

NOTICE Webinar: Improving Infection Control Practices in Dialysis Facilities

**Wednesday, Sept 5, 2012
2:00 PM – 3:00 PM CT**

**A COLLABORATION BETWEEN GOVERNMENT AGENCIES,
ESRD NETWORKS AND DIALYSIS PROVIDERS**

Agenda

A. Welcome & Introductions

B. Project Overview and Goals

C. Infection Control Check Lists

- Purpose & Overview
 - Review of Sections
-

D. Learned During Preliminary Period

E. Next Steps

F. Questions

NOTICE Project Team

Funded by the Agency for Healthcare Research and Quality (AHRQ) and executed by a team led by the Health Research & Educational Trust (HRET)

Government leadership also includes:

- Centers for Medicare & Medicaid Services (CMS)
- Centers for Disease Control and Prevention (CDC)

Project partners:

- University of Michigan Kidney Epidemiology and Cost Center
- Renal Network of Upper Midwest
- Surveyor Consultants

Goals of NOTICE

- Develop resources to assess infection rates in dialysis facilities
- Create educational resources for dialysis facilities and surveyors, focused on the same effective infection prevention practices
- Develop materials and a quality improvement process that supports efforts to reduce infections in dialysis facilities nationwide

NOTICE Project “Phases”

Assess Literature:
How can infections in dialysis facilities be avoided?

Develop Improvement Resources:
Will they help facilities reduce infections?

Develop Checklist:
Are behaviors that cause infections being avoided?

Test Checklist:
Do checklist results relate to infection rates?

ICCL: Purpose and Overview

Description

Infection control tool comprised of two sets of checklists for direct patient care activities:

1. **Eight “ICE” checklists** - *intended for use by facility supervisory staff and auditors when observing staff practices*
2. **Seven Procedural “user” checklists** - *intended for use by direct care staff at the dialysis station, as reminder-may be a set of quick-reference laminates displayed*
3. **Four informational sheets**



ICCL Section Details

Treatment Initiation

- #1a: CVC access
- #1b: CVC exit site care
- #1c: AV Fistula or Graft access

Medication Preparation and Injection

- #2: Parenteral Medication Preparation and Administration



ICCL Section Details (Continued)

Treatment Termination

- #3a: CVC access
- #3b: AV Fistula & Graft

Cleaning and Disinfection of the Dialysis Station

- #4: Cleaning and Disinfection of the Dialysis Station

Supply Management and Contamination Prevention

- #5: Supply Management and Contamination Prevention

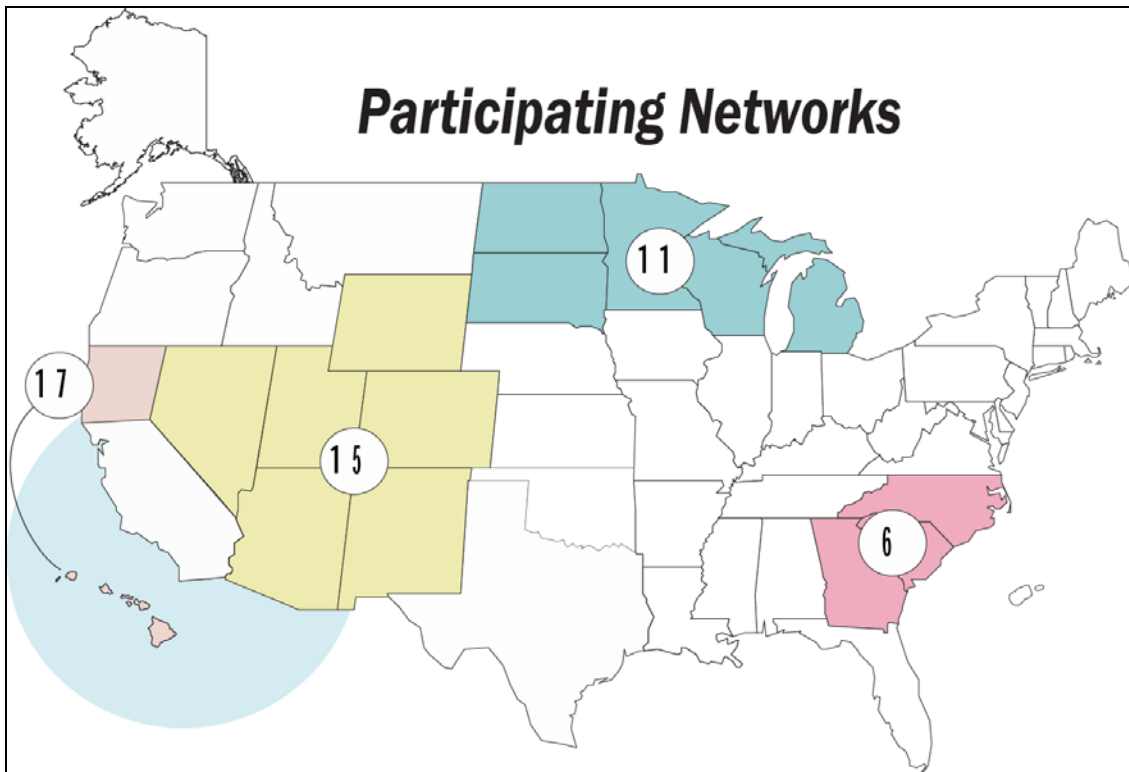


ICCL Informational Sheets

- **Hand Hygiene**-based on the CDC and World Health Organization (WHO) guidelines
- **Providing a Sanitary Environment**- based on CDC guidance adopted into the Medicare ESRD CfC and additional for management of certain diseases
- **Quality Assessment and Performance Improvement (QAPI)**-infection prevention & management components of an effective QAPI program
- **Injection Safety & Safe Medication Handling**-based on CDC guidance

ICCL Tested in Participating Facilities

ESRD Network	States	#of Dialysis Facilities
6	GA, NC, SC	561
11	MI, MN, ND, SD, WI	437
15	AZ, CO, NV, NM, UT, WY	299
17	Northern CA, HI, Pacific Islands	218
Subtotals	16 states	1,515
USA	50 states	5,580
% of USA	32%	27%



Analytic Plan: Aims

1. Provide analyses to support next phases of NOTICE Development and Implementation of a comprehensive quality improvement program for facilities
2. Summarize feedback on ICE visits and ICWS
3. Evaluate potential effects of the intervention (i.e. participation in the study, administration of the ICWS/ICCL, educational materials, and the webinar)
 - on facility practices
 - on infection rates

Data

ICE Site Visit Data

- Facility infection control practices recorded on the ICWS
- 34 Facilities with 2 observed CVC and 2 Fistula/Graft dialysis sessions each and also Medication Preparation
- 8 Checklists (73 items to check)

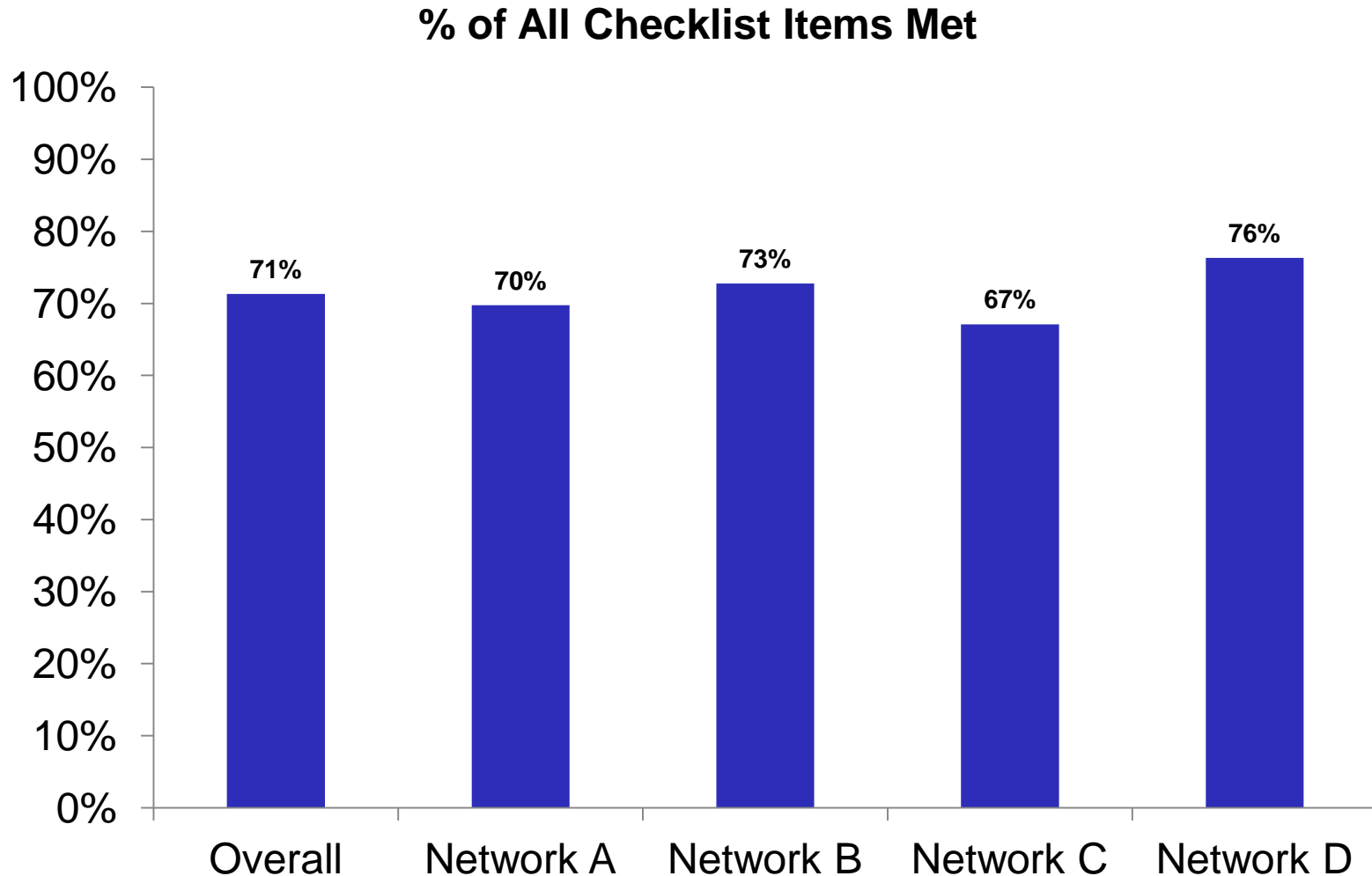
NHSN Data

- Monthly Data entered by facilities in the study
- Data collection from August 2011 to July 2012
- Infection rates based on reported events (Vascular Access Related Bacteremia (VAI), Positive Blood Culture(PBC), Antimicrobial Start, etc.)

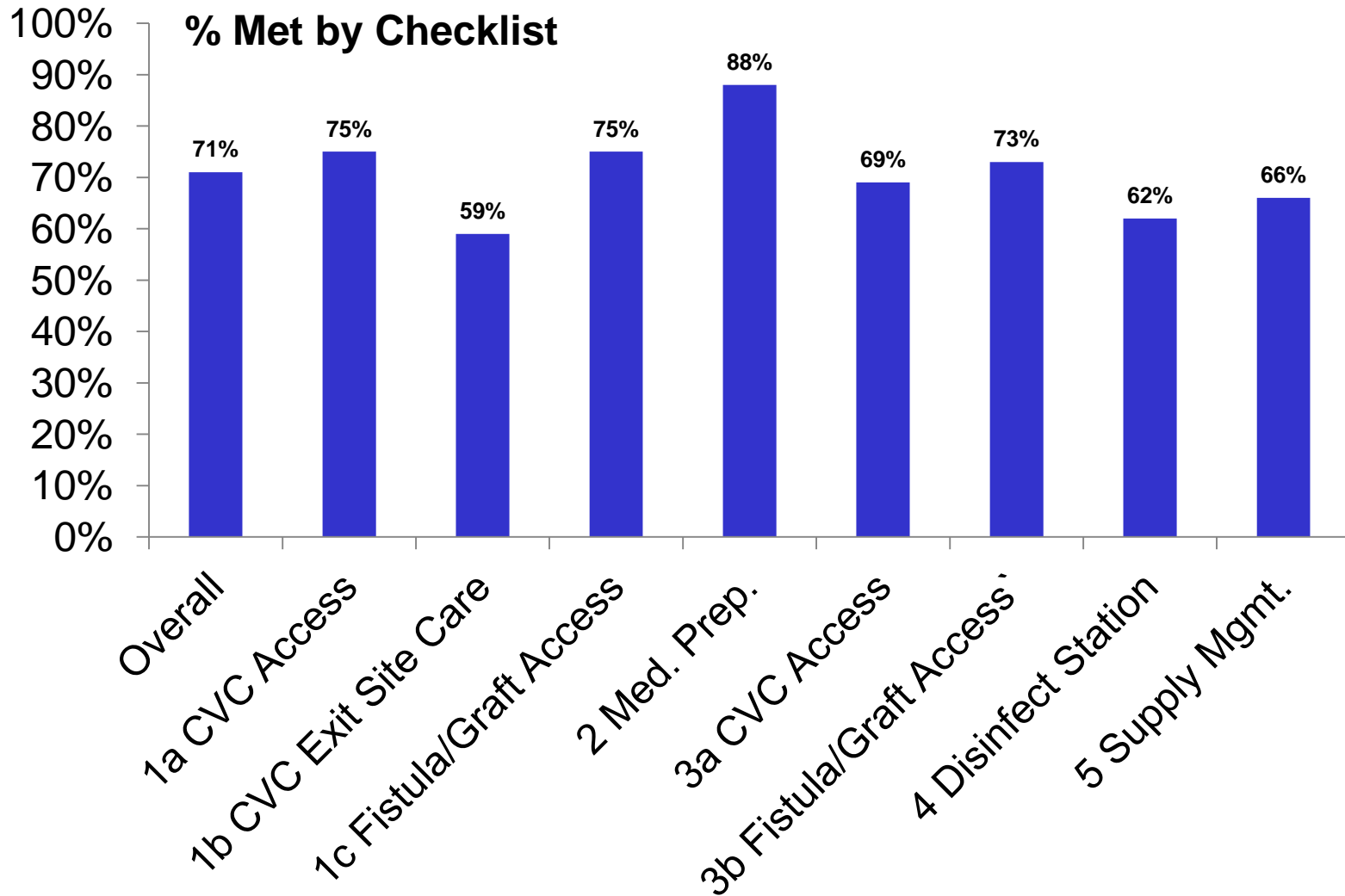
Medicare Claims Data

- Includes infection control measures presented in the Dialysis Facility Reports
 - Annual HD infection rates per 100 patient months
 - Deaths due to infection
 - Hospitalizations due to Septicemia
 - Other facility characteristics

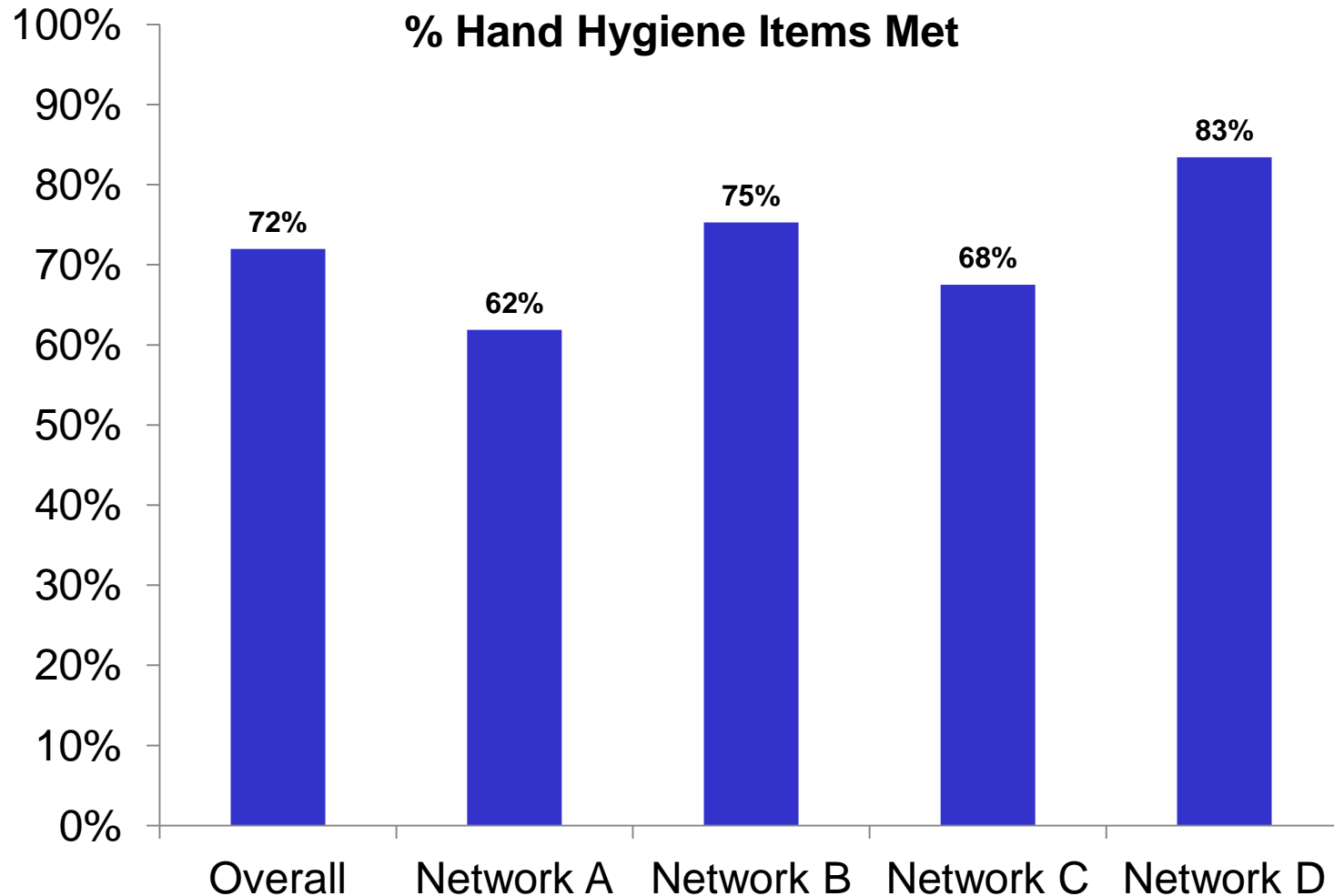
Summary of Findings from Site Visits: Overall Percent of Checklist Items “Met”



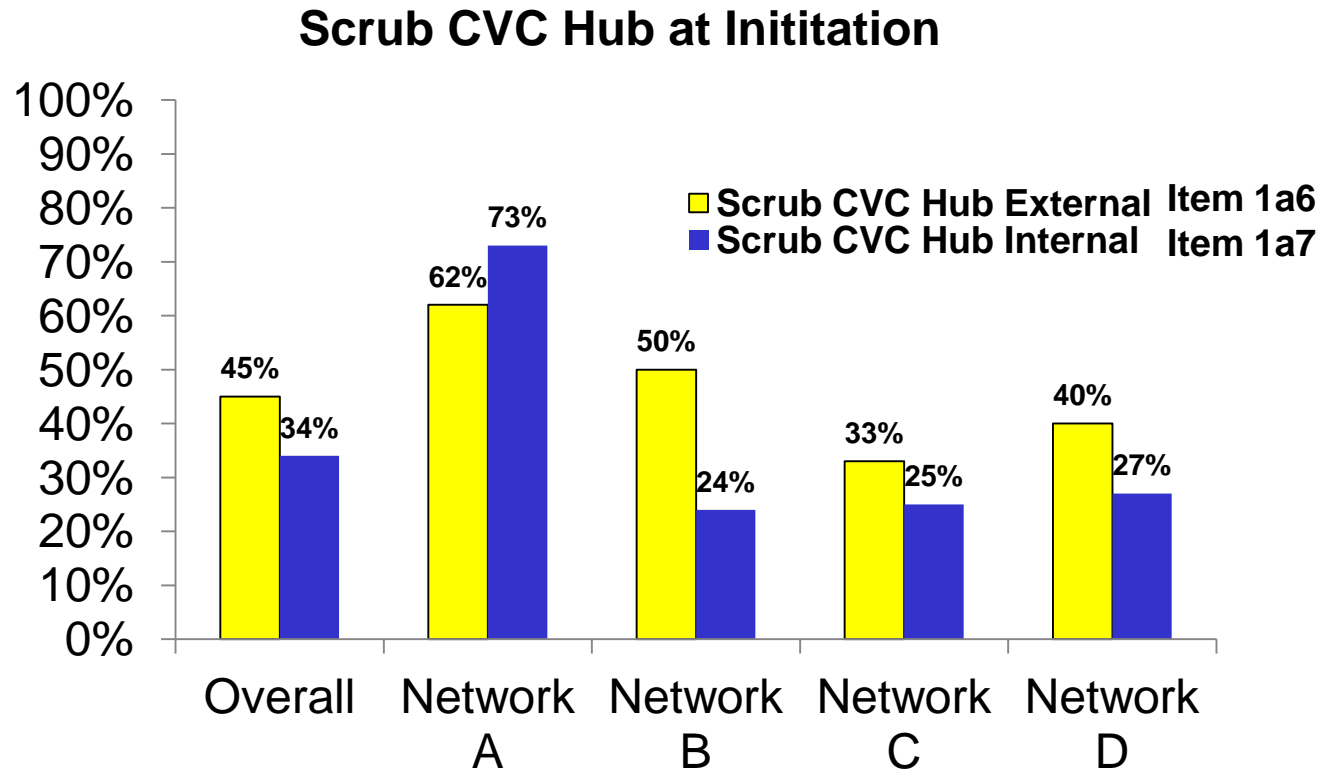
Summary of Findings from Site Visits: Percent “Met” by Checklist



Summary of Findings from Site Visits: Percent of Hand Hygiene Items “Met”



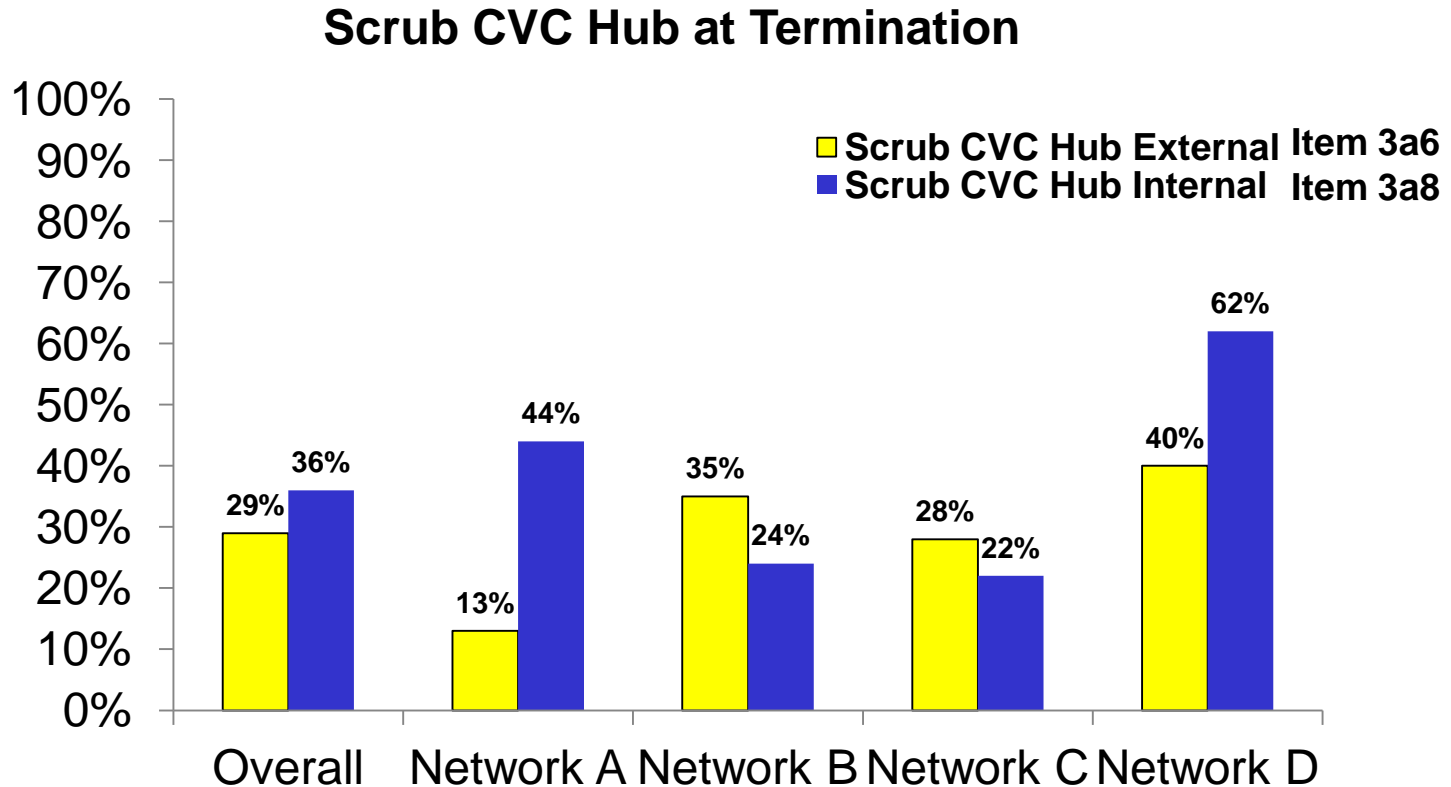
Summary of Findings from Site Visits: Percent Scrubbing CVC Hub at Initiation



Item 1a6: Scrub the exterior of the CVC hubs, with caps in place, with antiseptic (alcohol or povidone iodine or chlorhexidine)

Item 1a7: Remove port caps; scrub internal hub under cap with antiseptic, removing any residue/blood. Note: If using "needleless" catheter system and connector device caps are not removed, scrub the injection port of the connector device.

Summary of Findings from Site Visits: Percent Scrubbing CVC Hub at Termination

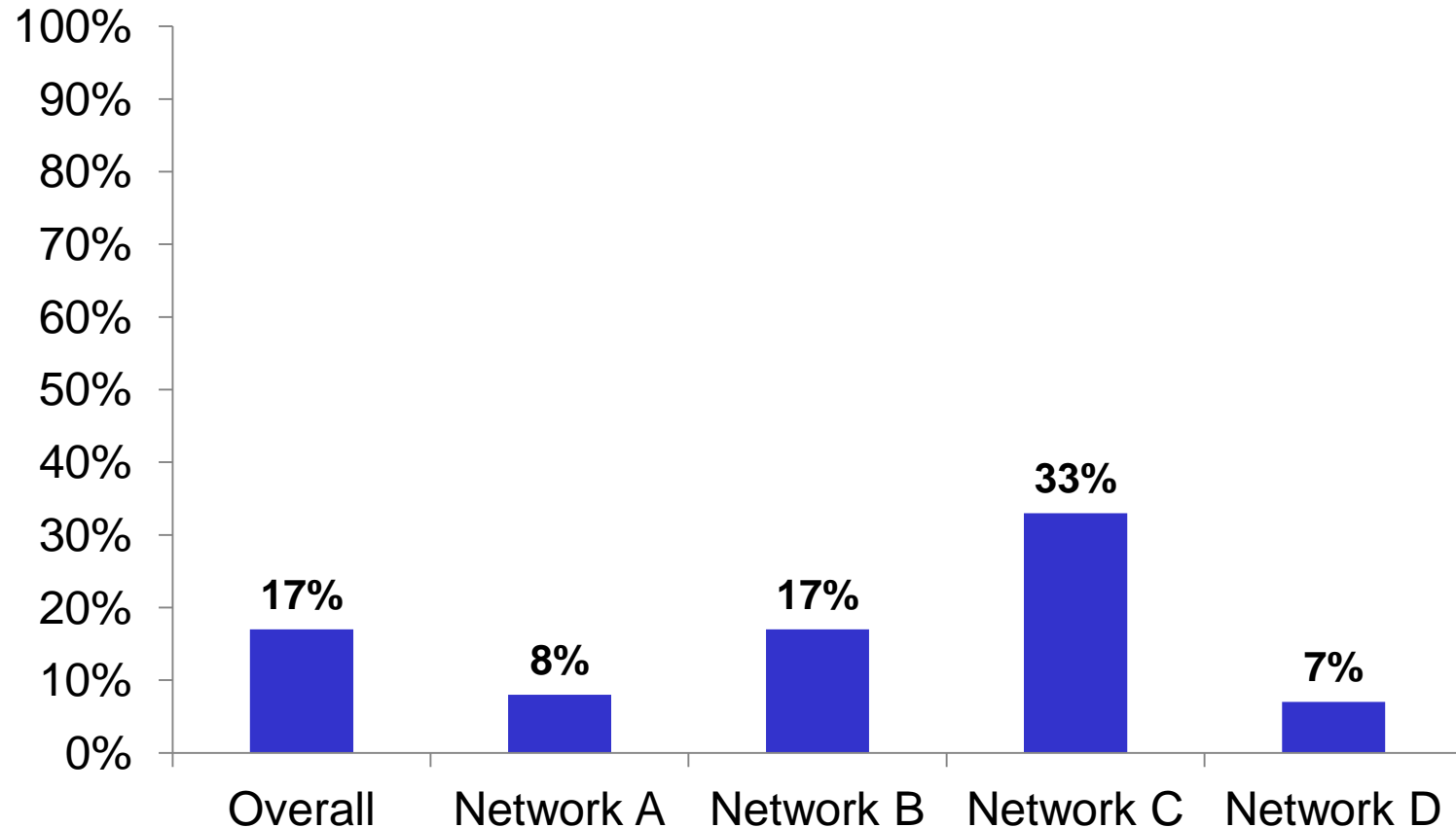


Item 3a6: Don clean gloves, scrub exterior of CVC hub with antiseptic

Item 3a8: Scrub CVC hubs with antiseptic to remove any residue/blood; apply sterile port caps aseptically after post treatment protocol.

Summary of Findings from Site Visits: Percent Use of Antimicrobial Ointment

% Use of Antimicrobial Ointment CVC Exit Site



- Use of Antimicrobial Ointment is not required
- Most facilities do not follow this practice

Correlation of Measured Infection Rates (August to November 2011)

Correlation		r	p-value
ICD-9 Infections	V-Modifier	0.25	0.15
ICD-9 Infections	NHSN VAI	0.37	0.05
ICD-9 Infections	NHSN PBC	0.03	0.87
V-Modifier	NHSN VAI	0.01	0.96
V-Modifier	NHSN PBC	0.08	0.69
NHSN VAI	NHSN PBC	0.73	<.0001

Only the two NHSN measures exhibit a substantial correlation in the rates over the period August to November 2011.

ICWS Predictors of Infection Rate

Outcome	Predictor	% Increase in Risk**	P-value
ICD-9 HD VAR Inf Rate	Overall Hand Hygiene*	80%	0.016
	Hand Hygiene After	79%	0.005
	Supplies 1c2	60%	0.005
	Insert Needle 1c8	46%	0.042
	Injection Port 2a9	49%	0.007
NHSN Bacteremia	Dressing 1b7	50%	0.024
	Injection Port 2a9	54%	0.007
NHSN VAI	HH 2a8	51%	0.001
	Injection Port 2a9	43%	0.023

*Specific hand hygiene items that were individually significant include: 1c1, 2a8, 3a1, and 3a12

** Effect of 100% compliance compared to 0%

- Hand Hygiene is a significant predictor
- Wiping the injection port statistically significant with all four infection measures
- Inserting needle, applying dressing, and assembling supplies associated with ICD-9

Infection Rates Pre- vs. Post-ICE Visit

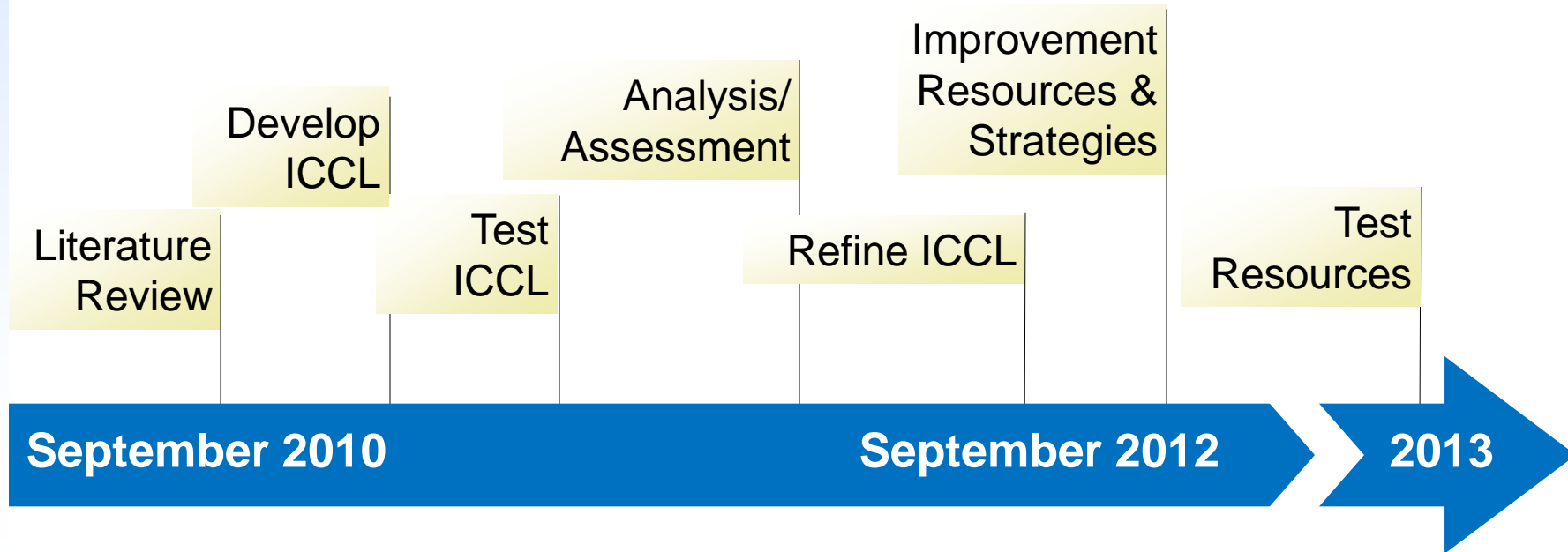
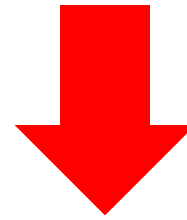
Outcome	Estimate	e^(est)	% Change	P-value
VAI	-0.615	0.54	46%	<.0001
PBC	-0.610	0.54	46%	0.0014

Instances of both VAI and PBC post-ICE visit were 46% less frequent than in the pre- ICE visit period, when provider effects are taken into account.

Further research is required to determine whether improvements in NOTICE facilities are associated with national trends and/or seasonal variation in infection rates. Analyses will be conducted using infections reported in Medicare claims data.

NOTICE Project Next Steps

Project next steps offer opportunities for facilities and Networks to engage in infection control activities



Q & A

- Q & A Session with NOTICE project team

***Thank you for working with us to keep
your patients safe from Healthcare
Associated Infections (HAI)!***

**Agency for Healthcare Research and Quality
Centers for Medicare and Medicaid Services
Centers for Disease Control and Prevention
State Survey Agencies**

ESRD Networks

Health Research and Educational Trust

Univ. of Michigan Kidney Epidemiology & Cost Center