RESEARCH AND IMPLEMENTATION ON DEPRESCRIBING FROM THE VA CENTER FOR MEDICATION SAFETY IN AGING

Kenneth Boockvar, MD & Amy Linsky, MD, MSc

US Deprescribing Research Network

February 4, 2025

NCPS VA National Center for Patient Safety

Safer Systems • Safer Care

Veterans Health Administration

Disclosures

- Grant Support
  - *VA National Center for Patient Safety*

- Dr. Linsky has received speaking and writing fees from NIA and AHRQ for deprescribing-related work

Veterans Health Administration

VA Center for Medication Safety in Aging

Framework

- Advance the science of deprescribing
  - National sites
  - Support development & testing of interventions
- Identify barriers/facilitators to inform implementation
- Disseminate deprescribing interventions across VA

Veterans Health Administration

Potentially inappropriate medications: Precursor to deprescribing

- **Risk factors**
  - Multiple providers
  - Long term care / transitions in care
  - Mental health conditions
  - Communication / health record lapses
- **Negative consequences**
  - Adverse drug events, falls, & mortality
  - Decreased quality of life & medication adherence
  - Financial burden

Halli-Tierney AD, et al. *Am Fam Physician*. 2019; 100(1): 32-38.

What is Deprescribing?

Proactive and systematic process of identifying and **discontinuing drugs** in instances in which existing or potential **harms outweigh** existing or potential **benefits** within the context of an individual patient's care **goals**, current level of **functioning**, life **expectancy**, **values**, and **preferences**.

Scott IA et al. *JAMA Intern Med*. 2015;175(5):827-834.

Veterans Health Administration

ENGAGING PATIENTS TO PROMOTE DEPRESCRIBING

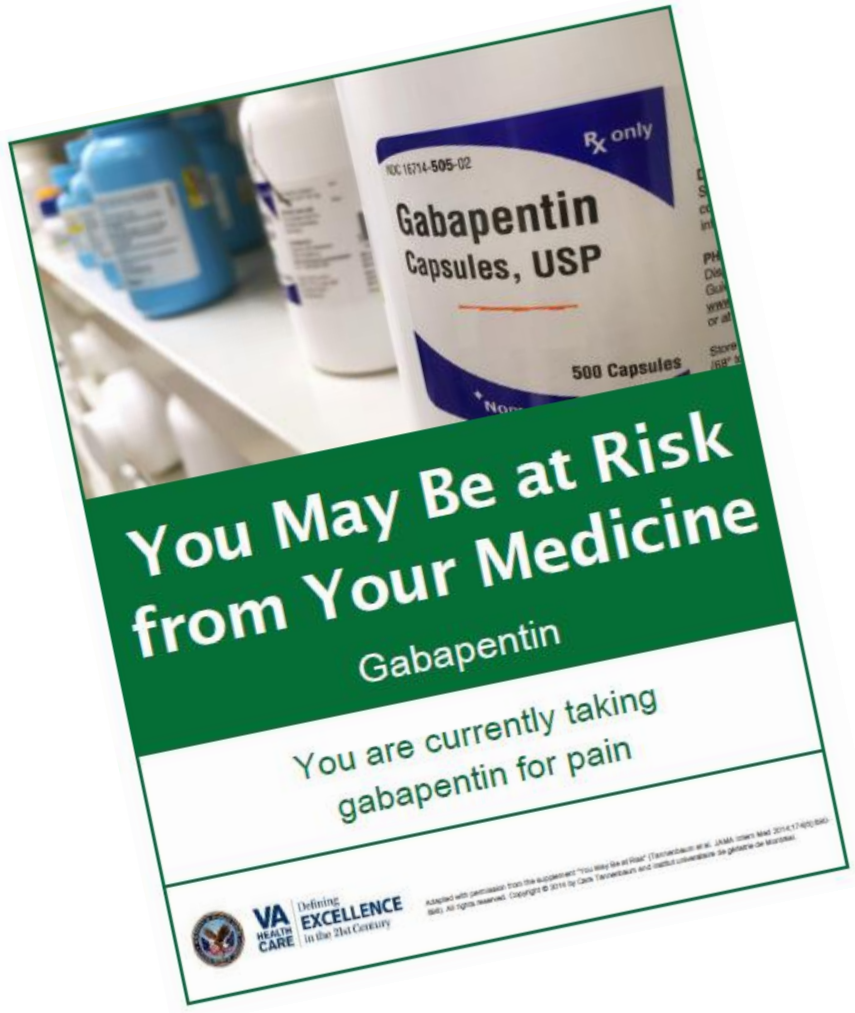
Amy M. Linsky MD, MSc

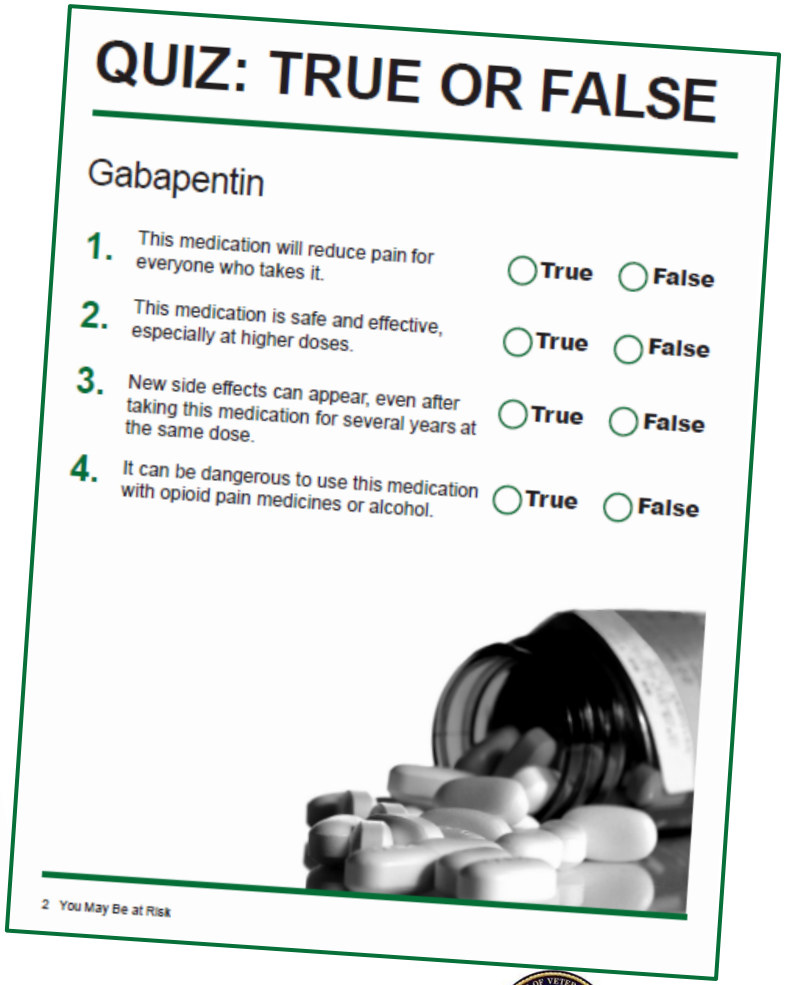
Katie Fitzgerald Jones, PhD, ACHPN; Kelly Stolzmann, MS; Jolie Wormwood, PhD; Jacquelyn Pendergast, BS; Christopher J. Miller, PhD; Michael Still, MS; Barbara G. Bokhour, PhD; Joseph Hanlon, PharmD, MS; Steven R. Simon, MD; Amy K. Rosen, PhD

NCPS VA National Center for Patient Safety
Safer Systems • Safer Care

Veterans Health Administration

VA-adapted EMPOWER brochures





Veterans Health Administration

Medication-based cohorts

Proton Pump Inhibitors (PPIs)

- Current prescription
- ≥90 consecutive days in prior year
- Excluded diagnoses where PPI would be appropriate

Sulfonylureas/insulin (Hypoglycemia Risk)

- Current prescription
- ≥90 consecutive days in prior year
- Most recent A1c <7%
- >1 of the following:
  - age > 65
  - renal insufficiency
  - cog impairment

High Dose Gabapentin

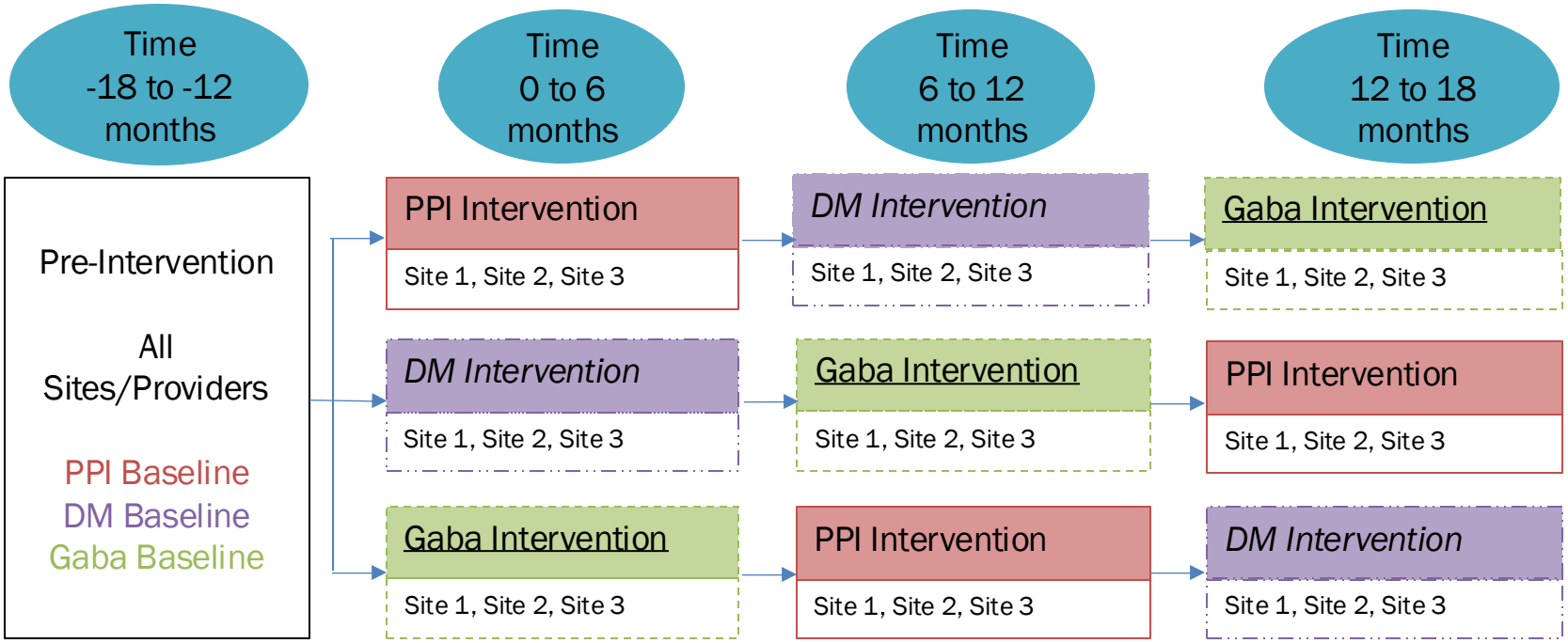
- Current prescription
- ≥90 consecutive days in prior year
- Total daily dose >1800mg
- Excluded diagnoses where gabapentin is recommended

Veterans Health Administration

Study Design

- Pragmatic quasi-experimental trial
- 3 geographically distinct sites
- Historical Controls:
  - Primary Care Providers' (PCPs) patients before intervention
- PCPs randomized to ordering of patients in medication-based cohorts

Study Design



Veterans Health Administration

Key variables

- Primary outcomes
  1. Deprescribing 6 months post-intervention (cessation or dose reduction, based on rx data)
  2. Report of deprescribing discussion

- Primary predictor – receipt of intervention

- Patient and clinician characteristics
- Survey responses about deprescribing attitudes and brochure engagement

Veterans Health Administration

Analyses

1. Deprescribing at 6 months
    - Descriptive statistics
    - Hierarchical Generalized Linear Modeling to account for clustering of patients within PCPs within sites

2. Deprescribing discussions
    - Descriptive statistics
    - Sequential model building based on demographics, attitudes, behaviors

Patient demographics

	Intervention (2,539)	Controls (2,532)	P value
Elixhauser Mortality Index, mean +/- sd	-1.7 +/-8.4	-1.7 +/-8.2	0.96
Age, mean +/- sd	71.1 +/-11.9	70.3 +/-12.7	0.01
Medication Group, n (%)			0.12
PPI	2064 (81.3)	2000 (79.0)	
Gabapentin	97 (3.8)	105 (4.2)	
Diabetes Hypoglycemia	378 (14.9)	427 (16.9)	
Female, n (%)	145 (5.7)	134 (5.3)	0.51
Hispanic/Latino, n (%)	223 (9.3)	200 (8.3)	0.22
Married, n (%)	1235 (49.0)	1297 (51.3)	0.09
Race, n (%)			0.01
Black	326 (14.4)	272 (12.1)	
White	1854 (81.9)	1874 (83.0)	
Hispanic/Other/Multiracial	85 (3.8)	112 (5.0)	

Veterans Health Administration

Deprescribing outcomes

Intervention cohort 29.5% vs. Historical controls 25.8%

	OR	95% CI	p value
Intervention vs Controls	1.205	(1.049,1.383)	0.008
Age	0.999	(0.993,1.005)	0.797
Elixhauser Mortality Index	0.997	(0.988,1.005)	0.451
Female (0/1)	1.203	(0.891,1.626)	0.227
Hispanic (0/1)	1.006	(0.772,1.312)	0.962
Race (reference: White)			0.572
Black	1.12	(0.904,1.387)	
Other	1.051	(0.753,1.467)	
Medication Group (reference: PPI)			0.001
Gabapentin	1.805	(1.313,2.48)	
Diabetes Hypoglycemia	0.896	(0.739,1.087)	
Married (0/1)	0.943	(0.821,1.083)	0.405

Veterans Health Administration

Survey Respondents

- 1,382 (43.1% response rate)
  - White (75%), male (95%), 66-75 years (45%)
  - Lived with other(s) (63%)
  - Adequate health literacy (89%)
- Most (71.3%) engaged with the brochure
  - 29% read it
  - 33% also completed ≥1 brochure activity
  - 9% also contacted PCP before appointment
- More than half (54%) indicated brochure caused concern

Deprescribing Discussions

- 29% reported deprescribing discussion
  - 78% indicated they initiated discussion
  - 57% explicitly discussed brochure

Veterans Health Administration

Factors Associated with Discussions

	OR	95% CI
Drug Cohort (ref = PPI)	--	--
DM - Hypoglycemia	0.26	[0.16, 0.40]
Gabapentin	0.61	[0.24, 1.55]
Race/Ethnicity (ref = White)	--	--
Black	0.31	[0.17, 0.57]
Hispanic	0.65	[0.38, 1.13]
Other/Multiracial	0.45	[0.23, 0.86]
Education (ref = high school or less)	--	--
Some College or Vocational School	1.88	[1.29, 2.73]
College Degree	2.11	[1.27, 3.52]
Graduate/Advanced Degree	2.40	[1.35, 4.27]

Veterans Health Administration

Factors Associated with Discussions

	OR	95% CI
Brochure Engagement (ref = none/missing)	--	--
Read Only	1.52	[0.94, 2.45]
Read and Engage Activities	2.23	[1.39, 3.59]
Contact PCP	2.47	[1.34, 4.58]
Discussed with Family/Friends	1.72	[1.22, 2.41]
Discussed with HCP	3.18	[2.08, 4.85]
Elevated Medication Concern	1.50	[1.03, 2.18]
Discussion is Important (ref = low/not at all/missing)	9.11	[6.52, 12.73]
Intend to Deprescribe	1.94	[1.28, 2.94]

Adjusted for variables in table, and these non-significant variables: age, gender, health status, health literacy, motivation to deprescribe, PCP relationship, healthcare navigation, healthcare ownership

Veterans Health Administration

Key Points

- Direct-to-patient brochures effectively promote:
  1. Deprescribing
  2. Patient engagement & deprescribing discussions

- Patient engagement is a powerful strategy to implement change in clinical practice

- Low-tech, low-cost intervention with potential for easy dissemination and spread

TELEPHARMACY MODEL OF CARE

Kristin Phillips, PharmD
Christine Cigolle, MD, MPH

VA Ann Arbor Healthcare System
Geriatrics Research, Education, and Clinical Center

NCPS VA National Center for Patient Safety
Safer Systems • Safer Care

Veterans Health Administration

Intervention

1. Medication list **accuracy**
2. Assess medication(s) **safety**
3. Assess patient **cognitive** ability
4. Assess patient **health literacy**
5. Assess patient **physical** ability
6. Assess **caregiver** ability to compensate for deficits in #3,4,5

Veterans Health Administration

Patient Demographics (n=121)

	Number (%)
Age (years, mean)	82.4 years
Marital Status	
Married	73 (60)
Unmarried	48 (40)
Education (years)	
≤12	12 (10)
12	21 (17)
>12	54 (45)
Unknown	34 (28)
Telemedicine Connection	
VA Video Connect (VVC)	69 (57)
Telephone	52 (43)
Pharmacy Personnel Conducting Visit	
PharmD	69 (57)
Pharmacy Technician	52 (43)

Veterans Health Administration

Medication Safety (Steps 1, 2)

- Mean # medications/patient: 11
- Mean # discrepancies/patient: 2.6
  - 41% ≥3 discrepancies
- 30% with ≥1 Red Flag medication
- 71% with ≥1 High Risk medication
- Deprescribing opportunities
  - 68% with ≥ 1 deprescribing opportunity (142 meds)
  - 38 (27%) opportunities resulted in deprescribing

Comprehensive Assessment (Steps 3-6)

- 20% with cognitive and/or health literacy difficulties
- 41% with functional difficulties
- 66% had a caregiver involved

Key Points

- Address barriers to self-management
- Telemedicine
- Pharmacy technician

IMPLEMENTATION STRATEGIES FOR DEPRESCRIBING IN OLDER VETERANS AT RISK FOR FALLS

Juliessa Pavon, MD, MHS; Marc Pepin, PharmD; William Bryan, PharmD; Richard Sloane, MPH; Janine Bailey, PharmD; Ivy Ivuoma, RN; Cathleen Colón-Emeric, MD, MHS

NCPS VA National Center for Patient Safety
Safer Systems • Safer Care

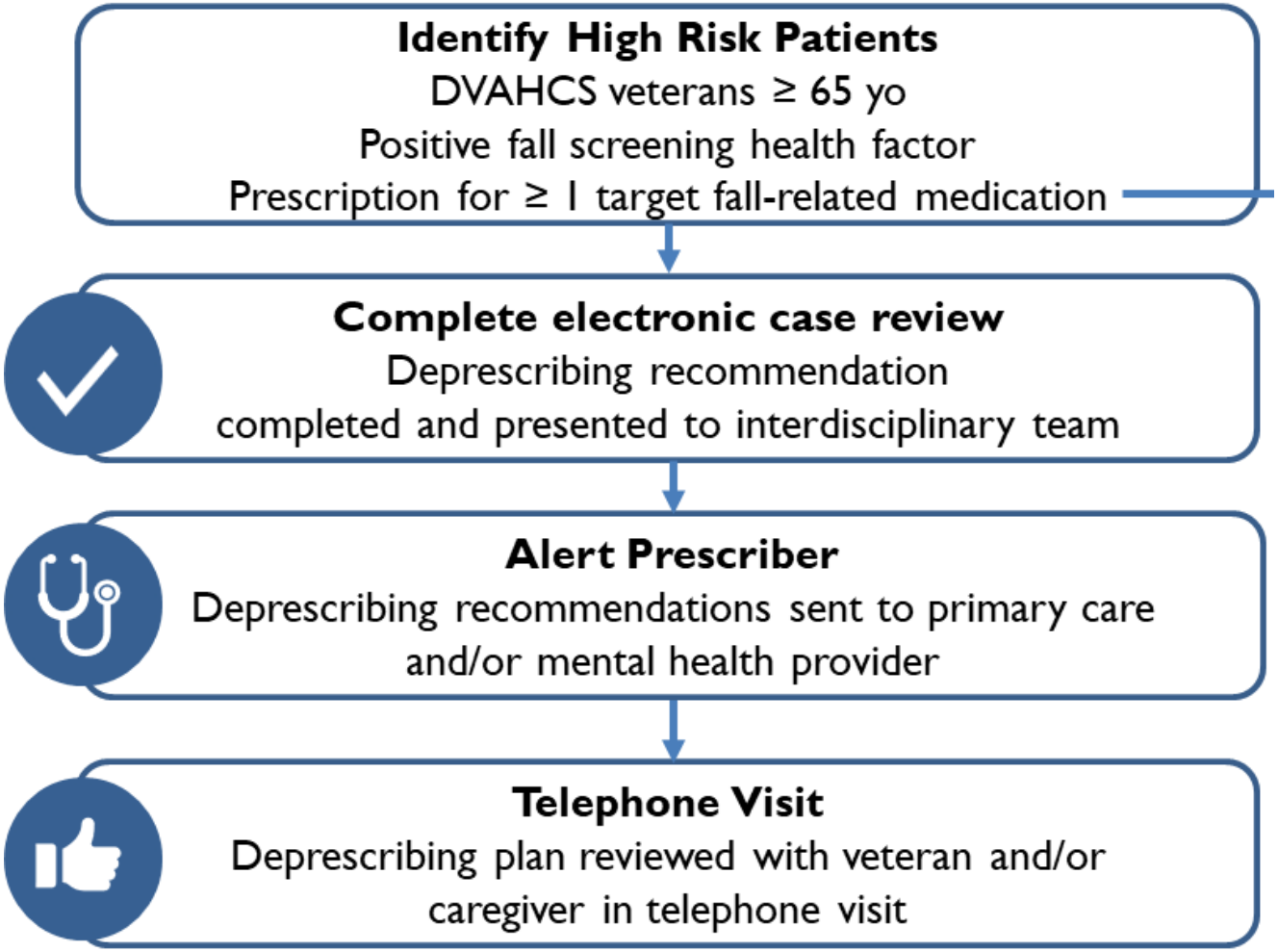
Veterans Health Administration

Background

- Falls are harmful and costly, and polypharmacy is a modifiable risk factor
- FAME (Falls Assessment of Medications in the Elderly) is a VA program designed to reduce fall-risk medications
- Aim: to identify an effective, scalable approach

Veterans Health Administration

FAME Intervention Components

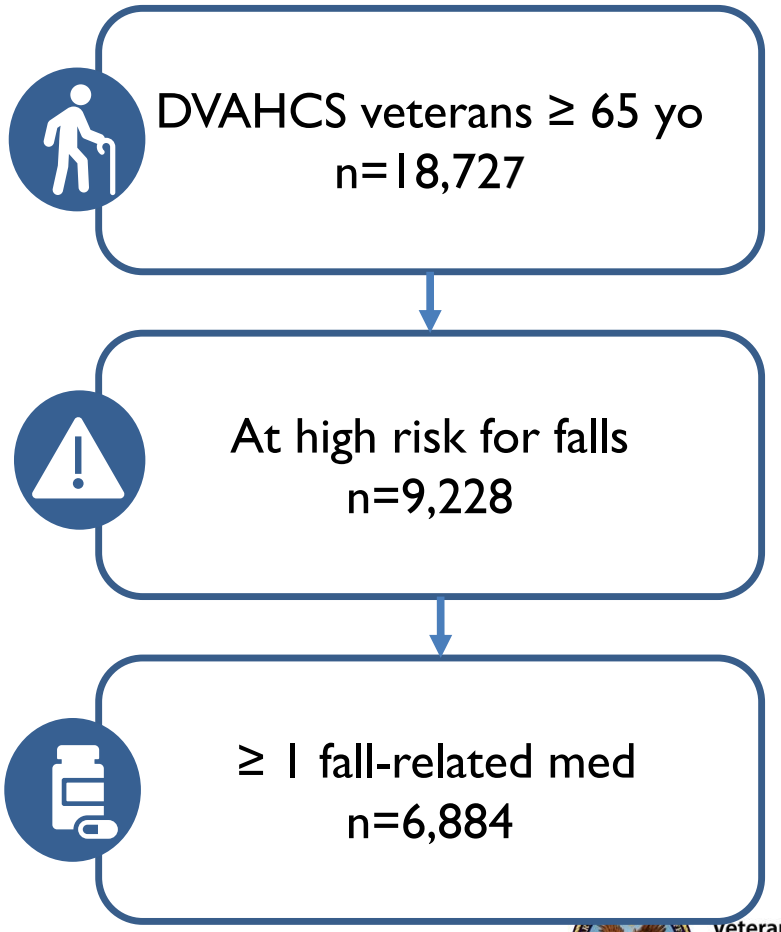


Veterans Health Administration

Target Medications and Patients

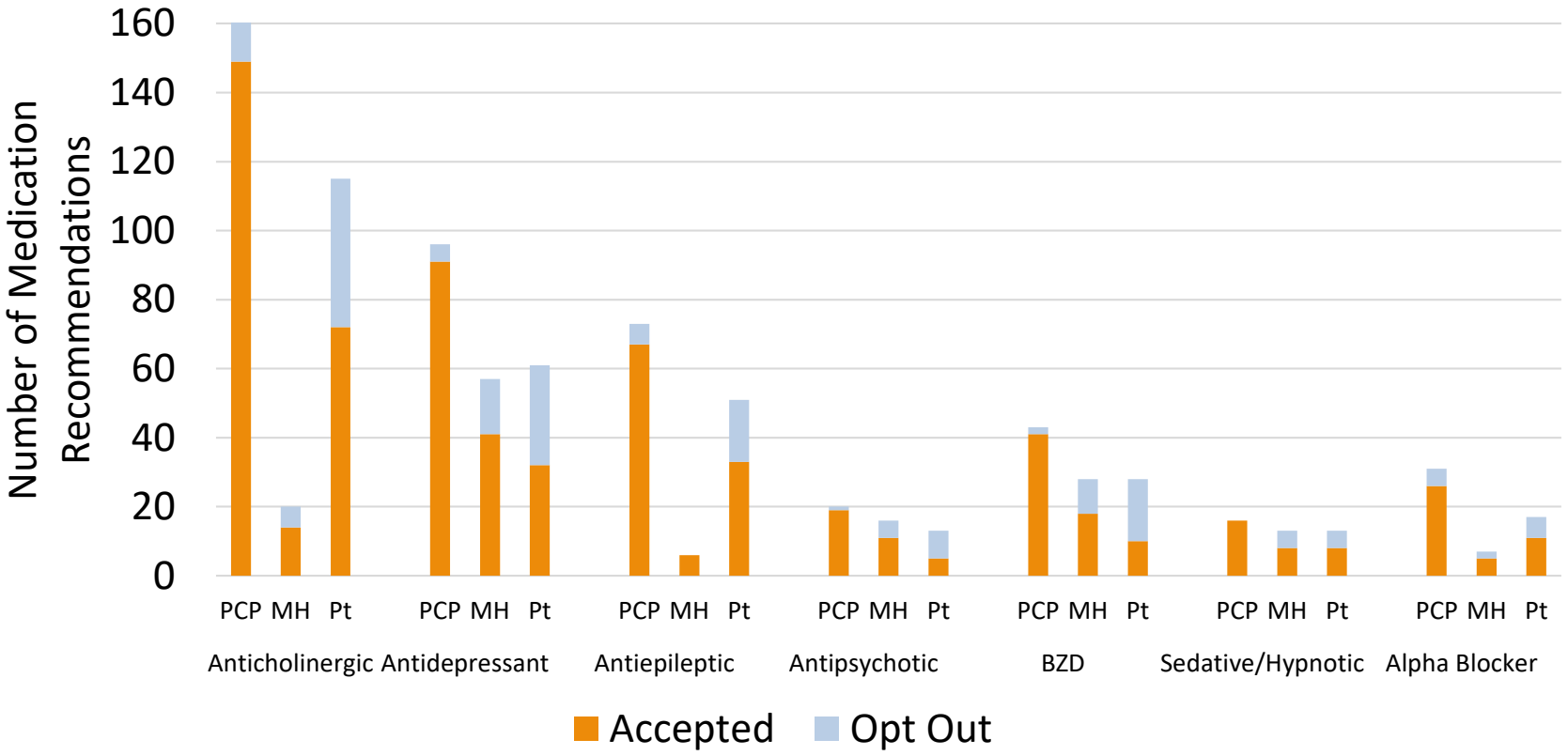
Target Med Classes:

Alpha-adrenergic antagonists
Anticholinergics
Antidepressants
Antiepileptics
Antihyperglycemics
Antipsychotics
Benzodiazepines
Diuretics
Sedative/hypnotics



Veterans Health Administration

Results: recommendation acceptance by providers and patients



Veterans Health Administration

Results: effects on drug burden and falls

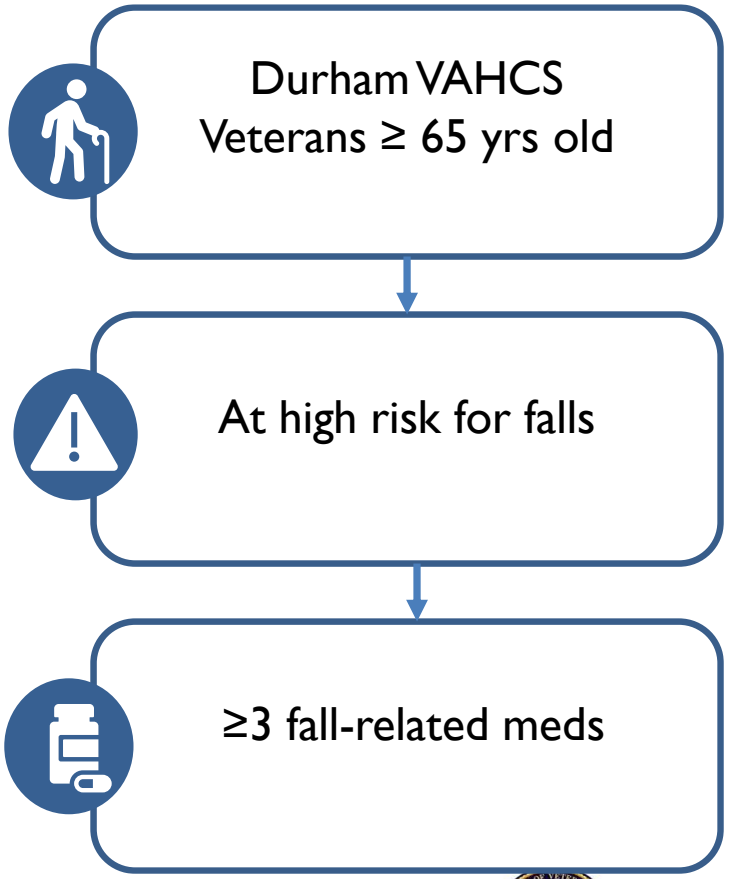
At 1 year, FAME patients, compared to controls, had:

- **Significantly decreased odds of worsening Drug Burden Index: 0.37 [95% CI 0.2-0.6]**
- **Trend for fewer fall-related visits**

Veterans Health Administration

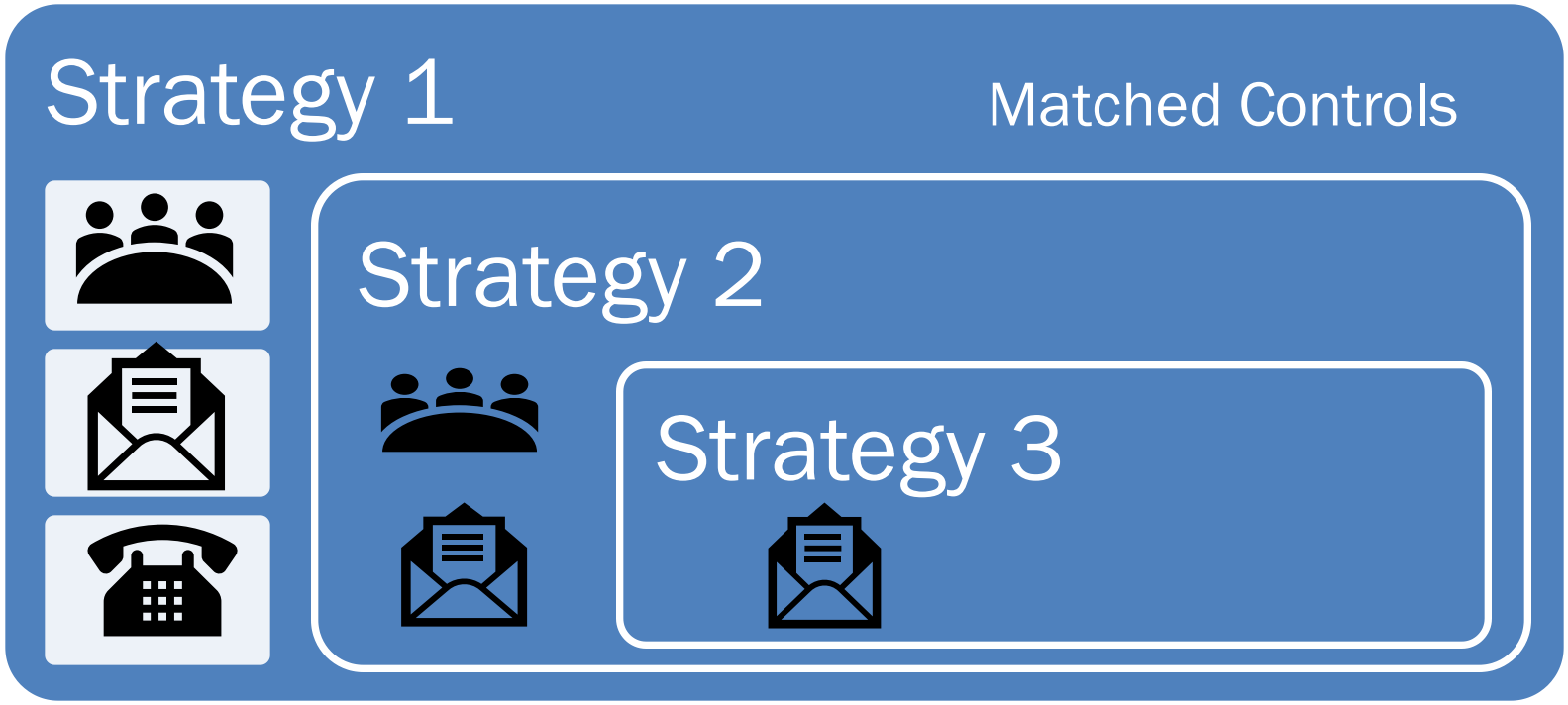
Revised Target Population for Scaling

Target Med Classes:
Anticholinergics
Antidepressants
Antiepileptics
Antipsychotics
Benzodiazepines
Sedative/hypnotics



Veterans Health Administration

Alternative Intervention Strategies to improve scalability



Outcome: Drug Burden Index at 1 year

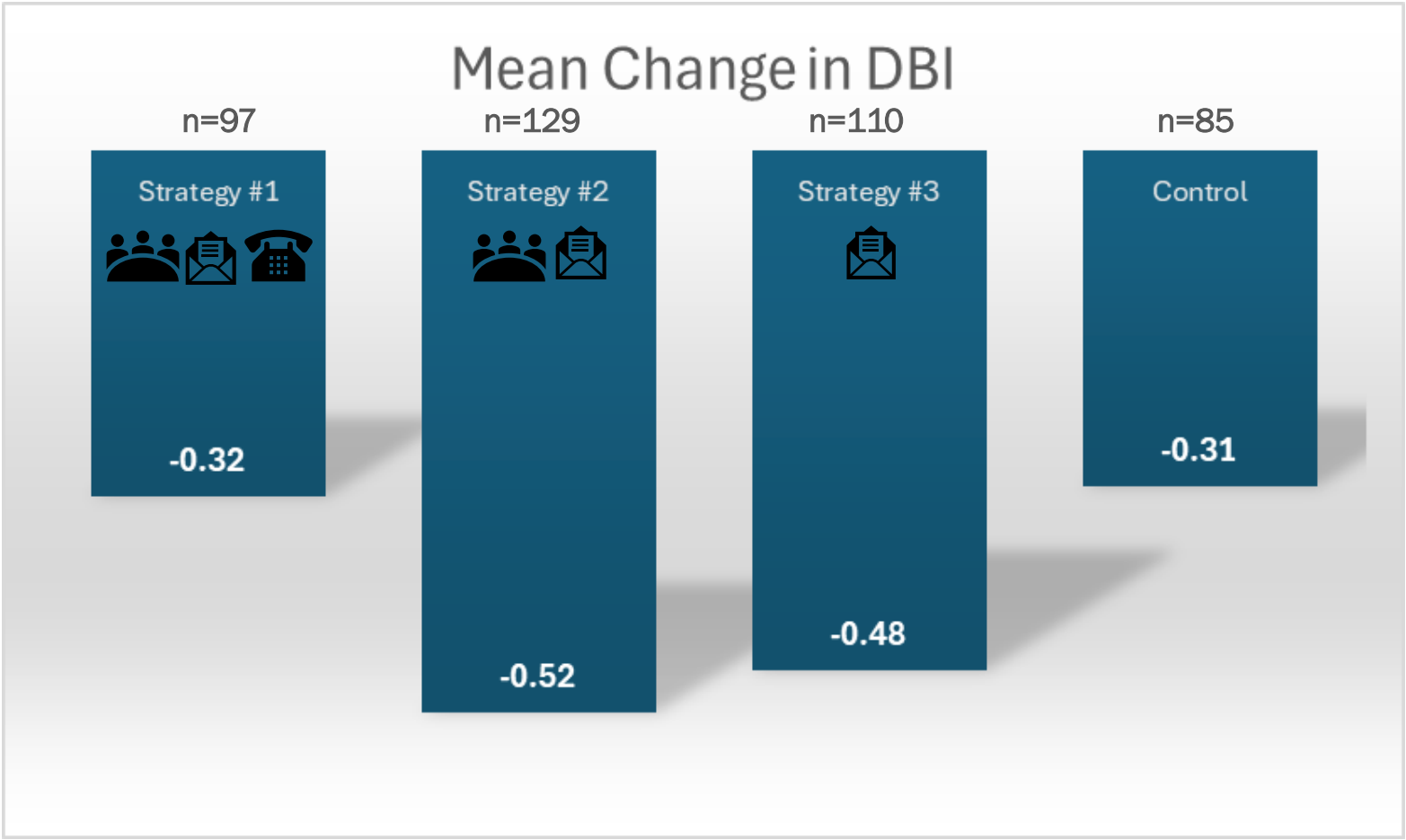
Veterans Health Administration

Differences in Baseline Characteristics

Patient Group	Control n=85	Strategy 1 n=97	Strategy 2 n=129	Strategy 3 n=110
Age	76.3 (4.6)	75.9 (4.1)	76.8 (3.9)	76.8 (3.4)
Race, White	60 (71%)	71 (73%)	82 (64%)	79 (72%)
Comorbidities				
Anxiety	70 (82%)	69 (71%)	97 (75%)	81 (74%)
Chronic pain	80 (94%)	90 (92%)	120 (93%)	98 (89%)
Cognitive Impairment	4 (5%)	10 (10%)	14 (11%)	24 (22%)
Depression	63 (74%)	66 (68%)	82 (63%)	72 (65%)
Medications each class				
Anticholinergics	72 (85%)	81 (84%)	105 (81%)	99 (90%)
Antidepressants	80 (94%)	93 (96%)	127 (99%)	105 (96%)
Benzodiazepines	30 (35%)	33 (34%)	43 (33%)	15 (13%)
Sedatives	28 (33%)	20 (21%)	21 (16%)	10 (9%)
Average number of FRIDS medications	3.4 (0.6)	3.4 (0.7)	3.3 (0.5)	3.1 (0.3)

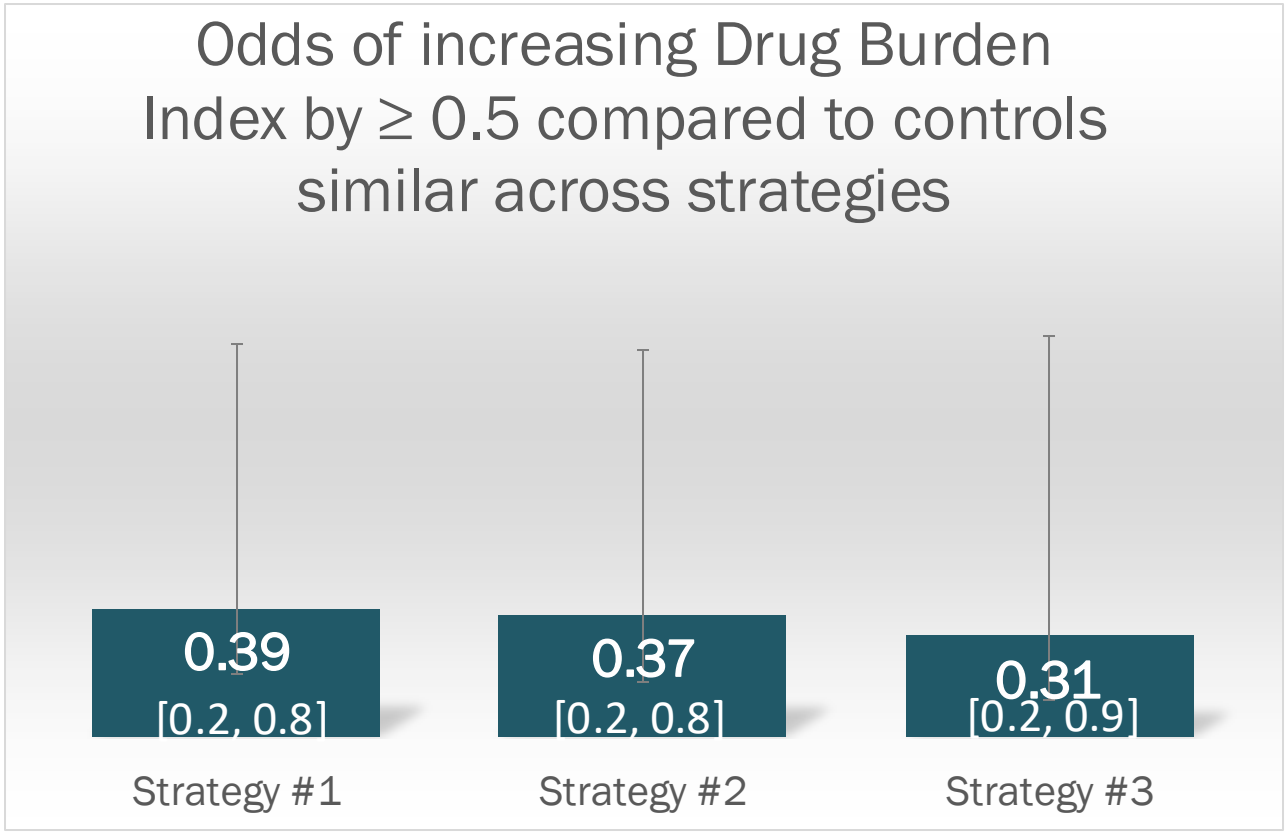
Veterans Health Administration

Results by Delivery Strategy



Veterans Health Administration

Results by Delivery Strategy



n=97

n=129

n=110

Veterans Health Administration

Conclusions and implications

- Strategies conferred **lower odds** of worsening drug burden at 1 year
- Program may have more impact on **preventing additional** prescriptions than decreasing existing use.
- **Lower intensity, lower-resource strategies** were as effective as others.

Veterans Health Administration

A BREAKTHROUGH SERIES COLLABORATIVE FOR DEPRESCRIBING ACROSS VA

Kenneth Boockvar, MD

NCPS VA National Center for Patient Safety

Safer Systems • Safer Care

Veterans Health Administration

Breakthrough Series Overview

- Team requirements: readiness, champions, commitment

- Engagement components:
  - Nationwide VA solicitation
  - Presentations from investigators and leaders
  - Small group and 1-to-1 facilitation meetings with shared learning
  - Audit and feedback of standard measures
  - Veteran and Caregiver Council input

Toolkit

- VIONE – Vital, Important, Optional, Not Indicated
- Direct-to-Patient Deprescribing Materials
- Deprescribing E-consult
- IMPROVE Deprescribing Clinic
- TRIM deprescribing decision-support

Available through VA Sharepoint

Veterans Health Administration

Virtual Breakthrough Series

Journal of Medical Systems (2019) 43:27
https://doi.org/10.1007/s10916-018-1126-z

SYSTEMS-LEVEL QUALITY IMPROVEMENT

How to do a Virtual Breakthrough Series Collaborative

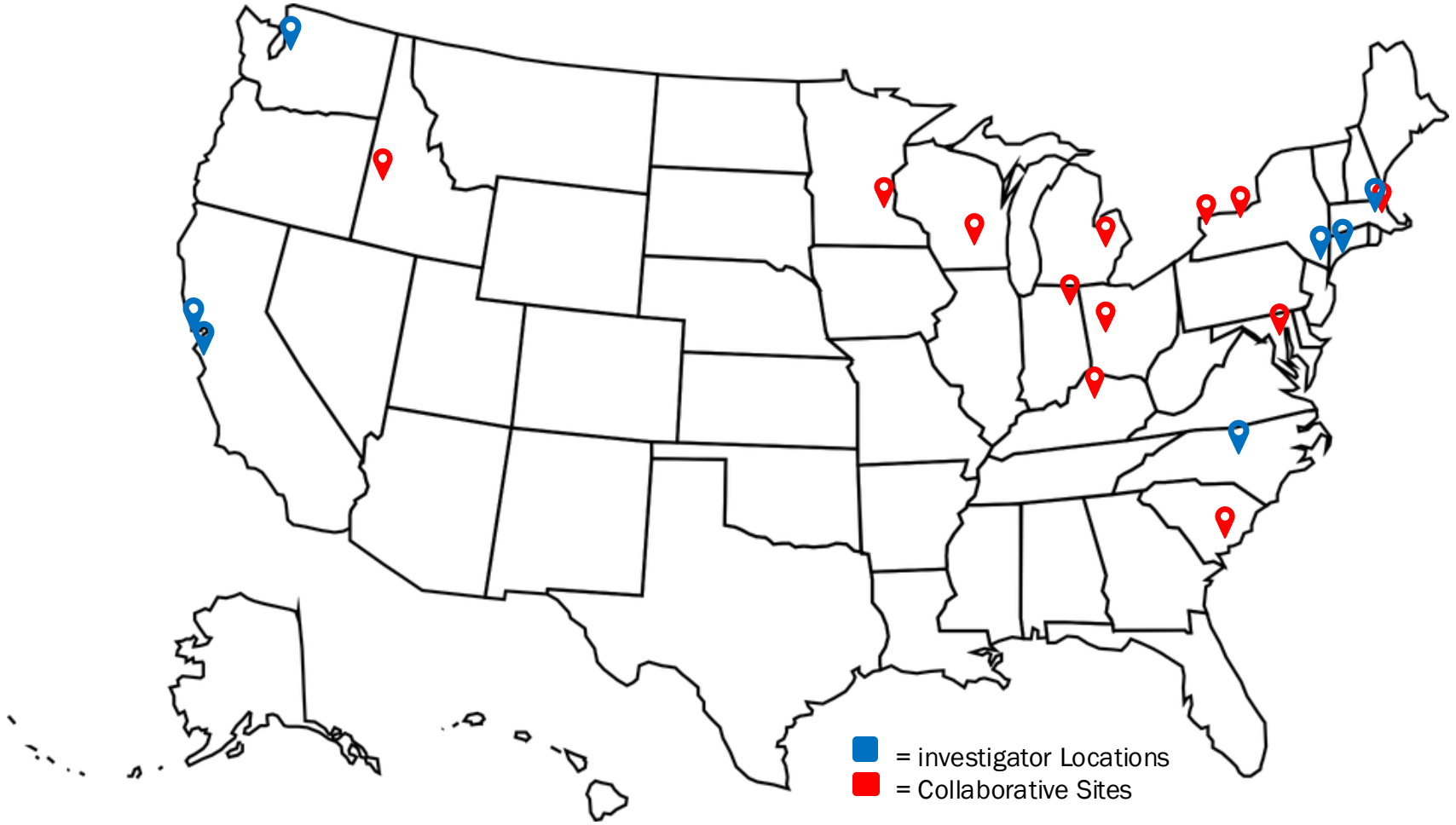
Lisa Zubkoff[1,2,3] · Julia Neily[3] · Peter D. Mills[2,3]

Received: 21 May 2018 / Accepted: 20 November 2018

Abstract
Despite widespread use of the breakthrough series (BTS) collaborative in healthcare, there is limited literature on how to operationalize the method in healthcare settings. A recent modification to the model is the virtual breakthrough series (VBTS), in which all work is done remotely via telephone and web-based platforms. With virtual methods gaining popularity, this manuscript presents guidance on methods to conduct a virtual breakthrough series collaborative to assist clinical teams in implementing evidence-based practices. Manuscript describes planning activities and implementation steps for individuals interested in conducting a VBTS collaborative. Topics presented include planning/preparation activities (e.g., developing a planning committee and change package of the evidence-based interventions), estimated resources required (i.e., personnel, percent effort), activities to prepare participants for the project (e.g., orientation calls), specific actions during the virtual collaborative, and evaluation approaches. The manuscript also presents examples from our work and templates for end users. This paper is a first attempt to describe the infrastructure and processes of a VBTS collaborative and offer reproducible methods currently employed in the U.S. Veterans Health Administration.

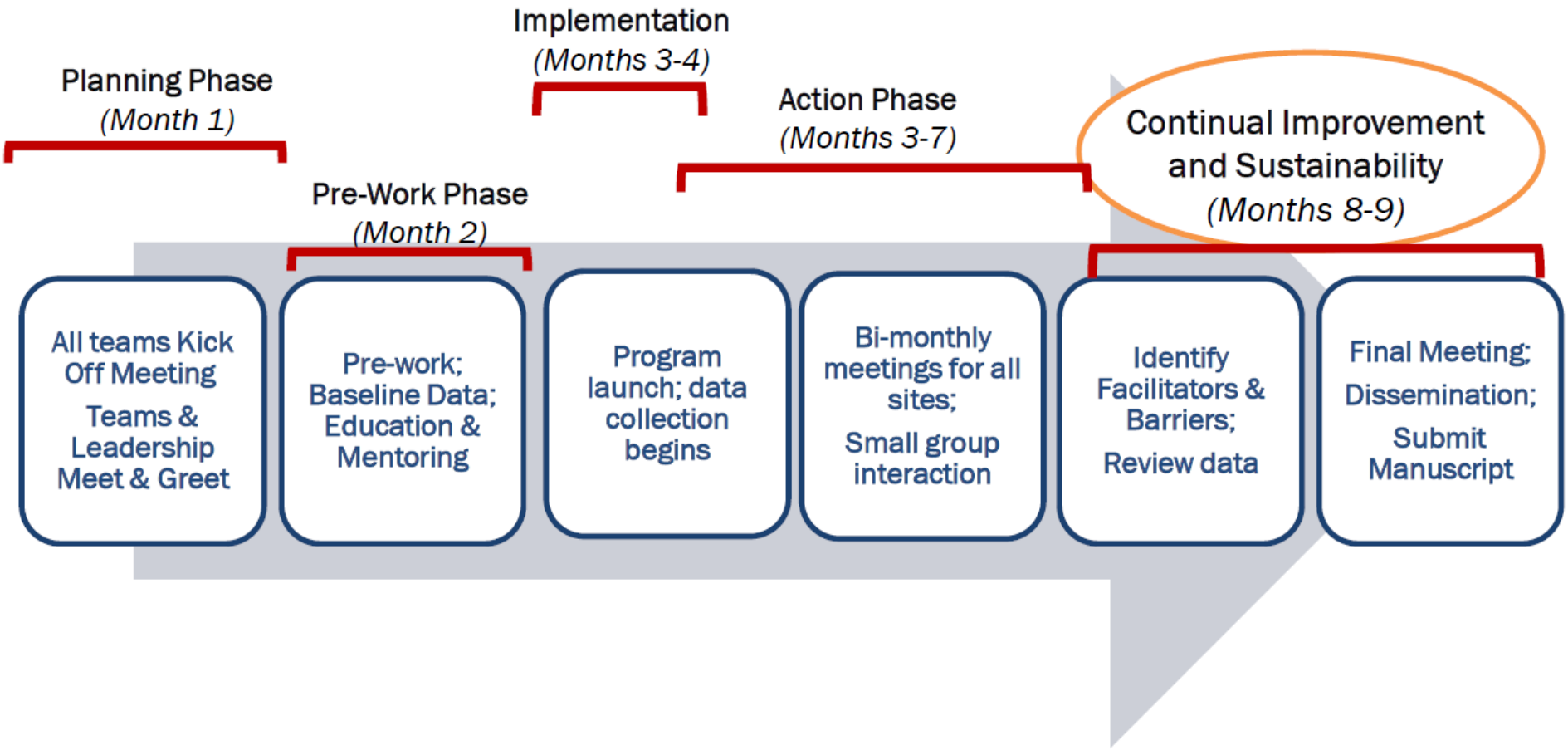
Veterans Health Administration

Nationwide participation



Veterans Health Administration

Collaborative timeline



Veterans Health Administration

Site and Intervention Characteristics

	n = 21
Practice Area	
Ambulatory Care (including Geriatrics)	11
Home-based primary care	9
Nursing home	5
Other Specialty (Mental Health, Nephrology)	2
Intervention Method	
Decision Support/Population Health tool (VIONE)	15
Direct to Patient Materials (EMPOWER)	1
Intensive Individualized Review (IMPROVE)	1
Other	4

Veterans Health Administration

Veterans served/medications deprescribed

- Total of 8,332 medications deprescribed in 4,770 Veterans (1-2 medications per Veteran)
- Mean 66 Veterans served and 62 medications deprescribed per site per month

	Veterans served per Site	Medications deprescribed per site	Meds deprescribed per Veteran, per site
Cohort	mean (range; SD)	mean (range; SD)	mean (range; SD)
1 (n=12)	204.3 (41-791; 197.4)	276.2 (21-1208; 302.4)	1.3 (0.48-2.52; 0.61)
2 (n=9)	596.9 (1-2713; 864.2)	557.6 (3-1916; 724.1)	1.2 (0.28-3.0; 0.76)

Veterans Health Administration

Barriers

- Staff turnover--difficult to keep up with education
- Difficulty maintaining momentum over time
- Hard to intervene on medications prescribed by outside providers
- Patients restart or increase target medication due to symptom relapse.
- Need to show cost-savings to maintain facility support
- Data collection to track progress

Facilitators and unanticipated benefits

Support from providers initially uninterested in deprescribing	Providers integrating deprescribing into daily tasks
Adoption of deprescribing outside the initial setting	Increased patient agency related to medication management
• Adaptable to telepharmacy	• Some sites saw changes in prescribing patterns

DOI: 10.1111/jgs.18474

MODELS OF GERIATRIC CARE, QUALITY IMPROVEMENT, AND PROGRAM DISSEMINATION

Journal of the American Geriatrics Society

A virtual breakthrough series collaborative to support deprescribing interventions across Veterans Affairs healthcare settings

Kristin K. Phillips PharmD[1] | Marcia C. Mecca MD[2,3] | Abigail M. Baim-Lance PhD[4,5,6] | Gabrielle S. Schiller MPH[6,7] | Jennifer A. Pruskowski PharmD, MS[8,9,10] | Elizabeth C. Ellis PharmD[11] | Deylen S. Aponte-Rosario PharmD[12] | Amanda L. Federovich-Hogan DNP[8,13] | Annette C. Kossifologos PharmD[14] | Erica D. Martinez BA[15] | Kenneth S. Boockvar MD, MS[16,17]

Veterans Health Administration

QUESTION AND ANSWER

NCPS VA National Center for Patient Safety

Safer Systems • Safer Care

Veterans Health Administration