Impact of Virtually Integrated Multi-site Patient Aligned Care Teams (V-IMPACT) for Teleprimary Care on Patients' Utilization and Costs

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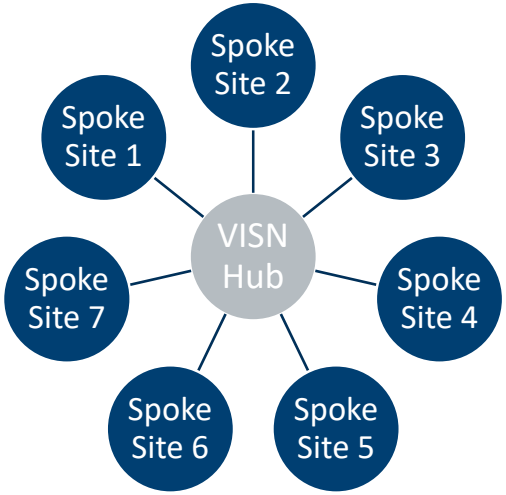
Primary Care Access

- VHA operates more than 900 primary care clinics for the 8 million veterans enrolled in VHA.
- Some geographic areas struggle to recruit primary care providers, especially rural areas.
- VA primary care sites may experience gaps in coverage due to provider turnover and difficulty with recruitment.

V-IMPACT Hub & Spoke Model

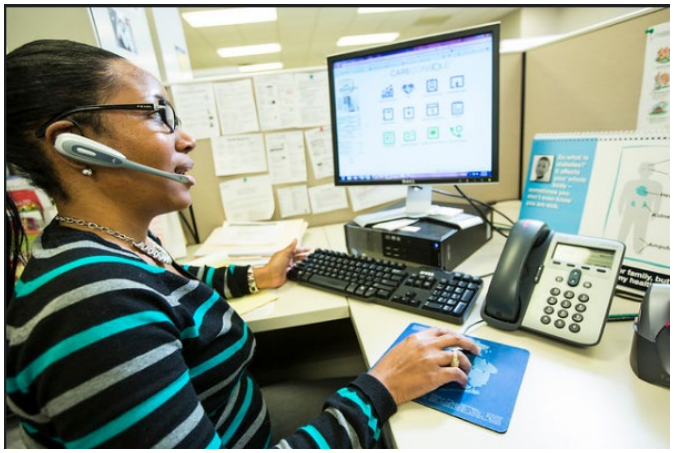
Hubs:

- Delivers *primary care services* across a VISN for sites experiencing primary care provider gaps that may reduce access for Veterans
- Used scoring tool to allocate resources to sites with greatest need
- Team-based to include integrated mental health & clinical pharmacy services. Some sites also incorporate RNCM in the Hub to provide an additional resource for the Spoke.



Spokes:

- Sites with longer term primary care provider needs
- Facilitate the telehealth visits with a PACT teamlet (LPN/RNCM/MSA)
- Hub providers document all clinical care within a spoke site CPRS system



V-IMPACT Model

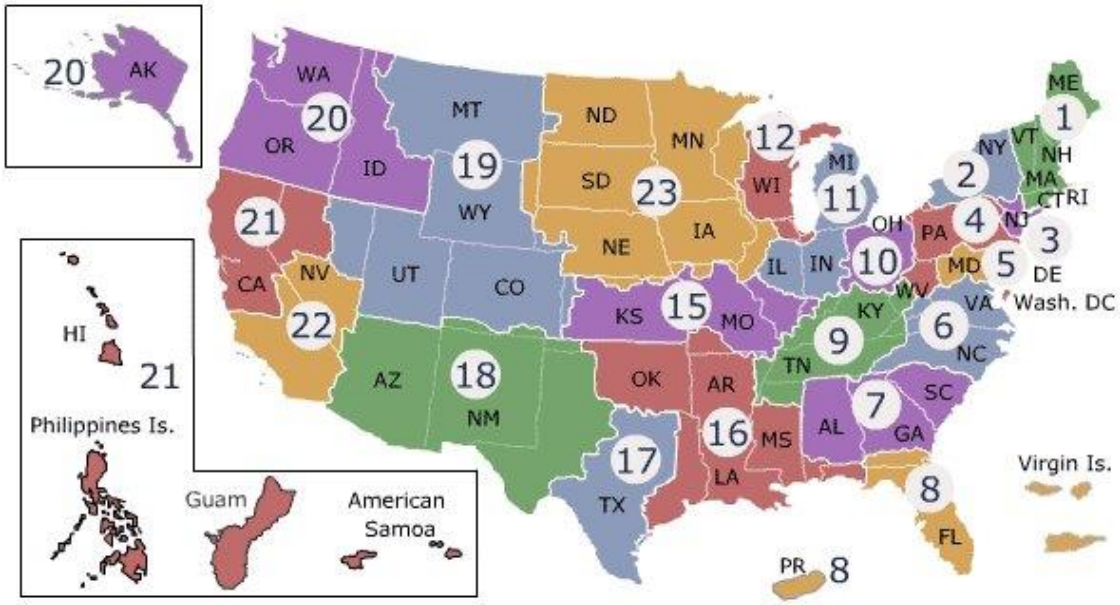
- Hub team assumes an entire patient panel when provider leaves a spoke site
- Originally intended to provide temporary coverage to spoke sites
  - Designed to provide 6-24 months gap coverage while sites recruit PC providers
- Continuity for patients
  - Allows patients continued access to care at their local facility while sites recruit providers

Benefits of V-IMPACT to Spoke Sites

- Helps clinics maintain access to care for patients during times of provider attrition
- Provides access to care for patients in their clinic and within a PACT Teamlet
- Stabilizes workforce within a VISN
- Provides whole team resources (RNCM, clinical pharmacy, PCMHI) to spoke sites

V-IMPACT Program Implementation

- Pilot program began with funding by Office of Rural Health in VISN 20 in 2013
  - Hub at Boise VAMC
- Expanded to other VISN's 2014-2018



Evaluation Objectives

- Describe V-IMPACT implementation across sites in VISN 20.
- Examine impacts of V-IMPACT on VA health care utilization.
- Estimate impact of V-IMPACT on health care costs.

Evaluation Design

- Cohort included 891,855 patients assigned to primary care in VISN 20 spoke sites.
  - 8 spoke sites excluded b/c <1000 patients in PCMM prior to 2017
- Longitudinal design with unbalanced panel
  - V-IMPACT penetration rate = # patients using V-IMPACT services during the year / all primary care patients
  - Compare site V-IMPACT penetration rate over time and by site and patient characteristics.
  - Compare outcomes 2013-2018 by site V-IMPACT penetration rate.
  - Some V-IMPACT sites implemented V-IMPACT after 2018, so their penetration rate = 0% for all evaluation years.

Data Sources

- V-IMPACT encounters measured using clinic location names from CDW Outpatient Visit Table and CHAR4 codes from MCA CHAR4 file.
  - Telehealth
  - Telephone
  - In-person (hub team visits spoke site)
- Total VA costs obtained from MCA Outpatient file.
- VA outpatient and inpatient care measured from CDW Outpatient files.
- Community care measured from Fee Basis/PIT files

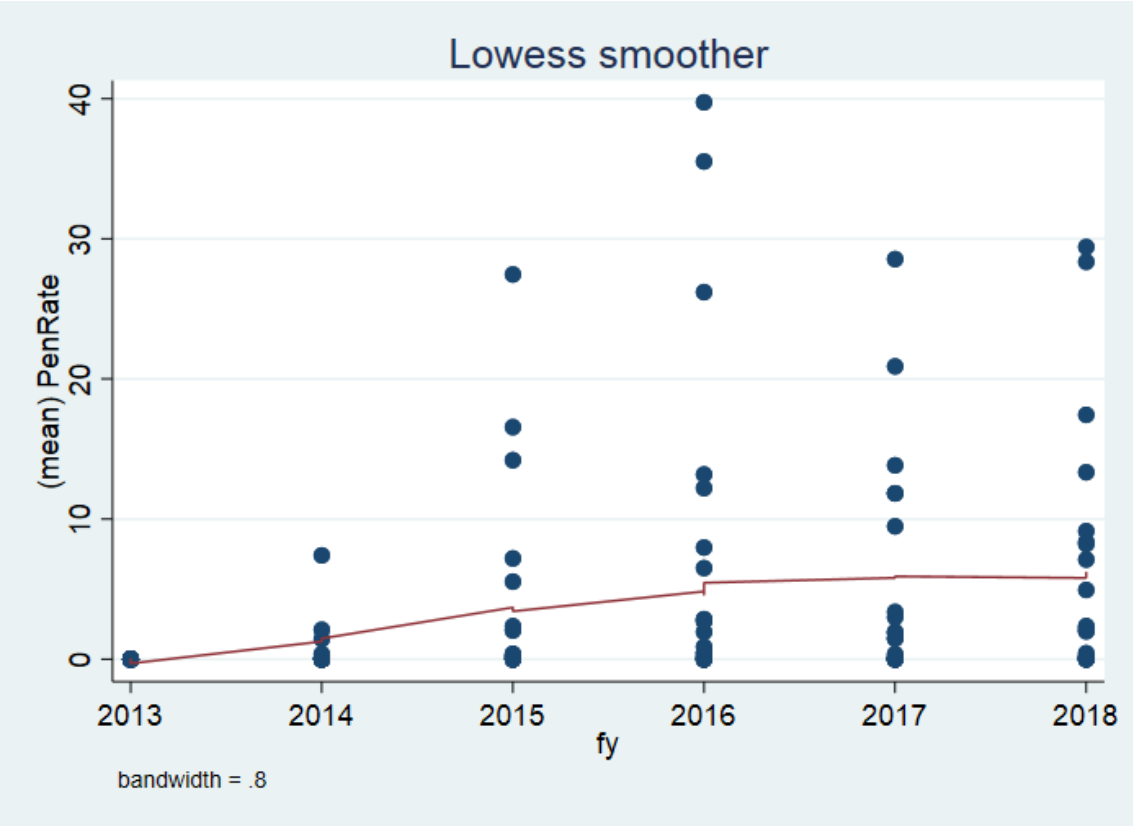
Evaluation Outcomes

- Utilization and cost outcomes:
  - Inpatient and outpatient costs
  - Community care costs
  - Primary care visits, in-person and telehealth
  - PCMHI visits, in-person and telehealth
  - Specialty care visits
  - Mental health visits
  - ED visits
  - Inpatient stays

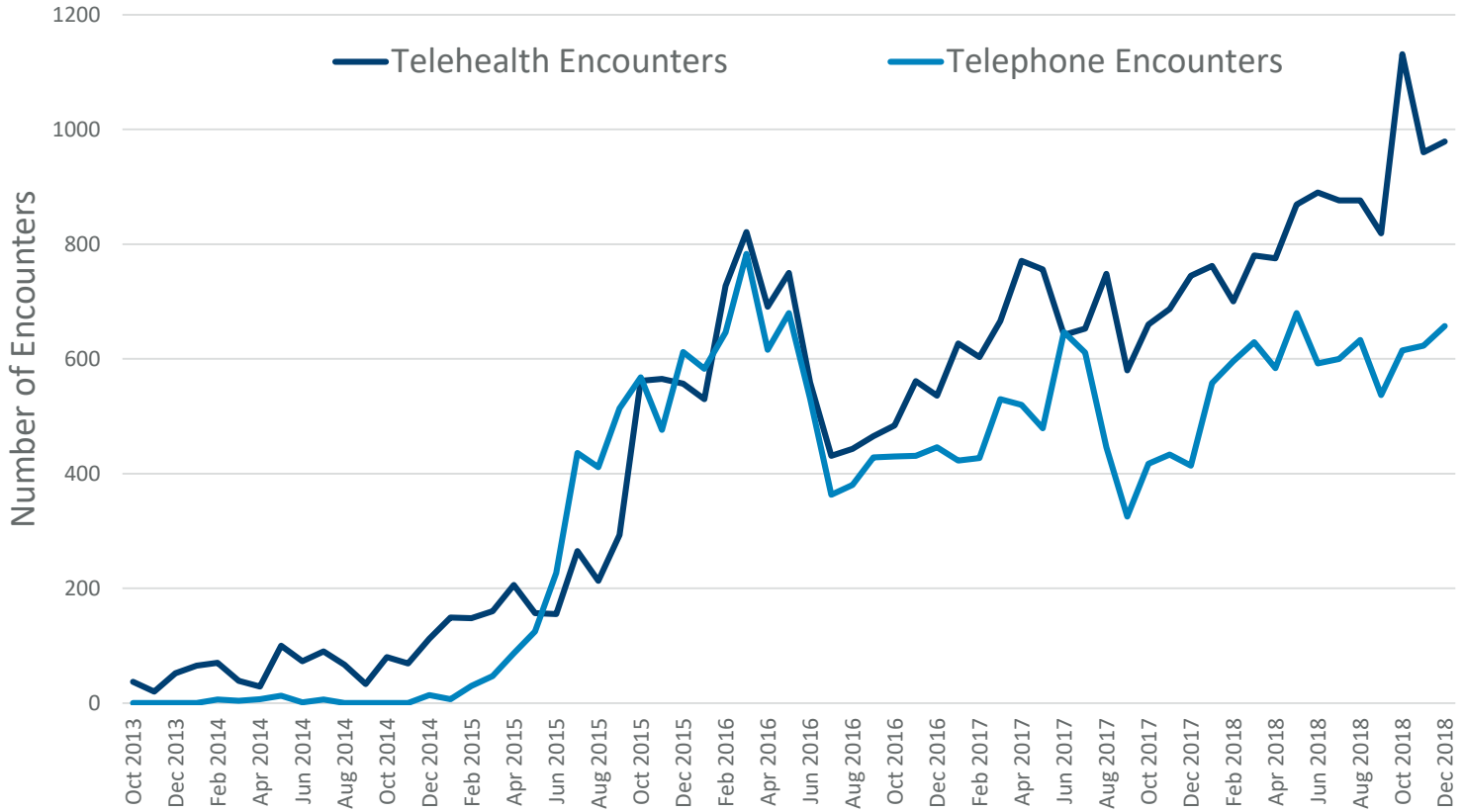
Regression Methods

- Regression models used negative binomial models for utilization outcomes (outpatient visits, inpatient stays)
- Linear models for cost outcomes (inpatient, outpatient, community care costs)
- All models included patient random effects and SE adjusted for clustering by site
- All models adjusted for patient sociodemographic characteristics, comorbidity, distance to VA site
- All models adjusted for site size, rurality, type (e.g. VAMC, CBOC)
- Sensitivity analyses with tobit models

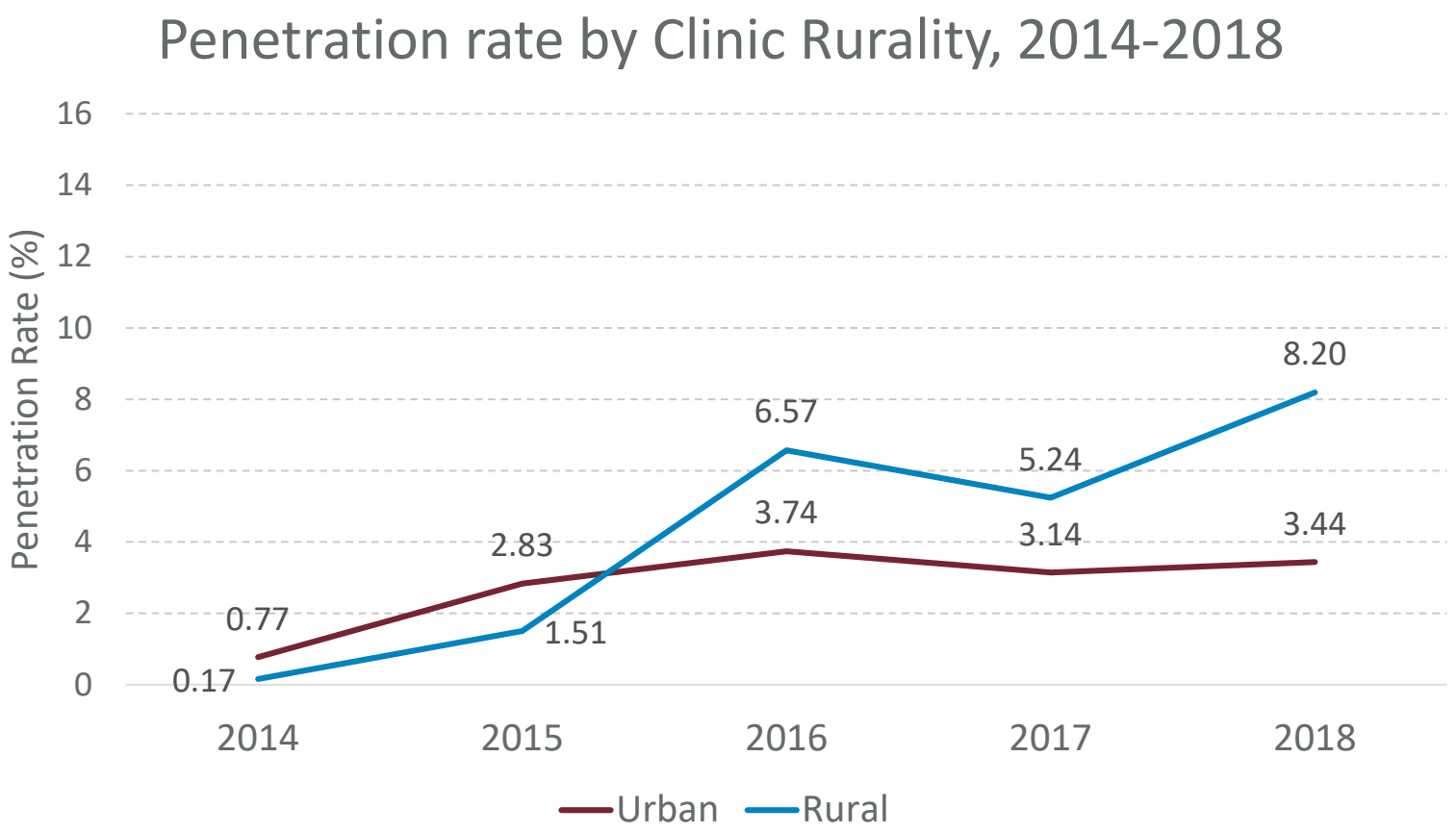
Penetration of V-IMPACT by Site, 2013-2018, N=22



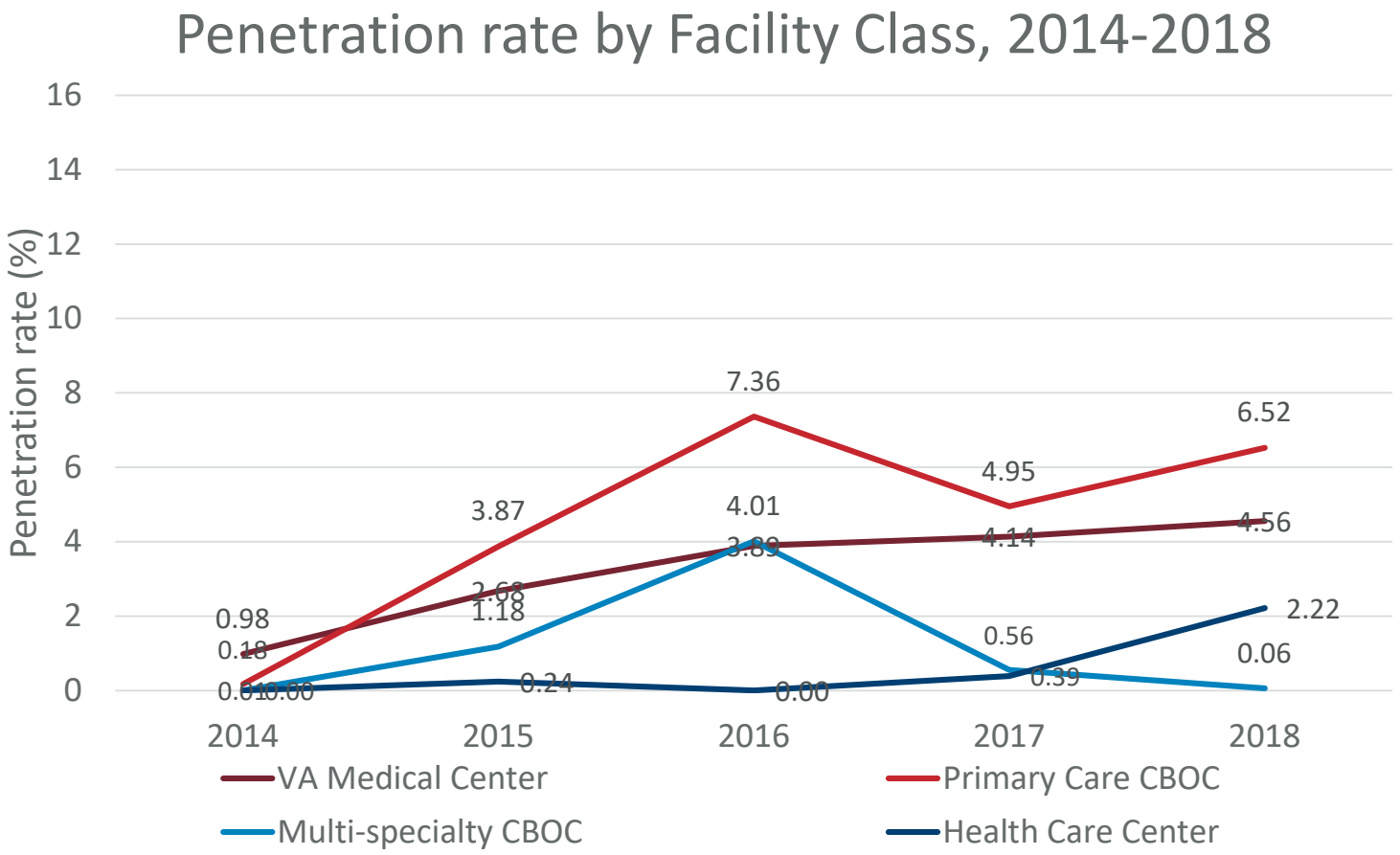
V-IMPACT Utilization in VISN 20 Hub



V-IMPACT Penetration by Rurality



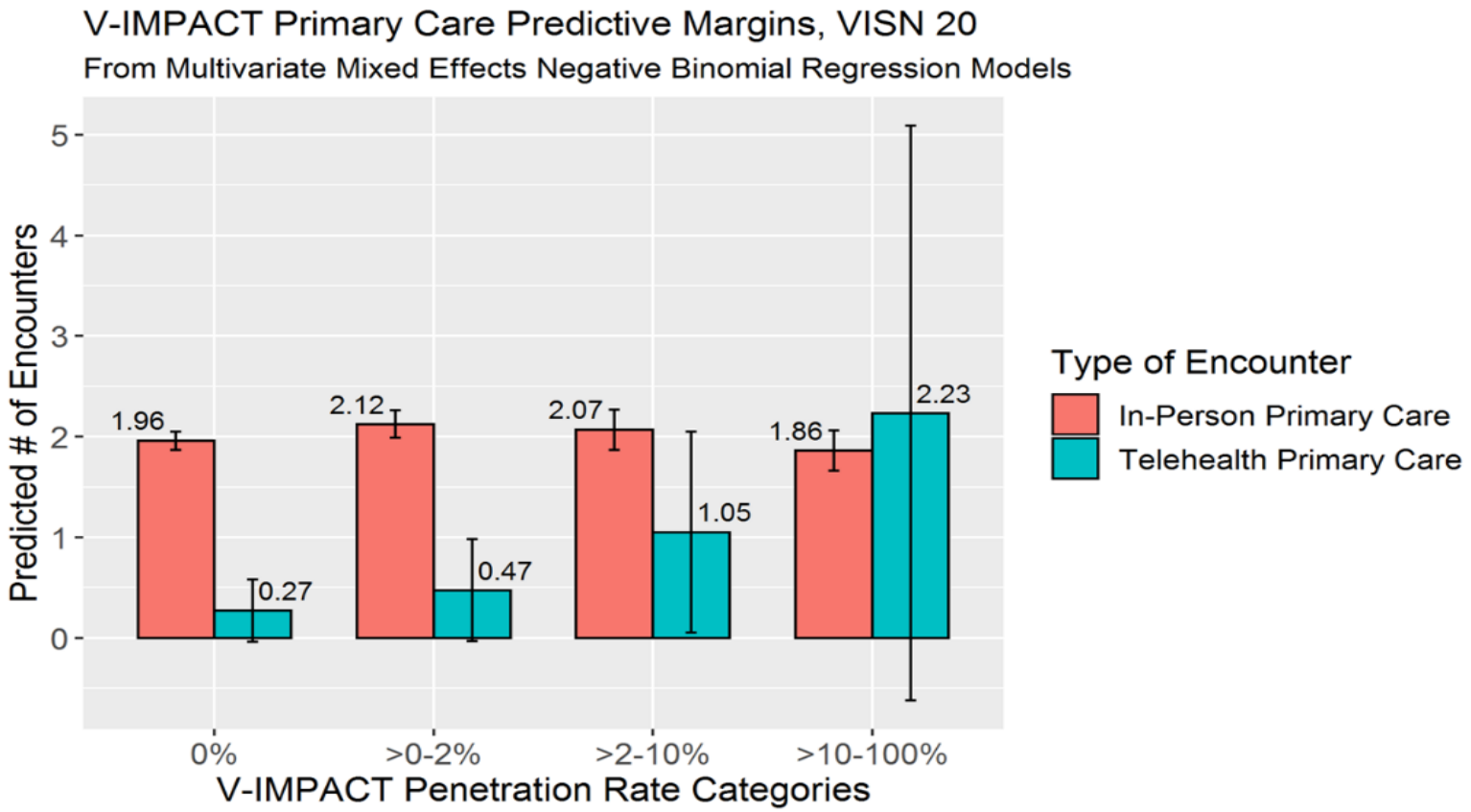
V-IMPACT Penetration by Site Type



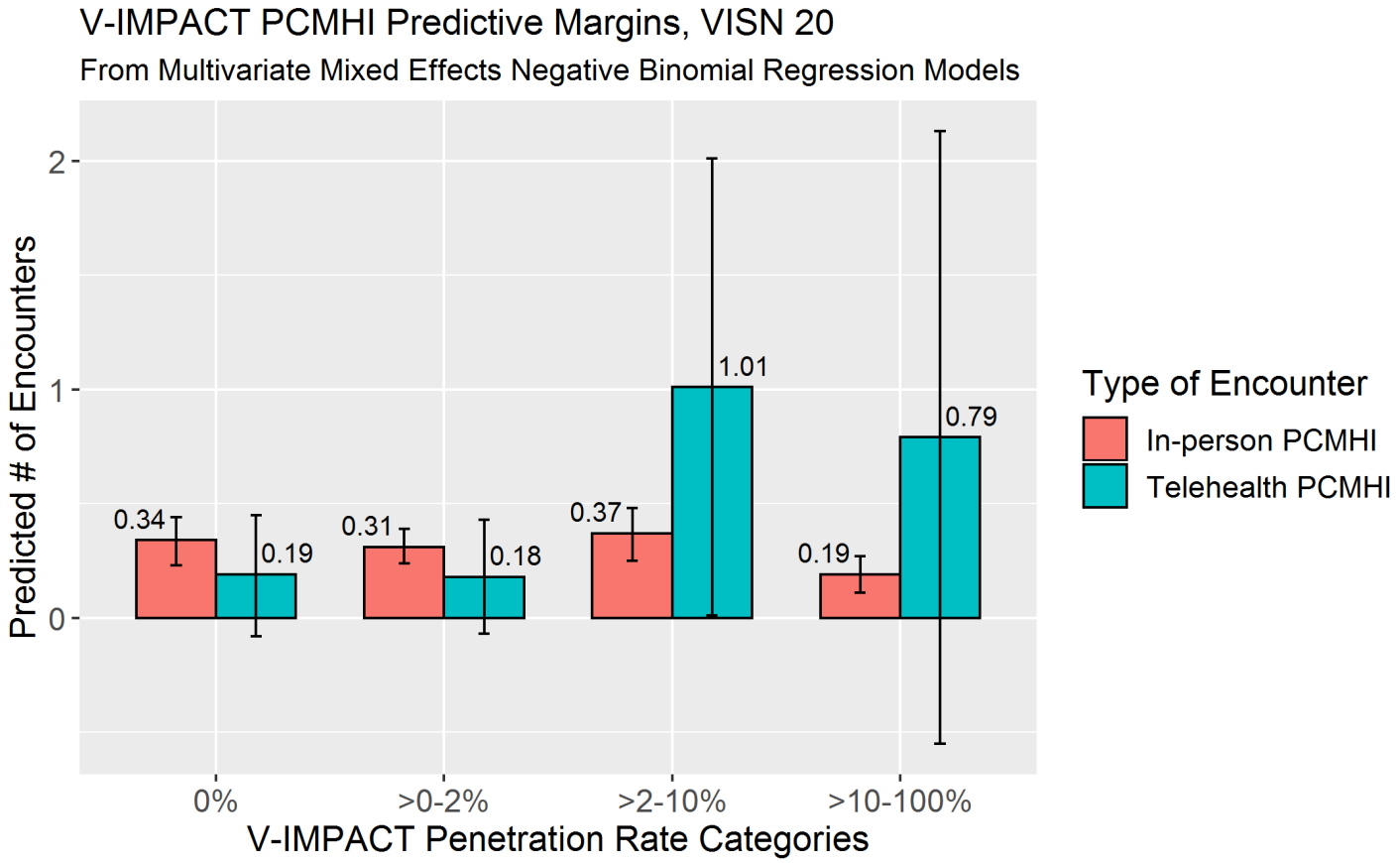
V-IMPACT Penetration rate by Patient Characteristics

Patient Characteristics	Penetration Rate in FY 2018			
	0%	>0-2%	>2-10%	>10-100%
	N=17349	N=63308	N=58414	N=15277
Age, mean (SD)	63.0 (16.1)	58.0 (17.3)	61.2 (16.8)	64.7 (15.8)
HCC Comorbidity Score, mean (SD)	0.7 (0.7)	0.7 (0.8)	0.7 (0.8)	0.7 (0.7)
Male	16,120 (93%)	56,333 (89%)	53,291 (91%)	14,204 (93%)
Race				
White	14,833 (85%)	47,224 (75%)	49,118 (84%)	13,764 (90%)
Black	300 (2%)	5452 (9%)	1863 (3%)	205 (1%)
Other	2,216 (13%)	10,632 (17%)	7,433 (13%)	1,308 (9%)
Married	10,096 (58%)	36,695 (58%)	32,366 (55%)	8,476 (55%)
Enrollment Priority				
>50% service-connected disabilities	6,203 (36%)	26,579 (42%)	20,624 (35%)	5,352 (35%)
Low income (Medicaid eligible)	2,974 (17%)	9,993 (16%)	11,482 (20%)	3,238 (21%)
Not service-connected	2,641 (15%)	7,515 (12%)	9,469 (16%)	2,091 (14%)
All other or unknown	5,531 (32%)	19,221 (30%)	16,839 (29%)	4,596 (30%)
Drive distance to closest VHA primary care site, mean (SD)	26.5 (22.3)	20.2 (22.4)	19.2 (26.0)	14.5 (17.9)
Drive distance to closest VHA secondary care site, mean (SD)	99.7 (45.4)	43.6 (67.2)	56.2 (107.6)	105.1 (40.8)

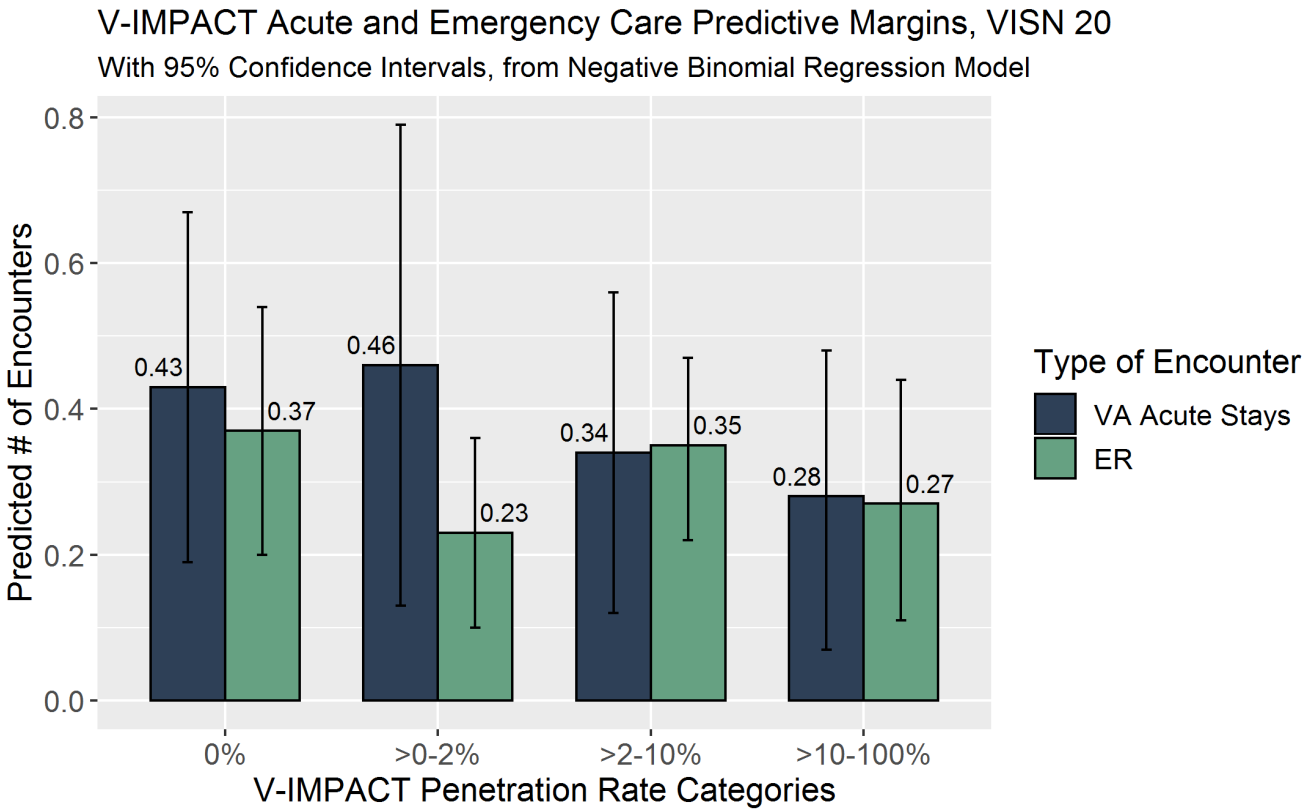
Results: Association between V-IMPACT Penetration Rate and Primary Care Utilization



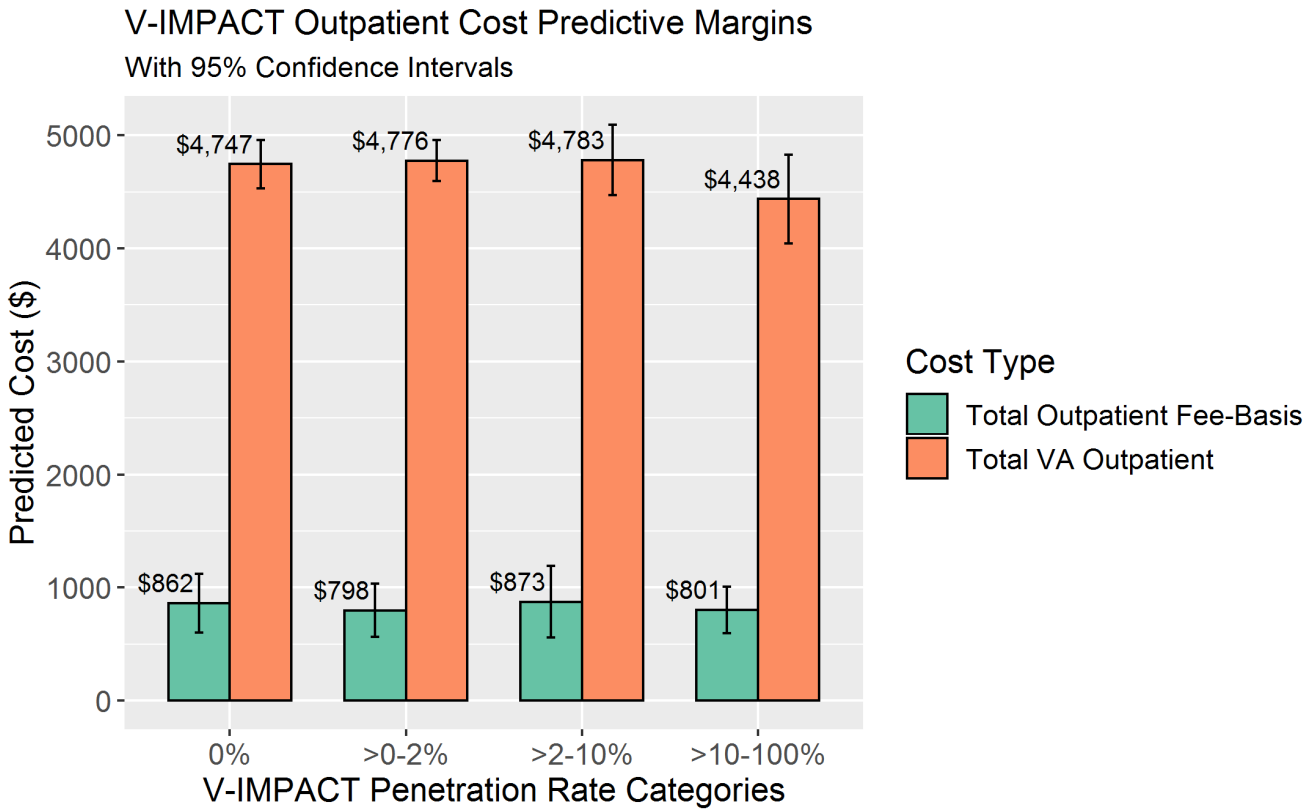
Results: Association between V-IMPACT Penetration Rate and PCMHI Utilization



Results: Association between V-IMPACT Penetration Rate and Acute Care Utilization



Results: Association between V-IMPACT Penetration Rate and Outpatient Costs



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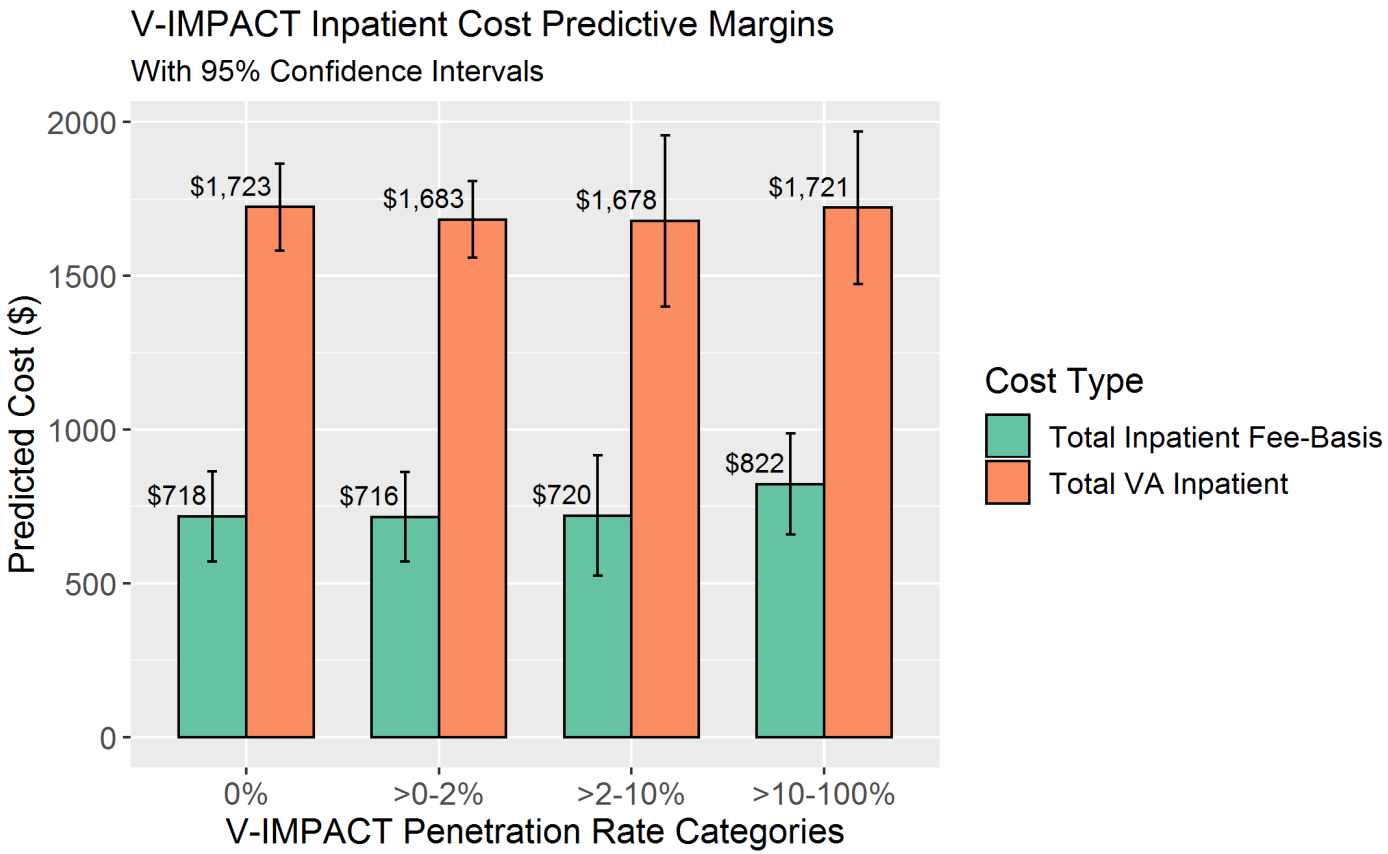

Summary

- High take up (18 spoke sites) of V-IMPACT services in VISN 20
- Implementation was greater in rural sites, primary care CBOCs
- Led to significantly increased use of telehealth services.
- No difference in health care costs.

Limitations

- Costs of implementing V-IMPACT program not included in total health care costs.
- Significant differences between sites with lower versus higher penetration of V-IMPACT.
- Impact on care quality is unknown.

Conclusions

- Site-to-site telehealth services appear to be a viable option for sites having difficulty recruiting providers.
- Rural sites most likely to adopt this type of telehealth program.
- Unclear how much this program substituted for community care.
- National Clinical Resource Hub program implemented in FY19 combined tele-primary care and tele-mental health under one VISN hub.

V-IMPACT Evaluation Team

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Questions?

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