Improving Access for Veterans with HIV Infection in Rural Areas

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Two Themes

- HIV care in rural settings
- Developing, evaluating, and scaling innovations in rural health care delivery

Poll Question #1

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

Poll Question #2

- What else are you doing while attending this cyberseminar (check all that apply)?
  - email
  - eating lunch
  - TMS training
  - sleeping
  - other

You may ask yourself, well….how did I get here?

- David Byrne

Case - 2010

Mr. Z is 62 year old man who drove three hours to HIV clinic for a follow up visit.

- Takes one pill a day to control HIV
- Normal immune function (CD4 count 900),
- Undetectable HIV in blood (< 20 copies/ml)
- Co-morbidities: hypertension, hyperlipidemia, type 2 diabetes, tobacco use, depression.
- Complains of chronic back pain. Wishes to start insulin for diabetes based on prior discussions.

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HIV Care in VHA

- VHA largest HIV care provider in US (N~26,000)
- Care needs driven by aging (median age 51) and co-morbidity
- HIV care concentrated in specialty clinics
- 12% Veterans with HIV in rural areas

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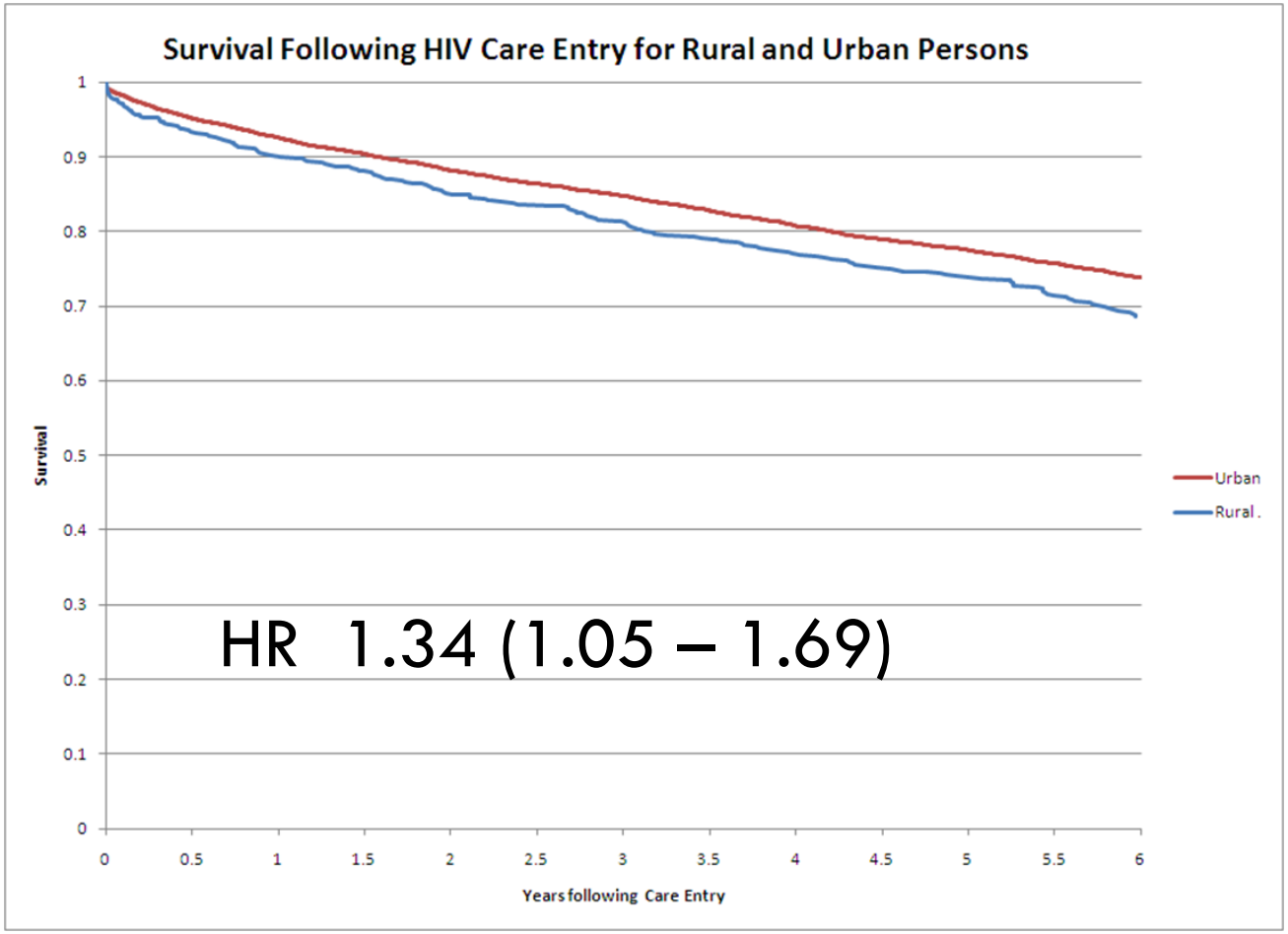
Kaplan-Meier survival curves following care entry, by rural residence, N=8,489



Ohl et al, Medical Care 48: 1064-70. 2010

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Rural veterans have more advanced HIV infection at care entry than urban veterans

	Urban	Rural	p-value
	N=7,784	N=705	
CD4, median	246	186	<.001
AIDS defining illness	12.0%	15.2%	.01
Substance use problem	19.5%	10.6%	<.001
Hepatitis C	41.2%	34.3%	.001

Ohl et al, Medical Care 48: 1064-70. 2010

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Delayed care entry drives increased mortality among rural veterans

	Urban	Rural
Crude mortality HR	Ref	1.34 (1.05 -1.69)
Adjusted HR*	Ref	1.21 (0.94 – 1.57)

*Age, CD4, ADI, substance use, hepatitis C

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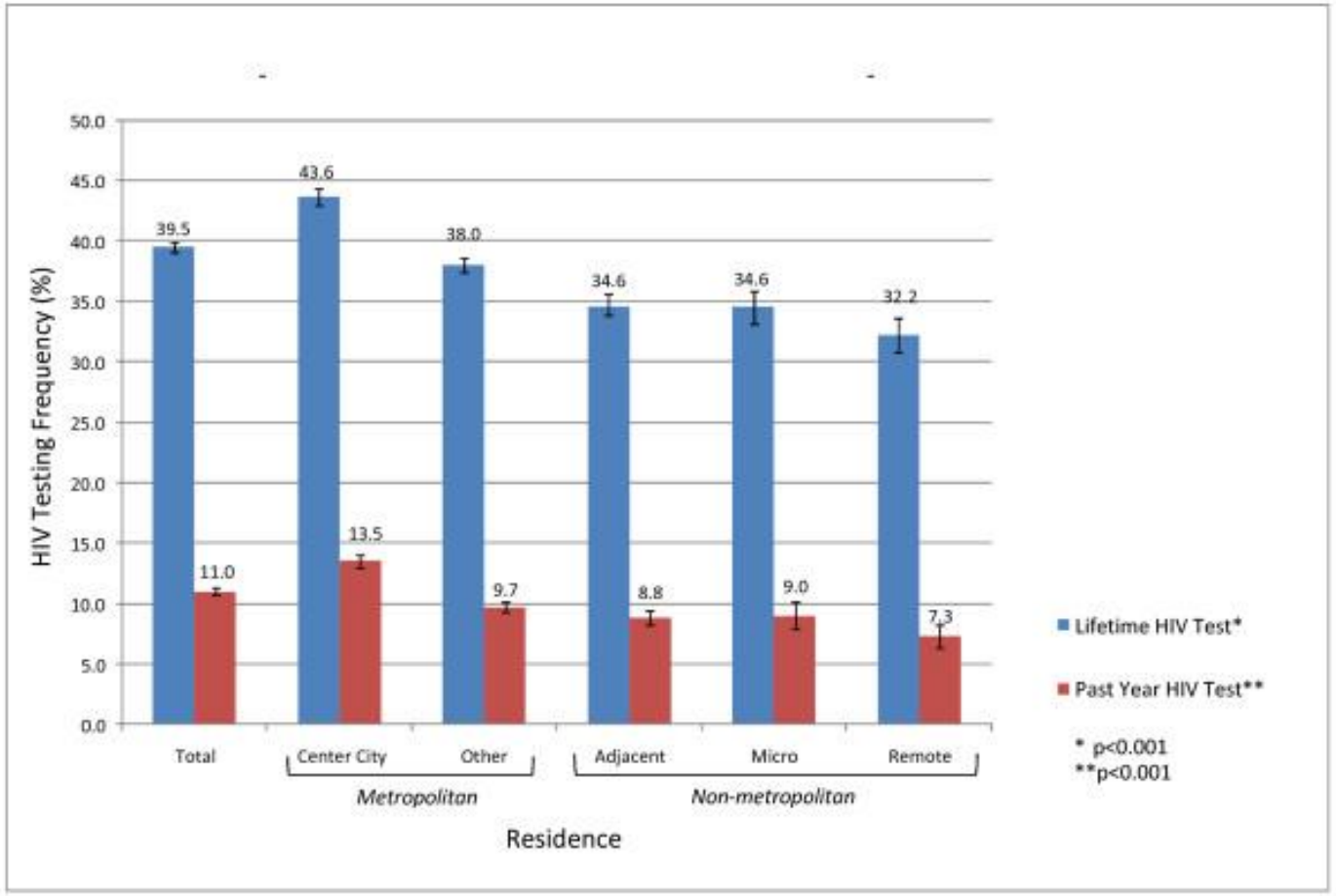
HIV testing in rural vs. urban areas of United States: BRFSS data



Ohl et al, BMC Public Health.11:681. 2012

Rural veterans with HIV have poor geographic access to specialty care

	Urban	Rural
Travel time to ID clinic, minutes median (IQR)	23 (15-42)	86 (63-115)
Travel time to primary care, minutes, median (IQR)	9 (5-15)	39 (20-57)

Ohl et al, J of Rural Health. 30(4):412-21. 2014

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Veterans with HIV travel for specialty care, bypassing primary care clinics

- 24% of Veterans with HIV reside > 1 hr. drive from infectious disease (ID) specialty clinic
- 51% live nearer to a primary care clinic than to ID clinic
- Among Veterans with HIV closer to primary care clinic, 78% had no visits in primary care

Michael Ohl, unpublished results

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Increasing travel time is associated with lower retention in HIV care

Travel time, minutes	Retention in Care,%*
< 30	80.7
30-59	76.1
60-90	73.2
>90	68.6

*p < 0.01; retention in care defined as at least two clinic visits in year at least 60 days apart

Michael Ohl, unpublished results

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New HIV care models are needed in rural areas

- Accessible
- Combine state-of-the art HIV therapy with comprehensive primary care for an aging population

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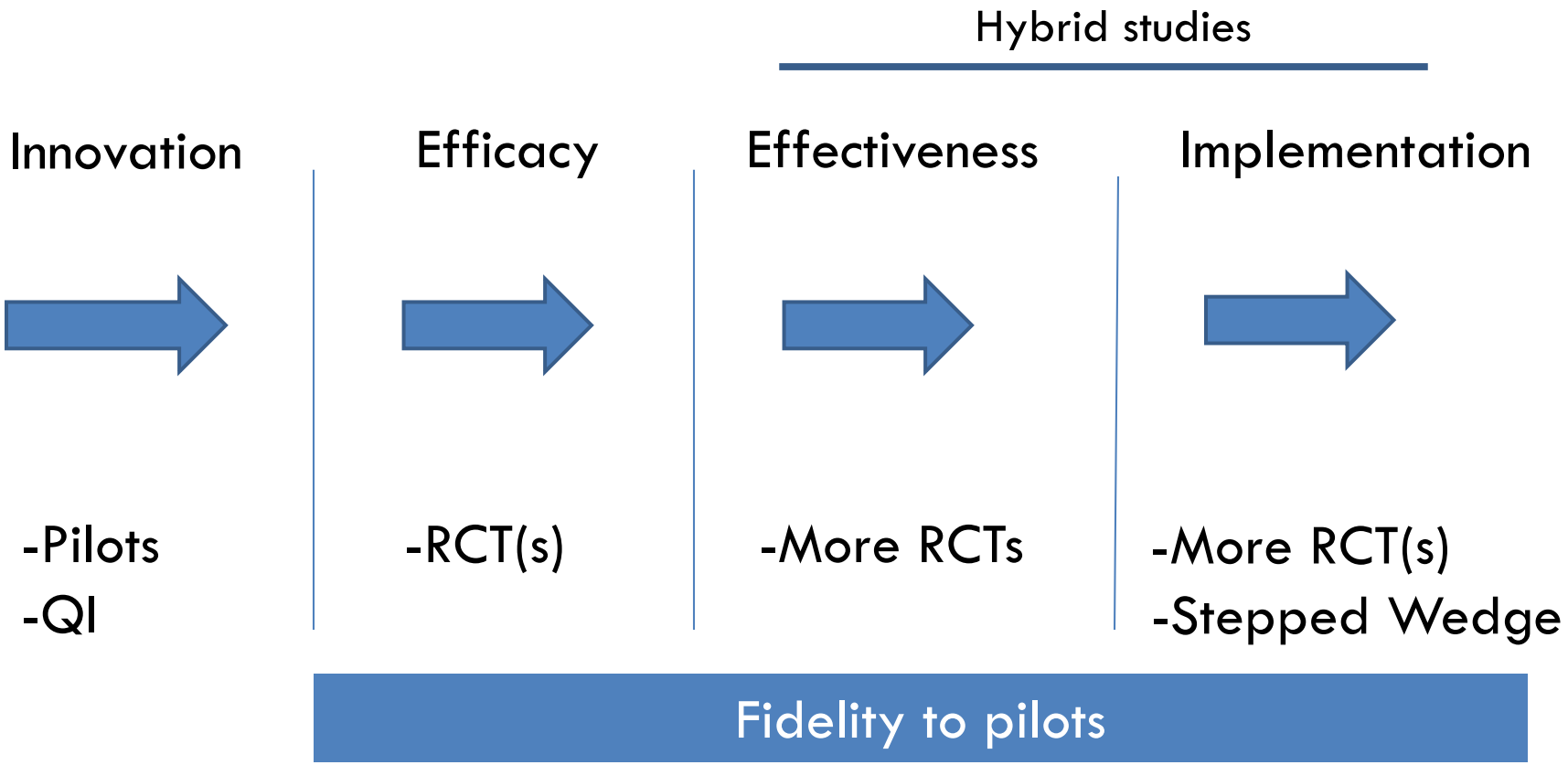
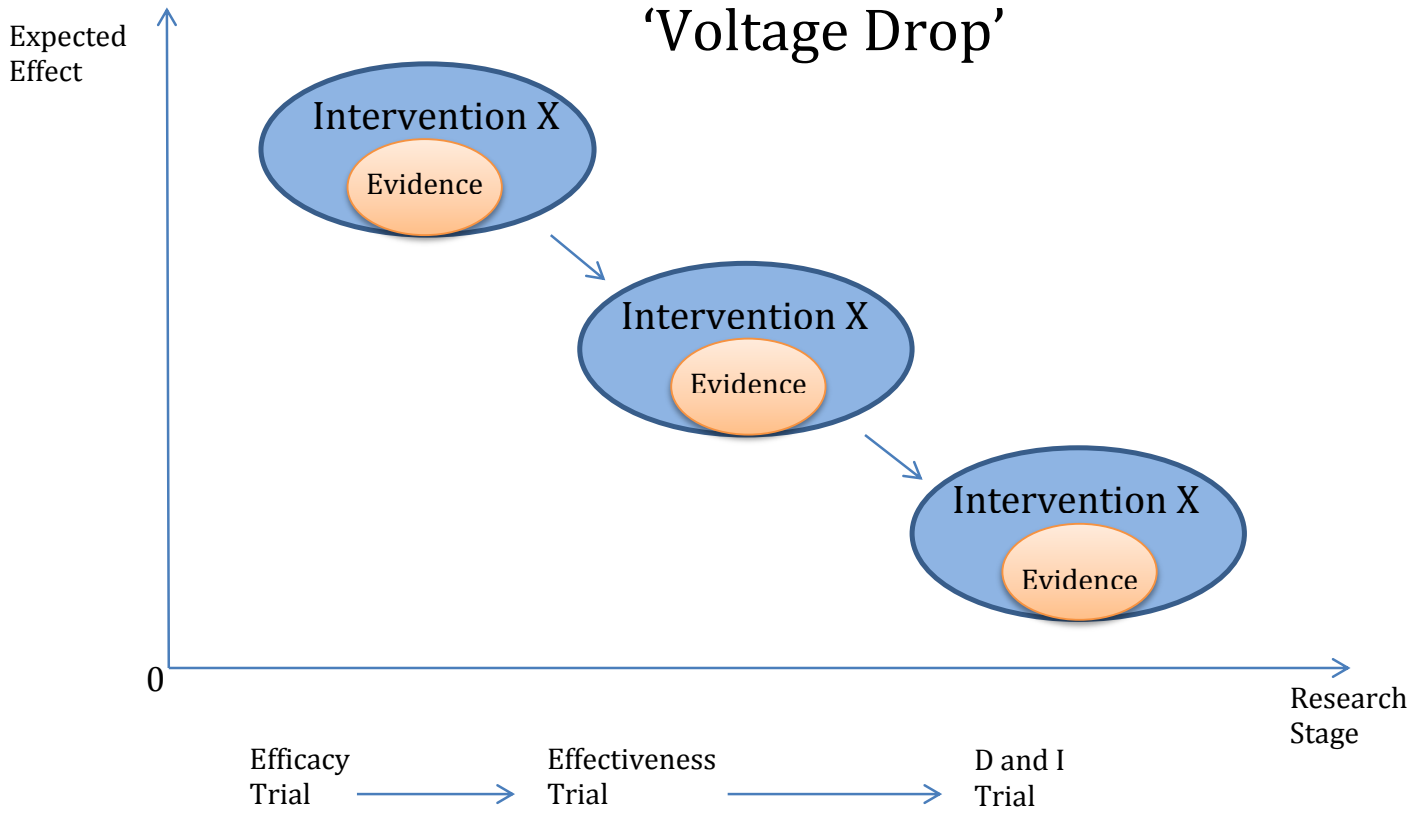
The linear model does not adapt to rural health care delivery innovations



Fidelity, program drift, and voltage drop



- Program drift is unavoidable, appropriate, and should be studied
- Voltage drop is not inevitable

Chambers et al, Implementation Science 8:117. Oct 2013

Problems with the linear model for rural delivery innovations

- Randomized controlled trials (RCTs) are generally not feasible in small number of sites
- Telehealth technologies are out-of-date before RCTs are completed
- Rural care contexts vary greatly and tight control of innovation fidelity is neither possible nor appropriate

Tinkering with HIV Care Delivery in Rural Areas

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Extension for Community Health Outcomes (ECHO) Model

Specialty HUB Site

Primary Care Spoke Sites

Key Aspects of ECHO

- Shifts location and ownership of care from specialty clinic to primary care

- Repeated case discussions and co-managed care create “learning loops”

HIV ECHO Evaluation in 3 Facilities

- RE-AIM: Focus on adoption and reach

- Identify factors influencing adoption and reach using qualitative methods

Measures

- Reach: number of Veterans with HIV ECHO consult, 2011-2014
- Veteran eligibility: 1) in local VA care with HIV diagnosis, AND 2) residence closer to primary care clinic than HIV specialty clinic
- Adoption: number of primary care clinics with any HIV ECHO consult
- Clinic eligibility: any eligible Veterans in catchment are of primary care clinic

Clinic-Level Adoption

Site A: 4 / 6 clinics (67%)

Site B: 2 / 6 clinics (33%)

Site C: 3 / 9 clinics (33%)

Reach was limited

Unique Veterans with HIV ECHO Consult

	2011	2012	2013	2014	Overall
Site A	0	17 (3.7%)	22 (4.7%)	12 (2.5%)	39 (7.3%)
Site B	0	0	0	3 (1.2%)	3 (1.0%)
Site C	0	0	7 (11.7%)	3 (5.2%)	9 (13.6%)

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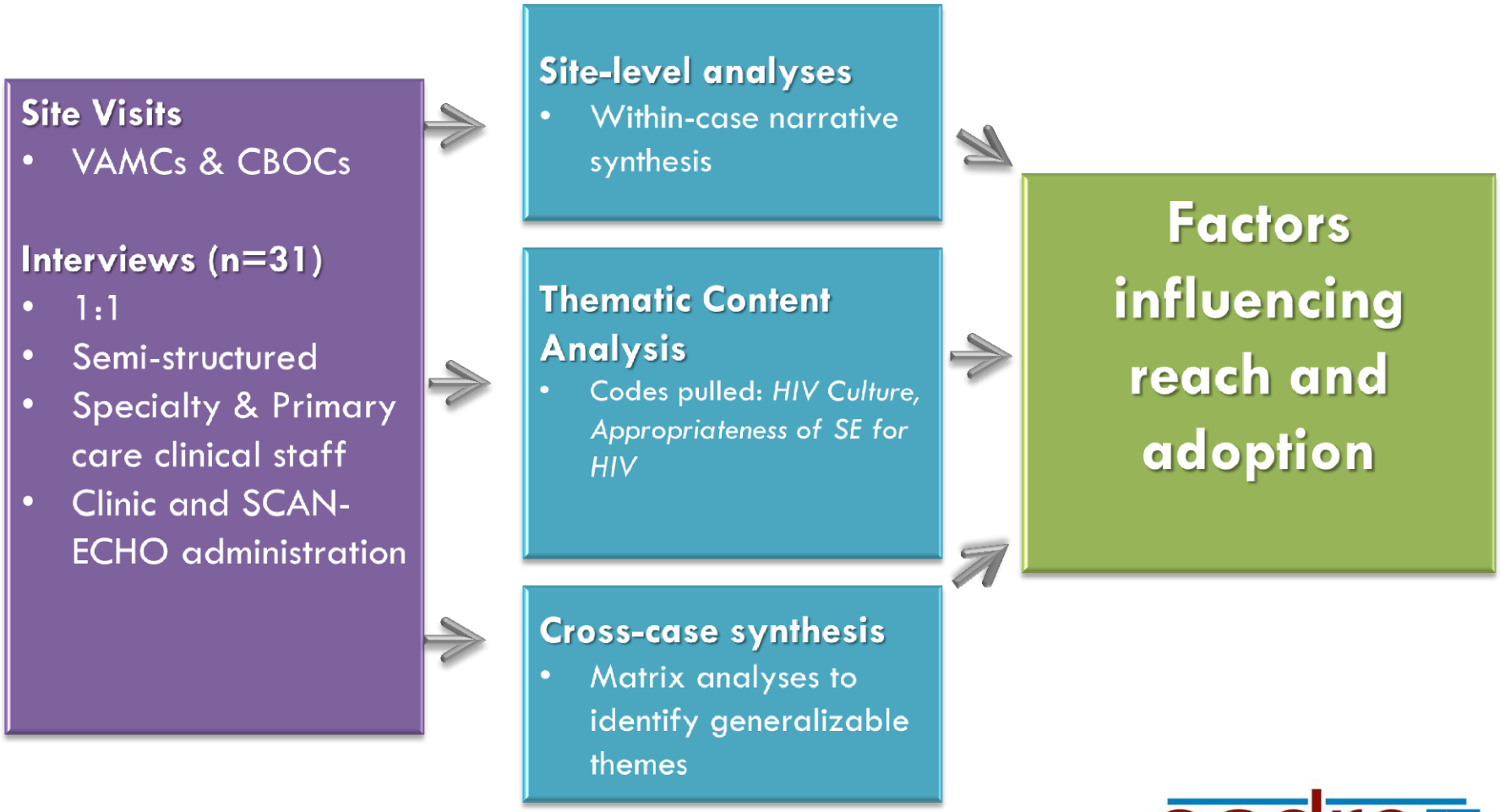
Qualitative Data Collection & Analysis



Qualitative Findings Overview

- HIV care perceived as culturally and clinically "exceptional" by generalists and specialists
- HIV specialty teams and primary care providers reluctant to transfer ownership of care
- HIV therapy cycles insufficiently frequent and rapid to drive learning loops

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HIV exceptionalism and reluctance to share care

"I think that most HIV clinics have this culture of exceptionalism and feel they have a mission in caring for this population, … because they feel committed to this mission. … primary care may not have quite that amount of time and resource to devote to each and every patient that way in the same way…." (HIV specialist)

Primary care providers often hesitant to engage in HIV care

"So I think that's really a struggle that [the HIV ECHO lead] has, specific to HIV, is it's just kind of that scary red flag that people just don't want to touch." (PCP)

HIV therapy cycles and learning loops

"…Hep C works great, because it's a very iterative-iterative process, like the longest treatment period you have someone for is a year, and now it's only a few months. And so you can work with one patient and then immediately apply everything you learned about evaluation, starting treatment, monitoring for side effects, post-treatment monitoring, and apply it to the other patient. HIV doesn't work like that. Like at best you're making, antiretroviral regimen changes maybe every few years? There's not enough iterative nature to it, I don't think. And then the prevalence isn't … high enough." (HIV specialist)

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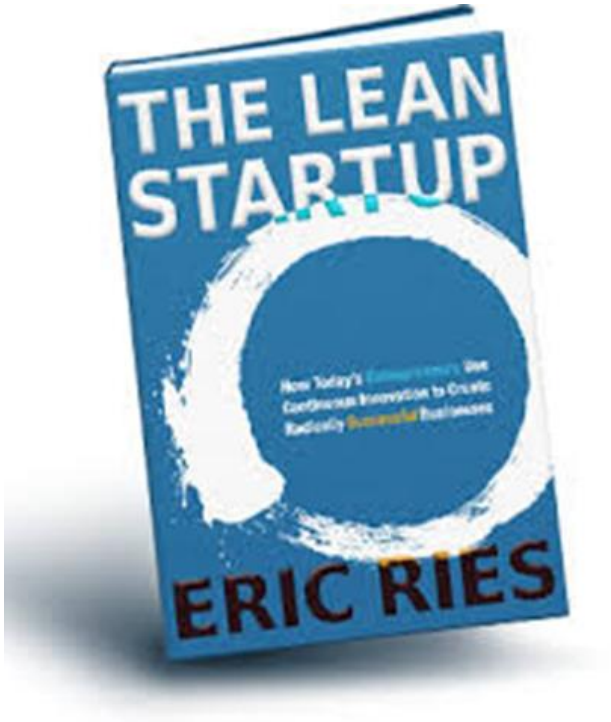
HIV ECHO Conclusions

- HIV ECHO programs had limited reach and adoption
- HIV care perceived as “exceptional” by generalists and specialists, owned by specialists
- HIV learning loops were not rapid enough to support the ECHO model
- Other telehealth models should be explored to improve access to HIV care

Managing delivery innovations as “lean start ups”



- Rapidly test and validate assumptions
- “Fail fast”. Minimum viable products.
- “Pivot”when assumptions are not validated

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Telehealth Collaborative Care (TCC)

EHR

Telephone

Primary clinic

Provider (NP/PA)

Nurse manager

Telehealth tech

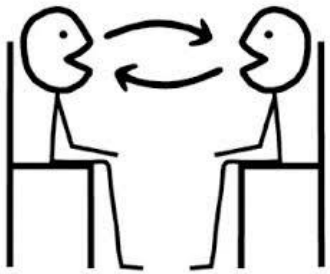
HIV Clinic

Provider

Pharmacist

Psychologist

Nurse manager



Patient

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TCC is shared care using telehealth, a care navigator, and a registry

- Team members dispersed across sites
  - Primary care team members in outlying clinics ("CBOC PACTs")
  - Primary care focuses on cardiovascular risk factors
  - HIV specialty team via clinical video telehealth from hub-site
- Central nurse care navigator
  - Work with patients to navigate care
  - Triage tasks and maintain role clarity across sites
- Registry for population management across sites

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Registry for population management

- Case finding by validated algorithm*
- Data from Corporate Data Warehouse (CDW)
- Criteria for data inclusion:
  - Prevalent drivers of risk (e.g. cardiovascular risk factors)
  - Modifiable
  - Standard terminology (LOINC, health factor definitions, etc.)

*** Backus et al, JAMIA, 16: 775-783. 2009**

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Registry: data elements

- Labs: CD4, HIV viral loads, lipids, blood glucose
- Vital signs: blood pressures
- Tobacco use from health factor
- Alcohol use by AUDIT-C
- Depression screen by PHQ

Case – February 25, 2014

59 yo man with HIV, hypertension, hyperlipidemia, chronic kidney disease, and diabetes. Lives near CBOC two hours from HIV clinic.

- Registry query: hemoglobin A1C = 11%
- Saw CBOC primary care provider, insulin started
- Met with CBOC nurse care manager for insulin education
- Video telehealth visit with HIV care team, followed by care coordination huddle including veteran, HIV provider, PACT nurse

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Veterans preferred TCC over usual care

- 41 / 43 (95%) veterans chose TCC over traveling to specialty clinic
- 2 dropped out after 18 months
- 85% Completely / very satisfied with care

Ohl et al, JGIM, 28(9):1165-73. 2013

Evaluation – select findings, N=38

	Before (%)	After (%)	p
HIV control	100	96	.99
Smoking cessation process measure	47	92	<.01
Influenza vaccination	29	96	<.01
Travel time (min / year)	320	170	<.01

Ohl et al, JGIM, 28(9):1165-73. 2013

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Veteran interviews – stigma and privacy

"I think I've come to the reality, you know, I have it. They either deal with it or they don't."

"I've never had any issues up there with anybody ever finding out (…) So, I'm not really worried about that."

"they're all professionals out there and (…) nobody should be judging one's illnesses anyway."

Ohl et al, JGIM, 28(9):1165-73. 2013

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Rural HIV care models - conclusions

- SCAN-ECHO does not adapt well to HIV care
- Limited shared-care using video telehealth is acceptable to Veterans and generalist care teams, and has potential to improve access
- Privacy and stigma issues are not deal-breakers

What next?

Office of Rural Health Promising Practices Initiative

- Delivery innovations with pilot data for feasibility, effectiveness, safety at single site (RCT not required)
- Three years of funding from ORH
- Replication by local system redesign teams at new sites, with facilitation from Rural Health Resource Centers
- Continuous evaluation during cycles of replication / scale-up

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TCC Scale-up in 4 VA networks

- Blended facilitation strategy
  - External facilitation team in RHRC
  - Local QI teams with systems redesign experience at local sites
  - Processes, resources, and experience shared across sites. Local flexibility in program stressed
- Evaluation
  - Randomized program evaluation, CBOCS randomly assigned to first or second wave
  - Mixed-methods formative evaluation focused on understanding and improving adaptation to context
  - Summative evaluation using data routinely gathered during care delivery, rolled-up in CDW

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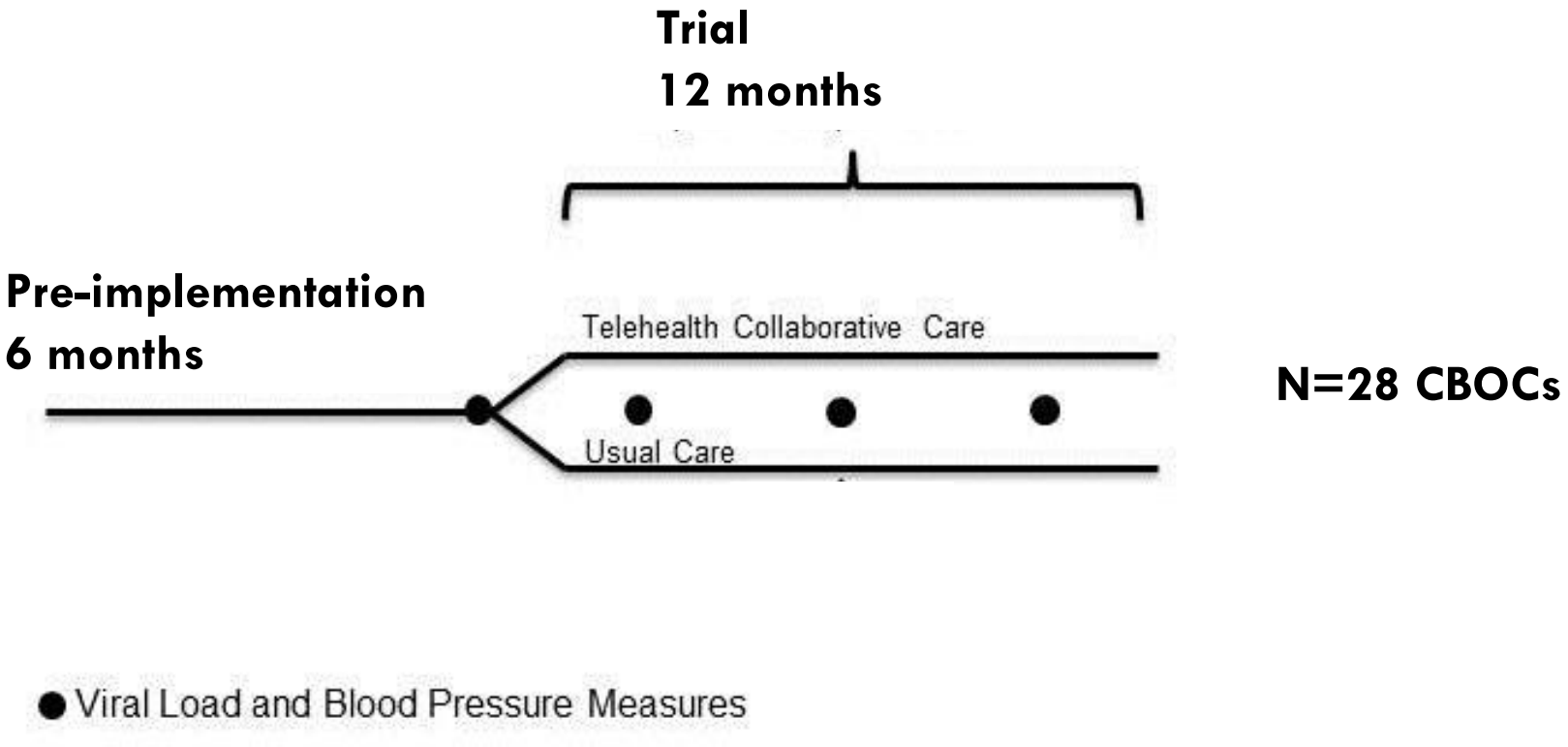
TCC: randomized evaluation design



Cluster randomization by CBOC and geographic catchment area, matching clinics on # eligible veterans and distance to specialty clinic.

Summative evaluation aims

AIM 1: Determine TCC effectiveness compared to usual care.

Hypothesis 1a: TCC will lead to non-inferior HIV viral control.

Hypothesis 1b: TCC will improve retention in HIV care.

Hypothesis 1c: TCC will reduce mean blood pressure among Veterans with HIV and hypertension.

AIM 2: Determine influence of TCC on health care utilization.

Hypothesis 2a: TCC will decrease HIV clinic visits and increase primary care visits in VHA.

Hypothesis 2b: TCC will reduce non-VHA fee basis outpatient care

HSR&D IIR #15-147-1

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Strategies for developing, scaling and evaluating rural delivery innovations

- Combine operational and HSR&D / QUERI funding
- Tinker with common building blocks (telehealth, nurse navigators, registries)
- Manage the tinkering like a “lean start up”, not like a traditional QI project
- Identify and rapidly validate your assumptions

Strategies for developing, scaling and evaluating rural delivery innovations

- Couple scale-up to evaluation to avoid rural "small N" problem
- Randomized program evaluation (stepped wedge, etc) during scale-up
- Leverage existing systems redesign infrastructure in facilities to facilitate scale up
- Pragmatic data collection: incorporate data routinely generated in care and collected in CDW

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Strategies for developing, scaling and evaluating rural delivery innovations

- If first randomized evaluations indicate, then type III hybrid I-E studies can test and optimize implementation strategies during next phases of wider scale-up
- Focus on understanding program adaptation instead of maintaining fidelity
- Rapid-cycling formative evaluation at each phase

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THANK YOU

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QUESTIONS & DISCUSSION

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