EFFECTIVENESS OF INTERVENTIONS TO IMPROVE EMERGENCY DEPARTMENT EFFICIENCY:
An Evidence Map

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VA Greater Los Angeles Healthcare System

Disclosure

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Evidence-based Synthesis Program (ESP)

VA Evidence-based Synthesis Program (ESP) Overview

Sponsored by the Quality Enhancement Research Initiative (QUERI)

Four centers: Los Angeles, CA; Portland, OR; Durham, NC; Minneapolis, MN

Reports help provide timely and accurate syntheses/reviews to support:

> development of clinical policies informed by evidence;

> the implementation of effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and

> the direction of future research to address gaps in clinical knowledge.

Topics identified by VA clinicians, managers, and policy-makers using online topic nomination process:

http://www.hsrd.research.va.gov/publications/esp/TopicNominationForm.pdf

Evidence-based Synthesis Program (ESP)

ESP
Evidence-based
Synthesis Program

Our Team

ESP Team Members

- Paul Shekelle, MD, PhD
- Melinda Maggard Gibbons, MD, MSHS
- Isomi M. Miake-Lye, PhD
- Chris P. Childers, MD
- Sean M. O'Neill, MD, PhD
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Stakeholders & Technical Experts

- Chad Kessler, MD, MHPE
- Michael Ward, MD
- Kristina Cordasco, MD
- Josh Geiger, MPsy

What is an Evidence Map?

*"an evidence map is a **systematic** search of a **broad field** to **identify gaps** in knowledge and/or future research needs that presents results in a **user-friendly format**, often a **visual** figure or graph, or a searchable database"*

What an Evidence Map is Not

An evidence map is not a meta-analysis. An evidence map does not critically review and synthesize the evidence on a particular issue to answer questions of efficacy or effectiveness.

Making a Map
Identification of Literature

- Coordinating Center provided results from preliminary searches
  - 9 systematic reviews
  - 20 studies
- Pulled studies from the systematic reviews

Making a Map
Selection and Data Abstraction
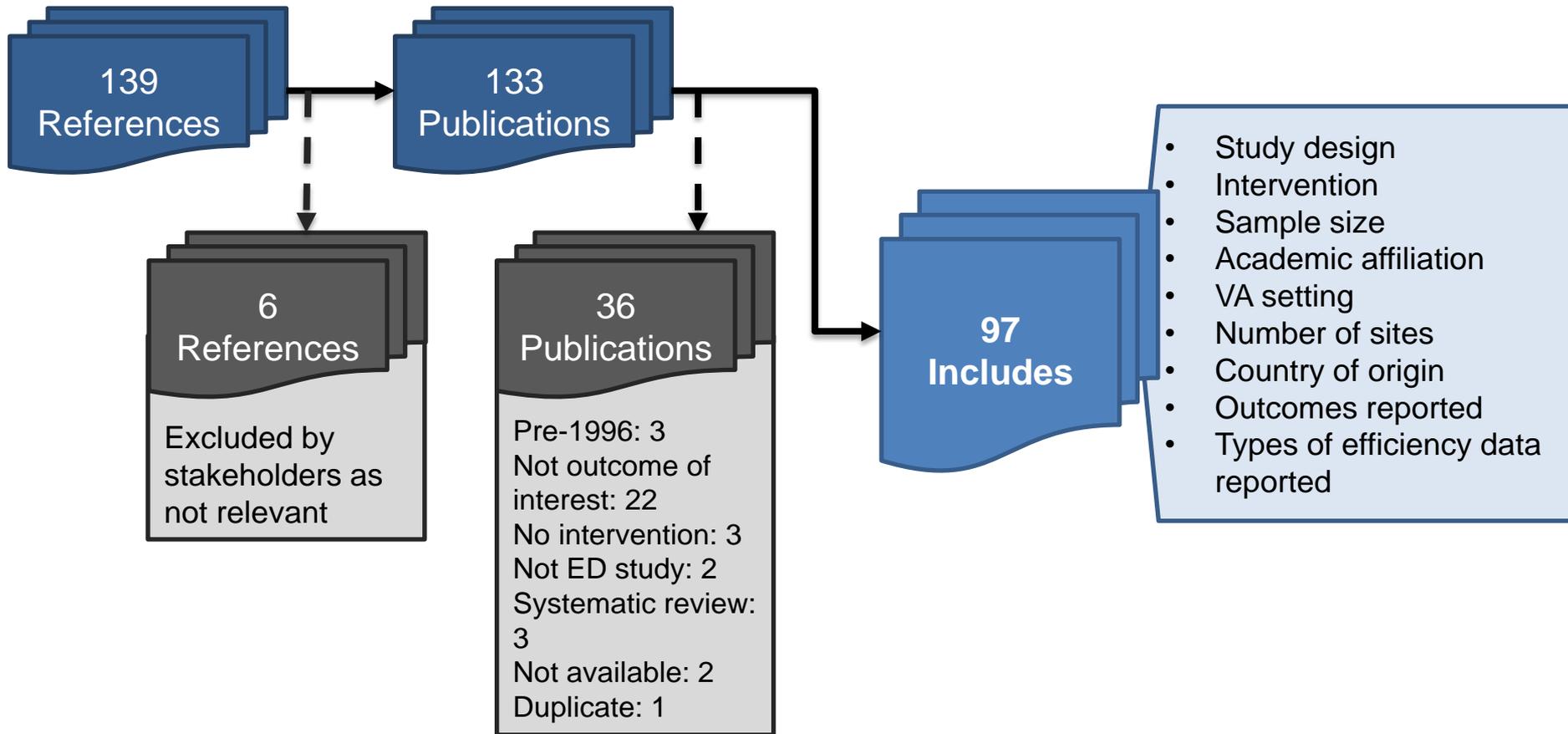
RESULTS

# Types of ED Efficiency Interventions
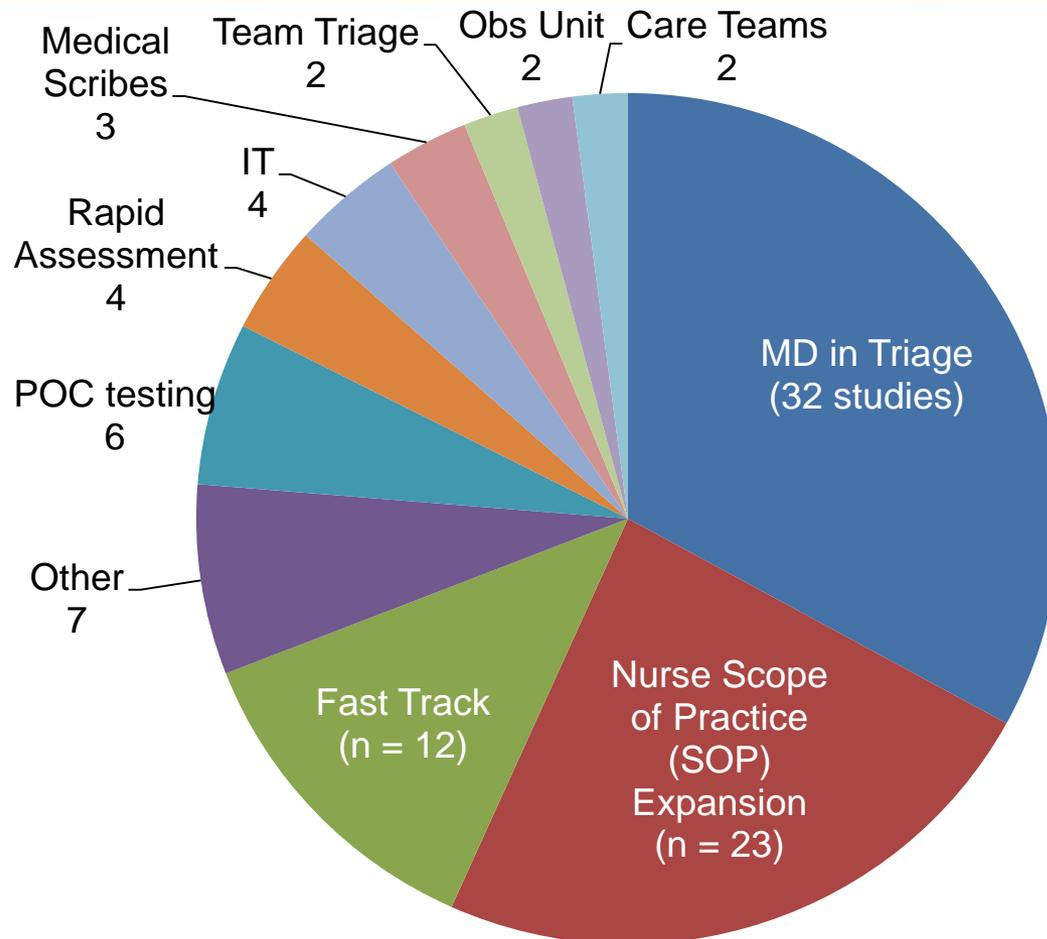
Outcomes Measured
*Length of Stay, Wait Times, Left without Being Seen*

Count of Studies (n)

Outcome	Count
Length of stay (LOS)	67
Wait times	37
LWBS	34
Patients admitted	32
Clinical outcomes	13
Harms	8
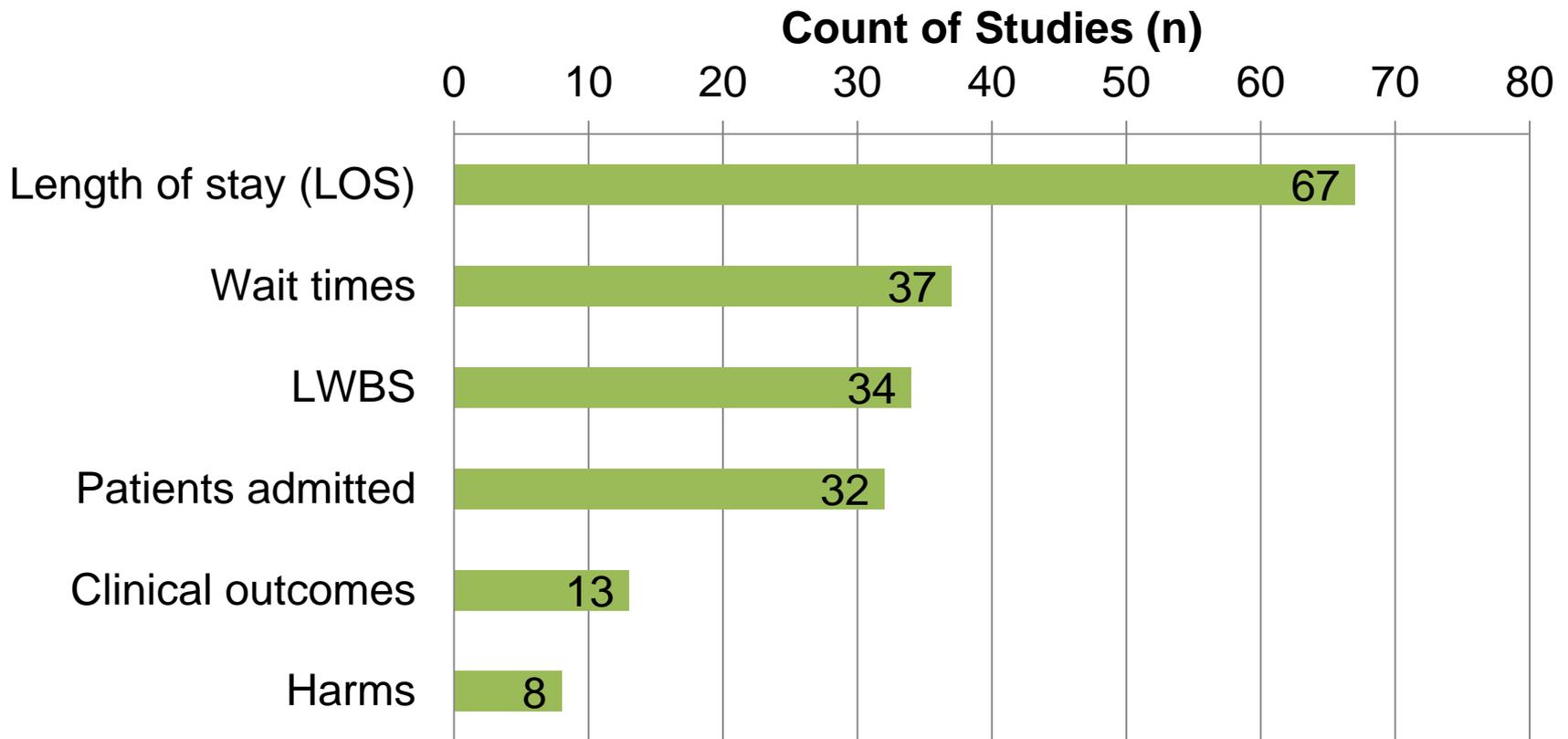
Included Publications (n=97)

Country

Other, 18
Australia, 19
Canada, 11
USA, 40
UK, 9

Sample Sizes

Alternate Units (n = shifts or facilities) 14

Unclear 2
>10,000 patients 36
1,000 9,999 patients 22
500 999 patients 7
100 499 patients 16

of Sites Involved

Unclear 1
Multiple Sites 6
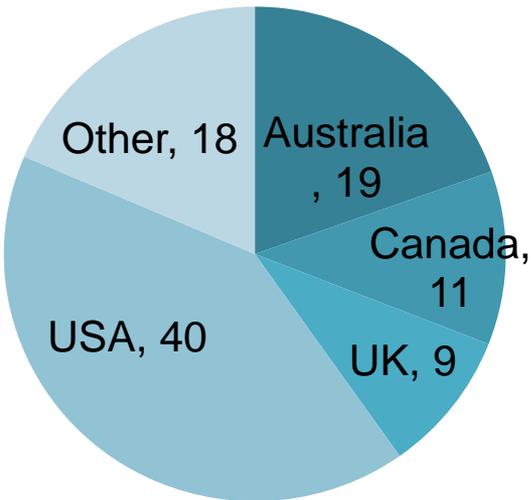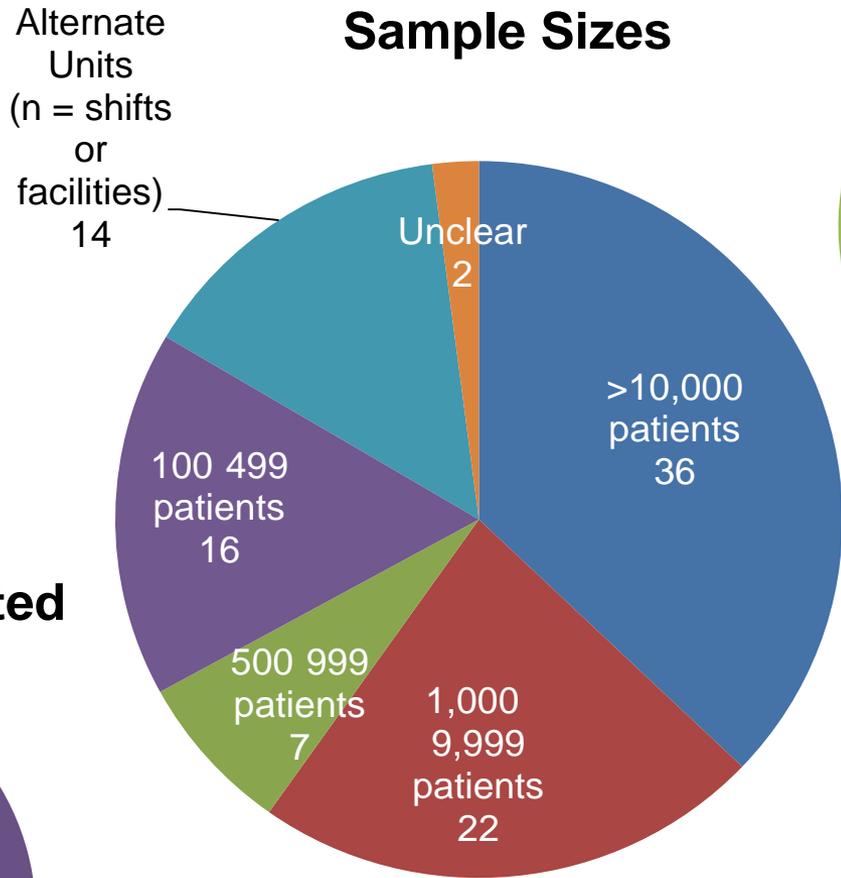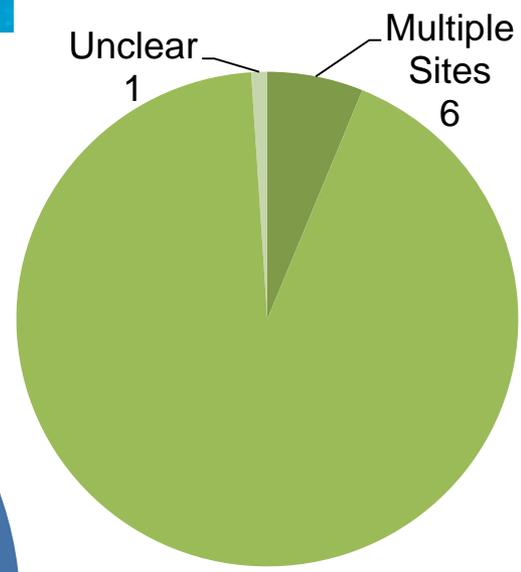
Site Academically Affiliated

No 11
Unclear 15
[CATEGORY NAME] 69

VA Setting

VA 1
11
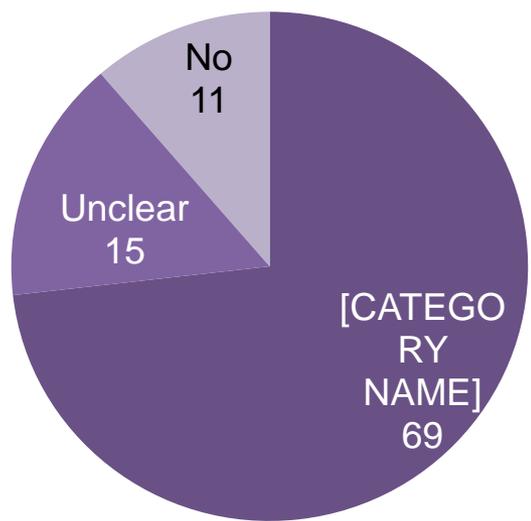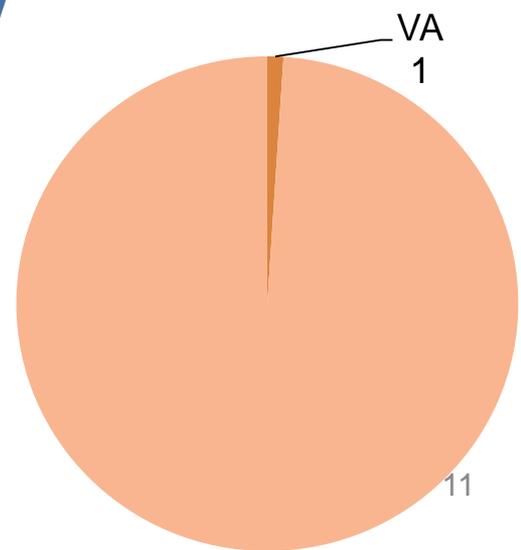
Categorizing Efficiency Data

All publications

Did they quantify costs?

- No
- Yes

Describe resource use in some capacity?

- Reallocates existing resources
- Adds new resources
- Unclear
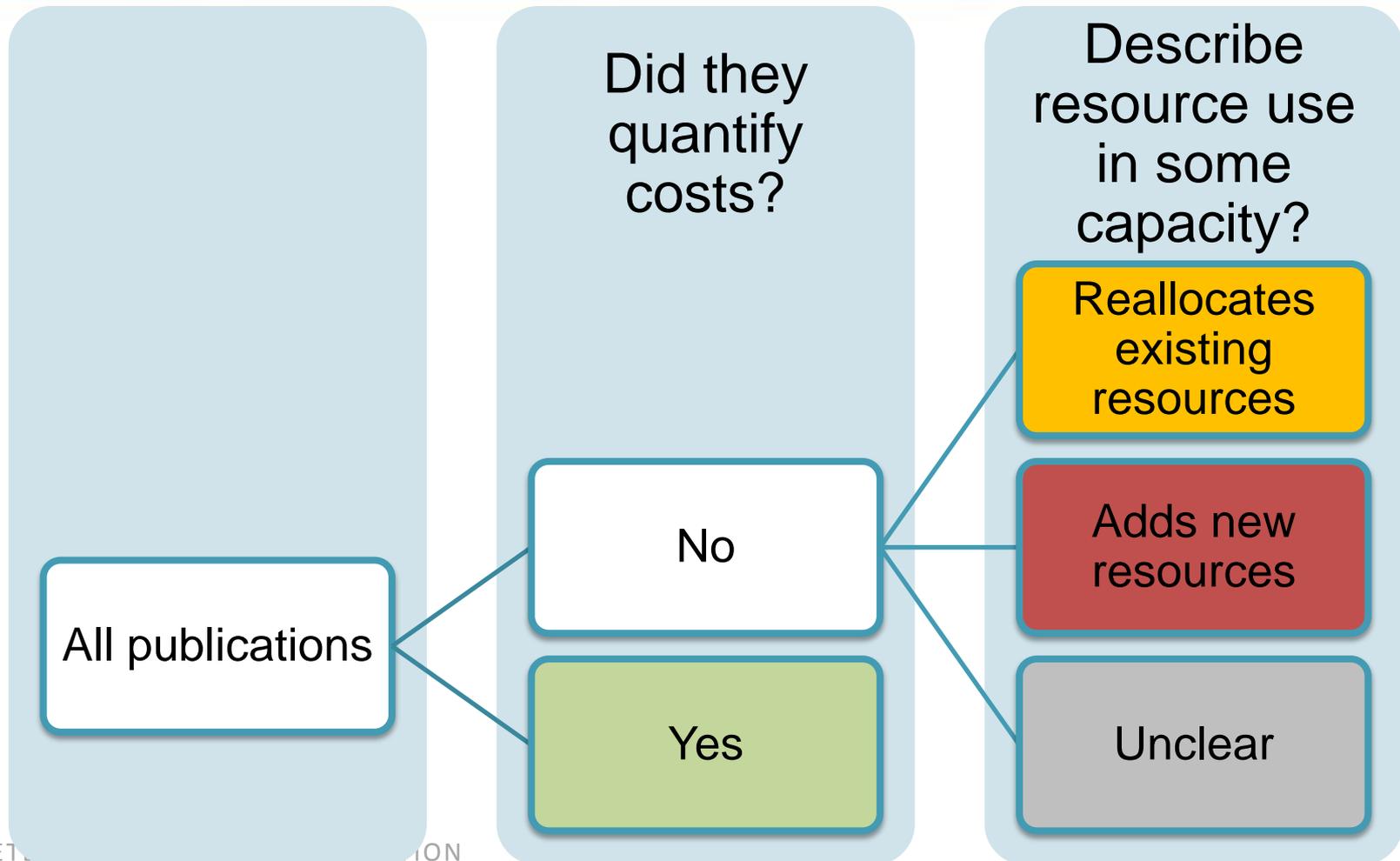
Efficiency Data Provided
Cost Quantified
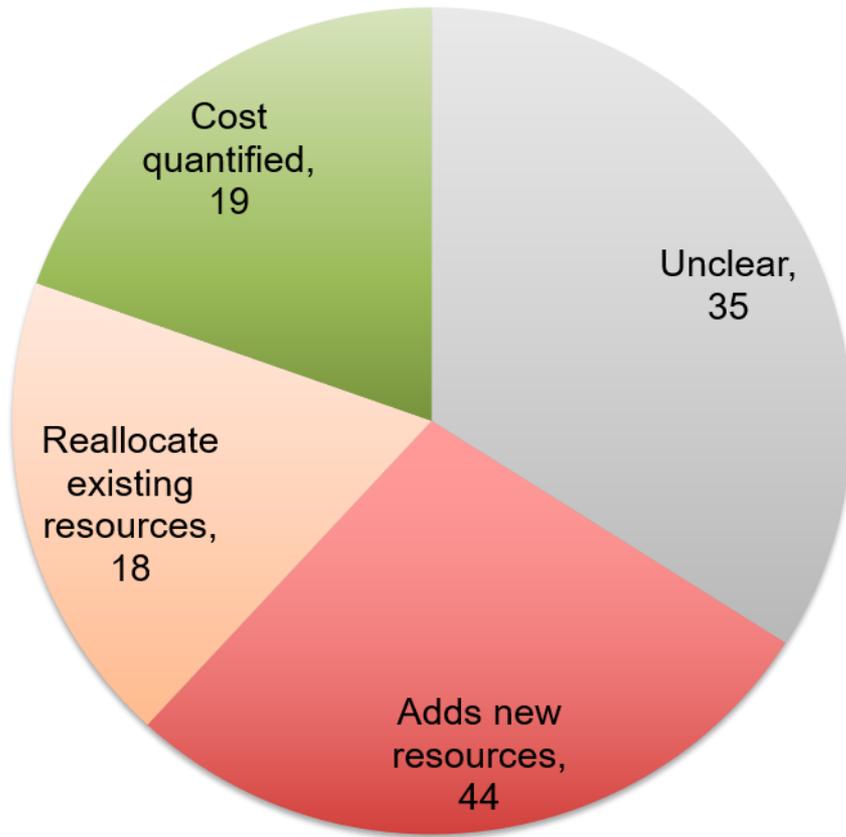
- # of additional hires and shifts/hours added at each level (eg, ED Tech, Clerk, Nurse, Physician)
- Additional RVUs/shift generated
- Fixed costs / Equipment

Efficiency Data Provided
Reallocate Existing Resources
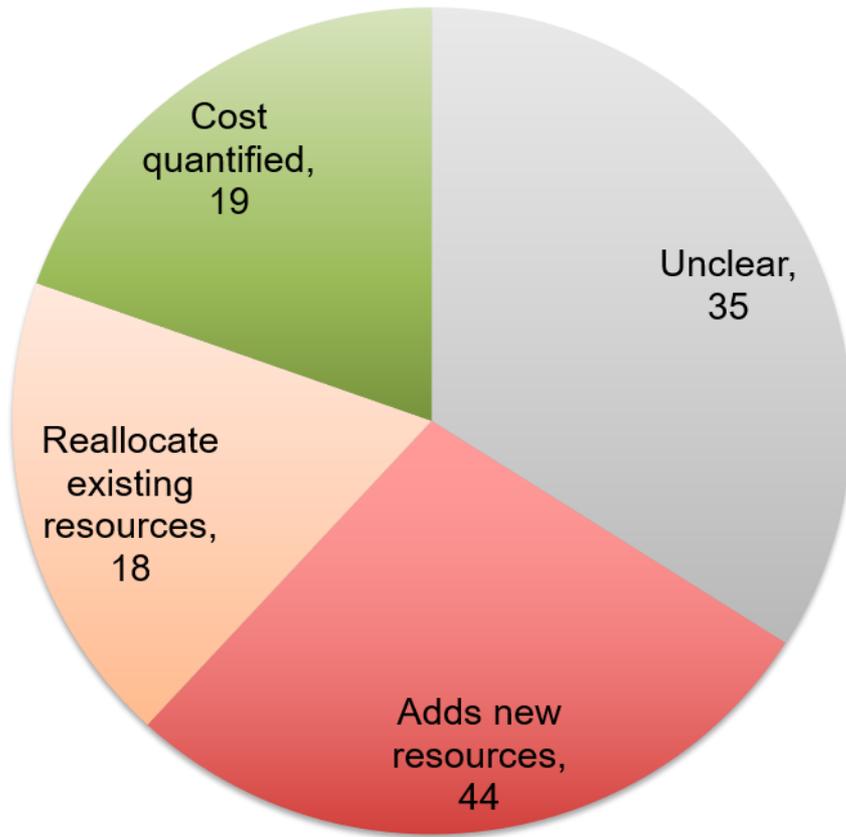
Statement that staffing levels did not change during intervention

Pie chart data:
- Unclear, 35
- Cost quantified, 19
- Reallocate existing resources, 18
- Adds new resources, 44

Efficiency Data Provided
Adds New Resources
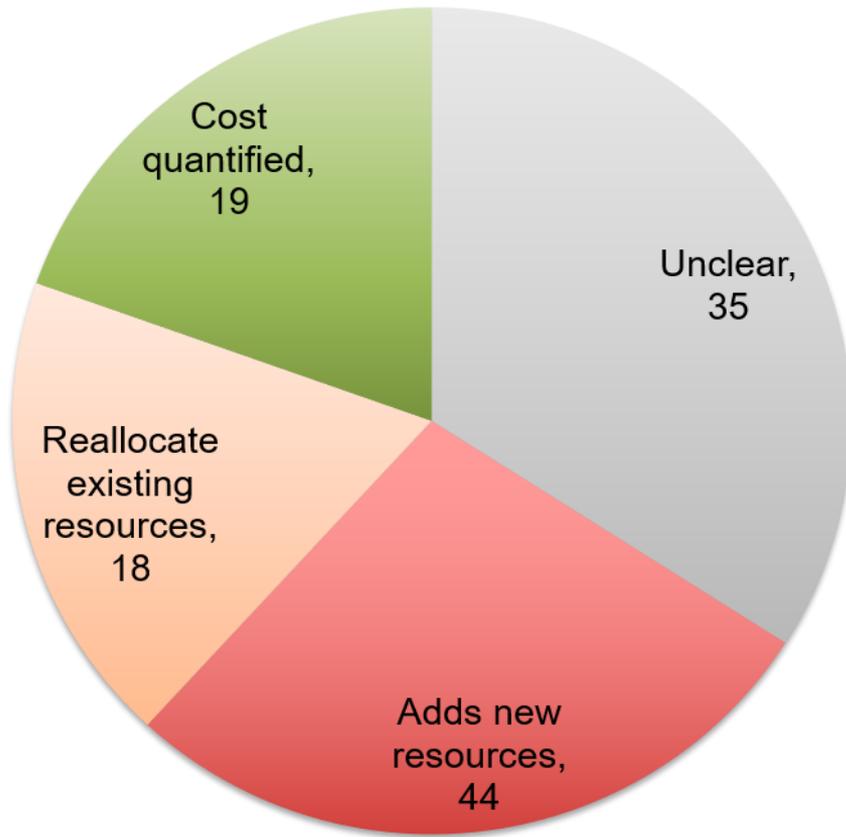
Affirmative statement about remodeling, reorganization, expansion of services without specific information on scale

Efficiency Data Provided
Unclear
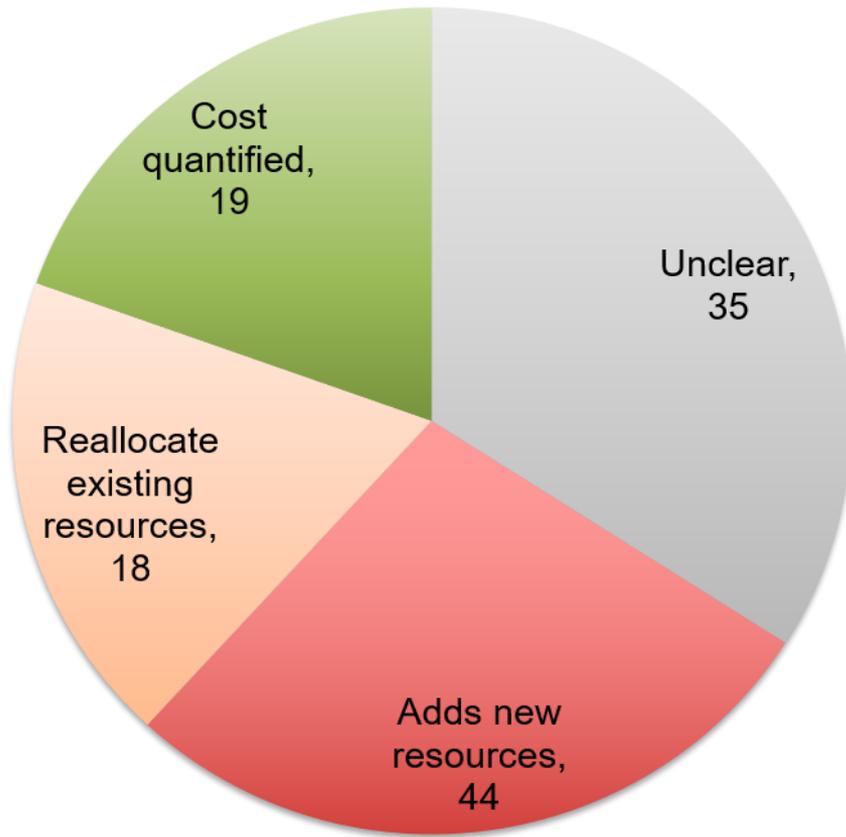
Scope/scale of organizational changes not stated specifically

Pie chart data:
- Unclear, 35
- Adds new resources, 44
- Reallocate existing resources, 18
- Cost quantified, 19

Amount of literature by intervention (n=97)

|	Physician Triage	Expand Nurse Scope of Practice	Fast Track	Point of Care Testing	IT	Rapid Assess. Unit	Medical Scribe	Team Triage	Care Teams	Observ. Unit	Other
Reallocates Existing Resources	7	6	3						1		1
Adds New Resources	16	7	5	4	3	1	3	1	1	1	2
Unclear Resources	9	10	4	2	1	3		1		1	4

Improvement in Length of Stay (Percent Change from Baseline)
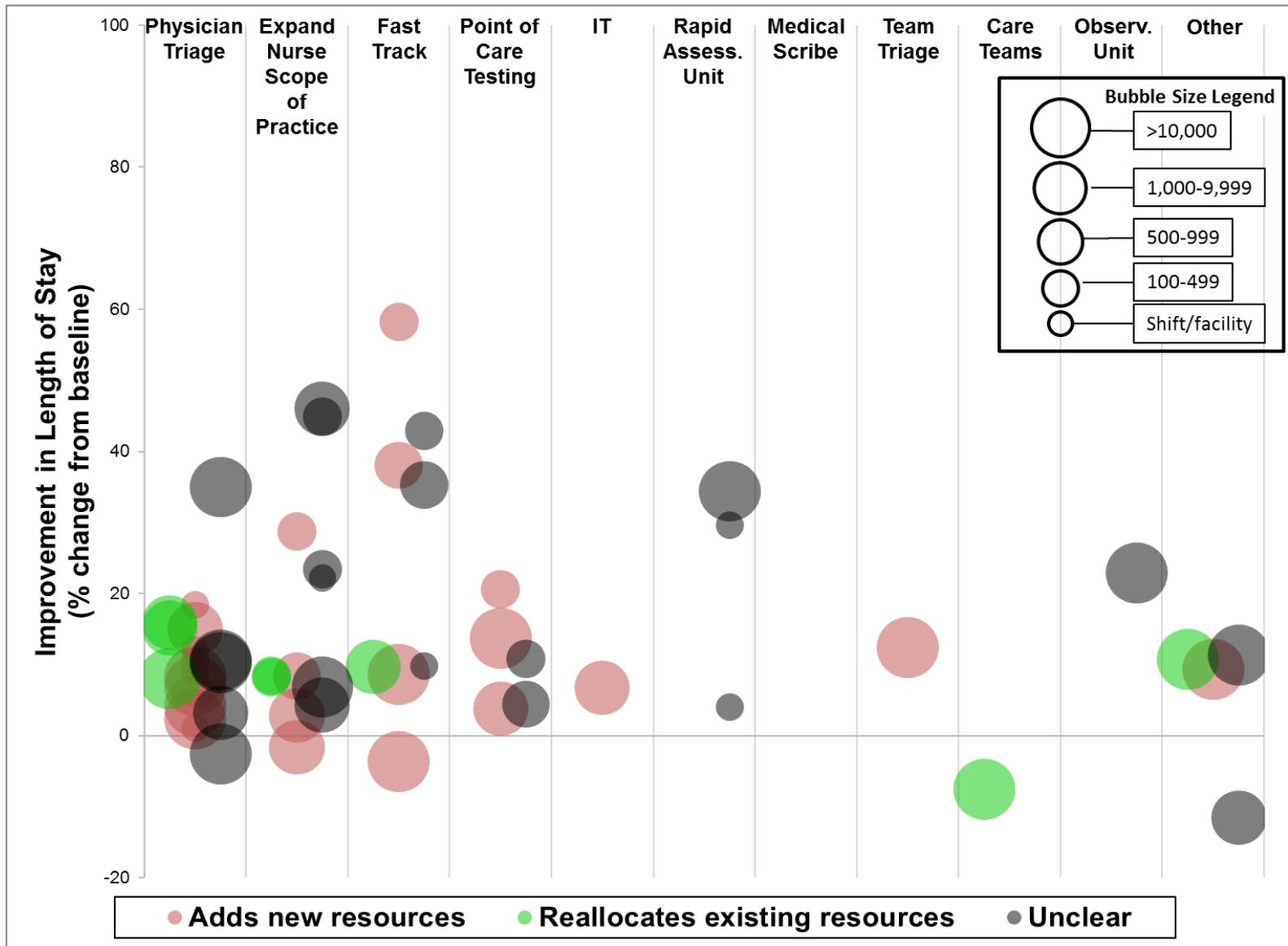
Improvement in Wait Time (Percent Change from Baseline)

Y-axis: Improvement in Wait Time (% change from baseline)

X-axis categories: Physician Triage, Expand Nurse Scope of Practice, Fast Track, Point of Care Testing, IT, Rapid Assess. Unit, Medical Scribe, Team Triage, Care Teams, Observ. Unit, Other

Bubble Size Legend:
- >10,000
- 1,000-9,999
- 500-999
- 100-499
- Shift/facility

Legend: Adds new resources | Reallocates existing resources | Unclear
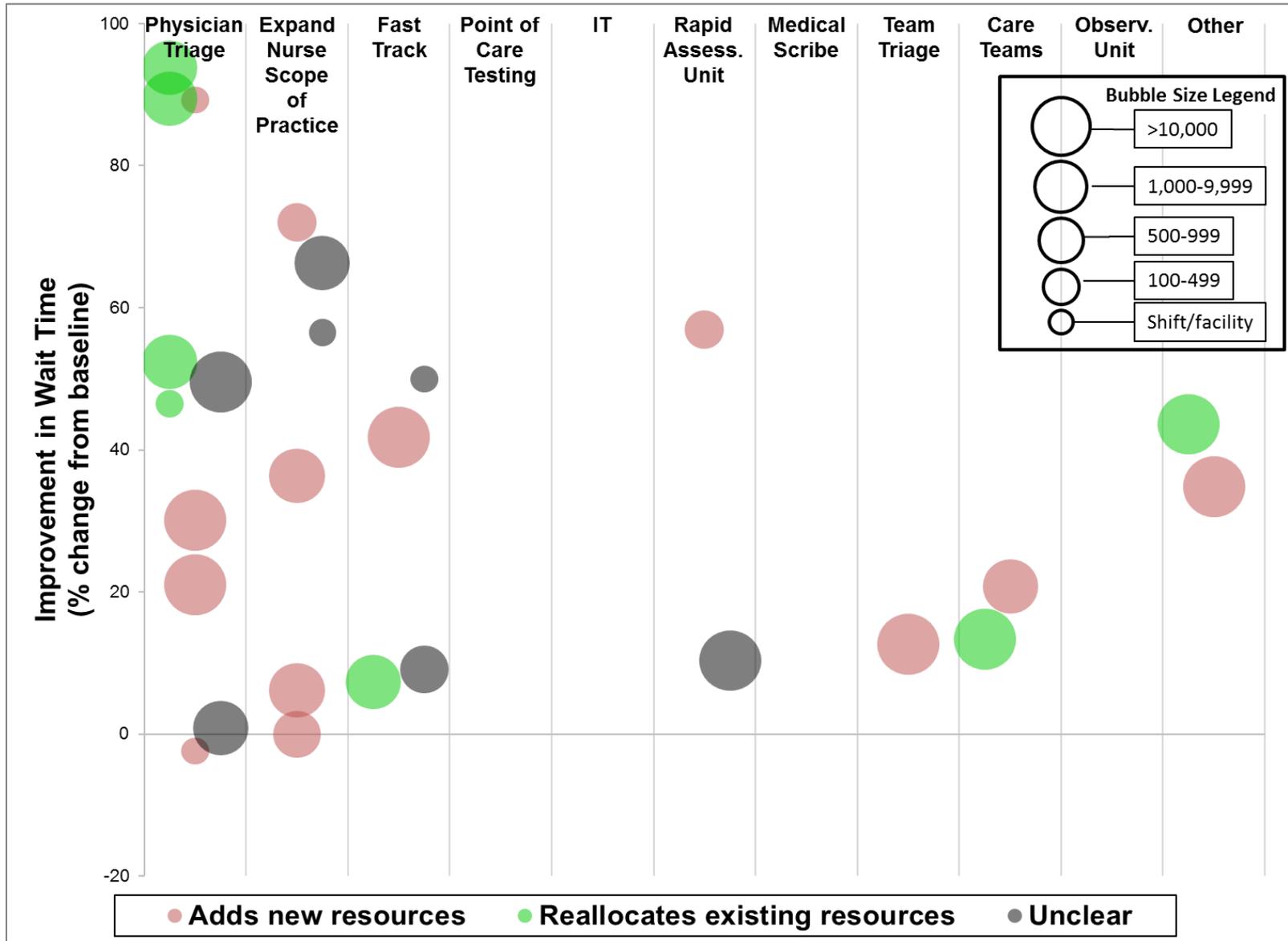
Change in Left Without Being Seen Rate
(Percent Change from Baseline)

Y-axis: Improvement in Left Without Being Seen (% change from baseline)

Categories (columns): Physician Triage, Expand Nurse Scope of Practice, Fast Track, Point of Care Testing, IT, Rapid Assess. Unit, Medical Scribe, Team Triage, Care Teams, Observ. Unit, Other

Bubble Size Legend:
- >10,000
- 1,000-9,999
- 500-999
- 100-499
- Shift/facility

Legend: ● Adds new resources   ● Reallocates existing resources   ● Unclear

Summary

- Costs usually not quantified, very little detail reported among "cost quantified" group
  - Many cases report similar to: "an additional nurse and an additional ED registrar were rostered" (Ardagh, 2002)
- Length of stay (LOS) most commonly measured outcome
  - Baseline times were highly variable
- Improvements in length of stay and wait times
  - Wait time improvements in 10-50% range
  - LWBS reduction in the 0-5% range
- Harms, clinical outcomes, and admissions data reported less often
- The majority of publications came from non-VA single sites with academic affiliation

Limitations

- Limited scope of search
    - Traded off an exhaustive search for quick turnaround
    - Other intervention types may exist
    - More studies of these identified intervention types may exist

- Types of interventions can overlap
    - e.g. Fast Track interventions often include hiring Nurse Practitioners or otherwise expanding nursing scope of practice

Gaps Identified

- There is a need for more rigorous economic evaluations of interventions designed to improve these outcomes
  - There may be additional outcomes of importance other than LOS, wait time, and LWBS

- This work needs to be done in the VA setting
  - Only one VA study identified
  - Distinct structural and demographic characteristics may affect efficiency and outcome findings

- How big a difference is VA aiming to achieve?
  - Are LOS, wait time, and LWBS outcomes in and of themselves OR only as they relate to other outcomes of interest (e.g., patient satisfaction, SAIL measures, etc.)

Evidence into Action

- Presented to the VA Emergency Medicine Field Advisory Committee February 2017
- Final report now available on VA intranet

Quality Improvement

Goal: Reduce Operational Vulnerability

Dept of Veterans Affairs

Emergency Medicine Improvement (EMI) Initiative Performance Plan

Plan Overview and Implementation Guidance [Version 1.0]

EDIS

Chad Kessler, MD   National Director for Emergency Medicine
10/1/2017
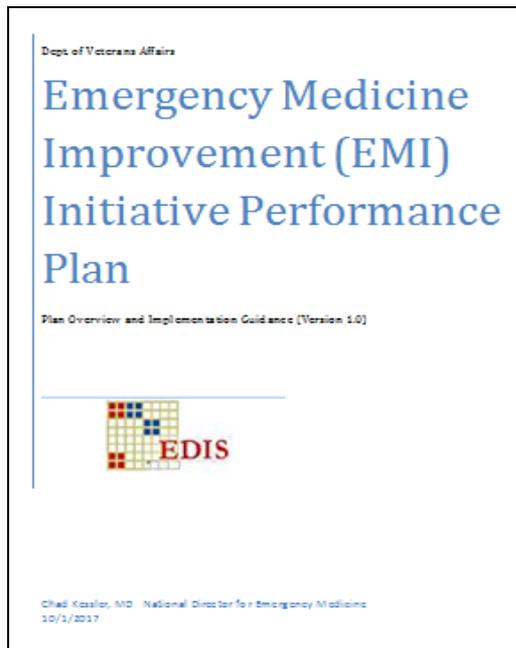
- Initiated October 1 in coordination with 10N

- Quarterly review of site Operational Vulnerability

- Targets sites with unreliable data or performance below threshold on multiple metrics

- Requires improvement plan with escalating levels of oversight

- Unreliable and High Vulnerability outreach efforts have been initiated

Start of FY18 Status
Unreliable Data—20 sites
High Vulnerability—8 sites
Medium Vulnerability—35 sites
Low Vulnerability—77 sites

Quality Improvement
EMI Community of Practice

Support for Field-Led Improvement

Emergency Medicine Newsletter

Monthly EMI CoP Meetings

Repository/Community Discussion Site

[VA Emergency Medicine Community of Practice](#)

News you can use…

Improvement ideas and perspectives…

On-going engagement…

Quality Improvement
PFCC & CFM

Patient Flow Coordination Collaboration

- Based upon Institute for Healthcare Improvement (IHI) Collaborative model and multiple years of successful VHA collaboratives (Bedside Care, Transitioning Levels of Care/Transitions & Patient Flow Coordination)

- Goal of applying proven improvement methods, strong practices, and tools to improve efficiency, effectiveness and patient-centric coordination of teams/processes relative to patient flow across the continuum of patient care

- Capacity: 30-36 VAMC-based teams based upon well-defined application process with focused AIMs; carve-out of 10-15 Emergency Department flow teams.

- Reinforces effectiveness/efficiency of inpatient healthcare delivery processes by engaging teams in a workshop environment, guided by nationally trained coaches, that supports learning, discovery, and continuous improvement

Comprehensive Flow Management

- Objective 1: Continue to Mature Flow Tools and Analytics Portfolio

- Objective 2: Support System-Wide Improvement and High Reliability Efforts

- Objective 3: Communicate Value to Users with quantifiable improvement metrics.

- Using the Emergency Medicine Management Tool (EMMT), we track operational vulnerability scores for all Emergency Departments (ED) and Urgent Care Centers (UCC) to provide improvement support that demonstrate high operational vulnerability.

- The approach is structured calls between our ED improvement support team and the accountable point of contact with a goal of each call to reach a common understanding of the operational issues faced by the ED and discuss priorities for improvement.

Questions?

If you have further questions, please feel free to contact:

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VETERANS HEALTH ADMINISTRATION

Evidence-based Synthesis Program (ESP)