Strengthening Organizations to Implement Evidence-Based Clinical Practices

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Study team

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VISN leaders

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Study aim

- To implement & evaluate an organizational model hypothesized to strengthen the ability of healthcare organizations to bring evidence-based clinical practices in routine operations.

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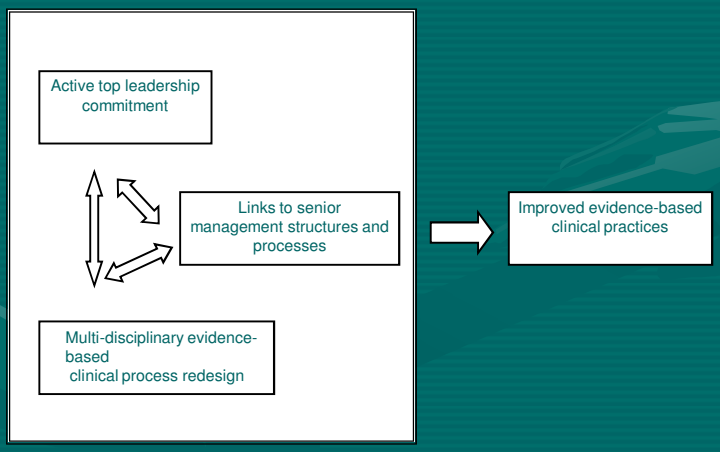
Organizational model tested



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Examples of operational elements of model

- Senior leadership commitment
  - Set high expectations for improvement
  - Invest own time on improvement-related activities
- Linkages to senior leadership
  - Appoint a leadership champion
  - Identify clear path for team reporting to senior leadership for accountability & support
- Multi-disciplinary evidence-based redesign team
  - Appoint members from affected disciplines & units
  - Use systematic methods to analyze processes & performance

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Study questions

- Is the organizational model implemented with high fidelity to the model design?
- Are medical centers that implement the model with high fidelity more successful in improving performance of a targeted evidence-based clinical practice than medical centers that implement fewer elements?
- Why is the organizational model implementation successful or not successful?

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Study design

- Designed in collaboration with directors and chief medical officers of 3 participating VISNs, or Networks, in Dept of Veterans Affairs (VA)
- Mixed-methods pre-post comparison group intervention in 16 medical centers in 3 networks
  - 1 Network randomly selected to implement the organizational model
  - Other 2 Networks served as comparison group

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Clinical focus is hand-hygiene

- Clinical redesign process component required specific clinical focus to engage staff
- Compliance with evidence-based hand-hygiene guidelines evidenced-based and high priority:
  - Fundamental aspect of infection control
    - One of the simplest yet most effective processes shown to reduce nosocomial infections
  - Requirement of The Joint Commission
  - New high priority for improvement in VA at time of study design

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Intervention in 7 medical centers

- Initial site visit for introduction of the project and assessment of baseline state of the model components;
- Follow up to work with site to complete implementation plan
- Repeat visits/phone calls every 4-6 months over 2 ½ years
- VISN-wide support
  - Shared learning groups monthly
  - Leadership consortium quarterly

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Reference slides

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Four data sources

- Organizational-model implementation fidelity ratings
  - fidelity of implementation
- Observations of hand-hygiene compliance
  - compliance rates
- Semi-structured interviews during site visits
- Site visit impressions journals
  - factors affecting implementation fidelity

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Fidelity of implementation

Data source: Ratings and narrative evidence of fidelity for each model element completed by site-visit research team at end of each visit

Measures:

- Ratings on a 0-4 scale (0= element not present; 4= element in place and consistently used as intended)
  - Component scores created by aggregating elements and calculating an unweighted mean
  - Overall site fidelity ratings calculated mean of 3 component scores
- Narrative evidence analyzed qualitatively by cross-site comparisons structured by fidelity instrument

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Hand-hygiene compliance

Data source: Observations of hand-hygiene compliance measured through structured observations by medical center staff

Measures:

- Percent compliance for each observation period at site level.
- Effect size of improvement in compliance calculated by comparing the baseline 3-month periods to the last 3-month periods of the study
- Statistical significance tested through a weighted least squares regression model with:
  - time (i.e., month) as independent variable
  - compliance percent as dependent variable
  - sample size in each data collection period as weight.

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Factors affecting fidelity

Data source: Notes from semi-structured interviews and impressions journals completed by research team during site visits

Measurement: Notes coded by members of team who did **not** visit the particular site being coded

- Thematic analyses beginning with individual site cases
- Data organized into matrices for cross-site comparisons

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Limitations

- Implementation in one Network in VA
- Hand-hygiene observations done locally
- Different team members interacted with each site; thus the intervention team actions might have differed in unmeasured ways

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Study implications

- Confirms expectations that implementation of EB practices that cut across multiple processes of care is a complex process with many possibilities for failure
- Implementation is strengthened by presence of 3 model components that interact and are mutually reinforcing:
  - Active leadership commitment to improving the targeted practices,
  - Robust clinical process redesign to engage staff and incorporate evidence-based practices in routine operations
  - Links to management structures and processes to support, align and integrate redesign
- Implementation is strongly influenced by organizational elements and context

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