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# Measuring Implementation Strategies to Inform Hepatitis C Quality Improvement: Lessons from the Field

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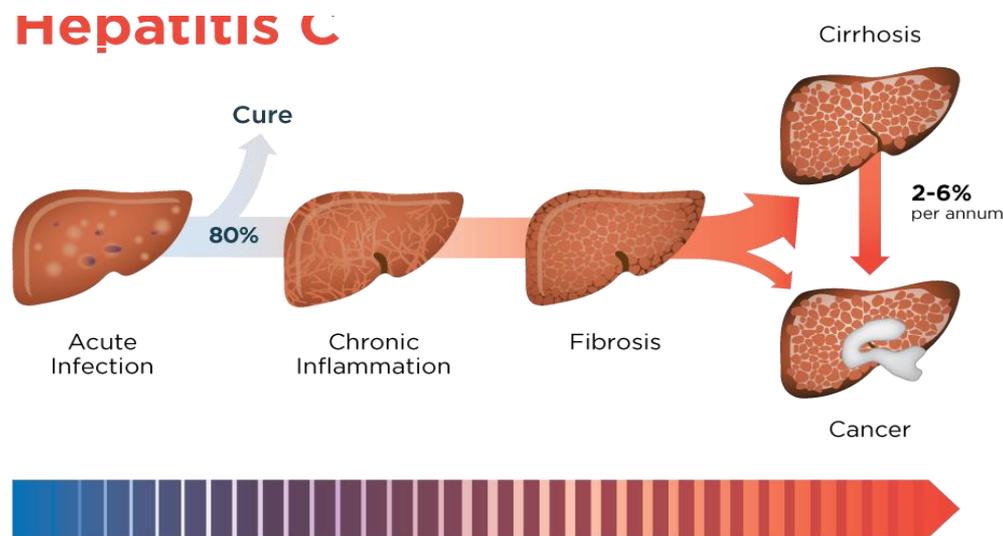
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# Outline

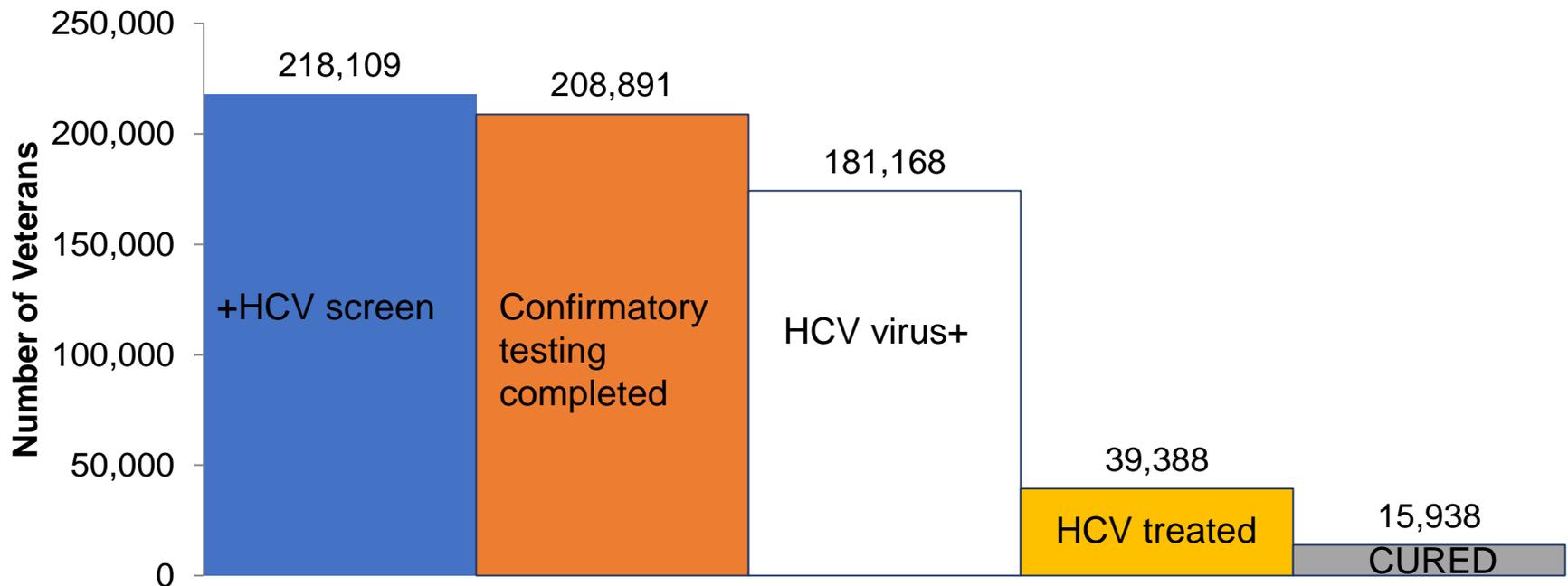
- Hepatitis C Background
- Hepatitis C Innovation Team (HIT) Collaborative
- 4-year evaluation
  - Methods
  - Strategies used
  - Attribution to the Collaborative
- Limitations
- Applying ERIC surveys elsewhere
- Lessons Learned

# Hepatitis C Virus

- 200 million people worldwide
- Disproportionately affects Veterans
- >200,000 Veterans exposed



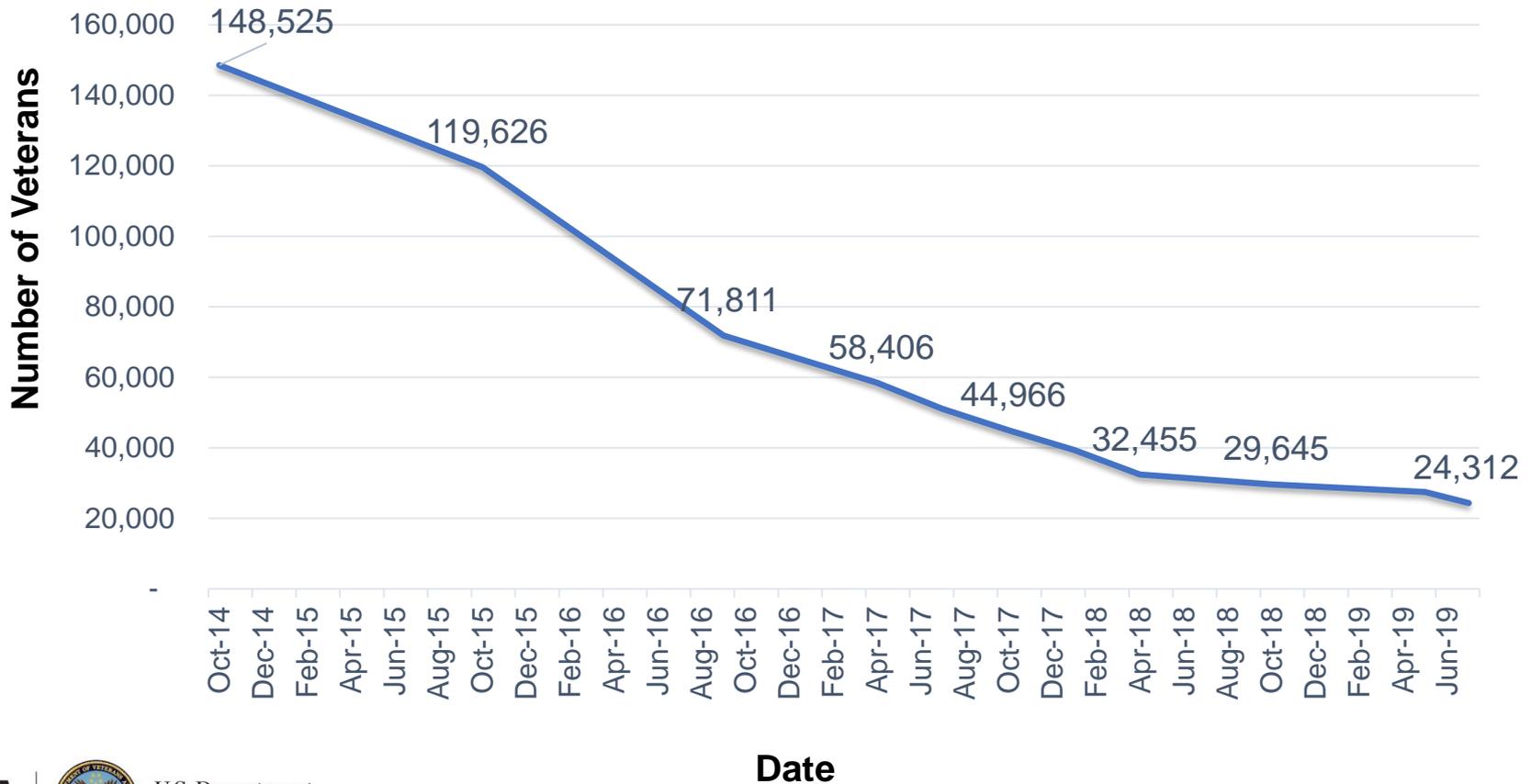
# State of Hepatitis C Care in VA 2013-14



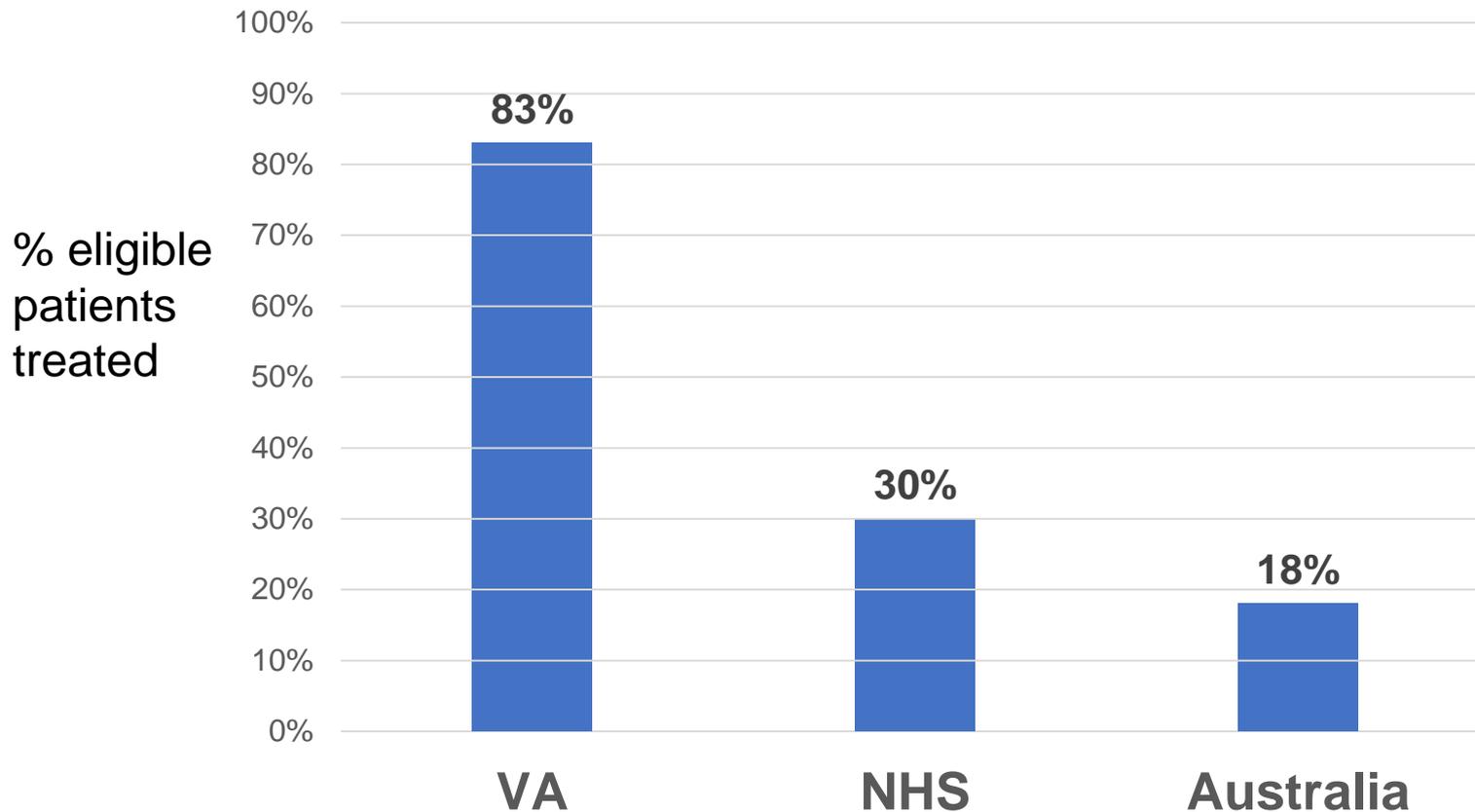
# New HCV evidence-based treatments

	<b>Interferon</b>
Administration	Injection
Duration	48 weeks
Side Effects	+++++++
Cure Rates	<50%

# Veterans with Hepatitis C



# Hepatitis Treatment by System

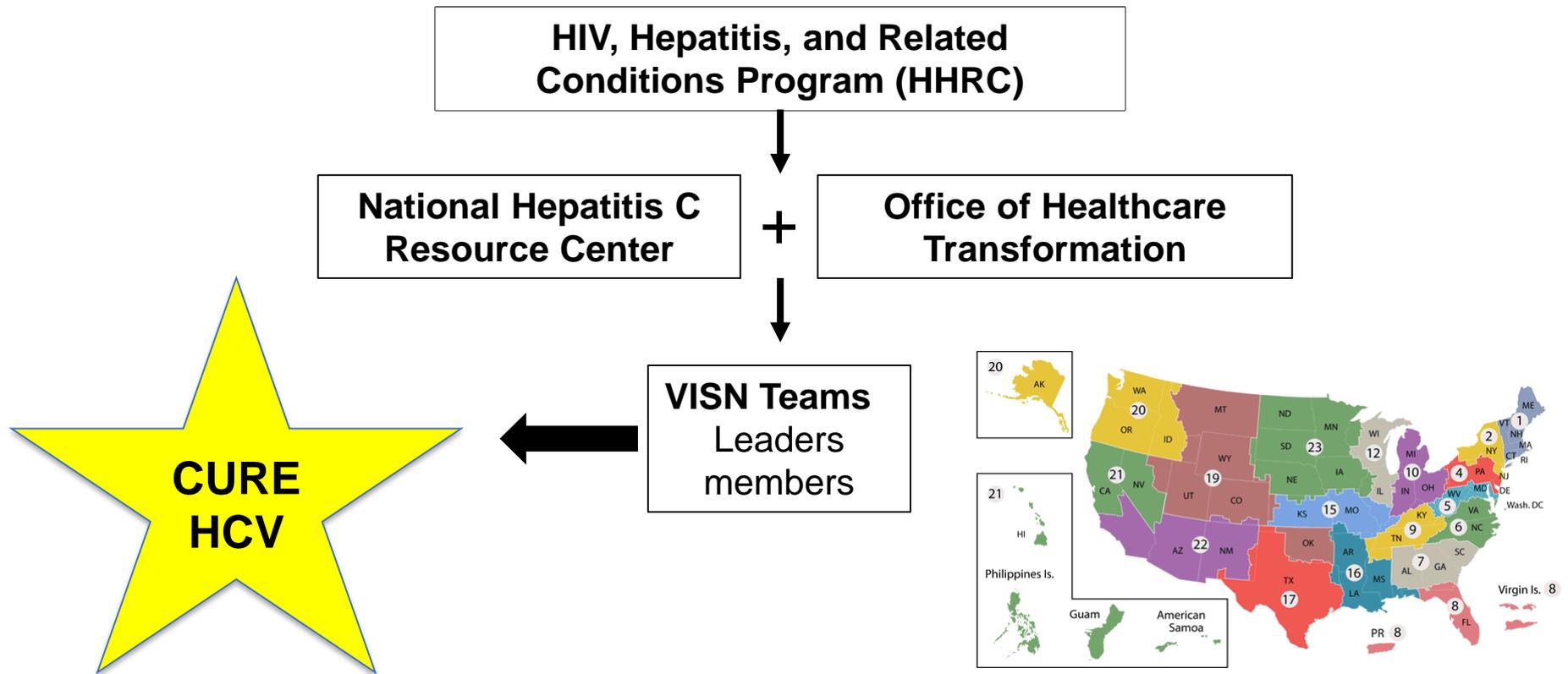




# VA Hepatitis C Initiative



# Hepatitis C Innovation Team (HIT) Collaborative



# HIT Collaborative Leadership Team

**National Hepatitis C  
Resource Center**

**Office of Healthcare  
Transformation**

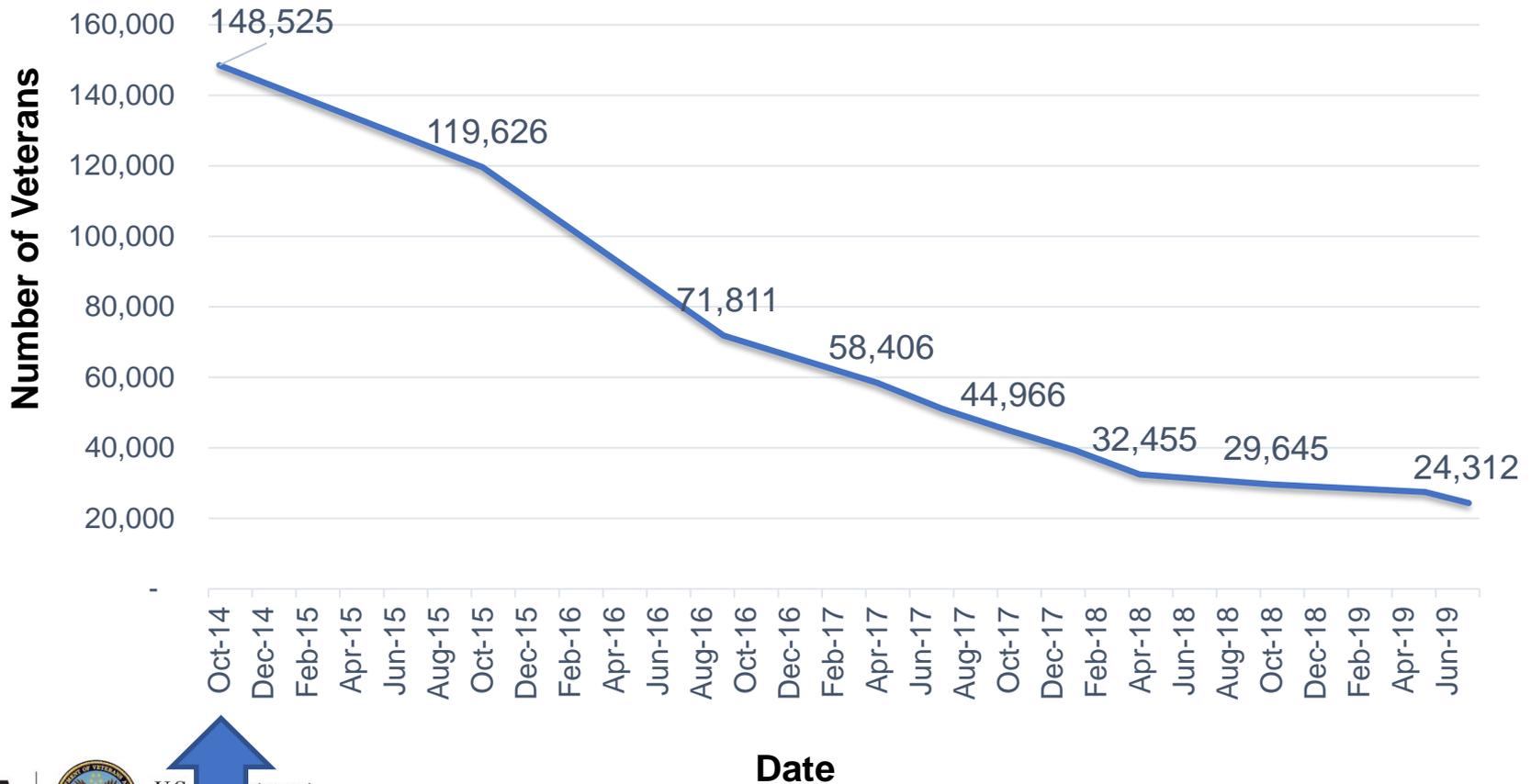
- Program management and facilitation, setting national goals
- Coaching HITs in process mapping
- Identifying low performers and pairing them with sites with strong practices
- Advocating for patients and on behalf of the HITs
- Building community among HIT members
- HHRC provides team funding

# VISN Hepatitis C Innovation Teams

- Identify a leader/HIT Coordinator
- Multidisciplinary, VISN-level teams
- Work locally to contribute to national goals
- Participate in national calls and working groups
- Have monthly virtual meetings and annual face-to-face meetings

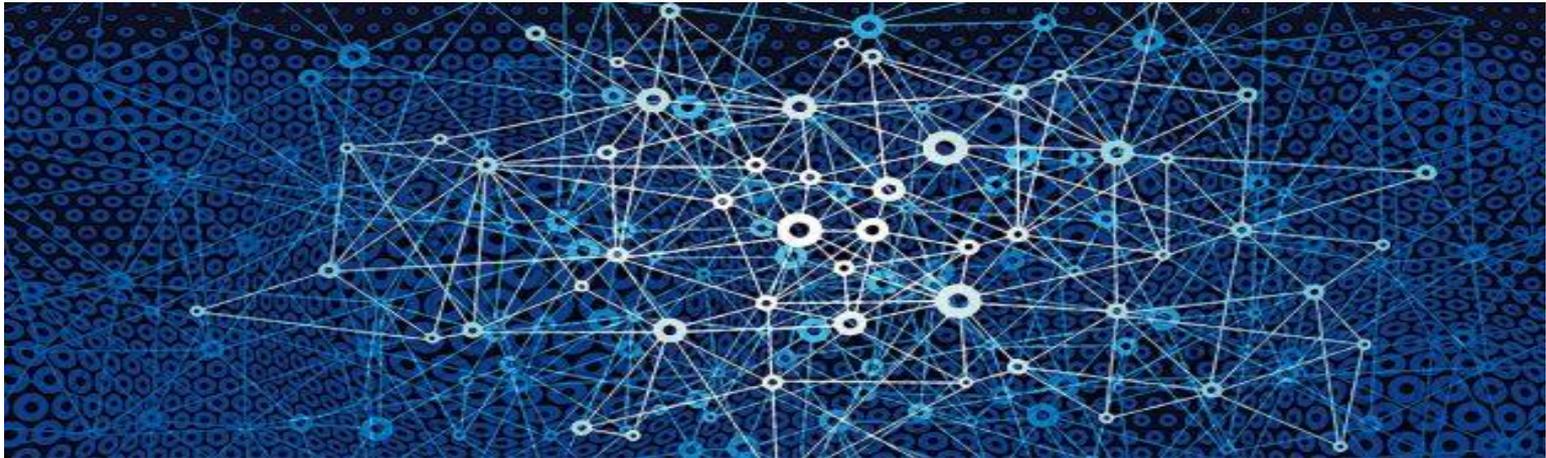


# Veterans with Hepatitis C



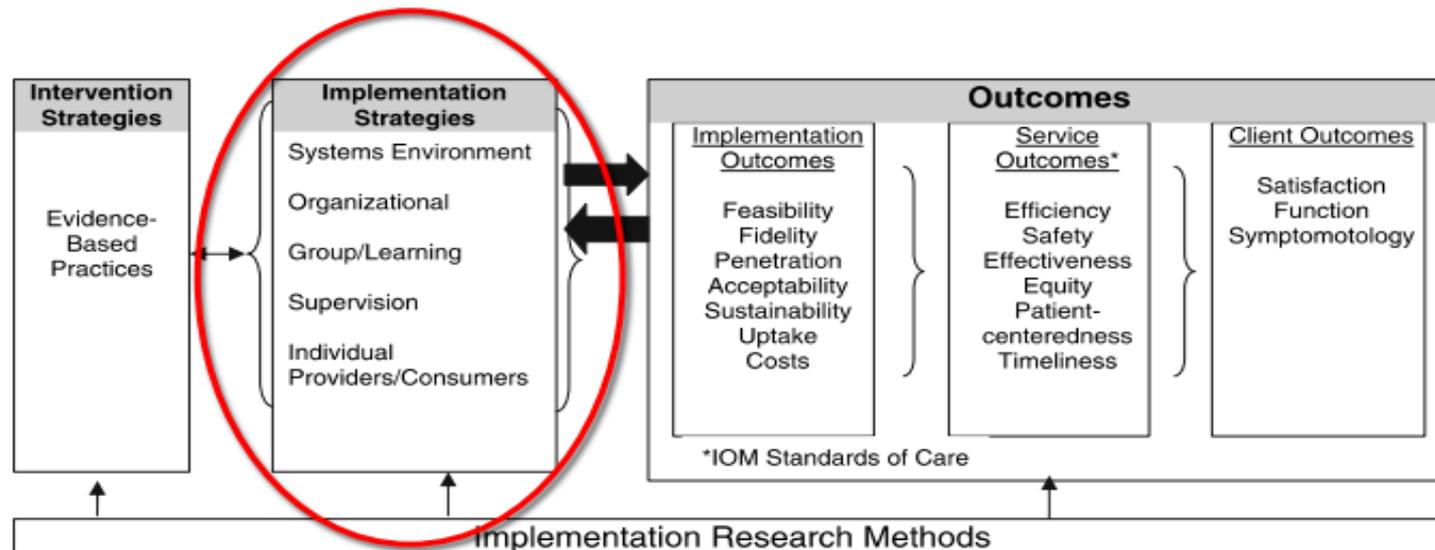
# Evaluation Question 1:

What did VA sites do?



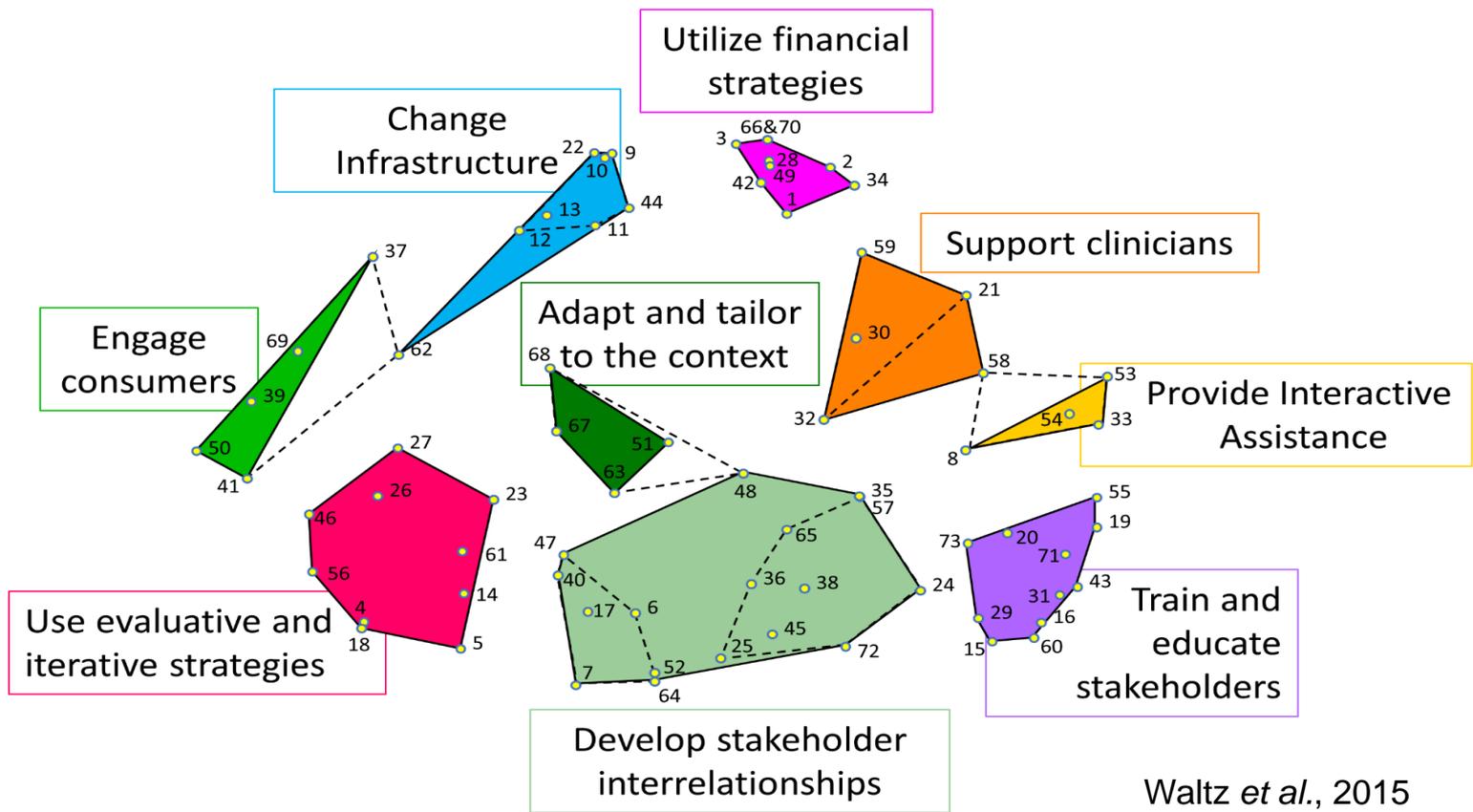
# Implementation Strategies

“Methods or techniques used to enhance adoption, implementation, and sustainability of a clinical program or practice.” (Proctor, Powell, & McMillen, 2013)



Proctor *et al.*, 2009

# Expert Recommendations for Implementing Change (ERIC)



Waltz *et al.*, 2015

# Evaluation Methods

- **Sample:** HCV providers and staff at VA hospitals
- **Data Collection:** Online survey examining use of 73 strategies across 9 clusters
  - Factors: absence of strategy = 0, presence of strategy = 1
- **Outcome:** Number of HCV treatment starts per year per site
- **Analyses:** Correlational and CCMs

# Implementation Strategy Survey

8. In FY15 did your center use any of these infrastructure changes to promote HCV care in your center? 

Did you implement this strategy in FY15?

If implemented in FY15, was it attributable to the HIT?

• Change physical structure and equipment (e.g., purchase a FibroScan, expand clinic space, open new clinics)



• Change the record systems (e.g., locally create new or update to national clinical reminder in CPRS, develop standardized note templates)



• Change the location of clinical service sites (e.g., extend HCV care to the CBOCs)



• Develop a separate organization or group responsible for disseminating HCV care (outside of the HIT Collaborative)

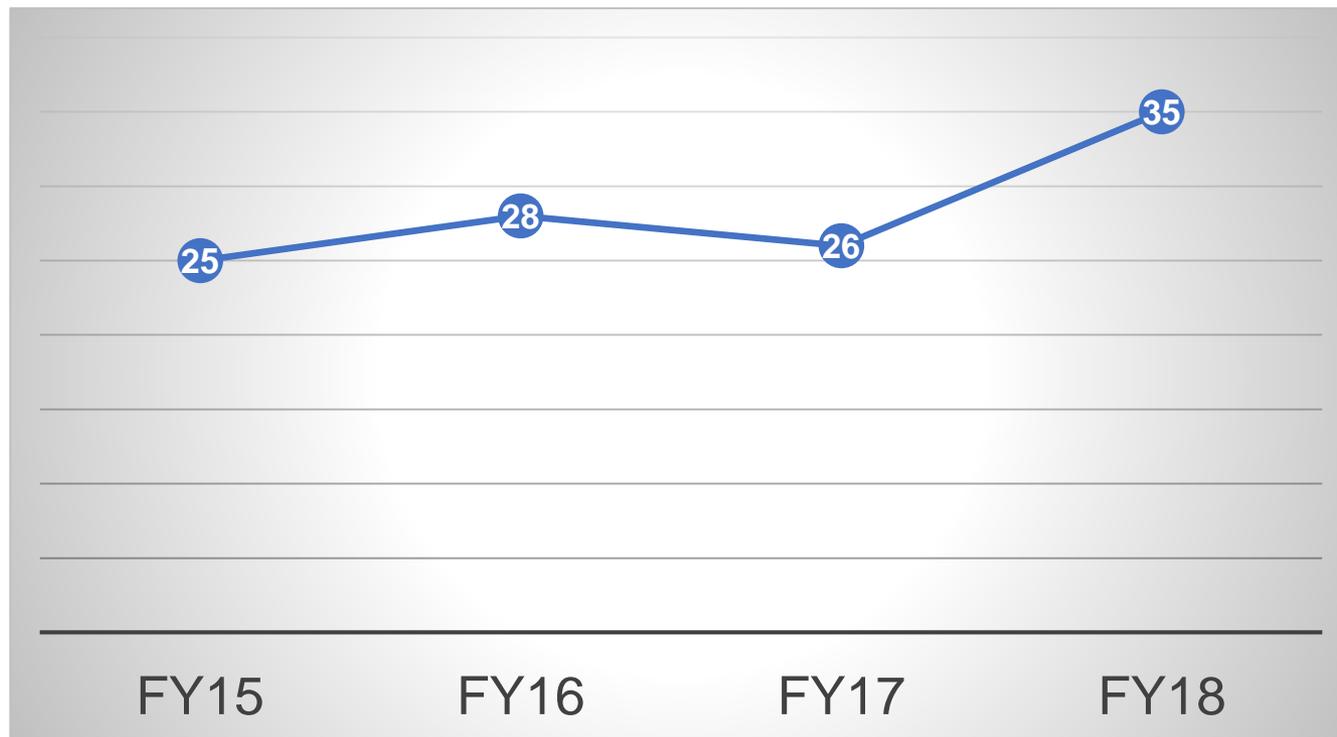


	FY15	FY16	FY17	FY18
<b>Sites (N)</b>	80	105	109	88
<b>% sites</b>	62%	81%	84%	69%

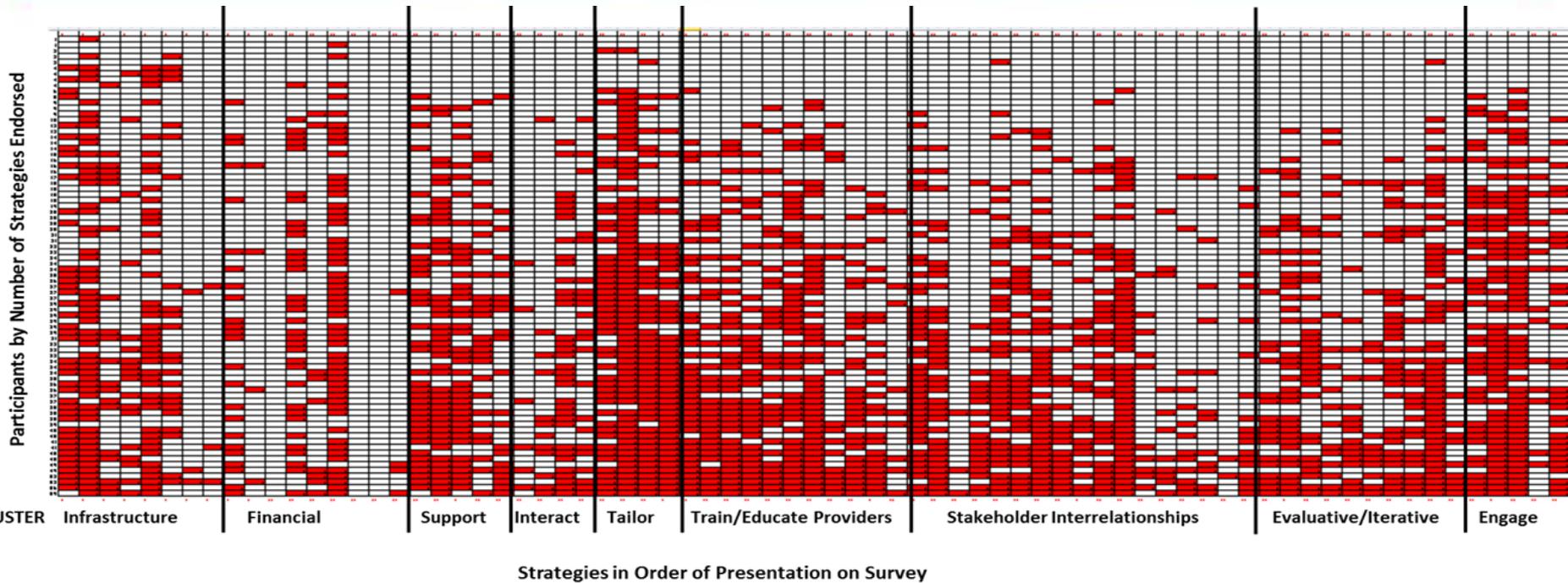
# Respondent Characteristics

	FY15 N %	FY16 N %	FY17 N %	FY18 N %
<b>130 VAMCs</b>	80 62%	105 81%	109 84%	88 68%
<b>Years in VA</b>				
< 3	13 16%	23 22%	17 16%	12 14%
4 to 9	25 31%	31 30%	41 38%	31 35%
10 to 19	25 31%	38 36%	33 30%	29 33%
> 20	17 21%	13 12%	19 17%	16 18%
<b>Specialty</b>				
Gastroenterology/ Hepatology	33 41%	42 40%	40 37%	34 39%
Infectious disease	17 21%	21 20%	19 17%	14 16%
Pharmacy	13 16%	31 30%	40 37%	31 35%
Primary Care	8 10%	3 3%	5 5%	5 6%
Other	9 11%	8 8%	5 5%	4 5%
<b>Degree</b>				
PharmD	35 44%	35 33%	47 43%	33 38%
NP	13 16%	21 20%	24 22%	20 23%
MD	11 14%	14 13%	19 17%	12 14%
PA	5 6%	3 3%	4 4%	6 7%
RN	2 3%	8 8%	12 11%	14 16%
Other	14 18%	24 23%	3 3%	3 3%
<b>Site Complexity</b>				
1a	27 33%	34 32%	34 31%	30 34%
1b	14 18%	15 14%	17 16%	19 22%
1c	12 15%	16 15%	23 21%	14 16%
2	14 18%	19 18%	14 13%	12 14%
3	12 15%	21 20%	21 19%	13 15%

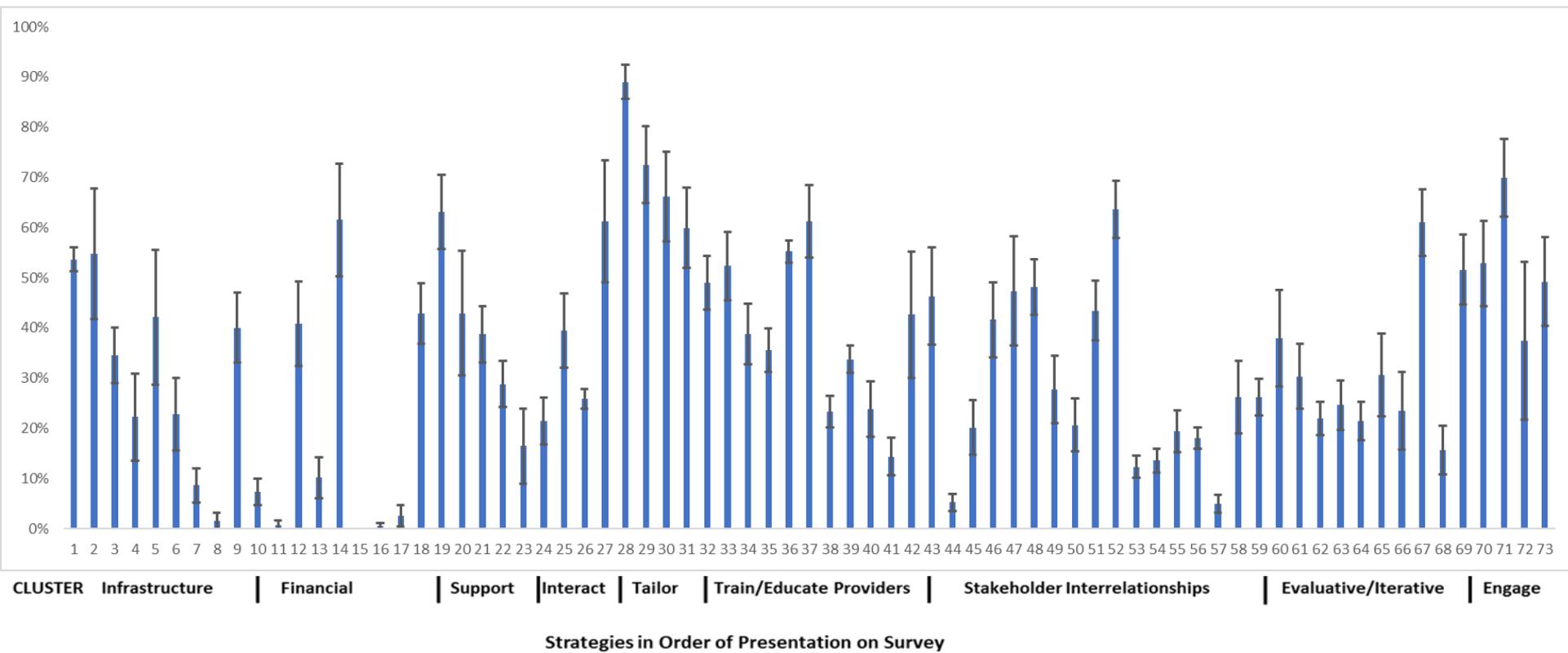
# Number of Strategies Used Each Year



# Heat Map of Strategies: Year 1



# Strategy Use Over Time



# Top 3 Most Popular Strategies by Year

FY15	FY16	FY17	FY18
<ul style="list-style-type: none"> <li>• Data warehousing</li> </ul>			
<ul style="list-style-type: none"> <li>• Change the record systems</li> </ul>	<ul style="list-style-type: none"> <li>• Tailor strategies to deliver HCV care</li> </ul>		
<ul style="list-style-type: none"> <li>• Intervene with patients to promote uptake and adherence to HCV treatment</li> </ul>		<ul style="list-style-type: none"> <li>• Promote adaptability</li> </ul>	

# Strategy Use Over Time

## Increasingly used:

- Promote HCV treatment demand among patients through mass media & other means
- Change clinic locations
- Facilitation and educational meetings
- Conduct small tests of change
- Data warehousing & relay data to staff

## Decreasingly used:

- Involve leaders
- Place HCV medications on the formulary
- Mandate changes to HCV care
- Revise professional roles
- Build local implementation team
- Develop tools for quality monitoring

# Significant Strategies across years

Years Significant	Strategies	%
0	28	38%
1	24	33%
2	13	18%
3	7	10%
4	1	1%

→ Make efforts to identify early adopters to learn from their experiences

# Attribution Overall and by Cluster

	FY15	FY16	FY17	FY18
<b>Change infrastructure</b>	48%	54%	70%	79%
<b>Financial strategies</b>	56%	65%	66%	73%
<b>Support clinicians</b>	57%	63%	68%	81%
<b>Provide interactive assistance</b>	40%	58%	57%	56%
<b>Adapt and tailor to context</b>	58%	63%	76%	68%
<b>Train and educate stakeholders</b>	27%	40%	47%	55%
<b>Develop stakeholder relationships</b>	41%	59%	66%	69%
<b>Use eval &amp; iterative strategies</b>	38%	59%	71%	76%
<b>Engage consumer</b>	20%	34%	50%	47%
<b>OVERALL ATTRIBUTION</b>	41%	54%	63%	66%

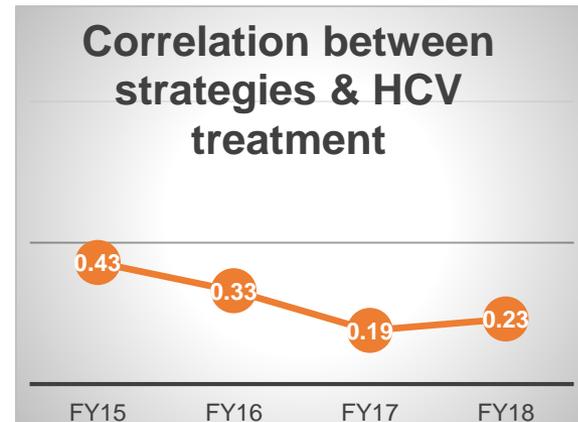
More
  Less

# Strategies by Cluster Over Time

	FY15	FY16	FY17	FY18
<b>Change infrastructure</b>	33%	34%	29%	24%
<b>Financial strategies</b>	18%	21%	18%	15%
<b>Support clinicians</b>	43%	50%	42%	38%
<b>Provide interactive assistance</b>	23%	28%	27%	24%
<b>Adapt and tailor to context</b>	65%	80%	76%	66%
<b>Train and educate stakeholders</b>	40%	44%	41%	37%
<b>Develop stakeholder relationships</b>	30%	34%	30%	23%
<b>Evaluative and iterative strategies</b>	32%	33%	30%	22%
<b>Engage consumer</b>	48%	57%	56%	45%

More
  Less

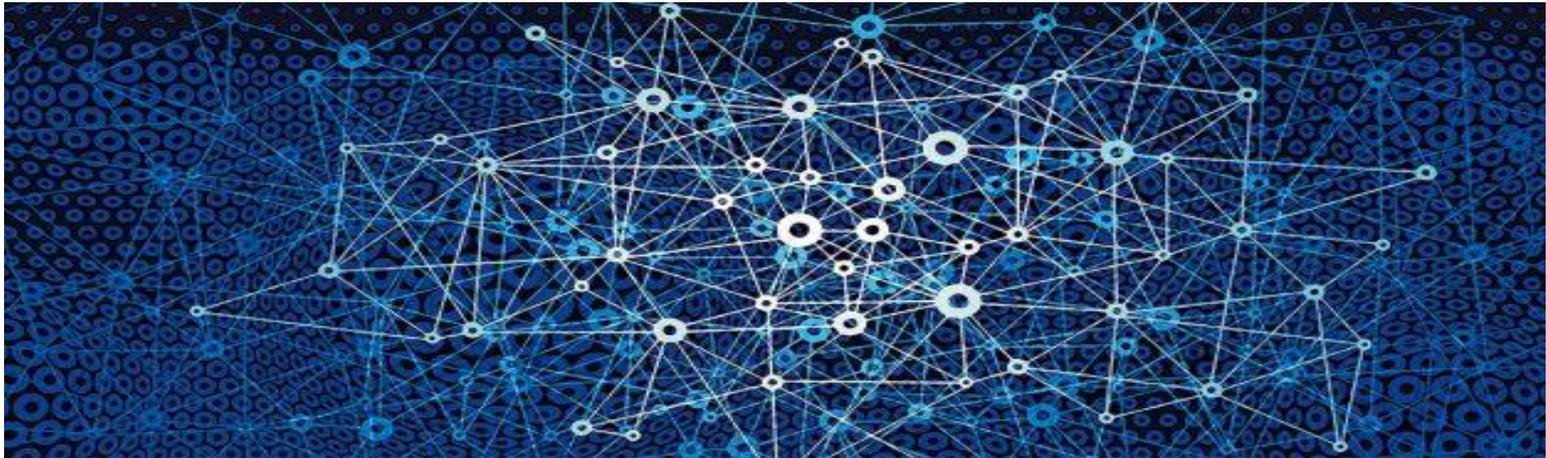
# Strategy Association with Treatment



**How do we choose efficient and effective strategies?**

# Evaluation Question 2:

Which strategies were successful?

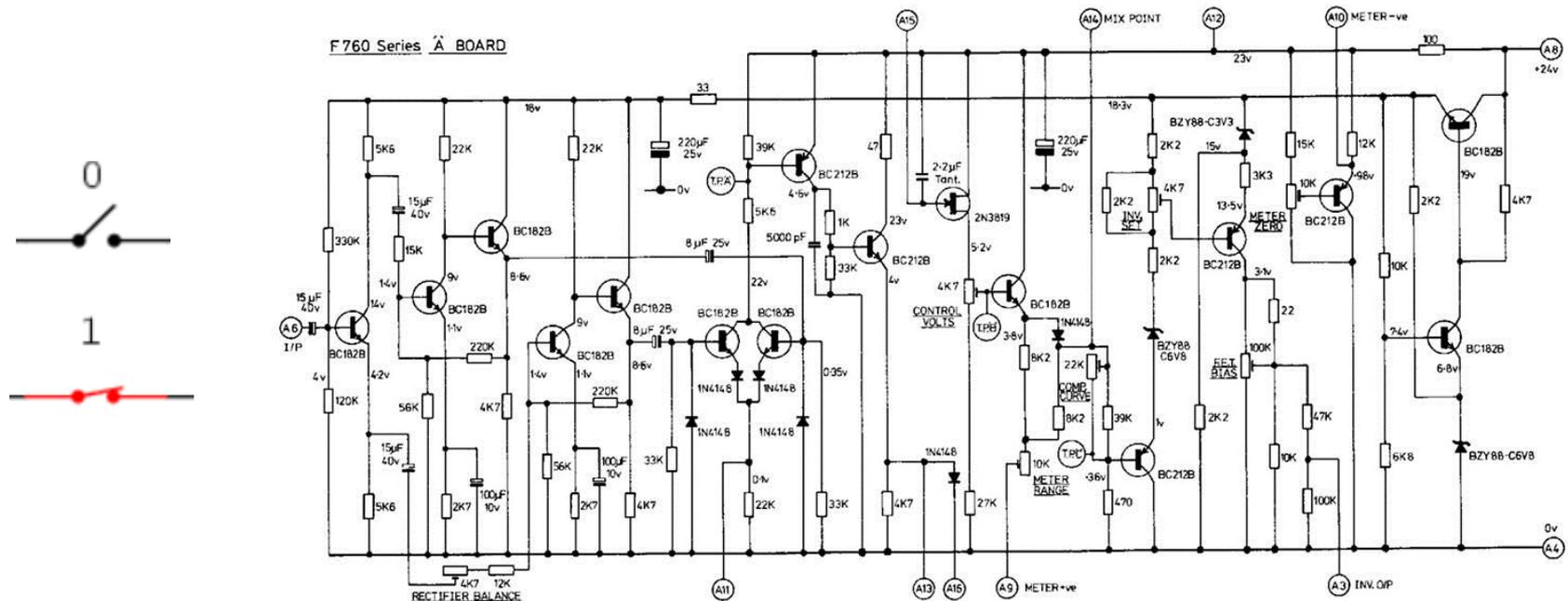


# High- vs. Low-Performing Sites

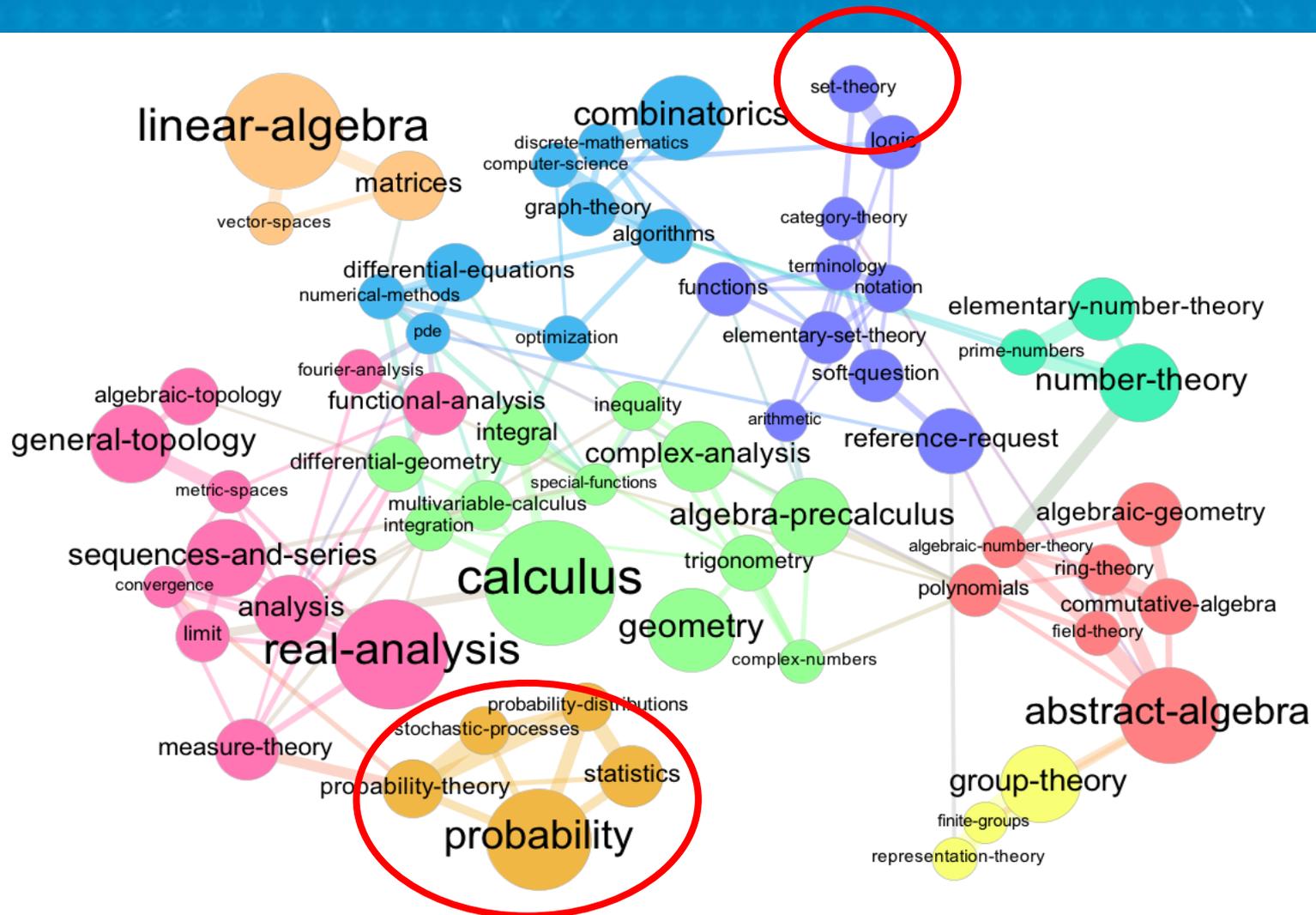
High Performing	Low Performing
Revise professional roles	Mandate changes
Champions	Change formulary
Preparing patients	Data Review

# Defining Effective Strategy Combinations

- Theoretically, with 73 strategies there are  $2^{73} = 9 \times 10^{21}$  possible combinations
- Empirically, we saw **2,427** combinations



# Configurational Comparative Methods



# Combinations of Strategies

M1: S24 + S34\*S45 + S18\*S47\*S70 => OUT

		incl	cov.r	cov.u
1	S24	1.000	0.300	0.075
2	S34*S45	1.000	0.400	0.075
3	S18*S47*S70	1.000	0.400	0.150
	M1	1.000	0.650	

## Path 1

**S24 OR**  
**Local technical assistance\*\***

## Path 2

**(S34 AND S45) OR**  
**Foster collaborative learning environment+**  
**AND**  
**Recruit, designate, train leaders+**

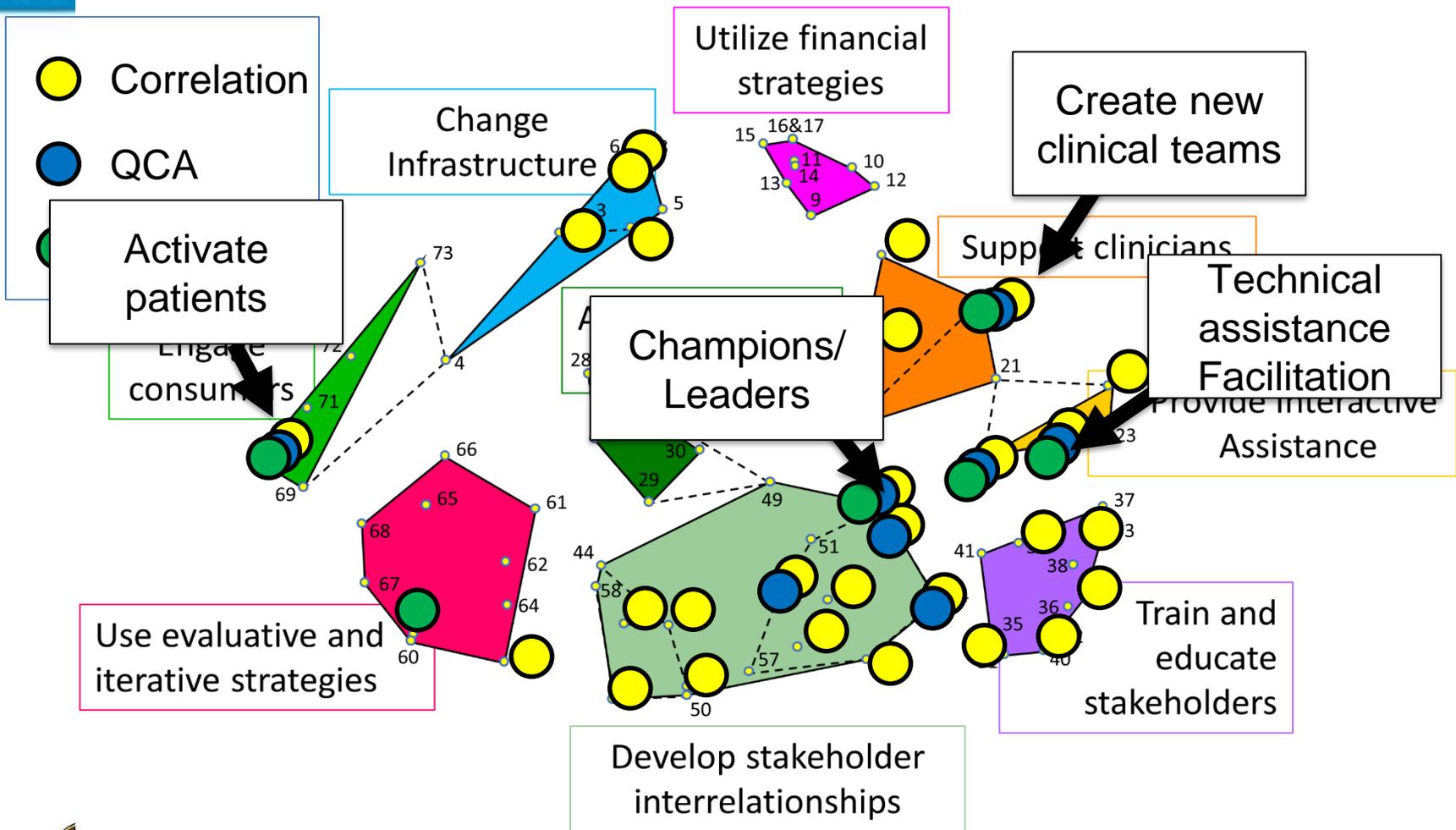
## Path 3

**(S18 AND S47 AND S70)**  
**Create new clinical teams\*\***  
**AND**  
**Share the knowledge gained from quality improvement efforts with other sites+**  
**AND**  
**Activate patients\*\***

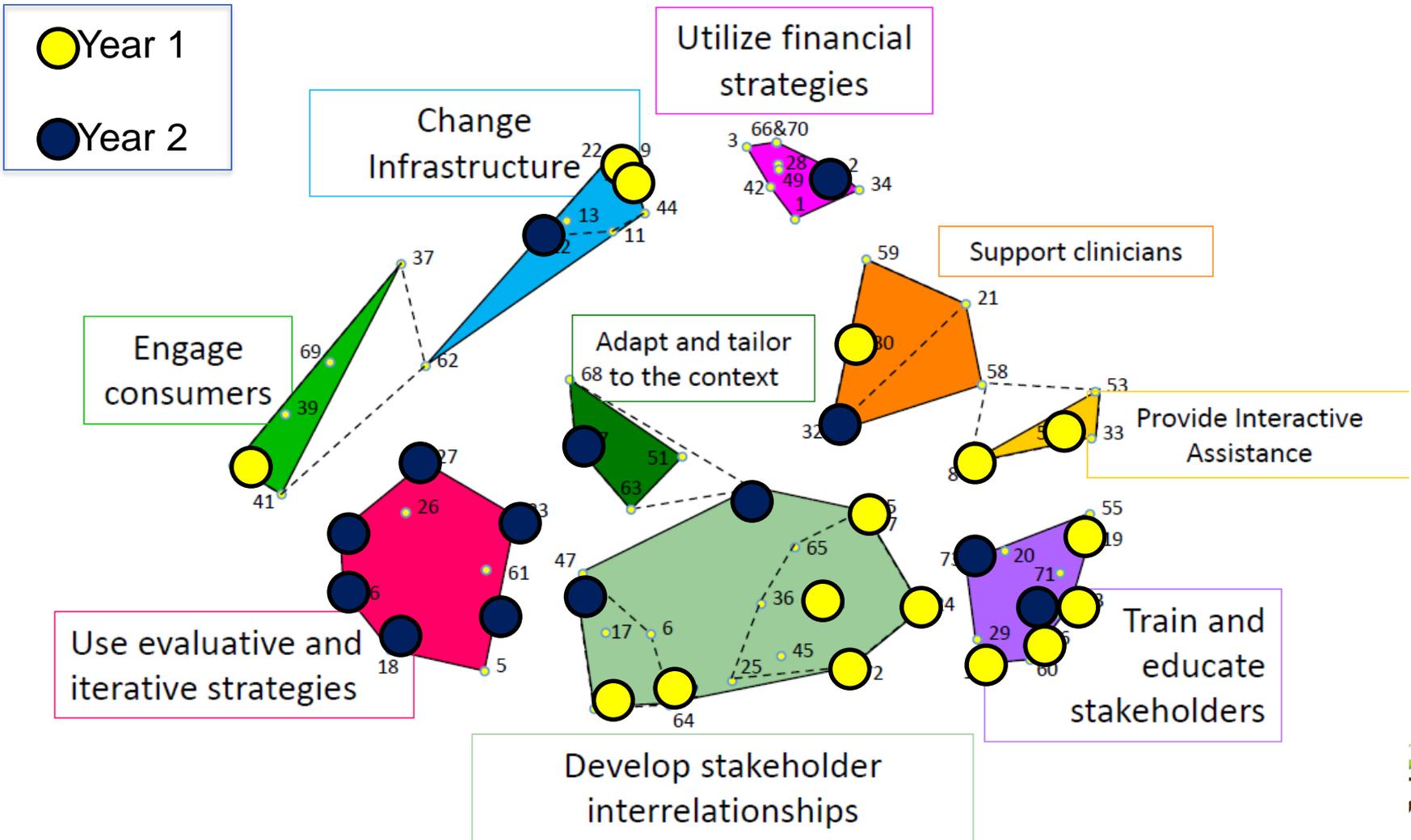
# Unpacking the High Treatment CCM Solution

Solution Path	Strategy	Cluster	Importance	Feasibility
1	S24: Local technical assistance	Provide interactive assistance	High	Low
2	S45: Recruit, designate, and/or train leaders	Develop stakeholder relationships	High	Low
	S34: Facilitate the formation of groups of providers and fostered a collaborative learning environment	Train and educate stakeholders	Low	High
3	S18: Create new clinical teams	Support clinicians	Low	Low
	S47: Share the knowledge gained from quality improvement efforts with other sites outside your medical center	Engage consumer	High	High
	S70: Engage in efforts to prepare patients to be active participants in HCV care	Develop stakeholder relationships	High	Low

# Strategy Triangulation



# Significant Strategies in Either Year 1 or Year 2



# Digging Deeper: Case Example

## **VISN 8 was a leader in treating HCV**

- VISN 8 HCV Workgroup
  - Forum to share success, barriers, plan/promote treatment
- Multidisciplinary Team Approach
  - Social Work, Case Management, Nursing, Physicians, Pharmacy, Nurse Practitioners, Physician Assistants, etc.
    - Social Work played a critical role in engaging patients and ensuring treatment was successful
- VISN 8 HCV Dashboard
  - Critical to identify unscreened & untreated veterans
  - Became model for National HCV Dashboard now used by all VISNs
- Persistence and Flexibility
  - Saturday clinics to screen and initiate treatment; labs pre-entered; mail Rx for telephone follow-up

(S18 AND S47 AND S70)

Create new clinical teams<sup>++</sup>

AND

Share the knowledge gained from quality improvement efforts with other sites<sup>+</sup>

AND

Activate patients<sup>++</sup>

# Results: Quotes from the Field

“Without the Collaborative, I don't think we would have been as successful in treatment efforts.”

“It's been really exciting to see what VA has been able to accomplish when they put their minds to it.”

“[The HIT Collaborative is] an awesome model that can be used to successfully manage large scale clinical problems... it's something [to be] very proud of.”

“VA is going to be an example for the whole nation.”

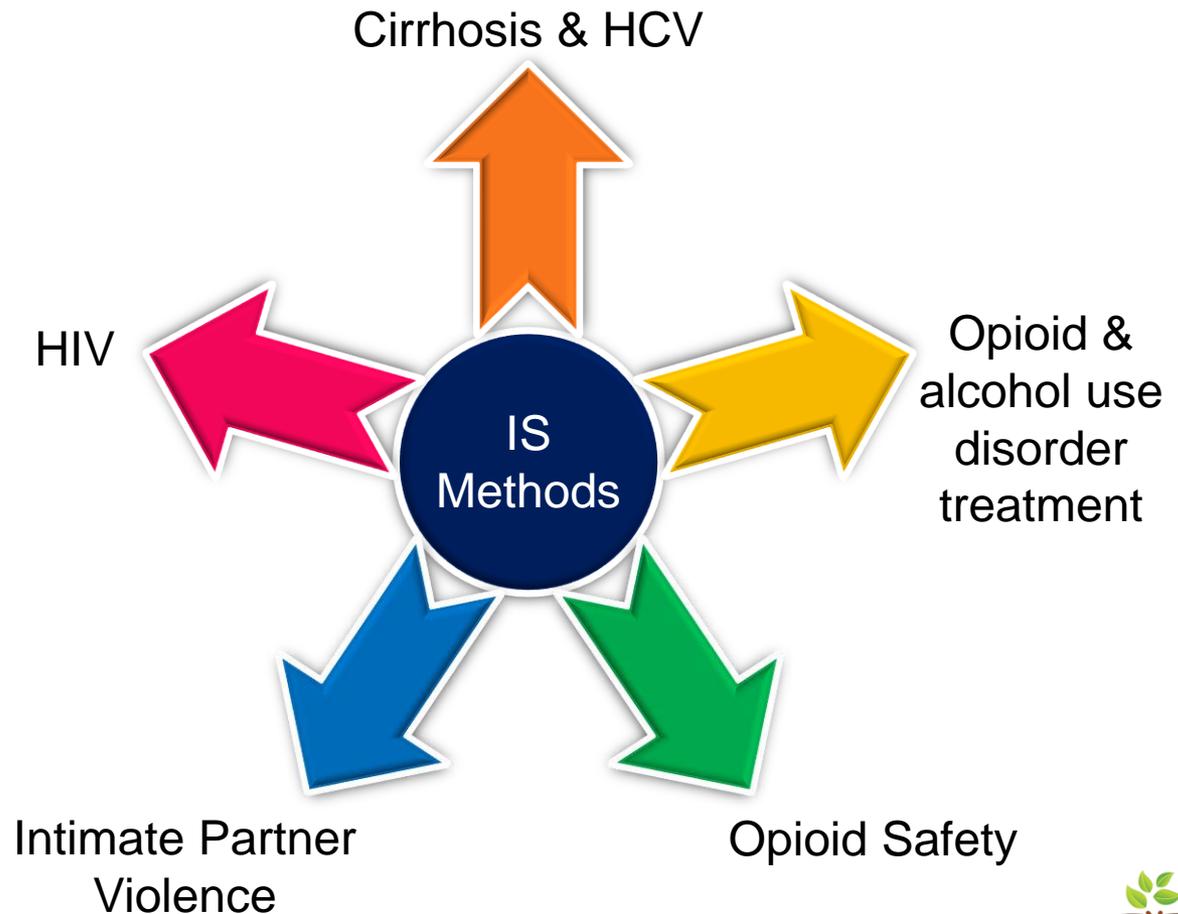


# Limitations

- Strategy use based on **self-report** from one respondent per site
- Don't know the **timing or sequence** of strategies used
- Continuous outcome was **dichotomized** in CCM analyses
- Strategies were named but not **specified** in the survey

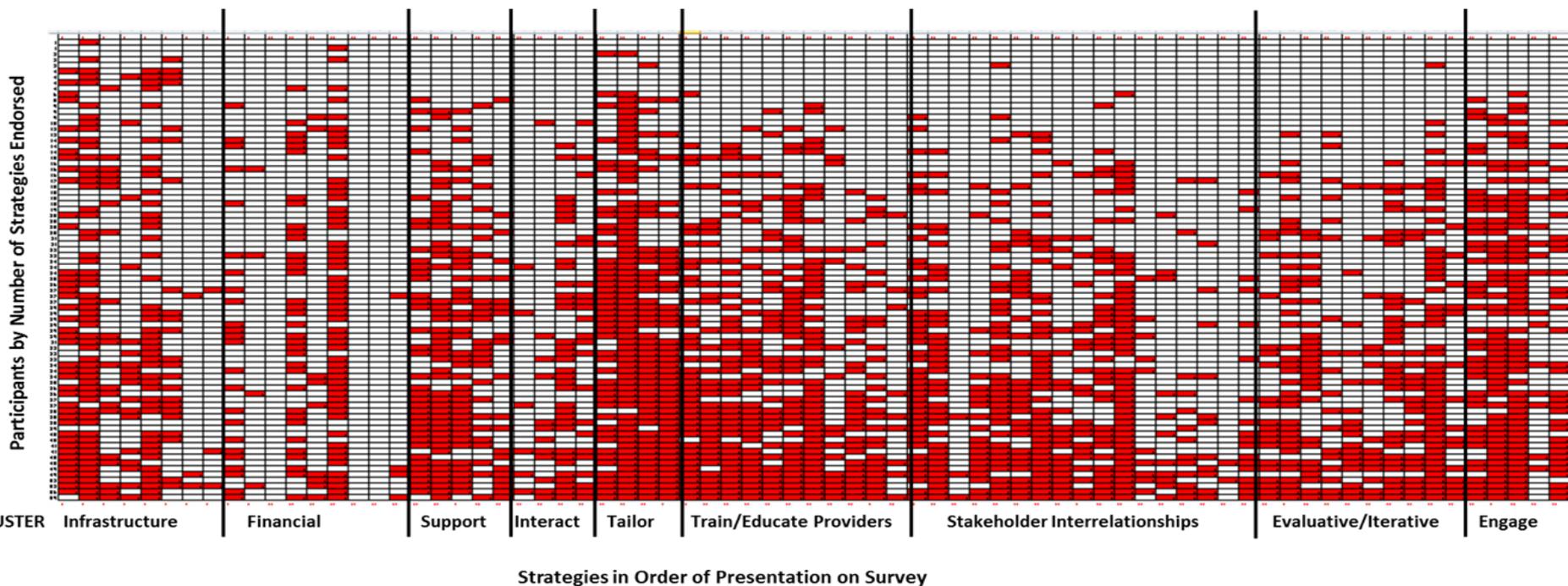
# Ongoing Implementation Work

- Expanding to other clinical areas and evidence-based practices
- Using implementation strategies to address healthcare disparities



# Lessons Learned

- Not all questions are appropriate for all groups



# Lessons Learned

- Feedback from participants
  - Anonymity
  - Providing examples
- Time to complete the survey
- Understandability/overlap
- Asking about attribution



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# Lessons Learned: Participation



# Open Questions

- When should we exclude inapplicable questions?
- How can we easily measure intensity of strategies?
- How should we go about specifying strategies?
- Can we use these to understand less active implementation projects?
- How do we balance the breadth vs. depth of strategy information?



# Conclusions

- Our 4-year evaluation using ERIC surveys captured information about a broad range of implementation strategies and their relationship to a clinical outcome
- HCV treatment was a tremendous VA success story and much of the work done to treat Veterans was attributed to the HIT Collaborative
- Measuring implementation strategies using ERIC surveys is feasible but imperfect

# Acknowledgements

- **Pittsburgh Evaluation Team:** Sandra Gibson, Carolyn Lamorte
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