Using Data & Information Systems in Partnered Research

Session 4:

The HEART Program Evaluation: Partnering with National and Local Leaders to Improve Healthcare Worker Resilience

May 17, 2022

Complementary Integrative Heath Evaluation Center (CIHEC)
Evaluation Team: Susan Stockdale, Stephanie L. Taylor, Briana Lott

Intervention Team: J. Greg Serpa, Caroline Prouvost (HEART co-developers)

Partners/Funding: VA Office of Patient Centered Care and Cultural Transformation (OPCC&CT) and VA QUERI (PEC 16-354)

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ed Research Series

Using Data & Information Systems in Partnered Research Cyberseminar Series

Presentations from the field focusing on VA data use in quality improvement and operations-research partnerships.

Sessions cover…

- Use of VA data and information systems in QUERI Projects and Partnered Evaluation Initiatives

- Operational data resources and QI-related data

- Challenges in using and managing multiple data sources

- VA resources to support data use

- Experiences working within operations/research partnerships

UPCOMING PARTNERED RESEARCH SESSIONS
Third Tuesday of the month | 12:00 - 1:00 PM ET

Date	Topic
6/21/22	QUERI Rapid Response Teams: Leveraging VA Partnerships for Rapid Data Collection and Analysis

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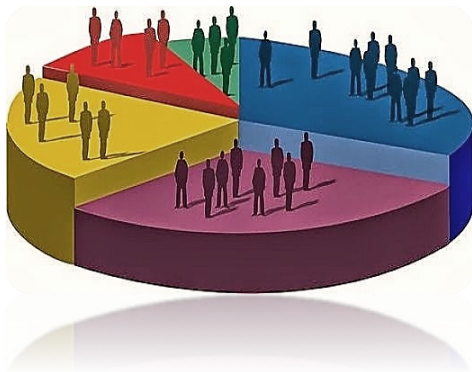Access code: 199 009 5117

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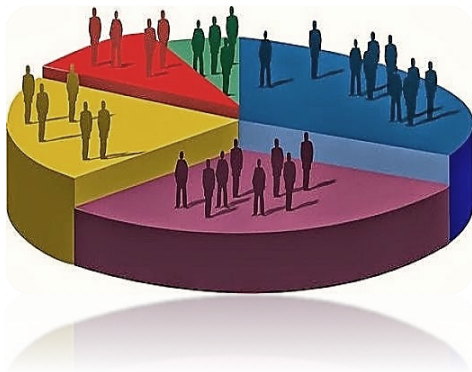Please click here for today's live captions

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Poll #1:

*What is your primary **role** in projects using VA data?*

- Investigator, PI, Co-I

- Statistician, methodologist, biostatistician

- Data manager, analyst, or programmer

- Project coordinator

- Other – please describe via the chat function

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Poll #2:

How many years of experience working with VA data?

- None – I'm brand new to this!
- One year or less
- More than 1, less than 3 years
- At least 3, less than 7 years
- At least 7, less than 10 years
- 10 years or more

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CSHIIP
Center for the Study
of Healthcare Innovation,
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CIHEC
Complementary and Integrative
Health Evaluation Center

Whole
Health
for Life

- Leaders recognize that burnout is a pervasive issue that may be contributing to turnover.

- High turnover is costly, impacts patient care.

- Mindfulness-based resiliency is an evidence-based practice to help providers/staff cope with burnout.

Purpose of the HEART Project

- To design and evaluate an intervention aimed at improving:
  - skills to alleviate burnout (resiliency, stress management, and self-compassion).
  - burnout
  - workforce job satisfaction and intent to remain in VA

- Ensure that the intervention will be feasible to implement in a clinical setting with minimal disruption to clinic flow
  - Especially challenging with multiple and unpredictable COVID surges

Objectives of This Presentation

- Describe the HEART intervention that Dr. Greg Serpa and his colleagues designed and its modification in collaboration with operations partners

- Present evaluation design considerations and describe the process of working with clinic partners

- Share preliminary results and next steps

The (Virtual) HEART Intervention

- 7-week virtual program for providers and staff
- Teaches self-care and patient interaction skills including mindfulness, self-compassion, finding one's purpose and holding human suffering
  - PACT clinicians and staff (MDs, MSAs, RNs, LPNs, SWs, PharmDs, etc)
  - 4 PC practices from 2 LA and Long Beach VAs
- Includes:
  - 6 weekly one-hour staff resilience and self-care trainings during clinic hours
  - 1 3-hour wellness retreat
  - Handouts and audio links to encourage home practice
  - Weekly wellness newsletters

HEART: Core Elements

- HEART was informed by my clinical work as a Mindfulness Based Stress Reduction (MBSR) and Mindful Self-Compassion (MSC) teacher as well as work as a Whole Health National Education Champion

  o Challenging provider shaming

  o Mindfulness

  o Self-Compassion

  o Whole Health: mapping your MAP

  o Healer's Journey

  o Gratitude

Mindfulness In Healthcare Settings

- Meta-analysis of 41 studies of mindfulness-based courses consistently found small to medium effect sizes for burnout, stress and mindfulness (Lomas et at., 2019)

- Yet the VA CALM study (Serpa et al., in press) found large effect sizes on all measures
  - Likely distinct populations (mindfulness naïve vs practitioners with a daily practice)
  - Differences in duration and intensity of the intervention
  - "Dose makes a difference"

HEART Development and Pandemic Pivot

- 2017 Homeless Primary Care team requested an employee intervention to reduce staff attrition
  - o Was well received by HPACT, but not rigorously evaluated
- In January 2020, launched a 15-hour version of HEART in primary care face-to-face in a multisite study… then COVID hit
- National and local partners encouraged development and testing of a less time-intensive intervention that could be delivered virtually
- Revised HEART into a 9-hour virtual training
  - o Pros of virtual delivery: became feasible, easier to access, less clinic disruption
  - o Cons of virtual delivery: harder to cultivate a healing space, distractions, distractions, distractions… and pandemic detailing

Collaboration with VA Los Angeles & Long Beach PC Leadership

- Leveraged existing relationships at 4 levels to seek interest and buy-in:
  - VACO / OPCC&CT- Are you interested in our CIHEC QUERI evaluating this?
  - Strong support from VISN 22 Medical Director for fostering well-being of frontline workers
  - GLA and Long Beach Primary Care Leadership recognized the need, signaled buy-in to PC clinic leaders
  - GLA and Long Beach Frontline leaders willing to work with us to incorporate into clinic workflow

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Incorporating activities into PACT clinic workflow

- Met with frontline PC and nursing leaders to discuss options for intervention delivery
  - Randomization be feasible?
  - Randomize individuals vs. teamlets (n=4) vs. entire PACT (4-5 teamlets, n=16-20)? Which PACTs?
  - Did clinic have designated weekly meeting time for us to deliver sessions (NOT during lunch) or would they have to block clinic time (90-day lead-time)?
- Implementation tailored to each site, resulting in quasi-experimental "institutional cycle" design
  - For clinics with multiple large PACTs, randomized entire PACT
  - 1 site with severe understaffing contributed only 2 teamlets

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Methods – Program Delivery and Evaluation Considerations: Achieving Validity

- Sample size goal: 100+ (50 intervention, 50 control)
- Internal validity – Did the HEART intervention achieve the desired outcomes?
- External validity – Can HEART's effects be generalized to others?
- True experimental designs best for achieving internal and external validity
  - o Not feasible to randomize individuals, too complicated to execute in clinic setting, risk unplanned exposure of control group
  - o Concerns with ethics, fairness of only some receiving the intervention
  - o HEART was designed to be delivered to teams, practiced within teams

Methods – Design Decision Was a Direct Result of Operation Partners' Input/Needs

- Opted for quasi-experimental, recurrent institutional cycle ("patched-up) design
  - o Group-level randomization of teams (when possible)
  - o Pre- and post-assessments
- Combines longitudinal and cross-sectional approaches
  - o Cross-sectional comparison between post- for group 1 and pre- for group 2
  - o Longitudinal comparison of pre- vs post- for all groups
- Biggest risks to validity with this design – regression to the mean, interaction of selection and the treatment

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HEART Evaluation Design - cross-sectional comparison

Fall 2021 Wave	October 2021	Oct 25, 2021 thru Dec 20, 2021	Dec 2021 – Jan 2022		
Group 1 - PACT	Pre-assessment	HEART	Post-assessment		
Group 2 - HPACT	Pre-assessment	HEART	Post-assessment		

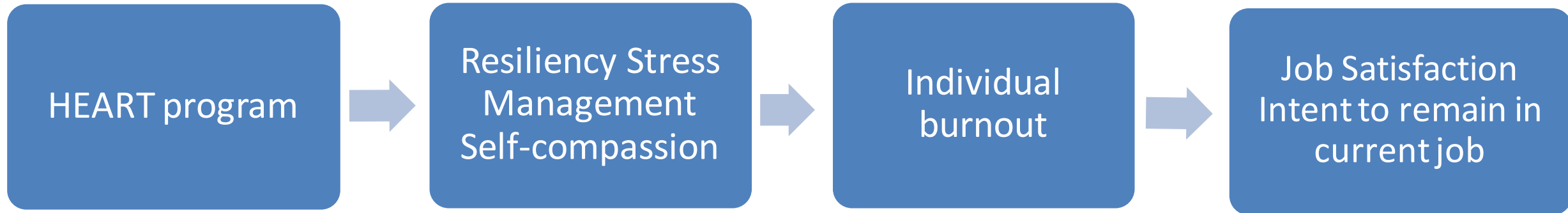| Winter 2022 Wave			Dec 2021 – Jan 2022	Jan 24, 2022 thru March 22, 2022	March-April 2022
Group 1 – PACT (2 sites)			Pre-assessment	HEART	Post-assessment
Group 2 - HPACT			Pre-assessment	HEART	Post-assessment

HEART Evaluation Design - longitudinal comparison

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HEART Program Conceptual Model Informing Evaluation

HEART program → Resiliency Stress Management Self-compassion → Individual burnout → Job Satisfaction Intent to remain in current job

- ## Key measures:
  - o Freiburg Mindfulness Inventory, Brief-resilience scale, Neff's Self-Compassion scale, Perceived Stress Scale-4, AES questions on job satisfaction and turnover, abbreviated Maslach Burnout Inventory
- ## Post assessment survey open ended items asking:
  - o "How have you benefited from the program?"
  - o "How can we improve the program?"

Methods - Quantitative Analyses

- Longitudinal analysis: pre vs post for 2 cohorts combined
  - Group t-tests (scales), cross-tabulation with chi-square (ordinally measured items)

- Cross-sectional analysis: Cohort 2 pre-test serves as control group, compare against post-test for Cohort 1
  - Regression (OLS for indexes, logistic for dichotomous outcomes) with predictors for intervention and attendance

- Preliminary analysis: unadjusted results

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Results – Baseline Sample Characteristics

Characteristic	Cohort 1 (n=45)	Cohort 2 (n=50)	Total (n=95)
Female	71%	82%	77%
White, non-Hispanic	33%	27%	29%
Age less than 35 years	48%	20%	33%
Job title (32 in Cohort 1 and 36 in Cohort 2 answered)			
PCP (all NPs)	13%	14%	13%
RN/RNCM	16%	22%	19%
LVN	19%	19%	19%
Clerk	13%	8%	10%
Other	41%	36%	37%
Full-time	98%	92%	95%
VA tenure less than 3 years	53%	36%	43%
Engage in regular mindfulness practice	18%	22%	20%
"Some/a lot" of previous formal training in mindfulness	64%	61%	63%

RESULTS – HEART ATTENDANCE

# Sessions	Cohort 1 % Attending n=56	Cohort 2 % Attending n=75	Total n=131
0	20%	31%	26%
1	16%	3%	8%
2	5%	11%	8%
3	5%	3%	4%
4	13%	12%	12%
5	11%	15%	13%
6	18%	21%	20%
7	14%	5%	9%

- Many invited completed baseline survey
- 26% did not attend any sessions
- 42% attended 5 or more sessions

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Program recipient comments from post-survey

*"I do believe **this will make a change in my personal life for the better**. To be fully honest, I can try to put some of this into play with work but at times, **it's too hectic/short staffed to take a min out of the day and use the techniques provided**."*

*"**It reminded me of what others are going through**, being mindful of what I am going through, and that self-appreciation is a very important aspect **and how you will also affect those around you**."*

*"Self-compassion session was incredibly enlightening and helpful. **I plan to incorporate that during challenging times**, and also do mindfulness meditation regularly"*

More Comments

"This program **helped me deal with some levels of burnout I wasn't fully aware that I had**, and has helped me be more compassionate to myself as well as my patients. I have found that I am **better able to listen to veterans and be open to their feelings**. This **makes sessions with patients more rewarding for both of us**."

"This program is giving me the tools necessary to deal which very stressful situations such as my job, living in a major city and a pandemic world. **I have benefited mostly from this program, by just getting the recognition that I deserve as a frontline worker** helped me."

"I think this program **teaches skills and encourages reflection in a very healthy way**. My only concern is that **I hope it won't be a "one and done" program where 'now primary care is fixed forever' is the attitude**."

Results – Longitudinal Comparison (intervention vs control)

- Both cohorts combined: N = 94 for pre-assessment, 62 for post-assessment

- Trends were in the right direction, but not statistically significant
  - Resiliency (higher is better: β = .04)
  - Perceived stress (lower is better: β = -.39)
  - High Emotional exhaustion (lower is better: odds ratio = .75)
  - Single item personal accomplishment from AES (lower is better: intervention = 18.5%, control = 26.0%)
  - Job satisfaction (satisfied/very satisfied: Odds ratio = 1.39)
  - Organizational satisfaction (satisfied/very satisfied: Odds ratio = 1.14)

Results – Cross-sectional Comparison (pre vs post)

- N = 28 for intervention-group, 49 for control- group
- Trending in right direction (intervention effectiveness), but NS
  - Resilience (higher is better: intervention mean = 3.03, control mean = 2.95)
  - Perceived stress (lower is better: intervention mean = 9.9, control mean = 10.8)
  - High emotional exhaustion (intervention = 17%, control = 22%)
  - Single item personal accomplishment from AES (lower is better: intervention = 18.5%, control = 26.0%)
  - Satisfied with job (intervention = 82.7%, control = 72.3%)
  - Satisfied w organization (intervention = 65.5%, control = 63.8%)

Summary

- Main outcomes= NS

- Possible explanations:
  - Not enough power to detect small effects due to sample size
  - Omicron surge Dec 2021 – March 2022
  - Both cohorts had high previous exposure to meditation/mindfulness (60-64% at baseline reported at least some)
  - Self-selection based on interest, experience with mindfulness

Hopeful Next Steps

- ## More analyses
  - o Examine whether "dose" (number of HEART sessions attended) makes a difference
  - o Adjust for individual characteristics, pre-intervention experiences with meditation/mindfulness
  - o Subgroup analyses (if n permits, for example, comparing PCPs to nurses)
  - o Check external validity – possible interaction of selection and treatment (people with higher attendance may have been more receptive and/or had more previous exposure)
- ## If found effective, in FY23-24 we (CIHEC QUERI PEI) might use and evaluate a train the trainer format (10 VAMCs)

Stay Tuned!

Acknowledgements

The evaluation was conducted by a team in our Complementary and Integrative Health Evaluation Center, a **QUERI PEI** (16-354)

Additional HEART Team Members: Eric Apaydin PhD (Analyst), Briana Lott MPH (Coordinator)

Operational Partners:

VA Office of Patient Centered Care and Cultural Transformation

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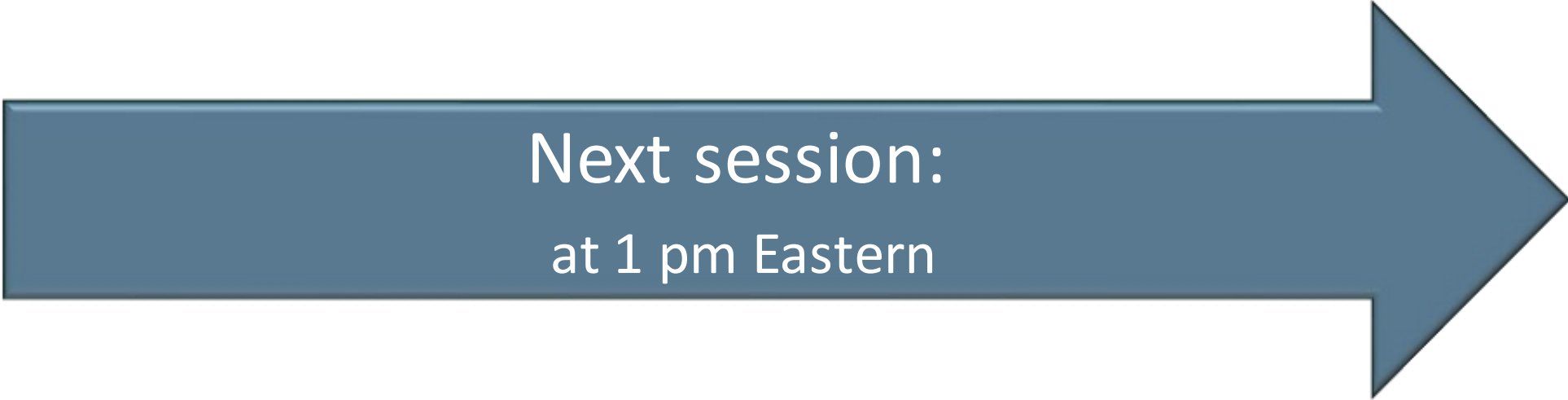
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THANK YOU!
Questions?

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Next session:

at 1 pm Eastern

QUERI Rapid Response Teams: Leveraging VA Partnerships for Rapid Data Collection and Analysis

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Partnered Research
BONUS SLIDES

Resources for *VA Data Users*

Quick Guide: Resources for Using VA Data	https://vaww.virec.research.va.gov/Toolkit/QG-Resources-for-Using-VA-Data.pdf (VA Intranet)
VA Information Resource Center (VIReC)	https://vaww.virec.research.va.gov/Index.htm (VA Intranet)
VIReC Cyberseminars	https://www.virec.research.va.gov/Resources/Cyberseminars.asp
VHA Data Portal	https://vaww.vhadataportal.med.va.gov/Home.aspx (VA Intranet)
VA Informatics and Computing Infrastructure (VINCI)	https://vaww.vinci.med.va.gov/vincicentral/ (VA Intranet)
Health Economics Resource Center (HERC)	https://vaww.herc.research.va.gov (VA Intranet)
Corporate Data Warehouse (CDW)	https://vaww.cdw.va.gov/Pages/CDWHome.aspx (VA Intranet)
Center for Evaluation and Implementation Resources (CEIR):	https://www.queri.research.va.gov/ceir/default.cfm

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