Dancing with the Devil You Know: Partnering with Delivery Systems in Implementation Science

A Case History

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Outline for this Talk

Why partner with delivery systems?

- VA QUERI – HIV/Hepatitis C as a model of partner-based research
- Projects to promote HIV testing as an example of successful partnership
No more dead mice
Where is the disconnect?

<table>
<thead>
<tr>
<th>Partners (QI)</th>
<th>Researchers</th>
</tr>
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<tbody>
<tr>
<td>Fast</td>
<td>Before grant funding runs out</td>
</tr>
<tr>
<td>Good enough</td>
<td>Robust to validity threats</td>
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<tr>
<td>Targeted to operational decisions</td>
<td>Produces generalizable knowledge Control of lines of inquiry</td>
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The Partner-Based Research Challenge

Is our audience

A other scientists and academics, 
B practitioners and policymakers, OR 
C can we serve two masters?
The Yin and Yang of Quality Improvement and Research
Community Based Participatory Research (CBPR) Model

Wallerstein and Minkler, 2008, 2010
NIH View of Translational Research

- According to the National Institutes of Health, “in order to improve human health, scientific studies must be translated into practical applications.”

Phase I:
- Bench research

Phase II:
- Clinical research
- Community research and application

Bench research → Clinical research → Community research and application
“Implementation Research is the scientific study of methods to promote the systematic uptake of clinical research findings and other evidence-based practices into routine practice, and hence to improve the quality (effectiveness, reliability, safety, appropriateness, equity, efficiency) of health care. It includes the study of influences on healthcare professional and organisational behaviour.” Implementation Science 2009, 4:18
Promoting Action on Research Implementation in Health Services (PARIHS)

Successful implementation = f (E, F, C)

- E = evidence
- F = facilitation
- C = context

Evidence:
- Research
- Clinical Experience
- Patient Experience
- Local Information

Facilitation:
- Appropriate
- Purpose
- Role
- Skills

Context:
- Culture
- Leadership
- Evaluation

Research/Implementation Pipeline

Identify Research Area

Identify Best Practice

Implement Intervention & Document outcome

Clinical Research / Guideline Development

Mainstream Health Services Research

Assess Existing Practice

Implementation Research

Phase 1
Pilot Projects

Phase 2
Small-Scale Demonstrations

Phase 3
Regional Demonstrations

Phase 4
"National Rollout"

Implementation Policy, Improved Health
Examples of Interventional Implementation Research

- Checklists reducing nosocomial infection in academic hospitals (Pronovost Critical Care 2004)
- Order sets reduce ICU mortality (Micek Critical Care 2006)
- Specialist/generalist teleconferences improve outpatient HCV treatment in rural New Mexico (Arora NEJM 2011)
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  - VA QUERI – HIV/Hepatitis C as a model of partner-based research
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VA Implementation Research Environment

- Large integrated health care delivery system involvement and support
- Electronic medical record
- National databases
- Outstanding group of clinical researchers
- Strong academic affiliations
- Intramural health services research funding programs encourage partnered research (CREATE, COIN, QUERI)
Ten QUERI Coordinating Centers

- Ischemic Heart Disease
- Chronic Heart Failure
- Diabetes
- Stroke
- HIV/Hepatitis C
- Polytrauma and Blast-Related Injuries
- Spinal Cord Injury
- Mental Health
- Substance Use Disorders
- E Health
HIV/Hepatitis QUERI Mission

Partner with VA Clinical Public Health to improve the identification and care of Veterans infected with the Human Immunodeficiency (HIV) and Hepatitis C (HCV) viruses.
Mission of CPH (10P3B): Protect Veterans' health through public health strategies

- Surveillance and epidemiology
- Underserved populations
- Disease prevention, risk reduction, and health promotion
- Public health policy

Not just HIV -> HCV, other conditions.
Know your partner
QUERI-HIV/Hepatitis - VHA COLLABORATIONS

Clinical Management & Provider Groups

Public Health Strategic Healthcare Group

Multi-VISN QI Leadership

Multi-VISN QI (VISN 1,3,16,22 Directors and CMOs)
Rapid Test (VISN 22; K. Clark, Director; T.Osborn, QMO)
HITIDES (VISN 16 Director)

Multi-VISN QI (M. Agarwal)
HITIDES(M. Shelhorse)

Education Committees

VISN QI (VISN 22, CPC)

Multi-VISN QI, Rapid Test,
Rapid Test in ER, Homeless Test (J. Burgess; R. Valdiserri; D. Ross; J. Halloran)
Casefinding (L. Mole & L. Backus)

Multi-VISN QI (All VISN 22 sites: Primary Care, ITS, HIV managers)
HITIDES (Little Rock, Houston, Atlanta HIV clinics)
Rapid Test, Rapid Test in ER (VA GLAHS primary care group)

Multi-VISN QI
(IT managers at all VISN 3 and VISN 16 sites)

Office of Information and Technology, Facility-based IRMS

Other HIV and HCV Study Groups

QUERI Centers

Center for Health Quality, Outcomes and Economic Research
Center for the Study of Healthcare Provider Behavior
Patient Centered HCV

VACS ACTION Network

Centers of Excellence

Office of Patient Care Services

Multi-VISN QI (VISN 1,3,16,22 Directors and CMOs)
Rapid Test (VISN 22; K. Clark, Director; T.Osborn, QMO)
HITIDES (VISN 16 Director)

Multi-VISN QI (M. Agarwal)
HITIDES(M. Shelhorse)

QUERI Resource Center (S. Asch)
HIV/HCV QUERI Structure

Clinical Public Health
- VA Palo Alto
  - Economics Core
  - Analytic Core

Executive Committee
- VA Bedford
  - Qualitative Core
  - Economics Core
QUERI-HIV/HEP Goals

- Goal 1: Better Disease Identification
- Goal 2: Better Chronic Disease Management
- Goal 3: Improve Access and Equity
Key elements of collaboration

- Communication
- Sharing agenda setting / staff
- Shift to intervention and cost studies
- Expansion of QUERI scope to match Clinical Public Health
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- Clinical Research / Guideline Development
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- Phase 1: Pilot Projects
- Phase 2: Small-Scale Demonstrations
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HIV Case Identification – The Problem in 2005

- Benefits of earlier diagnosis of HIV infection
  - ↓ mortality, ↓ hospitalizations, ↓ transmission

- Many HIV patients do not know their status
  - CDC: 25% of the 1.1 million US HIV+ unaware
  - VA: no testing in 50 – 70% with known risk factors
  - 50% of newly diagnosed at late stage (< 200 CD4)
Screening and Testing for HIV is Cost Effective

CDC recommends routine offer of HIV testing if prevalence of undiagnosed infection is > 0.1%

QALY without consideration of HIV transmission

QALY with consideration of HIV transmission

Testing in VA is cost effective even at very low HIV prevalence

Sanders GD et al. NEJM. 2005; 352:570-585
Prevalence of Undiagnosed HIV Infection in VA Outpts

6 Sites 2000 - 2002

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2005: Impediments to HIV Testing in the VA

- **Organizational barriers**
  - Written informed consent & pre-test counseling requirements
  - Constraints on provider time
  - Limited opportunity for timely, in-person post-test notification
  - Uncertain capacity to manage newly diagnosed patients

- **Provider behaviors**
  - Incomplete recognition of HIV risk factors
  - Reliance on trained counselors to order HIV tests
  - Discomfort with HIV counseling
  - Lack of prioritization of HIV testing
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Implementation Policy, Improved Health
Methods - Interventions

- Organizational changes
  - Digitized written consent
  - Streamlined, scripted counseling
  - Telephonic notification of negative test results
  - Assured assistance in counseling & HIV clinic f/u for new HIV+ pts

- Provider activation
  - Academic detailing & social marketing: promote desired behaviors

- Audit-feedback
  - clinic level HIV testing rates

- Decision support
  - electronic clinical reminder for at-risk patients
Electronic prompt for identification and testing of patients at-risk for HIV infection

Reminder Resolution: Screen for HIV Infection

- Click here to see details of this reminder (reason that it is due)
- Order HIV Serology (verbal consent required)
- Previously tested for HIV
- Refuses HIV testing
- Screening for HIV Not Applicable / Not Necessary

EVALUATE FOR TESTING FOR OTHER CHRONIC VIRAL INFECTIONS

- Click here to display prior Hepatitis B and Hepatitis C serology

<No encounter information entered>
Engaged Clinical Partners

- Presentations to leadership: done by QUERI-HIV
- Installation of clinical reminder: coordinated by QUERI-HIV
- Acquisition of leadership support: assistance provided by QUERI-HIV
- Identification of local champion
- IRB submission: prepared by QUERI-HIV
- Audit feedback reports: generated by QUERI-HIV
- Provider activation: tools developed and supported by QUERI HIV
- Removal of organizational barriers: assistance provided by QUERI-HIV
Handout package

VA Healthcare System

Tips for Proposing HIV Testing

- Would you like a free HIV test?
- As a veteran, you’re entitled to an HIV test.
- Along with other regular tests - blood pressure, cholesterol, etc., we’re offering routine HIV testing, do you want to check for HIV?

Providing HIV Education

- Testing is confidential and voluntary
- Cannot determine status without testing
- If positive, we can provide confidential care

Delivering Negative Test Results

- HIV antibodies not detected at this time
- Can take up to 3 months after exposure for detection
- Discuss safe behaviors and retest in 3 months

Delivering Positive Test Results

- Explain: HIV infection = AIDS (CD4 x 200)
- Benefits of active treatment (HAART)
- Lifestyle: diet & exercise, drug & alcohol use
- Safer behaviors: sexual & drug use
- Support: social, emotional, mental health
- Normalcy: neutral, scared, angry, confused
- Call 911 if you feel you might hurt yourself

VA Healthcare System

Documenting Verbal Consent

The HIV clinical reminder automatically enters:
"The patient has verbally consented to HIV testing. An HIV antibody test has been ordered." in the NOTES section.

Discussion Points for Patients

- The ACP recommends that all adults be offered HIV testing
- Early HIV is asymptomatic and is highly treatable
- 21% of HIV-infected persons in the U.S. are undiagnosed
- 50 - 70% of at-risk VA patients haven’t been tested
- 65% of veterans are diagnosed after advanced HIV disease
- VA surveys show undiagnosed HIV infection in 9.5% of 65 to 74 year olds
- Many OIF/OIF veterans are at high risk due to age, drugs and alcohol, non-use of condoms
- Timely HIV care keeps patients healthy and viable

References:

Dusty Jones, M.D.: (505) 505-2000 Pager #123

Pocket card

Overview Sheet

Which of these people should get an HIV test?

All of them

HIV testing can save your life.

Take control. Ask your provider for the test.

www.hiv.va.gov

Poster & Pamphlet

GET CHECKED

just to be sure...
March 2011

VAMC and Associated Clinics

Dear Primary Care Providers and Staff:

The VA is evaluating the effectiveness of a clinical reminder-based intervention for increasing HIV testing rates in 11 facilities in VISNs 1, 3, and 16. Originally, a risk-based clinical reminder was used to identify patients who warranted HIV testing. More recently all sites, including 3 new sites, substituted a non-risk based reminder which prompts providers to offer testing to all untested patients. During the first 3 months, 45,000 routine testing reminders were resolved at active sites; nearly a 5 times increase in the rate of resolution.

The graphic below depicts the quarter-to-quarter changes in screening for all primary care patients following the change-over to the non-risk HIV testing clinical reminder.

- Quarterly feedback
- HIV testing rate
- Rate of clinical reminder resolution

On behalf of the QUERI-HIV team, thank you for your continued efforts in making HIV testing a priority among your patients. The success of this intervention is only possible with your continued contributions to this important health issue.

Please contact me if you have any questions or concerns about this project.

Herschel Knapp, Ph.D.
Implementation Plan

In-Person Launch Meeting

• Met with facility leadership, e.g., COS and leadership of nursing, laboratory service, ambulatory care and primary care programs

• Promoted program at primary care team meetings
  • Consent process
  • Emphasize that HIV testing is not a performance measure
  • Tips for proposing HIV testing

• Provide educational materials

• Emphasized use of site-wide rather than provider-specific feedback
Program implementation yields ~2-fold increase in aggregate HIV testing rate
Incident Rate of HIV Testing (Month -1 to 5) vs Timing of Provider Activation Program

Substantial increases in HIV tested preceded implementation of the provider activation campaign at HCS E.
Summary of Phase I-II Intervention Results

- Implementation of this multi-modal intervention more than doubled HIV testing rates in 4 facilities.
- Increases in testing were accompanied by increases in HIV case identification (data not shown).
- At the two original sites, the increase in HIV testing rates were sustained over a two year period of time.
- Marginal costs = $40,000 - $70,000 per quarter.
- Modest additional contribution of provider activation program.
**Research/Implementation Pipeline**

1. **Identify Research Area**
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3. **Implement Intervention & Document outcome**
4. **Clinical Research / Guideline Development**
5. **Mainstream Health Services Research**
6. **Assess Existing Practice**

**Phases**
- **Phase 1**: Pilot Projects
- **Phase 2**: Small-Scale Demonstrations
- **Phase 3**: Regional Demonstrations
- **Phase 4**: "National Rollout"

**Implementation Policy, Improved Health**
Phase III Implementation Trial

- Assess generalizability of intervention to VA facilities with differing structural characteristics

- Evaluate the added value of “provider activation” (academic detailing, social marketing) campaigns
  - Facilities randomized to receive extensive vs modest support for conduct of “provider activation” program
Testing of Central vs. Local Activation

Central Activation
- National project staff to provide extensive support for the provider activation campaign

Local Activation
- Local staff to be encouraged to conduct their own provider education activities

Matched facilities in 3 VA regions by breadth and depth of subspecialty services, size, academic affiliations and randomly assigned
LIFE TAKES DETOURS
A Memoir
The Real World Intervenes

- **October 2008**: Project funded
- **June 2009**: Project launched at 3 sites
- **August 2009**: VA HIV testing policy changes
  - Verbal agreement replaces written informed consent
  - Pre- and Post-Test counseling requirements removed
  - Routine, once per lifetime testing of all patients, not just those at risk
Impediments to HIV Testing in the VA

- Organizational barriers
  - Informed consent & pre-test counseling requirements
  - Constraints on provider time
  - Limited opportunity for timely, in-person post-test notification
  - Uncertain capacity to manage newly diagnosed patients
- Provider behaviors
  - Incomplete recognition of HIV risk factors
  - Reliance on trained counselors to order HIV tests
  - Discomfort with HIV counseling
  - Lack of prioritization of HIV testing

Verbal consent and routine testing removes 2 barriers
Pre- vs Post-Intervention Risk-Based HIV Testing Phase III Project

Increase in Testing

12% 78% 158%

HIV Testing Rate

Pre-Intervention Post-Intervention

No Implementation Implementation Implementation

Control Sites Local Implementation National
Pre- vs Post-Intervention Routine HIV Testing Phase III Project

Control Sites
No Implementation

Local Implementation

Central Implementation

Increase in Testing

50%

390%

556%

HIV Testing Rate

Pre-Intervention

Post-Intervention
Summary of Phase III Results

- Results replicated in NE and South Central facilities
  - Risk-based testing increased by 78 – 158%
  - Routine testing increased by 390 – 556%
- Programs with central support perform better
- Largest, wide-scale analysis of a structured program to promote routine HIV testing in primary care
Limitations and Remaining Work

- Sustainability remains to be determined
- Relationship between program effectiveness and facility structure and culture
- Economic analysis
- Rate of new case finding remains to be determined
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Implementation Research

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Implementation Policy, Improved Health
Lessons from Dancing with the Devil You Know

• Building research enterprise for partner eased by relationship planning, programmatic funding
• Partnership improves research and makes “dead mouse research” less likely
• Researchers can serve two masters
  • Project produced generalizable conclusions about implementation in addition to serving institutional aims
Acknowledgements

- VA HSR&D funding: QUERI core funds, SDP 06-001, SDP 08-002
- VA Office of Public Health: moral, financial and logistical support
- Local leaders, clinical champions, primary care providers, facility leadership in VISNs 1, 3, 16 and 22
- QUERI-HIV/HEP colleagues: Matt Goetz, Allen Gifford, Jane Burgess, Tuyen Hoang, Hersch Knapp, Henry Anaya and many, many others
Pre-vs Post-Intervention

Monthly Risk Based Testing

Risk-Based HIV Testing

Month: M-2, M-1, M1, M2, M3, M4, M5, M6

Monthly HIV Testing Rate

Local, Central

1/26/12 data revision
Pre-vs Post-Intervention
Monthly Routine Testing

1/26/12 data revision
Pre- vs Post-Intervention
Monthly Routine Testing

Routine HIV Testing

Monthly HIV Testing Rate

Intervention Month

1/26/12 data revision
Questions/Comments?

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