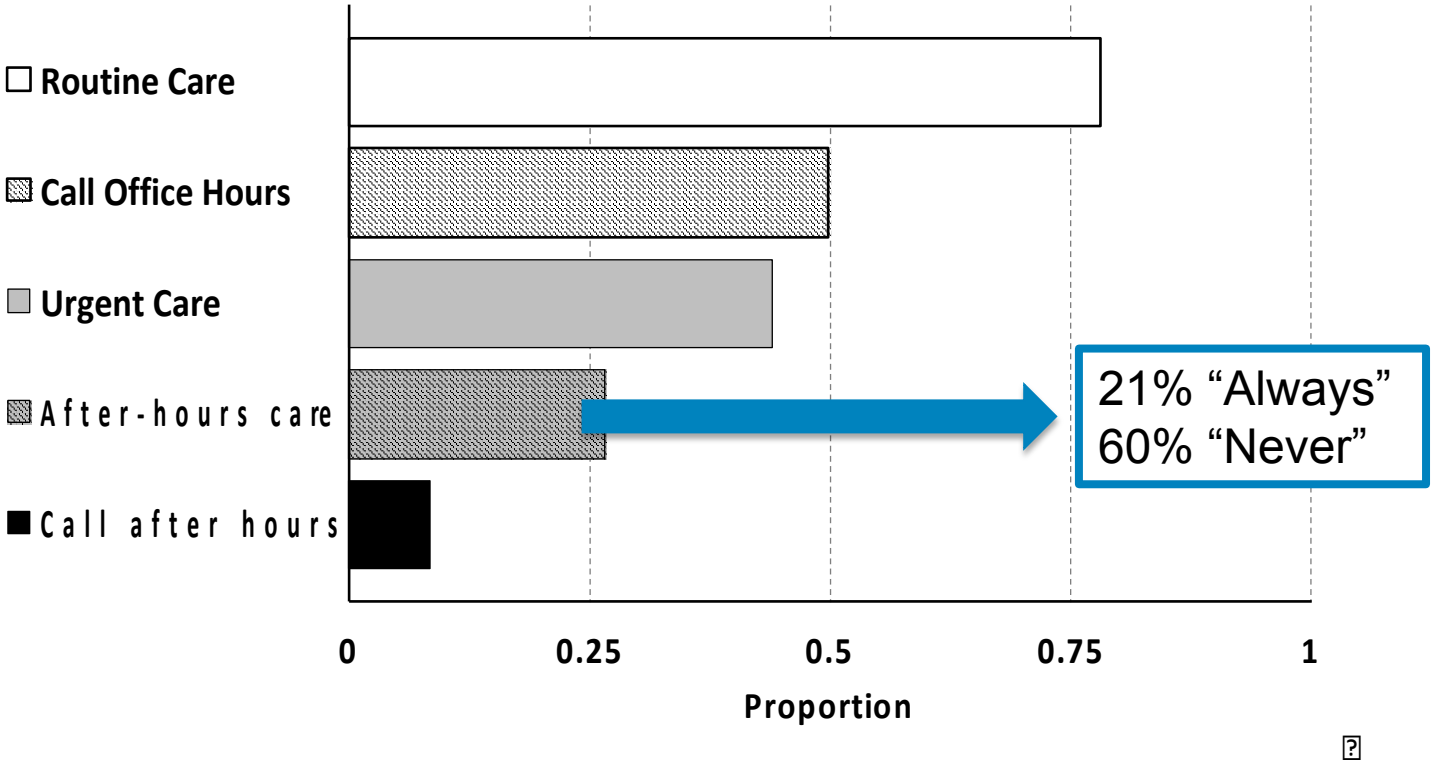
*p<0.05; **p<0.01; ***p<0.001

Summary: PCMH Access & Preventable hospitalization

- For chronic ACSCs, improving experience with access to…
  - Afterhours care may reduce hospitalization
  - Answers to questions by phone during office hours may increase hospitalization
  - Routine care, Urgent care, and care by phone after-hours showed no association

4:00PM at VA Primary Care Clinics

After-Hours Care: An unmet demand?



Augustine et al., JACM, 2018

Different Access Needs:
Routine & After-hours Care

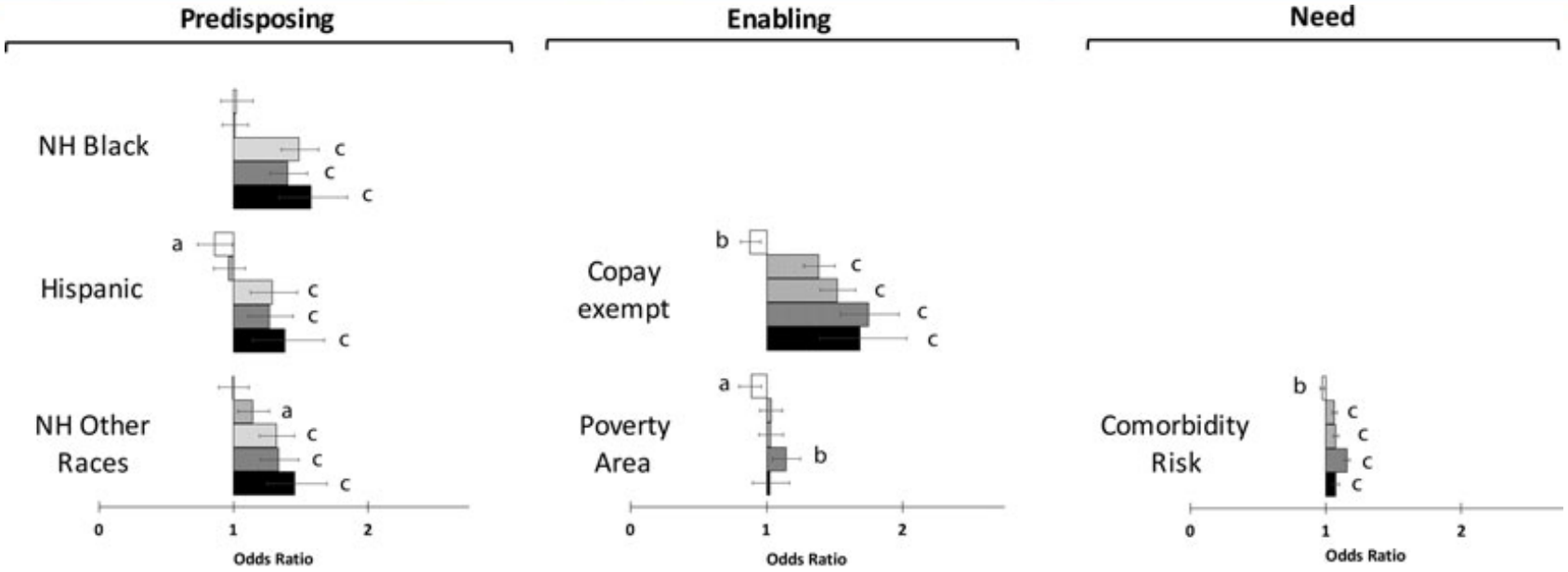


Figure 3. Factors associated with nonroutine ways to access primary care. The 5 ways assessed include routine care (□); calling during regular hours (■); immediate care (■); after-hours care (■); and calling after-hours (■). Comparison are presented in odds ratios, comparing report of needing or seeking the way to access care for NH black race, Hispanic ethnicity, and NH Other races (vs NH white); copayment exemption; living in poverty area; and comorbidity risk (per unit increase). NH indicates non-Hispanic. [a]$P < .05$; [b]$P < .01$; [c]$P < .001$.

Augustine et al., JACM, 2018

Objective 2a:

- Does access to Routine care influence need for after-hours access?

Routine Care Access & Need for After-Hours Care

	Care by phone Office Hours	Urgent Care	After-Hours Care	Care by Phone After-hours
	OR	OR	OR	OR
Never	*Ref*	*Ref*	*Ref*	*Ref*
Sometimes	0.85	0.94	0.65***	1.10
Usually	0.61***	0.64***	0.35***	0.67**
Always	0.55***	0.54***	0.23***	0.56***
Not Needed	0.27	0.25	0.22	0.29

*P<0.05; **p<0.01; ***p<0.0001

Objective 2b:

- Does access to Routine care influence need for after-hours access? Yes

  - Does access to Routine Care modify the effect the association after-hours access with preventable hospitalization?

Methods: Statistical approach

- **Weighted** for clinic, age, gender to national VA population
- **Mixed effects** multivariable logistic regression models
  - Calculated OR for outcome comparing patient-reported categories
    - Reference category: “Never”
  - Random intercept to account for correlated clinic-level effects upon hospitalization for ACSCs
  - Stratified sample
  - Interaction: Less that optimal access to Routine Care (“usually, sometimes, never” vs. “always”) * Access to After-hours care

Results: Stratified Routine Care Access

		Hospitalization for any ACSC	
		Access to Routine Care	
		"Always"	"Usually / Sometimes / Never"
		OR (95% CI)	OR (95% CI)
	N =	29,102	21,364
After-hours Care	Never	*Ref*	*Ref*
	Sometimes	1.01 (0.43-2.37)	0.68 (0.44-1.06)
	Usually	1.91 (1.06-3.47) *	0.58 (0.34-0.97) *
	Always	0.87 (0.55-1.37)	1.96 (0.93-4.15)
	Not Needed	0.67 (0.48-0.92) *	0.58 (0.45-0.77) ***

Columns represent multivariable logistic regression testing association of experienced with after-hours care and hospitalization for any ACSC, stratified by experiences with accessing with routine care; All models weighted to national VA population in FY 2012; *p<0.05, **p<0.01, ***p<0.001

Results: Stratified Routine Care Access

		Acute ACSC		Chronic ACSC	
		Routine Care		Routine Care	
		"Always"	"Usually / Sometimes / Never"	"Always"	"Usually / Sometimes / Ne
		OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
	N =	29,102	21,174	29,102	21,364
After-hours Care	Never	*Ref*	*Ref*	*Ref*	*Ref*
	Sometimes	0.88 (0.24-3.20)	0.67 (0.29-1.56)	0.65 (0.54-0.78)	0.69 (0.41-1.16)
	Usually	1.09 (0.44-2.70)	0.75 (0.38-1.48)	**2.46 (1.29-4.71) ****	**0.50 (0.26-0.96)**
	Always	1.05 (0.47-2.38)	**3.63 (1.33-3.89) ***	0.73 (0.46-1.16)	1.11 (0.54-2.26)
	Not Needed	0.65 (0.41-1.03)	0.80 (0.54-1.17) ***	0.63 (0.43-0.91) *	0.51 (0.36-0.72)

Columns represent multivariable logistic regression testing association of experienced with after-hours care and hospitalization for acute and chronic ACSCs, stratified by experiences accessing with routine care; All models weighted to national VA population in FY 2012; *p<0.05, **p<0.01, ***p<0.001

Results: Stratified Routine Care Access

		Acute ACSC		Chronic ACSC	
		Routine Care		Routine Care	
		"Always"	"Usually / Sometimes / Never"	"Always"	"Usually / Sometimes / Ne
		OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
	N =	29,102	21,174	29,102	21,364
After-hours Care	Never	*Ref*	*Ref*	*Ref*	*Ref*
	Sometimes	0.88 (0.24-3.20)	0.67 (0.29-1.56)	0.65 (0.54-0.78)	0.69 (0.41-1.16)
	Usually	1.09 (0.44-2.70)	0.75 (0.38-1.48)	**2.46 (1.29-4.71) ****	**0.50 (0.26-0.96)**
	Always	1.05 (0.47-2.38)	**3.63 (1.33-3.89) ***	0.73 (0.46-1.16)	1.11 (0.54-2.26)
	Not Needed	0.65 (0.41-1.03)	0.80 (0.54-1.17) ***	0.63 (0.43-0.91) *	0.51 (0.36-0.72)

Columns represent multivariable logistic regression testing association of experienced with after-hours care and hospitalization for acute and chronic ACSCs, stratified by experiences accessing with routine care; All models weighted to national VA population in FY 2012; *p<0.05, **p<0.01, ***p<0.001

Results: Interaction Model
*Routine * After-Hours*

		Hospitalization for ACSC		
		Overall	Acute	Chronic
		OR (95% CI)	OR (95% CI)	OR (95% CI)
Interaction	N =	50,466	66,307	65,945
Not always receiving Routine Care * After-Hours Care	Never	*Ref*	*Ref*	*Ref*
	Sometimes	0.59 (0.22-1.54)	0.61 (0.14-2.65)	0.53 (0.18-1.61)
	Usually	**0.29 (0.13-0.66) ****	0.60 (0.21-1.70)	**0.22 (0.08-0.58) ****
	Always	2.38 (0.94-6.00)	3.40 (0.85-13.64)	1.65 (0.75-3.62)
	Not Needed	0.83 (0.54-1.26)	1.14 (0.63-2.05)	0.77 (0.47-1.26) *

Columns represent multivariable logistic regression testing association with experienced access with after-hours care comparing patients 'usually / sometimes / never' (not always) vs. 'always' receiving routine care and likelihood for any hospitalization for overall, acute, and chronic ACSCs; All models weighted to national VA population in FY 2012; *p<0.05, **p<0.01, ***p<0.001

Summary: Perceived Access in the PCMH

- (1) Perceived access to 5 different services & H-ACSC
  - Routine Care, Urgent Care, and Care: no association
  - Care by phone during regular hours : Increase, chronic ACSCs
  - After-hours care: Decrease, chronic ACSCs

- (2) After-Hours and Routine Care & H-ACSCS
  - (a) Optimal Routine Care Access, less need for After-hours care
  - (b) H-ACSCS
    - Optimal Routine Care & Better After-hours Access: INCREASE
    - Less than optimal Routine Care & better After-hours Access: DECREASE

Potential Limitations

- Selected population who complete the survey
- Recall bias of self-reported measures
- Misclassification based upon understanding of question
- Limited generalizability to broader non-VA population
- Confounding clinic level factors outside of access and not included in our model that influence hospitalization due to ACSCs

Implications

- **Analysis 1: Experienced Access & Potentially preventable hospitalizations**
  - Increasing access to afterhours primary care may reduce hospitalizations due to chronic ACSCs
  - Increasing access to answers to questions during regular hours may increase hospitalizations due to chronic ACSCs

Implications

- **Analysis 2: After-hours and Routine care**
  - For patients with optimal perceived access to Routine care, increased access to after-hours care may increase hospitalizations due to chronic ACSCs
    - Complement, facilitating hospitalization
  - For patients with less than optimal perceived access to Routine Care, increased access to after-hours care may decrease hospitalizations due to chronic ACSCs
    - Substitute , preventing hospitalization

Discussion

- What is perceived as after-hours care?
  - Can we objectively measure?

- Extended hours
  - VHA Directive 2013-001*
  - MyVA Access Declaration

- Who needs after-hours care? Can we target?

*VHA Directive 2013-001, *https://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2854*

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Thank you / Questions / Comments

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"Better performance is not simply—it is not even mainly—
a matter of effort; it is a matter of design"
-- Don Berwick