
Use and Cost of Low-Value Services by Veterans in VA and non-VA Settings

HERC Cyberseminar Series

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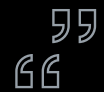
OBJECTIVES



Define low-value care and why it's a serious health problem



Present our research on the use, cost and variation in low-value care among Veterans in VA and non-VA settings



Describe our qualitative findings on the drivers of and acceptable approaches to reduce low-value care in VA



Discuss next steps and potential future research

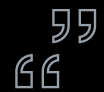
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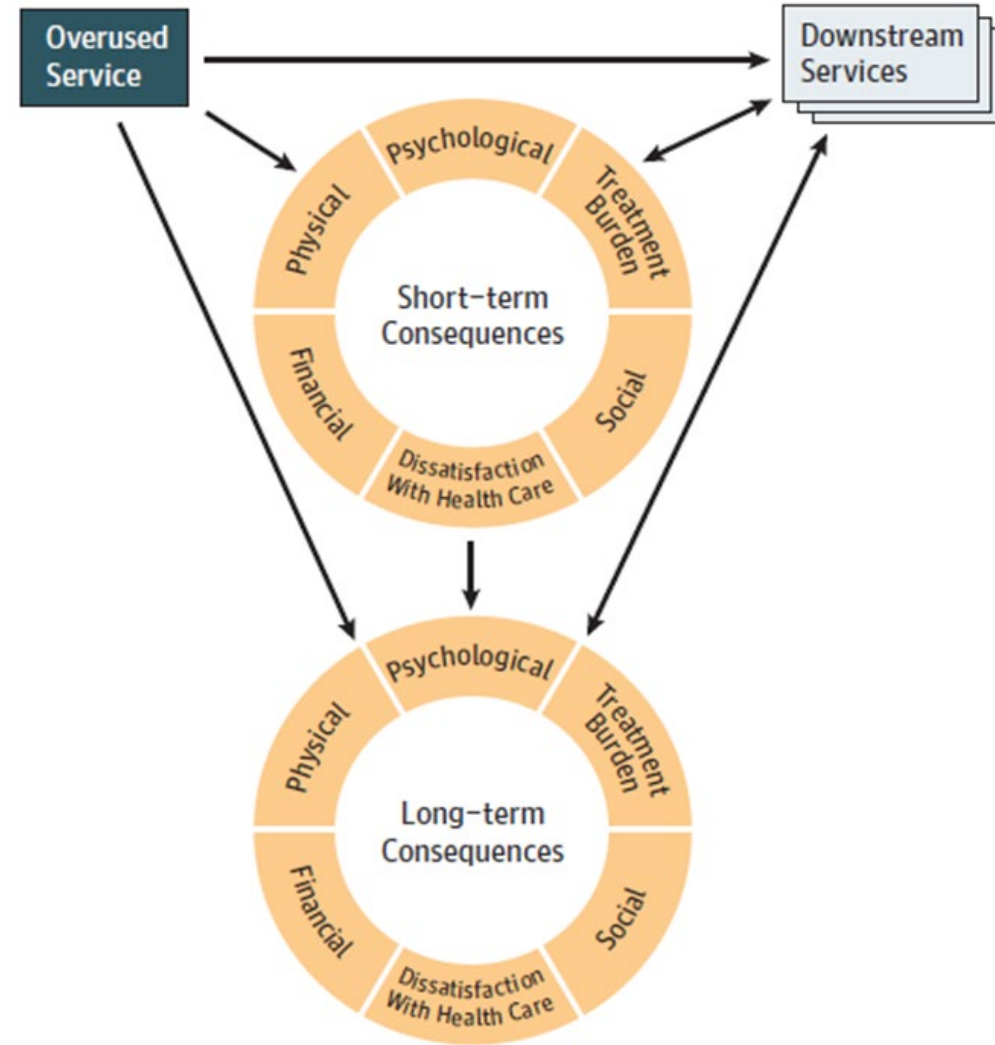
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Discuss next steps and potential future research

What is low value care?

- Any health service that confers a risk of harm or cost that exceeds its benefit
- Waste derived from subjecting patients to care that, according to sound science and the patient's own preferences, cannot possibly help them



Korenstein D, et al. JAMA IM 2017



A substantial amount of U.S. health care spending is on services that **DO NOT** make us healthier

TOTAL
Hospitals,
Clinical Services,
Insurance,
Equipment,
Drugs

\$2.6 TRILLION

\$765 BILLION

\$340 BILLION

WASTE
Excess
Administration,
Fraud,
Low-Value Care

LOW-VALUE CARE

Unnecessary, inefficient services

Source: "Best Care at Lower Cost: The Path to Continuously Learning Health Care in America." Institute of Medicine [2013]

"Best Care at Lower Cost: The Path to Continuously Learning Health Care in American." IOM. 2013



Low-Value Care in Non-Veteran Populations

- 25% of Medicare beneficiaries received at least one of 26 low-value services in 2009, costing \$1.9 billion¹
- 8% of commercially insured beneficiaries aged 18-64 received at least one of 28 low-value services in 2013²
- 20% of patients in a state all-payer claims database received one of 44 low-value services in 2014³
- Common services: imaging for low back pain, PSA in ages 75+, cardiovascular testing

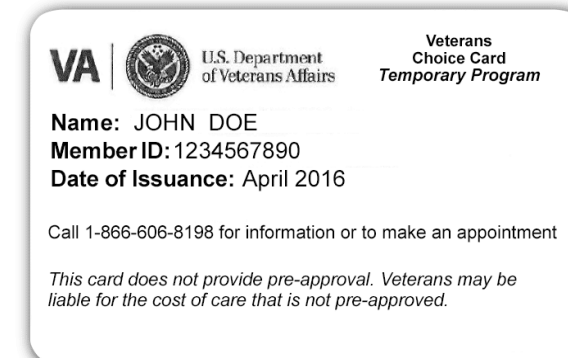
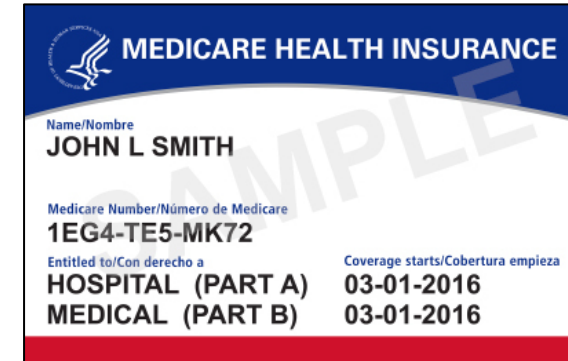
1. Schwartz A., et al., *JAMA Int Med* 2014.
2. Reid RO, et al., *JAMA Int Med* 2016.
3. Mafi JN, et al. *Health Aff*, 2017.

Low-Value Care within the Veterans Health Administration

- Prior VA studies focused on a limited subset of individual services
- VA quality monitoring programs have not monitored low-value services
- Prior studies may not generalize to VA
 - Non-fee-for-service environment
 - Greater protection from lawsuits
 - Decision support & other initiatives to reduce specific types of low-value care

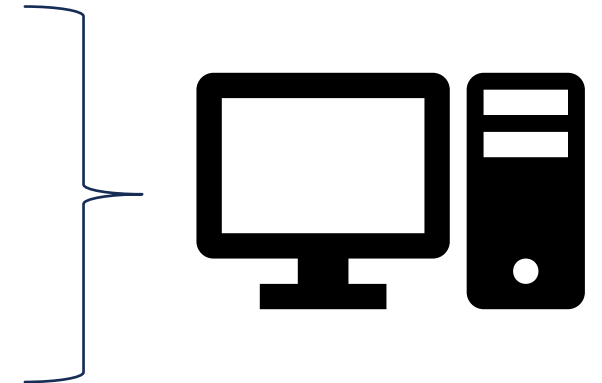
Veterans' Dual Use of VA and non-VA Care

- Over half of VA enrollees can access non-VA care via dual Medicare enrollment (Huang, 2018)
- Veterans increasingly receive non-VA care via VA Community Care (VACC) programs paid for by VA
- Dual use increases Veterans' risk of health service overuse and worse health outcomes (Gellad 2018; Moyo 2019; Thorpe J 2017; Thorpe C 2018)



Study Aims

- 1) Characterize use, costs, and facility-level variation for a diverse set of low-value services received by Veterans at VAMCs or paid for by VHA through VA Community Care (VACC) programs
- 2) Characterize use, costs, and facility-level variation for low-value services received by VA-Medicare dual enrollees, within VAMCs and outside VAMCs through Medicare
- 3) Interview providers at VAMCs exhibiting different patterns of low-value service provision to Veterans across these settings to identify drivers of and acceptable approaches to reduce low-value services in VA and non-VA settings



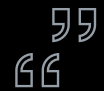
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Use and cost of low-value health services delivered or paid for by the Veterans Health Administration

- Radomski TR, Zhao X, EZ Lovelace, Sileanu FE, Rose L, Schwartz AL, Schleiden LJ, Oakes AH, Pickering AN, Yang D, Hale JA, Gellad WF, Fine MJ, Thorpe CT
- JAMA Internal Medicine. 2022 Aug; 182(8):832-839. PMID: 35788786
- Objective: To quantify veterans' overall use and cost of low-value services, including VA-delivered care and VA-purchased community care.

Research Approach

- **Study Design:** Retrospective cross-sectional study
- **Data:** Administrative data from VA Corporate Data Warehouse, Program Integrity Tool (VACC) and fee basis files
- **Cohort:** National cohort of Veterans who were continuously enrolled in VA in FY17-18 with 1+ inpatient or outpatient encounter in VA in FY2018
- **Timeframe for assessing low-value care:** Fiscal year 2018

Measuring Low-Value Care

- Low-Value Care Metric: 29 services
 - Imaging (8)
 - Cancer screening (4)
 - Pre-operative testing (4)
 - Preventive and diagnostic testing (6)
 - Cardiovascular testing and procedures (5)
 - Other procedures (2)

Schwartz et al. JAMA IM. 2014



Considerations In Using Administrative Data

- Administrative data may not capture the nuances of a provider's and patient's shared decision making regarding a “low-value” service
- Tension between relative sensitivity vs specificity
- We applied sensitive and specific criteria for each low-value service

Prostate Specific Antigen (PSA) Screening

Sensitive	Specific
Any PSA test in a man aged 75 years or greater	

Schwartz et al. JAMA IM. 2014
So et al. JGIM. 2015
Radomski TR, et al. JAGS, 2019



Prostate Specific Antigen (PSA) Screening

Sensitive	Specific
Any PSA test in a man aged 75 years or greater	Any PSA test in a man aged 75 years or greater - Excluding those with a history of prostate cancer (ICD-10)

Schwartz et al. JAMA IM. 2014
So et al. JGIM. 2015
Radomski TR, et al. JAGS, 2019



Descriptive Analyses

- Count of services per 100 Veterans
 - Overall
 - By domain
 - By individual service
- Count and percentage of each service delivered in VA & VACC
- Service-specific cost estimates from HERC, based on standardized national average reimbursement rates in Medicare and private sector

Veteran Characteristics

Characteristic	Cohort (N = 5,242,301)
Age, mean (SD)	63 (\pm 16)
Male, N (%)	91.7%
Race/ethnicity, N (%)	
Non-Hispanic white	68.0%
Non-Hispanic black	17.3%
Hispanic	6.3%
Other	3.1%
Missing	5.3%
Number of Elixhauser comorbidities	1.2 (\pm 1.7)
Any use of VA Community Care (%)	32.3%



Low-Value Health Service Use in VA or VACC

20 - 45 Low-Value Services per 100 Veterans

11% (21%) delivered by VACC

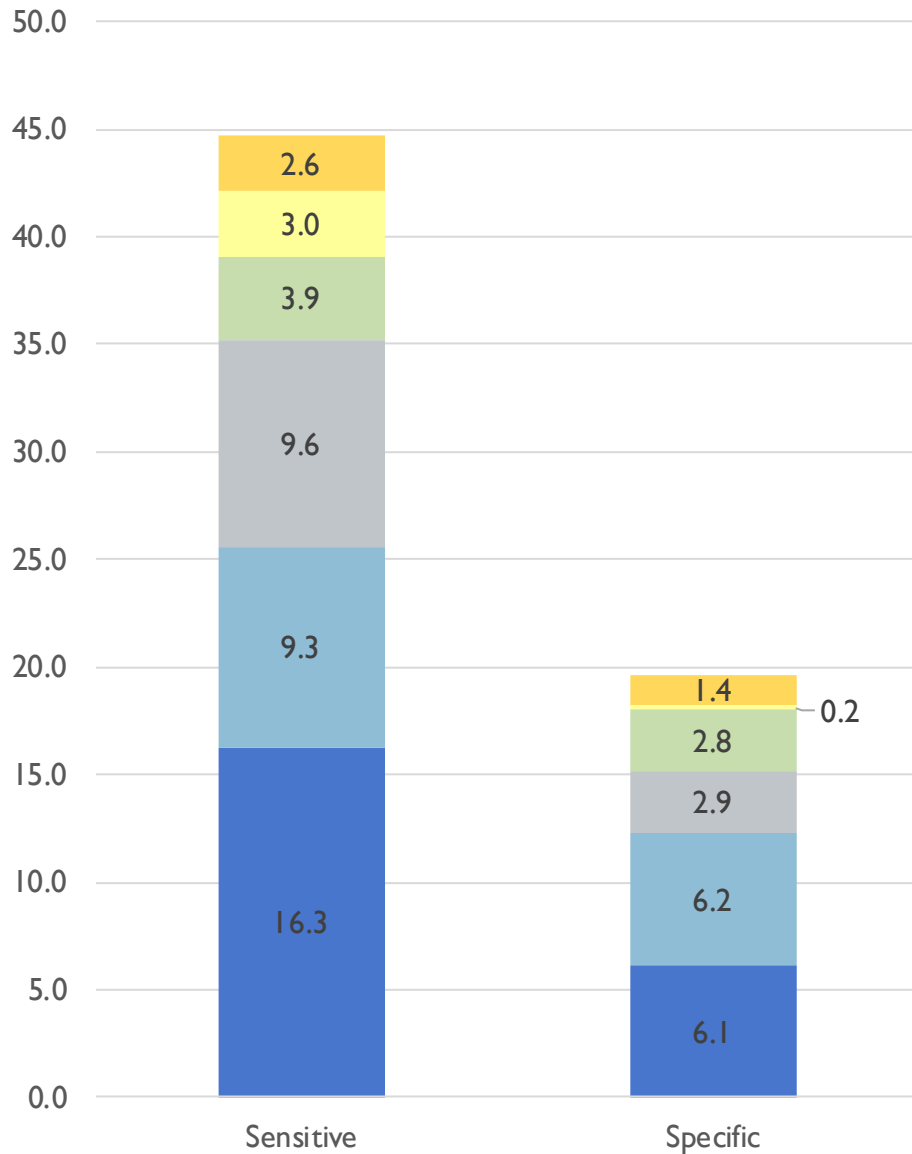
\$206 - 699M Total Cost of 29 Low-Value Services

.003 - 0.01% Percentage of VA Health Expenditures

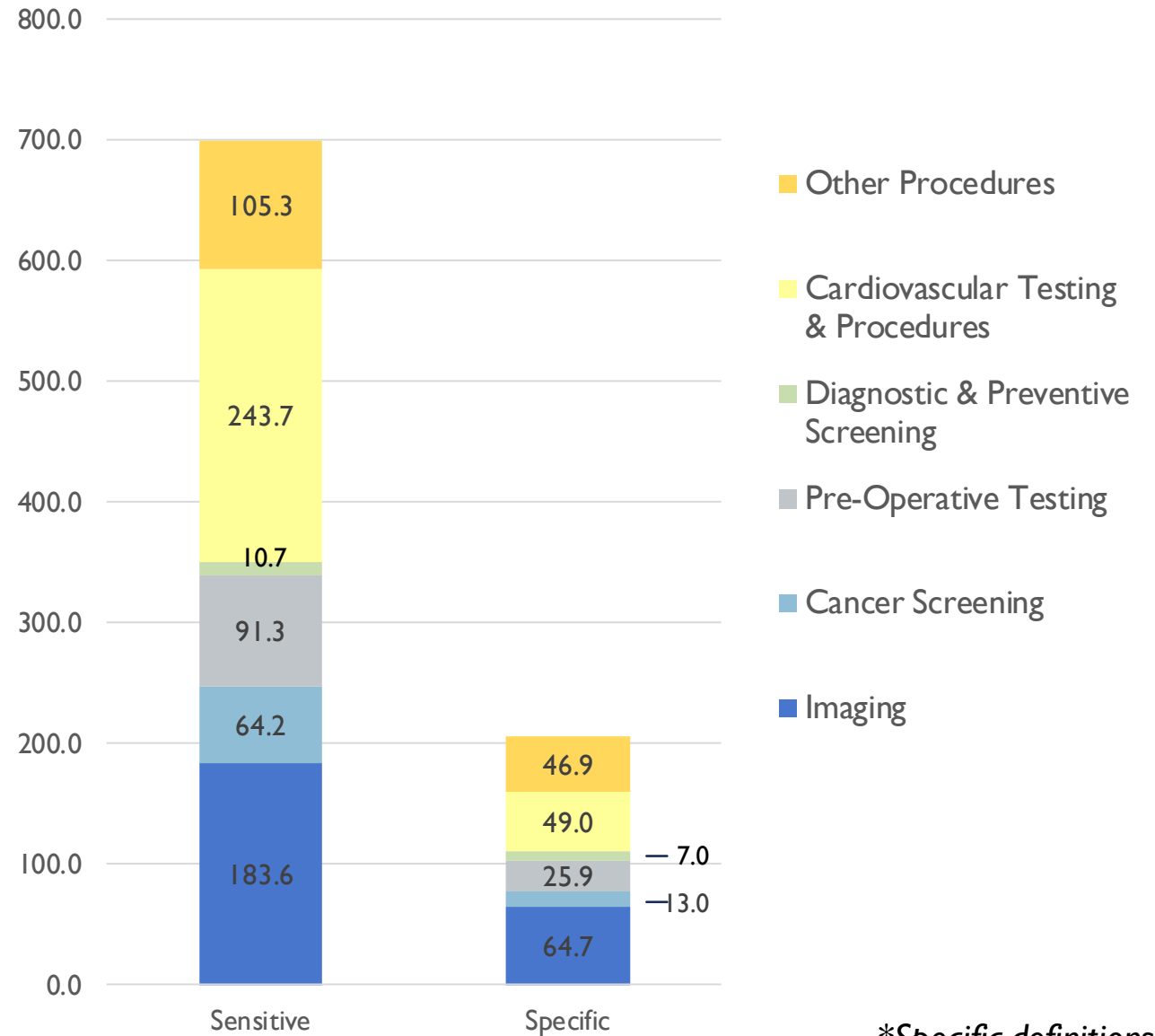
Total expenditures: \$72.3 billion



Counts of Services per 100 Veterans, By Domain



Total Costs of Services, By Domain (\$ million)



**Specific definitions*

Most Frequently Delivered Low-Value Services in FY18

(specific versions)

Low-Value Health Service	Overall use (VA + VACC), Count		By setting, Count (Row %)	
	Total	Per 100 Veterans	VA Facilities	VACC Programs
Prostate cancer screening in men aged ≥ 75	309,731	5.9	98.9	1.1
Back imaging for patients with nonspecific low back pain	141,424	2.7	86.8	13.2
Pre-operative chest radiography	117,777	2.3	89.2	10.8



Most Frequently Delivered Services by VA in FY18

Low-Value Health Service	VA	
	Total	Per 100 Veterans
Prostate cancer screening in men aged ≥ 75	306,317	5.8
Back imaging for patients with nonspecific low back pain	122,801	2.3
Pre-operative chest radiography	105,054	2.0

Most Frequently Delivered Services by VACC in FY18

Low-Value Health Service	VACC	
	Total	Per 100 Veterans
Spinal injection for low-back pain	28,224	0.5
Back imaging for patients with nonspecific low back pain	18,623	0.4
Pre-operative chest radiography	12,723	0.2

Most Costly Low-Value Services in FY18

(VA and VACC combined)

Low-Value Health Service	Total Cost (\$million)	Proportion of Low-Value Costs (%)
Spinal injection for low-back pain	43.9	21.4
PCI with balloon angioplasty or stent placement for stable coronary disease	36.8	17.9
Back imaging for patients with nonspecific low back pain	25.4	12.3

Use and cost of low-value services among Veterans dually-enrolled in VA and Medicare

- Radomski TR, Lovelace EZ, Sileanu FE, Zhao X, Rose L, Schwartz AL, Schleiden LJ, Pickering AN, Gellad WF, Fine MJ, Thorpe CT
- Currently in peer review
- *Objective:* To quantify the use and cost of low-value health services delivered to dually enrolled Veterans from VA and Medicare.



Research Approach

- **Study Design:** Retrospective cross-sectional study
- **Data:** Administrative data from VA Corporate Data Warehouse, Program Integrity Tool (VACC), fee basis files, and Medicare fee-for-service (FFS) claims for Veterans
- **Cohort:** National cohort of Veterans who were continuously enrolled in VA and FFS Medicare in FY17-18 and had 1+ inpatient or outpatient encounter in VA in FY2018
- **Timeframe for assessing low-value care:** Fiscal year 2018

Analyses

- Count of services per 100 Veterans (29 services in 6 domains)
 - Overall
 - By domain
 - By individual service
- Overall count and percentage of each service from VA and Medicare
 - VACC included under umbrella of VA, for this analysis
- Applied service-specific cost estimates based upon standardized national average reimbursement rates in Medicare provided by HERC

Veteran Characteristics

Characteristic	Cohort (N = 1,627,779)
Age, mean (SD)	73.1 (10.4)
Male, N (%)	1,573,222 (96.7)
Race/ethnicity, N (%)	
Non-Hispanic white	1,248,429 (76.7)
Non-Hispanic black	182,130 (11.2)
Hispanic	55,205 (3.4)
Other	40,302 (2.5)
Missing	101,713 (6.3)
Elixhauser Score, mean (SD)	1.4 (1.8)
E&M Visits in VA/VACC in FY18, median (IQR)	4 (2-9)
E&M Visits in Medicare in FY18, median (IQR)	4 (0-12)



Low-Value Health Service Use

63 -
147

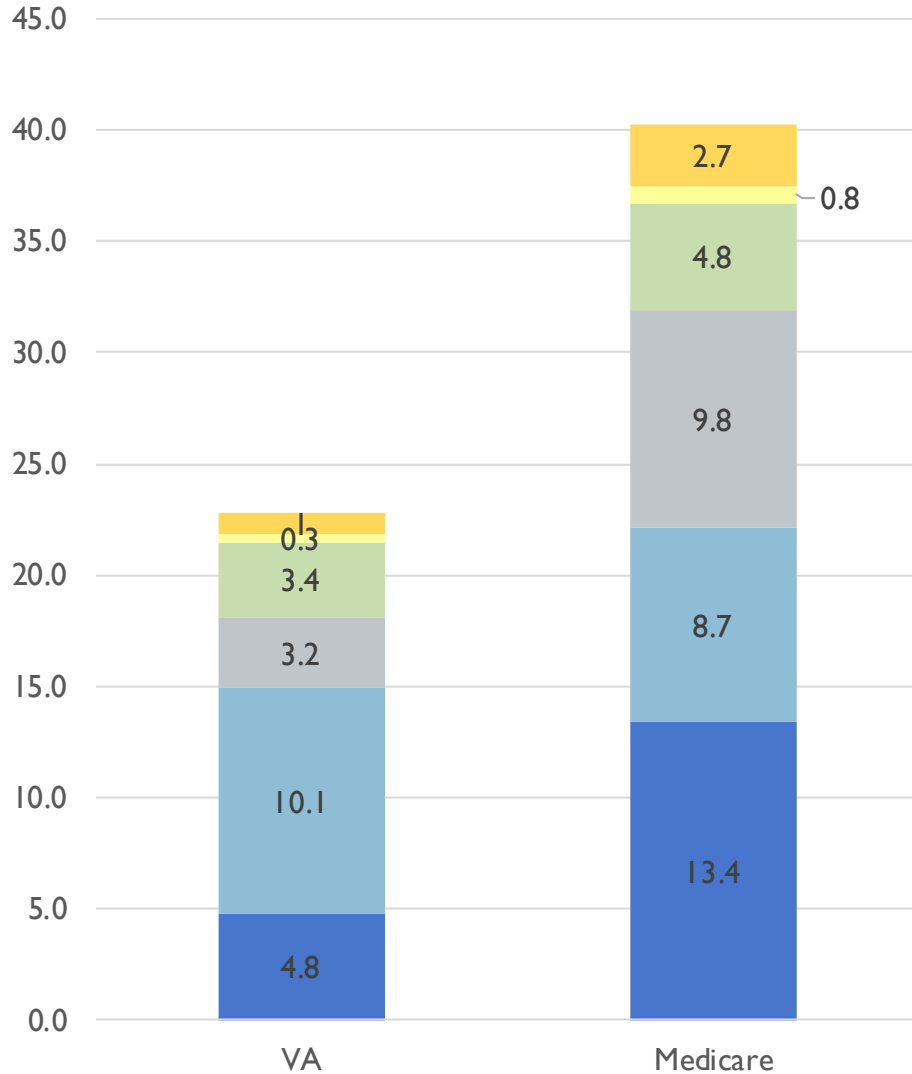
Low-Value
Services per
100 Veterans

\$226 -
884M

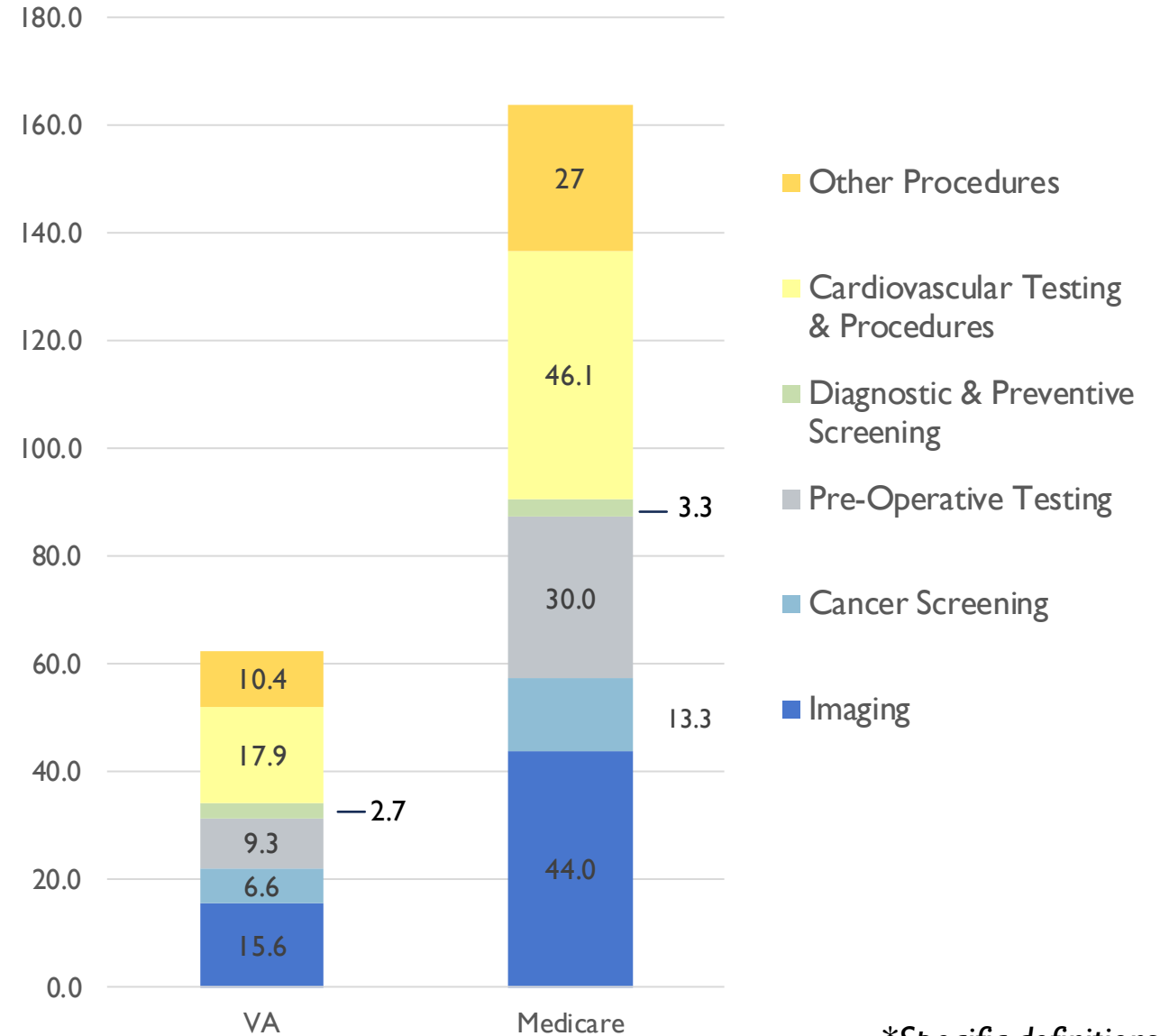
Total Cost of
29 Low-Value
Services



Counts of Services per 100 Veterans, By Domain*



Total Costs of Services, By Domain (\$ million)*



*Specific definitions

Most Frequently Delivered Low-Value Services in FY18

(specific version)

Low-Value Health Service	Overall use (VA + Medicare), Count		By setting, Row %	
	Total	Per 100 Veterans	VA	Medicare
PSA screening for men aged ≥ 75	281,499	17.3	55.9	44.1
Pre-operative chest radiography	155,386	9.5	25.5	74.5
Screening for carotid artery disease	113,834	7.0	29.8	70.2

Most Costly Low-Value Services in FY18

Low-Value Health Service	Overall use (VA + Medicare), Count		By setting, \$ million (%)	
	Total Cost (\$million)	Proportion of Overall Cost (%)	VA	Medicare
Percutaneous coronary intervention for stable coronary disease	\$46.5	20.5	\$13.6 (21.8)	\$32.8 (20.1)
Spinal injection for low-back pain	\$36.6	16.2	\$10.1 (16.1)	\$26.5 (16.2)
Screening for carotid artery disease	\$22.6	10.0	\$6.9 (11.0)	\$15.7 (9.6)

Variation in low-value service use across Veterans Affairs facilities

- Schwartz AL, Lovelace EZ, Sileanu FE, Zhao X, Rose L, Schwartz AL, Schleiden LJ, Pickering AN, Gellad WF, Fine MJ, Radomski TR, Thorpe CT
- *Journal of General Internal Medicine*, 2023. DOI: 10.1007/s11606-023-08157-9
- Objective: To quantify facility-level variation in low-value service use across VA and to examine the association between facility characteristics and low-value service use.



Research Approach

- **Study Design:** Retrospective cross-sectional study
- **Data:** Administrative data from VA Corporate Data Warehouse, Program Integrity Tool (VACC), fee basis files
 - VA Planning Systems Support Group (PSSG) data; Area Health Resource File; VSSC, OPES files
- **Cohort:** National cohort of Veterans who were continuously enrolled in VA in FY17-18 with 1+ inpatient or outpatient encounter in VA in FY2018
- **Timeframe for assessing low-value care:** Fiscal year 2018

Analyses

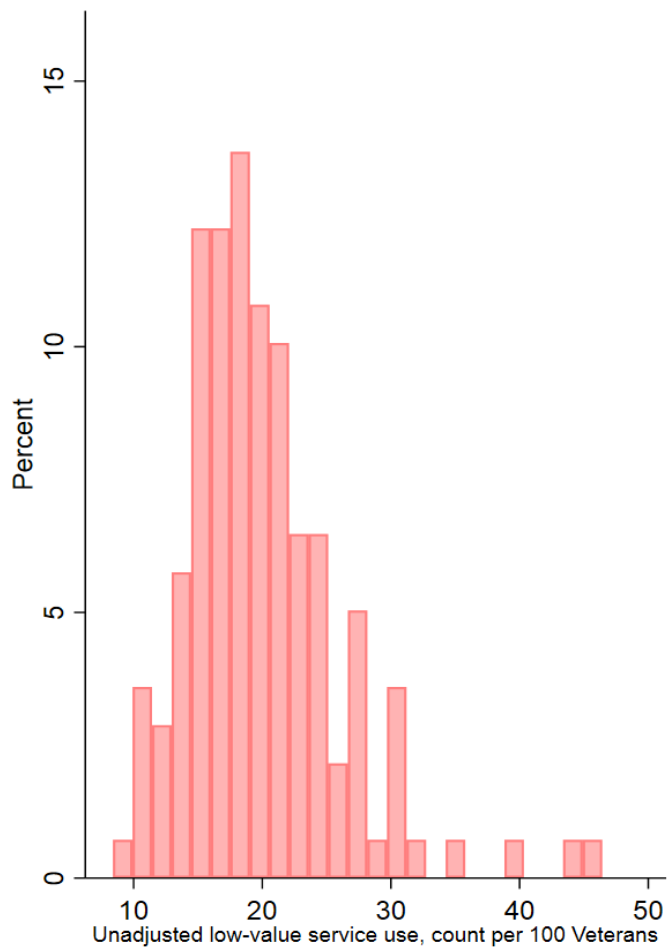
- Assigned each Veteran to a single VA facility (parent station) accounting for the plurality of outpatient and inpatient care in FY18
- Constructed facility-level rates of low-value service use as the count of low-value services per 100 Veterans per year (specific definitions)
- We calculated adjusted rates using OLS regression including covariates for Veteran sociodemographic and clinical characteristics
 - Age, sex, race/ethnicity, priority status, rurality of residence, driving time and distance to nearest VA, Elixhauser comorbidities, indicators for being “at-risk” for each low-value service



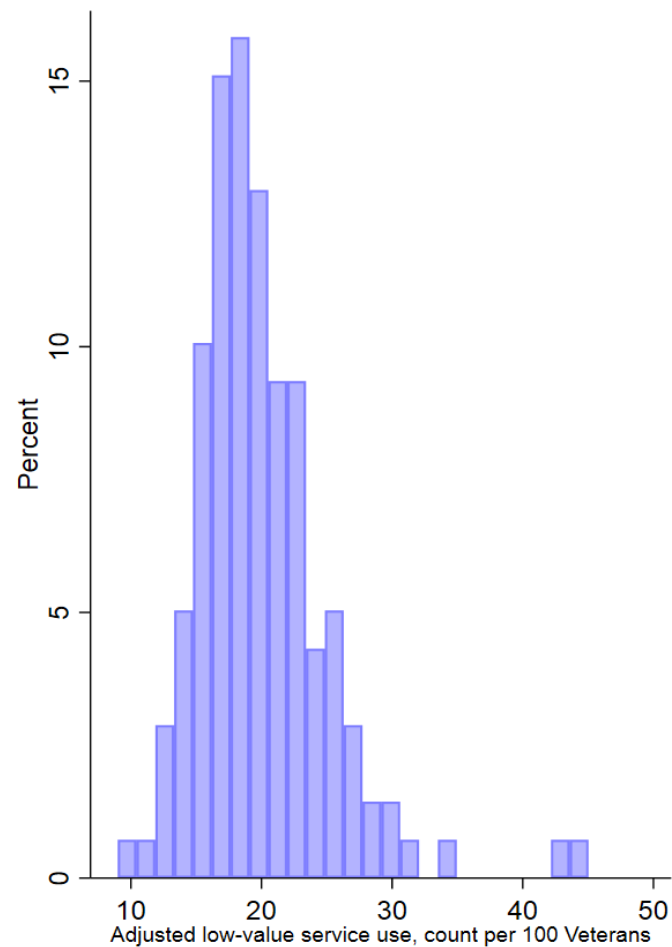
Analyses

- To quantify variation across facilities:
 - Standard deviation of the facility rates
 - Ratio of rates at the 90th to 10th percentiles
- Examined associations between adjusted facility-level rates and facility geographic/operational characteristics
 - Census region, facility complexity, percent of patients with a VACC encounter, number of outpatient visits, ratio of sub-specialist to generalist clinicians, number of CBOCs





90th/10th Ratio: 2.0, 95% CI 1.8-2.3



90th/10th Ratio: 1.8, 95% CI 1.6-1.9

- Extensive variation in the use of low-value services across VA facilities
- Variation shrank only modestly when facility rates were adjusted for Veteran characteristics, including clinical factors that affect whether Veterans are at risk for receiving each low-value service
- Twice as much use at facilities with the highest rates than at facilities with the lowest rates



Associations of Facility Characteristics with Low-Value Service Rates

- Facilities with a greater proportion of patients seeing non-VA clinicians in VACC had modestly higher adjusted rates of low-value service use in bivariable analyses
 - 20.8 services per 100 Veterans per year for facilities above the median, vs. 19.1 services per 100 Veterans per year for facilities below the median
- No facility characteristics were independently associated with overall low-value service use after adjustment for other facility characteristics

Caveats and Limitations

- Administrative claims may not capture the nuance involved in determining the value of a health service
- Estimated costs are conservative and do not reflect the costs related to subsequent care or harms Veterans may experience
 - (but see Pickering et al. papers in reference list)
- Results should not be interpreted as reflecting performance/quality differences between VA vs. VACC vs. Medicare in avoiding low-value care

Summary & Implications

- Among VA-enrolled Veterans, 20 - 45 low-value services per 100 Veterans were delivered in VA & VACC in FY18, costing between \$206 - 699 million, with 2-fold variation across VA facilities
 - 11% - 21% of these services were delivered through VACC
- Among Veterans dually-enrolled in VA and Medicare, 63 - 147 low-value services per 100 Veterans were delivered in VA & Medicare in FY18, costing between \$226 - \$884 million
- These studies are the most comprehensive analyses of the use, cost and variation of low-value services delivered or paid for by VA or received by VA-enrolled Veterans in non-VA settings
- Our findings may aid VA in prioritizing de-implementation efforts, considering frequency of use and cost of the low-value services



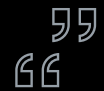
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Background

- Veterans commonly receive low-value services from VA and non-VA sources of care due to high rates of dual enrollment in Medicare and use of VA Community Care (VACC) programs
- Drivers of and optimal strategies to reduce low-value care remain poorly understood
- Using latent class analysis, we previously characterized VA Medical Centers based upon the relatively high degree of low-value service use by the Veterans they serve through VA Medical Centers, VACC, or Medicare in FY 2018



Research Approach

- Objective: To characterize the drivers of and acceptable approaches to reduce the delivery of low-value services within and outside VA from the perspective of VA clinicians
- From 8/2022–9/2023, we interviewed 65 VA clinicians (physicians, nurse practitioners, physician assistants), including 32 generalists and 33 medical or surgical sub-specialists. We sampled roughly equal numbers of clinicians from the 3 latent classes of VA Medical Centers
- We explored influences on low-value service use and sought feedback on approaches to reduce low-value services in VA and non-VA settings
- Using a codebook based on the Theoretical Domains Framework, two analysts co-coded 20% of the transcripts and established intercoder consensus. We used thematic analysis to identify key themes

**KEY DRIVERS
OF LOW-
VALUE SERVICE
USE IN VA**

Environmental Context and
Resources

Social Influences

Beliefs about Consequences

Key Drivers of Low-Value Service Use in VA

Environmental Context and Resources

Social Influences

Beliefs about Consequences

- Support tools (i.e., EHR reminders, orders sets)
- VA culture, policies, and systems
- Referral parameters and requirements



Key Drivers of Low-Value Service Use in VA

Environmental Context
and Resources

Social Influences

Beliefs about Consequences

“At the VA, there's a very unique relationship. It's not just a doctor and patient - it's a doctor and Veteran. It's also administrative and political...”



Key Drivers of Low-Value Service Use in VA

Environmental Context and Resources

Social Influences

Beliefs about Consequences

- Pressure from Veterans
- Social norms/practice culture
- Pressure from other providers/VA leadership

Key Drivers of Low-Value Services Use in VA

Environmental Context and Resources

Social Influences

Beliefs about Consequences

- Fear of negative consequences
- Prior negative consequences
- Anticipated regret

Key Drivers of Low-Value Service Use in VA

Environmental Context and Resources

Social Influences

Beliefs about Consequences

“Emotions are very strong, and fear is one of the strongest emotions. So when you tie fear into, ‘I may miss something without all these tests,’ their (the provider’s) knee jerk reaction is just order it. Just order it, just order it.”



SUGGESTIONS TO REDUCE LOW-VALUE SERVICE USE IN VA

Improving quality of VA care

Education

Optimizing use of the EHR

Instilling a value-oriented organizational culture

Suggestions to Reduce Low-Value Service Use In VA

Improving quality of VA care

Education

Optimizing use of the EHR

Instilling a value-oriented organizational culture

- Enhanced access to VA care
- Adequate staffing
- More time with patients
- Better and faster communication between providers



Suggestions to Reduce Low-Value Service Use In VA

Improving quality of VA care

Education

Optimizing use of the EHR

Instilling a value-oriented
organizational culture

- Patient directed
- Provider directed
- Importance of incorporating specialists/established experts



Suggestions to Reduce Low-Value Service Use In VA

Improving quality of VA care

Education

Optimizing use of the EHR

Instilling a value-oriented
organizational culture

- EHR reminders
- Optimal use of pop-alerts
- Integrated EHR



Suggestions to Reduce Low-value Service Use In VA

Improving quality of VA care

Education

Optimizing use of the EHR

Instilling a value-oriented
organizational culture

- Facilitation of cultural change
- Support from leadership
- Enhanced trust between patients and providers



Summary & Implications

- The use of low-value services by Veterans within and outside VA was a readily recognized occurrence by VA clinicians
- Applying the theoretical domains framework, we have identified key drivers and promising approaches to reduce the use of low-value services in VA settings
- Our findings may directly inform the development of policies and interventions that overcome the barriers inherent in reducing low-value service use among Veterans both within and outside VA



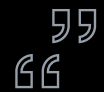
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Reducing Low-Value Care and Improving Health Care Value

Transitioning to a state of health care delivery that prioritizes value over volume will require balancing "top-down" policy prescriptions with a "bottom-up" approach unique to health systems and practices.

Step One

Apply Validated Tools to Measure Low-Value Care



Step Two

Develop an Embedded Research Agenda to Establish De-Adoption Priorities



Step Three

Align Approaches to Reduce Low-Value Care with the Motivations of Patients & Clinicians at the Point of Care



Step Four

Implement Behaviorally Informed Interventions Focused on Shared Heuristics & Combating Cognitive Biases



CHERP

Efforts to move away from a culture in which low-value care is a default practice will require health systems and payers to promote organizational behavioral change.



Oakes AH, Radomski TR. JAMA. 2021
Graphic by Chelsea Dempsey



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL



Pitt | School of
Medicine

Feedback from Operations Partners And VA Leadership

- Office of Reporting, Analysis, Performance Improvement, and Deployment
- Office of Integrated Veteran Care
- Clinical Leadership
 - Primary Care & Preventive Medicine
 - Cardiology
 - Radiology
- CRADO and Assistant Under Secretary for Health, Discovery, and Affiliate Networks



Key Feedback

- Recognition of the occurrence of low-value care and support for ongoing research
- Measures may benefit from further validation or enhancement using clinical data sources, such as Clinical Assessment Reporting and Tracking
- Emphasized importance of local approach to identify relevant determinants of low-value care and appropriately tailor interventions
- A measure for low-value PSA testing is currently under development by the RAPID electronic quality measurement team



Next Steps

1

Complete ongoing research, with particular focus on qualitative studies of VA clinicians

2

Identify high priority low-value services for de-adoption and refine the measurement of these services

3

Conduct pilot interventions targeted at de adopting high priority low-value health services at select VAMCs

Questions?

- Tom Radomski
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- Carolyn Thorpe
 - carolyn_thorpe@unc.edu

Thank you for your time!

Related Low-Value Care Publications

- Radomski TR, Huang Y, Park SY, Sileanu FE, Thorpe CT, Thorpe JM, Fine MJ, Gellad WF. Low-value prostate cancer screening among older men within the Veterans Health Administration. *Journal of the American Geriatric Society*. 2019 Sep; 67(9): 1922-1927. PMID: 31276198
- Radomski TR, Feldman R, Huang Y, Sileanu FE, Thorpe CT, Thorpe JM, Fine MJ, Gellad WF. Evaluation of low-value diagnostic testing for 4 common conditions within the Veterans Health Administration. *JAMA Network Open*. 2020 Sep; 3(9): e2016445. PMID: 32960278
- Oakes AH, Radomski TR. Reducing low-value care and improving healthcare value. *JAMA*. 2021 May 4; 325(17): 1715-1716. PMID: 33830184
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