Leveraging Data to Support Infection Preventionists:

Insights & Strategic Priorities from a Comprehensive Needs Assessment

Amy Encinger, PhD
University of Nebraska Medical Center
Global Center for Health Security

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY

Presentation Overview

OBJECTIVES

BACKGROUND

PURPOSE

METHODOLOGY

RESTULTS

KEY TAKEAWAYS & CONCLUSIONS

NEXT STEPS

QUESTIONS

Objectives

- Assess Infection Preventionist Needs

- Identify Focus Areas

- Encourage Collaboration

Infection Prevention & Control: A Critical Need

- **Essential for Safety:** Crucial in safeguarding patients and healthcare workers

- **Pandemic Impact:** COVID-19 highlighted critical IPC roles and existing gaps (Martinez et al., 2023)

- **Key Challenges:**
  - Disparities in healthcare worker expertise (Martinez et al., 2023)
  - Structural issues in training programs (CDC, 2021; Martinez et al., 2023)
  - Limited resources in small, rural hospitals

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY

Evolving Demands & Responses in IPC

- **Increased Recognition & Demand:** Frontline IPs saw a rise in demand for pandemic planning and response skills (Houben, 2024; Rebmann et al., 2023).

- **Workforce Challenges:**
  - Difficulty in retaining and recruiting skilled IPs, with high vacancy rates and anticipate retirements (Rebmann et al., 2023; Vassallo et al., 2019)

Purpose of Needs Assessment

- **Inform resource development**

- Identify priorities

- Facilitate collaboration

- Benchmarking & evaluation

- Advocacy and resource allocation

Methods

HAI/AR Director Needs Assessment	Infection Preventionist Needs Assessment

• Collected May – July 2023
  • Individual survey links emailed directly to HAI/AR Directors
  • 113 unique emails sent out
    • 38 completed
    • 34% response rate
	• Collected June - August 2023
	  • HAI/AR Directors, APIC chapters, contacts, webinars, QR code at APIC conference
	  • 309 completed
	    • 267 IPs, 42 other

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY

Demographics

IP Race Ethnicity

Other,4% AI/AN,1% Asian,5% Black,6% Hispanic,3% Multi-racial,1%
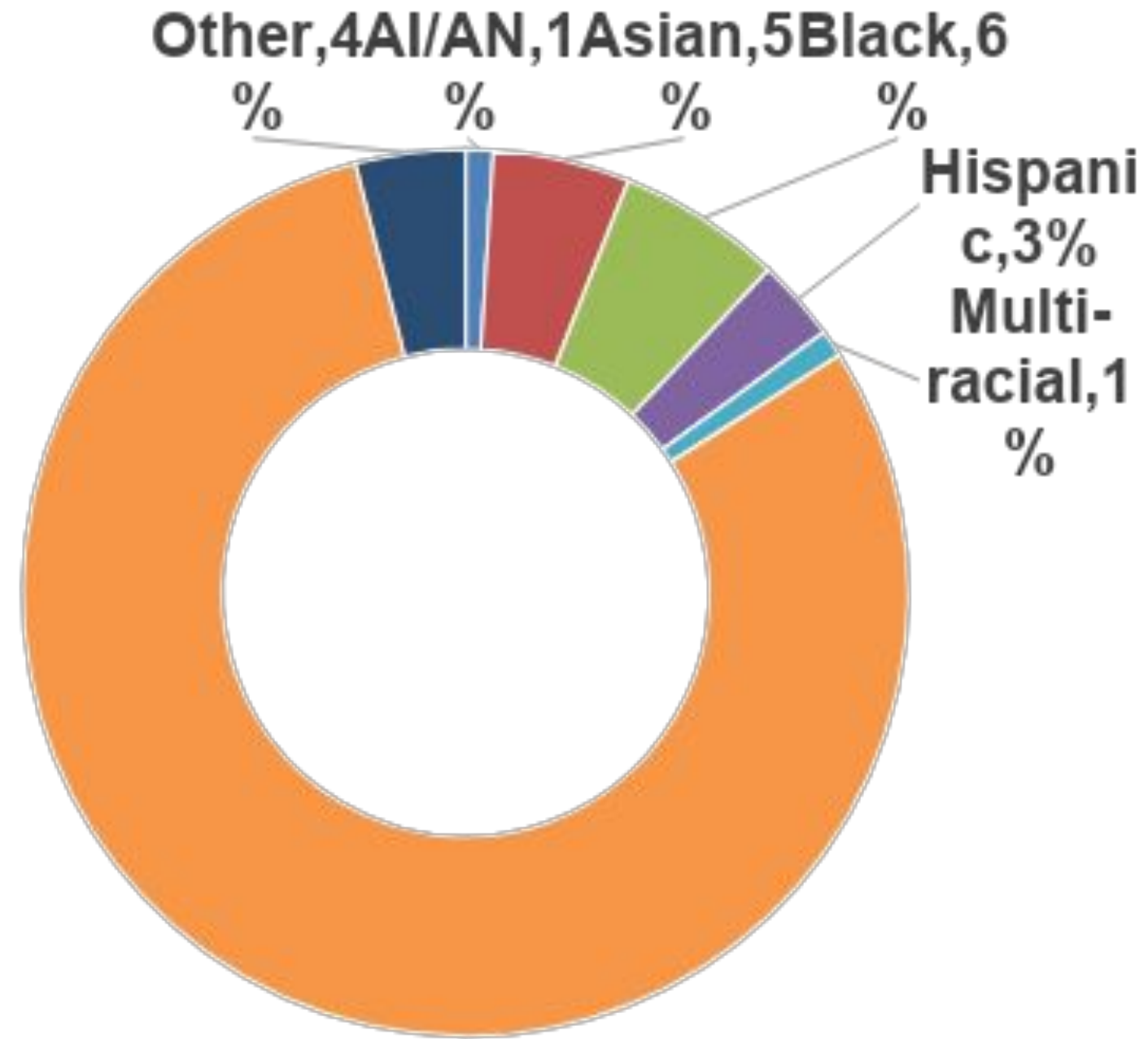
n=267

HAI/AR Race Ethnicity

AI/AN,6% Black,9% Hispanic,6% Multiracial,

n=38

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY
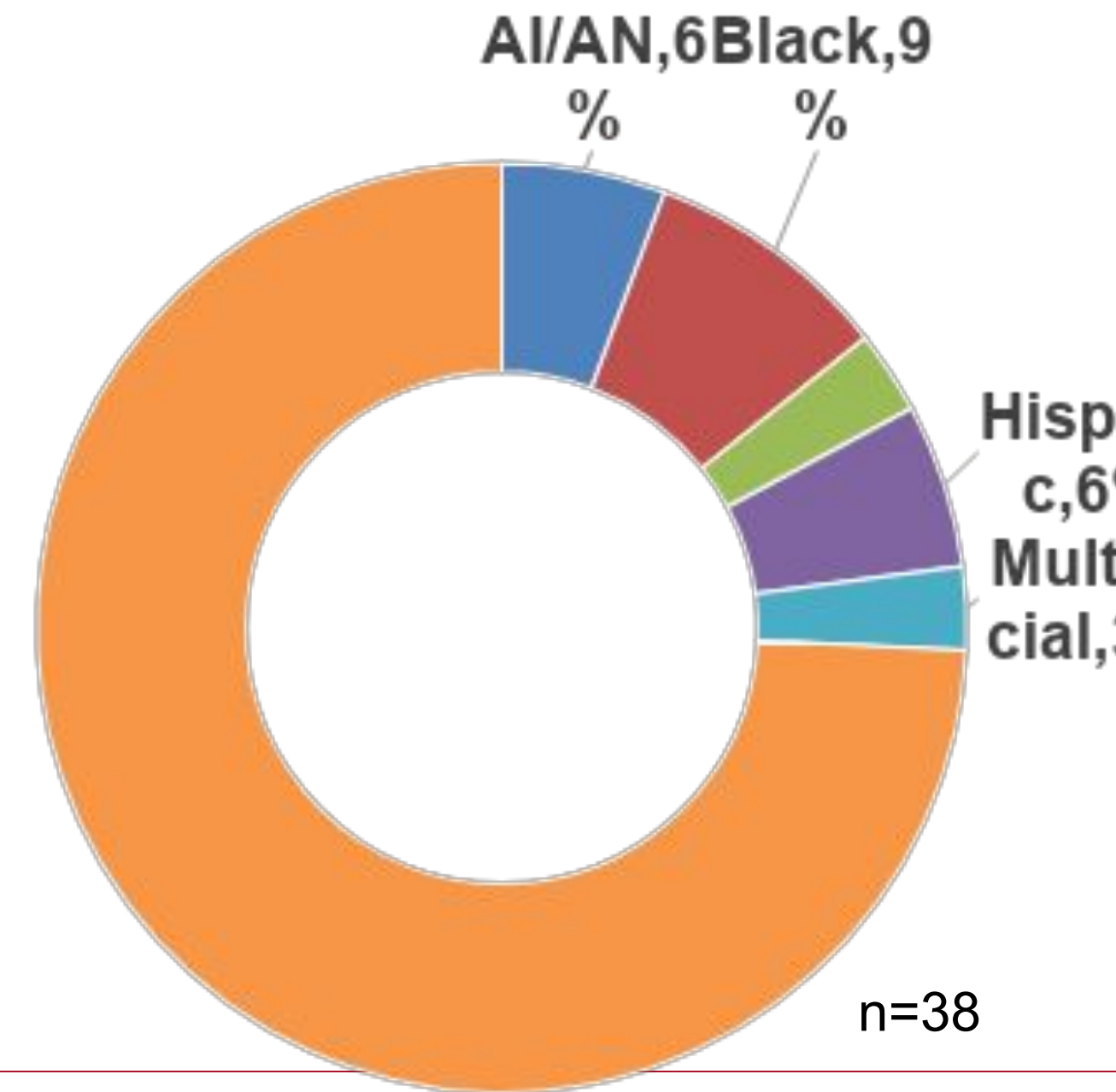
IP Needs Assessment completion by region
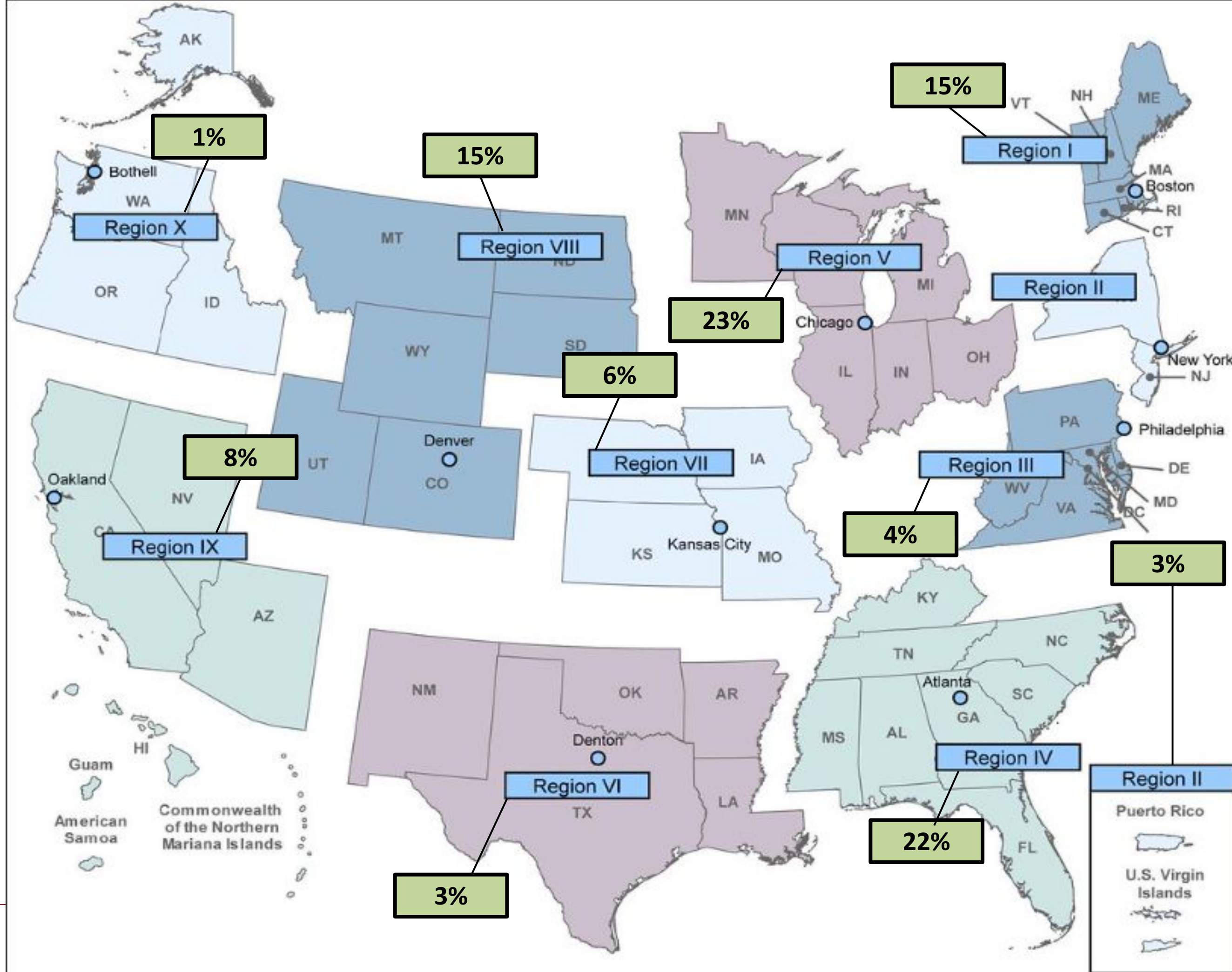
Source: Federal Emergency Management Agency. | GAO-16-38

Years of IPC Experience

	HAI/AR Director (n=38)	IP (n=267)
≤1 year		11%
1-3 years	5%	18%
3-5 years	16%	10%
5-7 years	10%	9%
7-10 years	21%	15%
>10 years	45%	37%

Time in Current Role

	HAI/AR Director (n=38)	IP (n=267)
≤1 year	13%	17%
1-3 Years	24%	26%
3-5 Years	19%	11%
5-7 Years	18%	8%
7-10 Years	18%	14%
>10 Years	8%	26%

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY
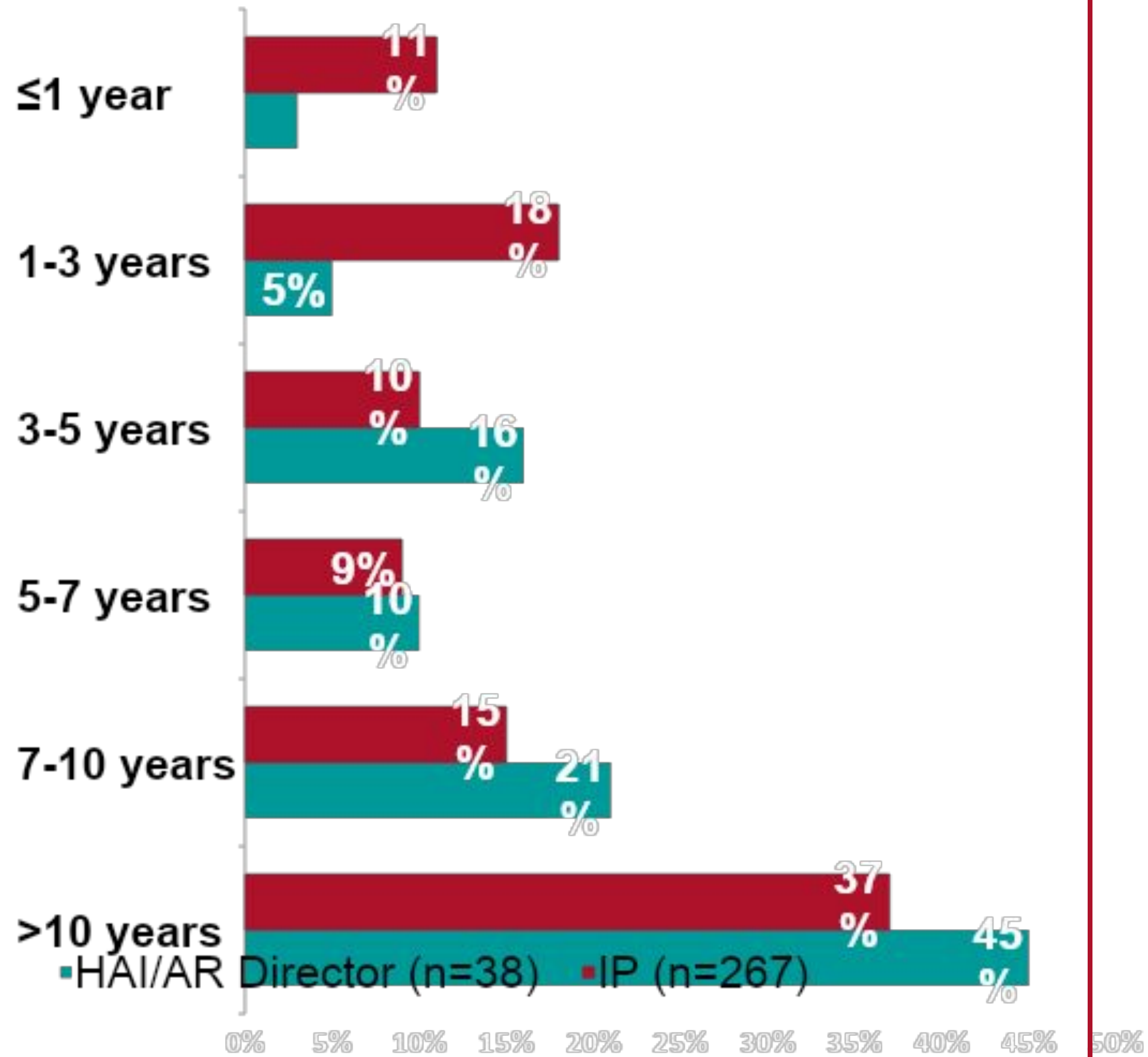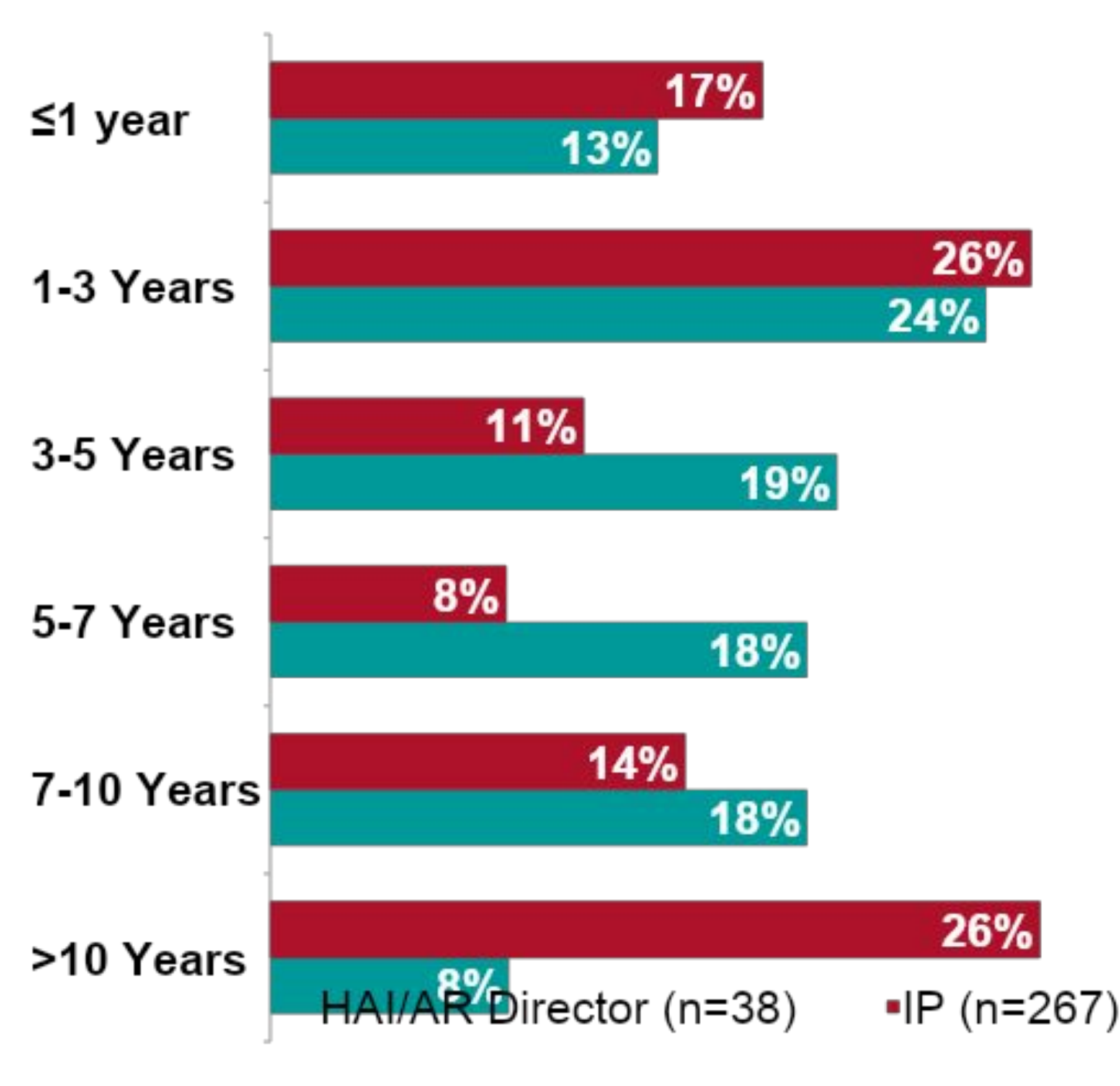
IPC Years of Experience x Facility Size

Legend:
Buffer
- ≤ 6 months
- Over 6 months - 1 year
- Over 1 year - 3 years
- Over 3 years - 5 years
- Over 5 years - 7 years
- Over 7 years - 10 years
- Over 10 years
Buffer2

6-24 Beds (n=18): 5% | 11% | 39% | 17% | 28%

25-99 Beds (n=58): 10% | 10% | 21% | 9% | 10% | 15% | 28%

100-299 Beds (n=90): 4% | 11% | 18% | 9% | 8% | 16% | 34%

300+ Beds (n=96): 2% | 2% | 14% | 10% | 9% | 17% | 46%

n=267
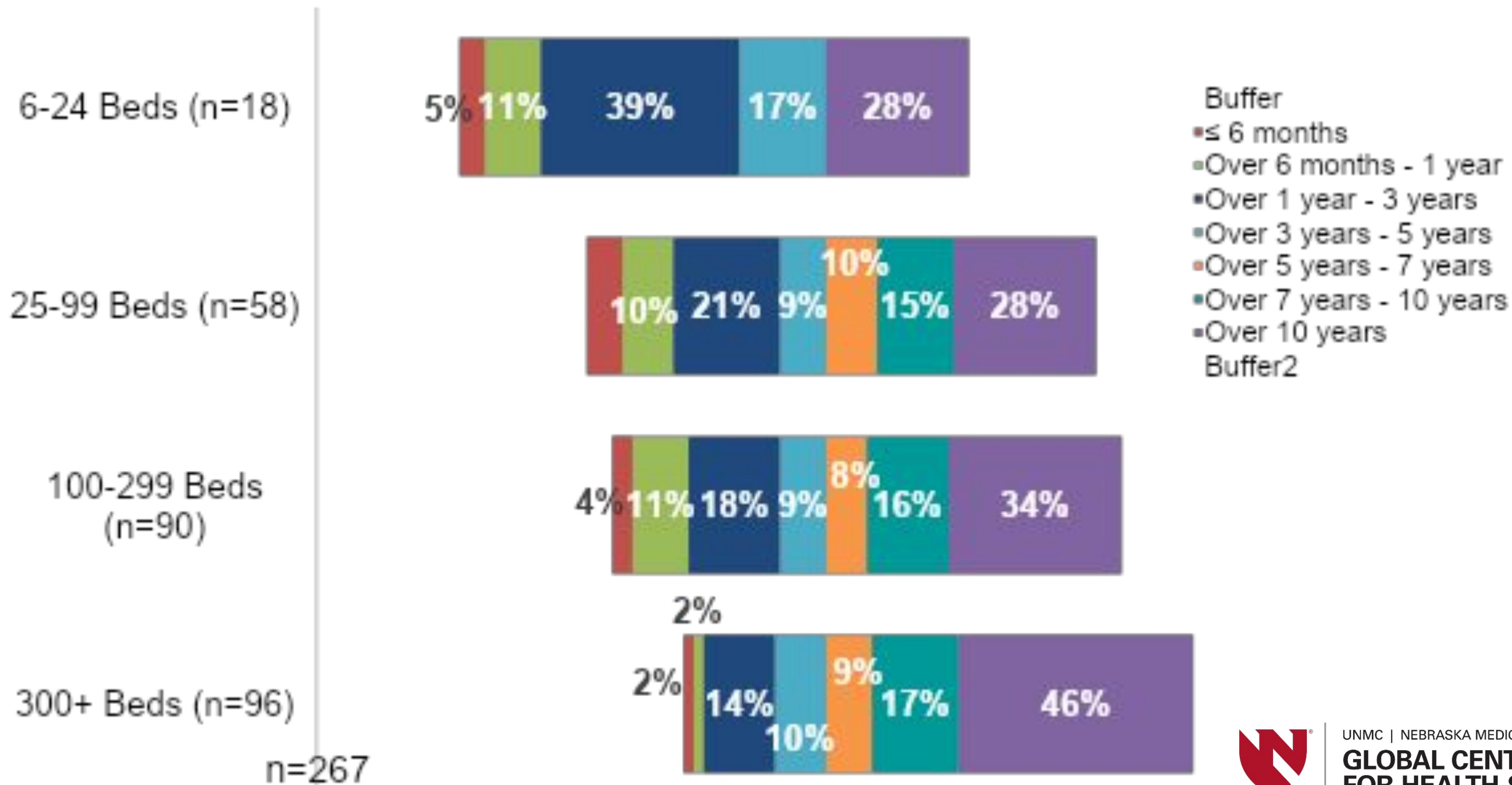
FTEs &
Hours Dedicated to IPC Program

41% of IP respondents indicated that they serve multiple roles (e.g., Quality, Employee Health, Safety, Nursing related role) in their facility, in addition to being an IP

Facility FTEs Dedicated to IPC Program

Category	Percentage
<1	13%
1	30%
2	18%
3	8%
4	7%
5-7	10%
8-10	7%
>10	7%
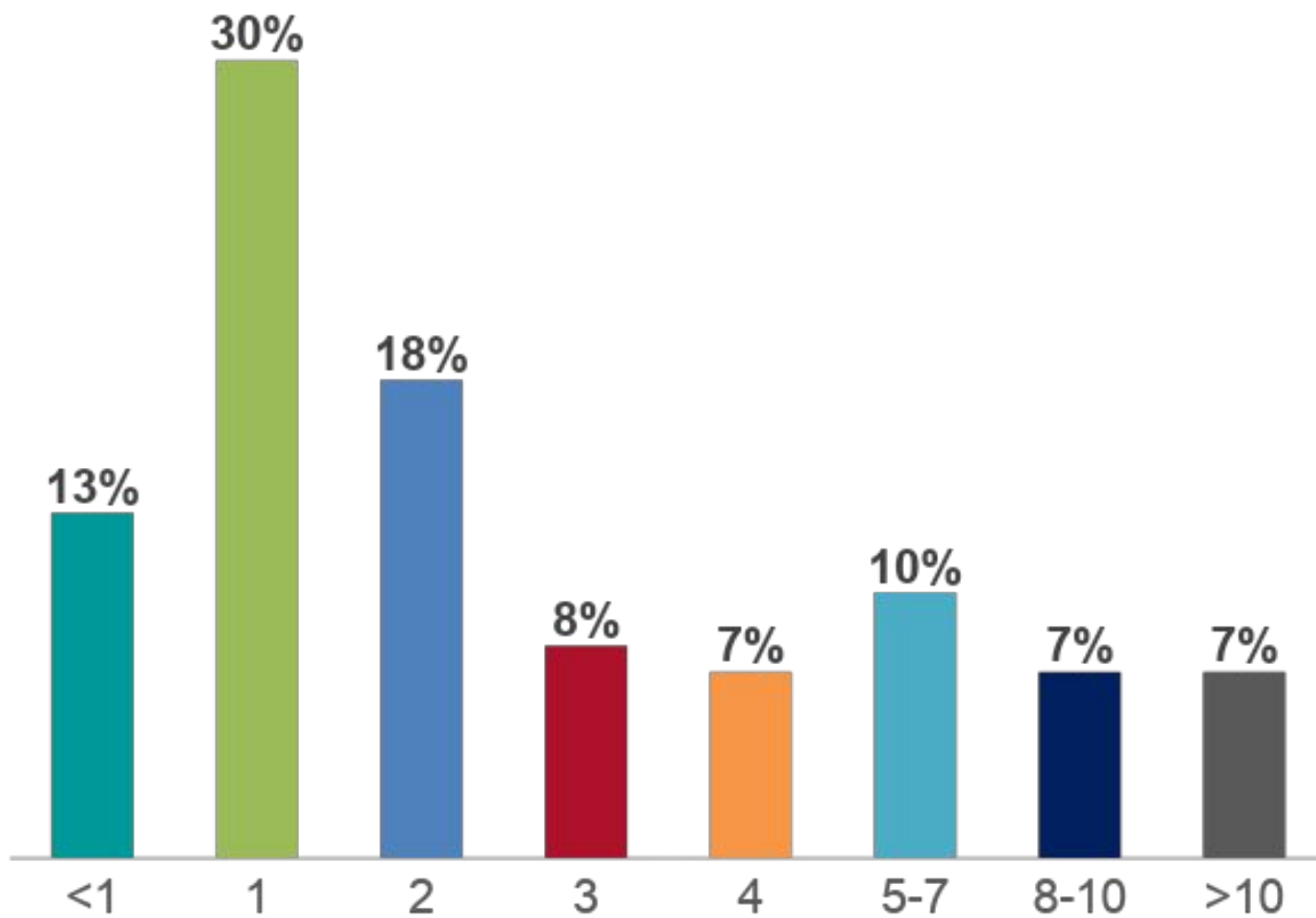
Hours Per week dedicated to IPC program

Category	Percentage
<10	3%
10-15	4%
16-20	8%
21-25	4%
26-30	10%
31-35	4%
36-40	34%
>40	33%
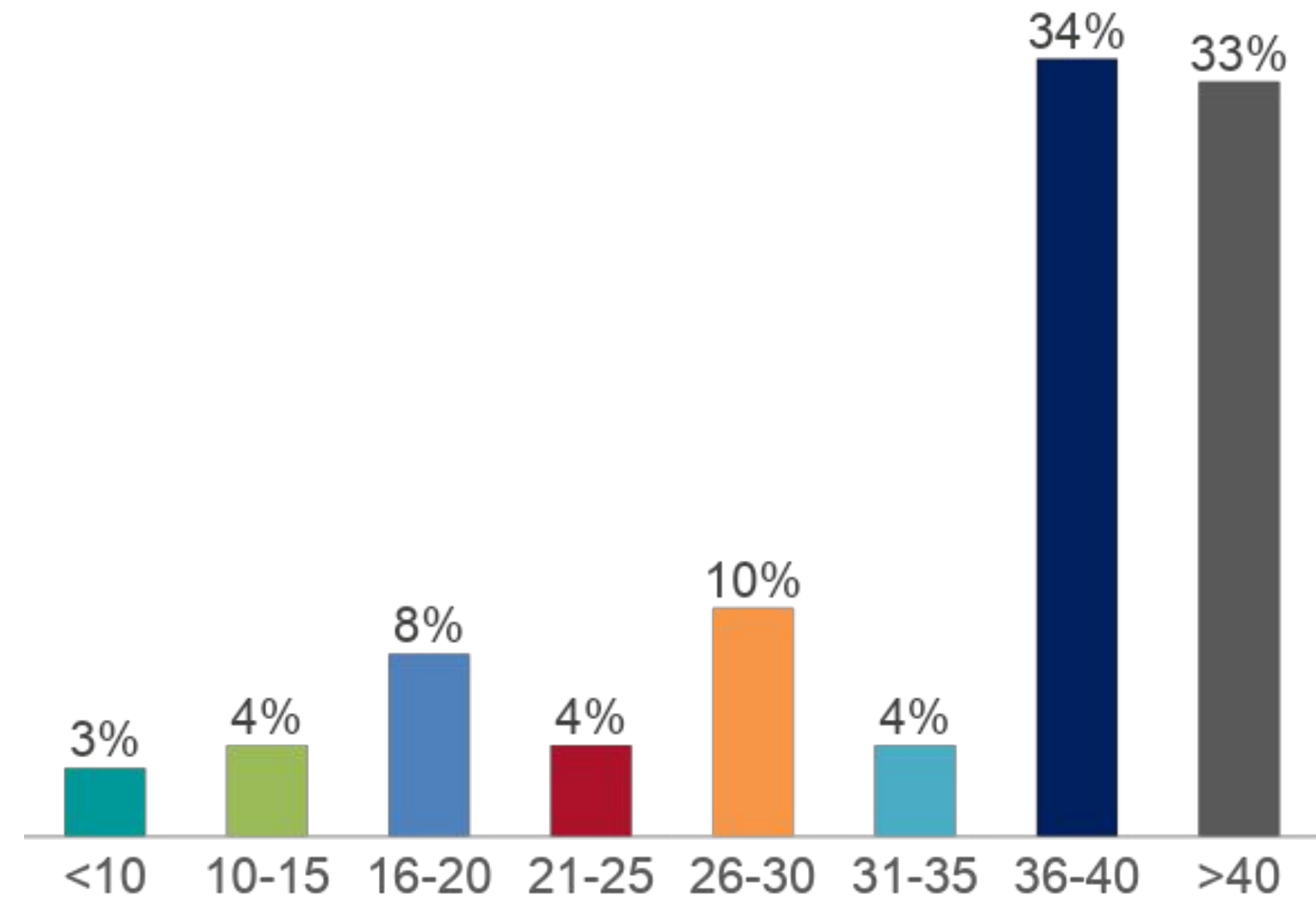
n=267

FTEs Dedicated to IPC Program x Facility Size
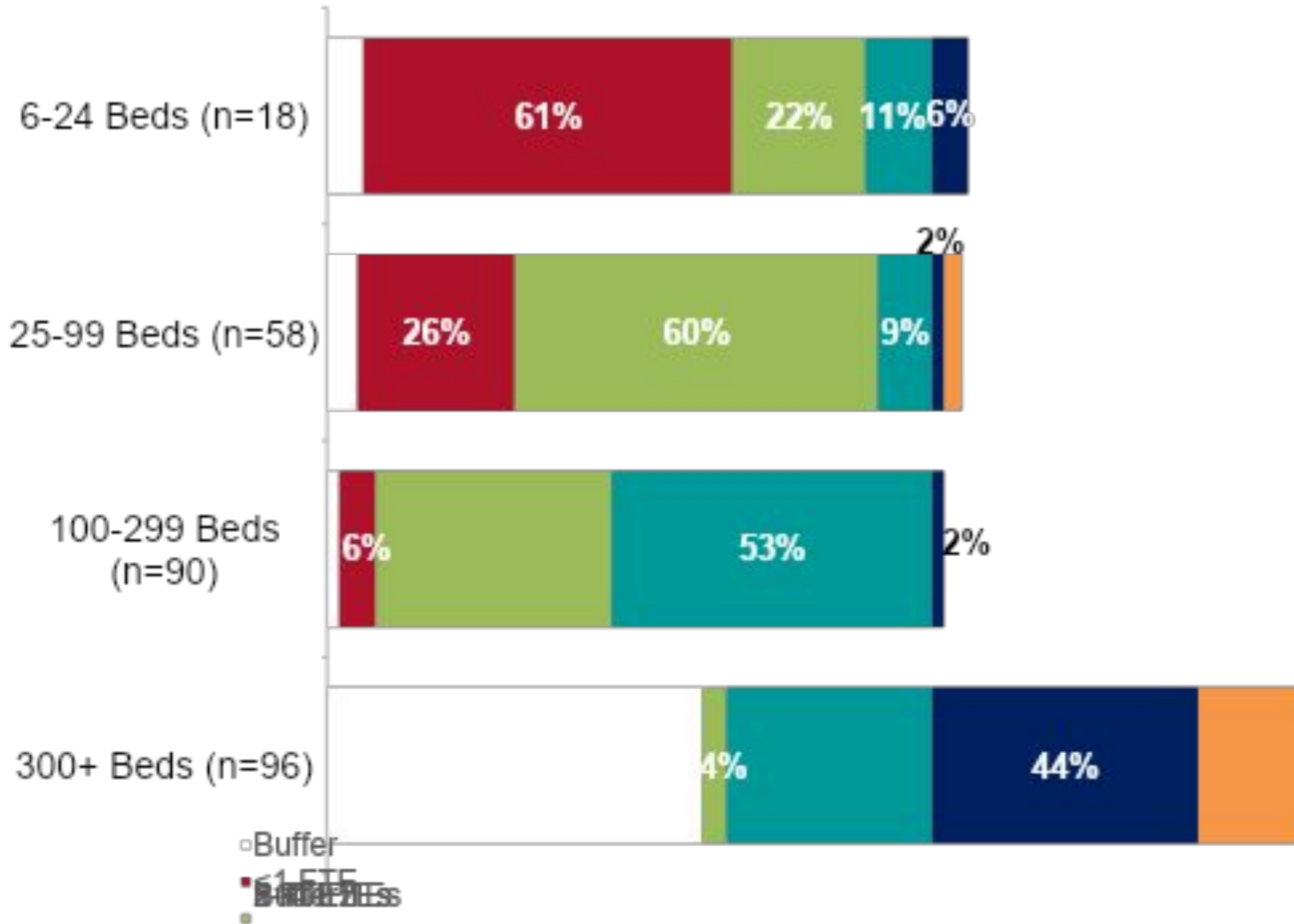
73% of IP programs with <1 FTE (n=33) dedicate 25 hours or less to their facility's infection prevention program.

Results

- **Relationships**

- Concerns

- Training Availability & Needs

- Resource Needs

UNMC | NEBRASKA MEDICINE
**GLOBAL CENTER
FOR HEALTH SECURITY**

Relationships: Support & Engagement

- **Engagement:** 74% report active leadership engagement

- **Understanding:** 67% understand the role of IPC

- **Support:** 63% supportive of IP programs

- **Prioritization:** 59% view IPC practices as a priority

- **Engagement: 66**% report active leadership engagement

- **Understanding:** 68% understand the role of IPC

- **Support: 59**% supportive of IP programs

- **Prioritization:** 59% view IPC practices as a priority

58% of IPs feel heard by hospital leadership when voicing concerns about the IPC program at their facility

UNMC | NEBRASKA MEDICINE
**GLOBAL CENTER
FOR HEALTH SECURITY**

Facility Leadership IPC Support & Engagement
x
Facility Size
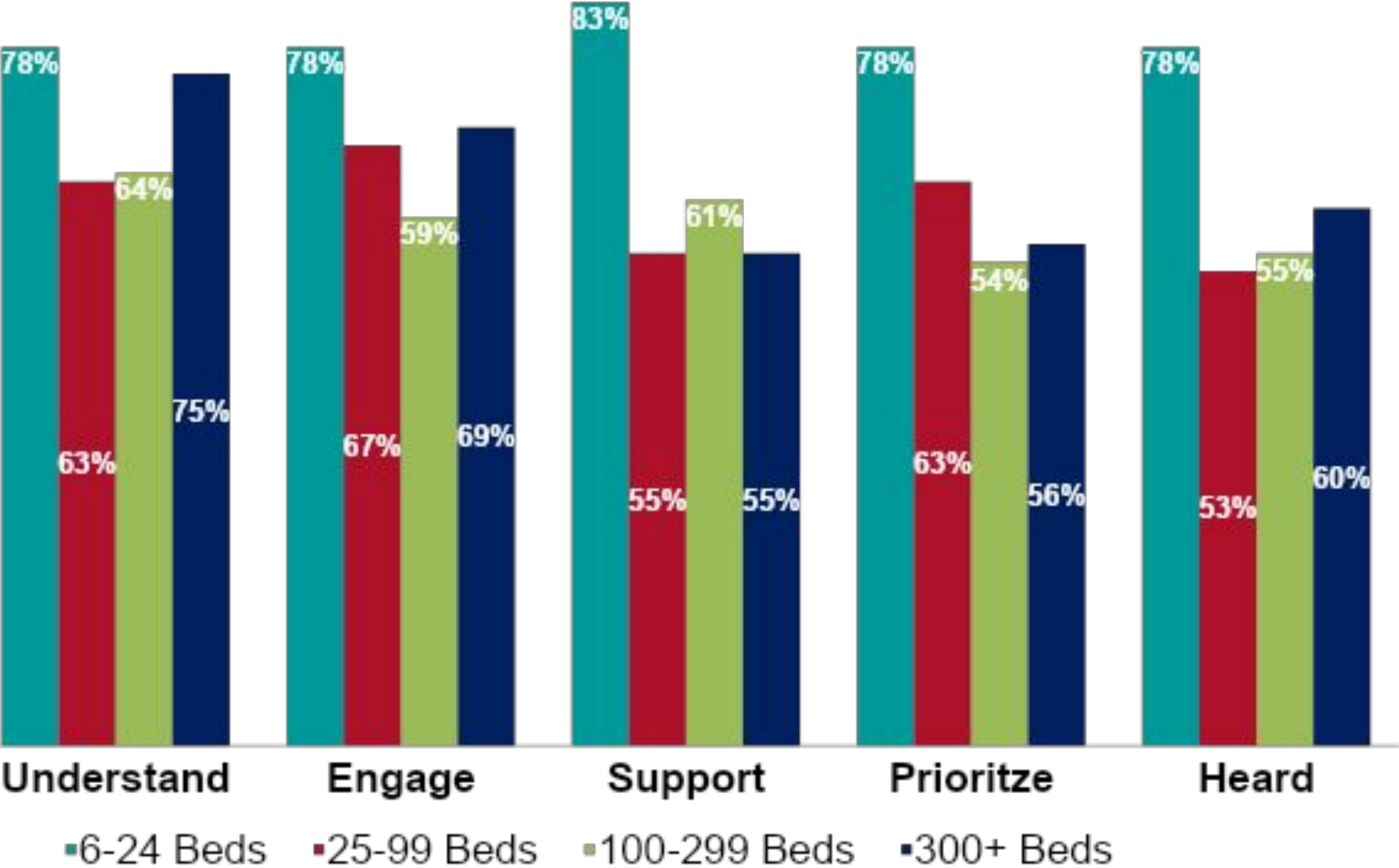
>**50%** of IPs **across all facility sizes** report positive relationships with their facility leadership.

>**75%** of IPs at **CAH facilities** report positive relationships with their facility leadership.

Understand | Engage | Support | Prioritze | Heard

- 6-24 Beds
- 25-99 Beds
- 100-299 Beds
- 300+ Beds

n=260

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY

Relationships: Collaboration & Communication

Collaboration & Communication: HAI/AR Director Insights	Collaboration & Communication: IP Insights
• **Collaborative Relationships: <u>100%</u>** report strong collaborations with IPs and hospitals • **IPs Understanding of Contact Protocols:** 97% understand when to contact HAI/AR team • **Hospital Leadership Understanding of Contact Protocols:** 83% supportive of IP programs	• **Collaborative Relationships: <u>63%</u>** report strong collaborations with HAI/AR leaders • **IPs Understanding of <u>*When to*</u> Contact: 74**% understand when to contact HAI/AR team • **Understanding of <u>*Who to*</u> Contact: 70**% with questions or concerns

63% of IPs are aware of the work the HAI/AR program does to support IPC in their state/territory

Awareness & Collaboration with HAI/AR Programs

- Awareness is high: Most respondents from facilities of all sizes are aware of HAI/AR program support

- **Contact Clarity:** Small facilities most confident about who to contact

- Contact Understanding & Collaboration: Knowing who to contact is most reported by 25-99 bed facilities. Strongest collaboration is noted in 100-299 bed facilities

Relationships Matter

Significant positive associations between IP job satisfaction and hospital leadership's :

- Support for job responsibilities and program goals
- Responsiveness to concerns voiced about IPC programs

Significant negative associations between IP role strain and job stress and hospital leadership's :

- Engagement with IP program
- Prioritization of IPC practices
- Support for job responsibilities and program goals
- Responsiveness to concerns voiced about IPC programs

Concerns

IP Concerns Among HAI/AR Directors

- 100% of HAI/AR directors are concerned about IP turnover

- 88% reported that IP turnover is high in their state/territory

- 89% are worried about the availability of affordable, quality IP training

Concerning HAIs

- 76% of HAI/AR Directors are moderately to extremely concerned about HAIs in their state territory.

- 41% of IPs are moderately to extremely concerned about HAIs in their facility.

HAI/AR Director State/Territory Concerns (n=27)					
11%	15%	67%		4%	4%

•CAUTI •CLABSI •C. diff •MDROs •SSIs •Other

Other HAI Conce Include:

Candida Auris
Respiratory Disea
VAE
VAP

IP Facility Concerns (n=216)					
24%	24%	13%	14%	20%	4%

•CAUTI •CLABSI •C. diff •MDROs •SSIs •Other

Other HAI Concerns Include:

Respiratory Diseases
Candida Auris
VAEs
UTIs
Pneumonias
Construction Risks
Water Management

IPC Training Availability & Needs

61% of IPs indicated the training and professional development opportunities available to them at their facility are somewhat adequate to adequate.

57% of IPs reported that they are somewhat to extremely concerned about the availability of affordable, quality training relation to IP professional development

54% of IPs are somewhat to extremely concerned about having time to complete IPC trainings

Resource Needs

HAI/AR Director Reported: Do the IPs in your state/territory have the _necessary resources_ to _implement programs_ for the following HAIs:

Approximately 50-60% of IPs were reported by HAI/AR directors to have most or all the necessary resources to implement programs for the listed HAIs in their state/territory.

	Unsure	None	Some	Most	All
VAEs		11%	26%	33%	15%
CDI	7%		33%	33%	19%
CAUTI	4%		33%	37%	19%
MDROs			37%	41%	15%
SSIs			37%	41%	15%
CLABSI	11%	4%	26%	41%	19%

Buffer · Unsure · None · Some · Most · All

n=27
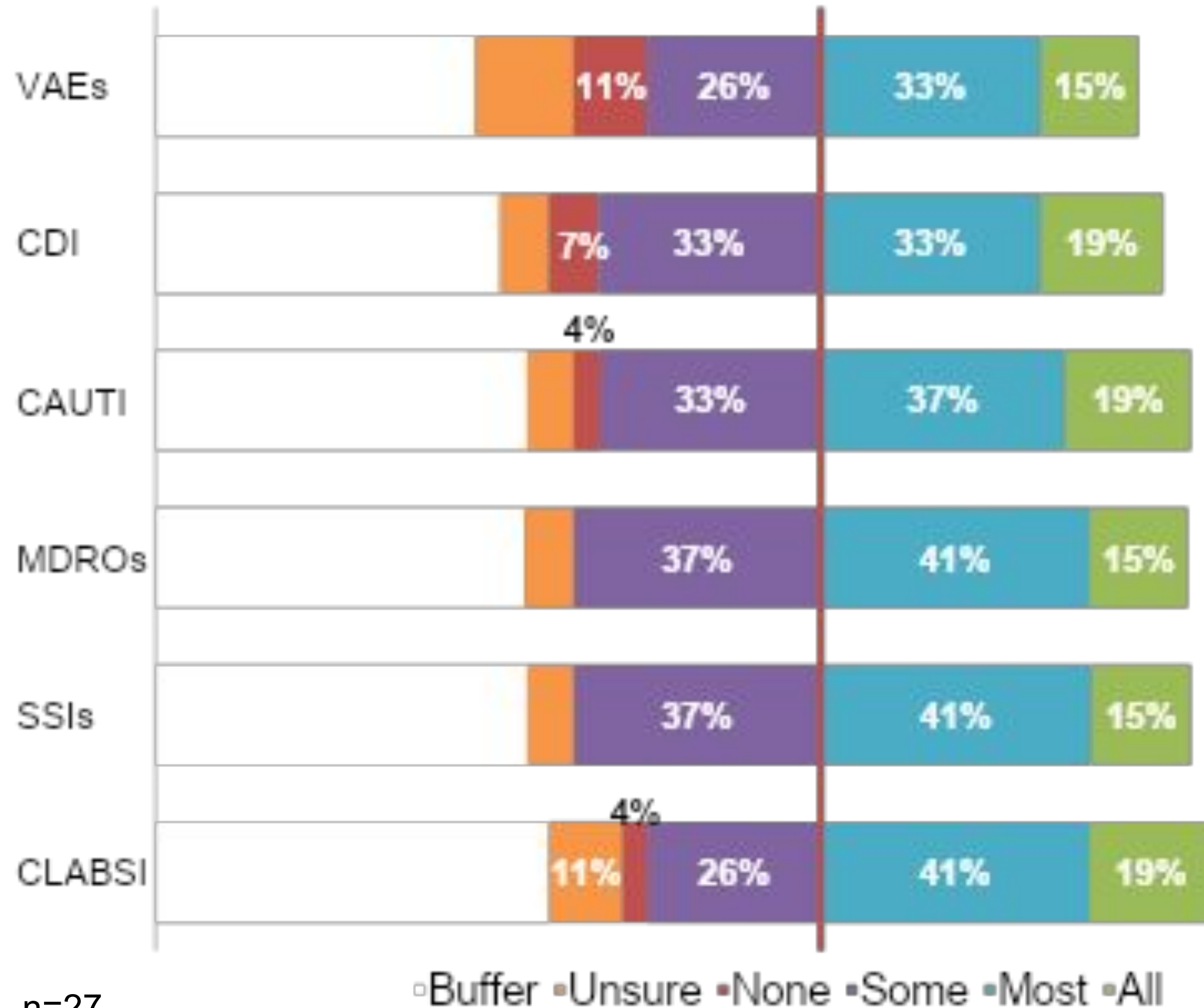
IP Reported: Do you have the _necessary resources_ to _implement programs_ for the following HAIs in your facility:

- Majority of IPs reported they have most or all the necessary resources to implement programs for the listed HAIs in their facilities.

- VAEs and SSIs were reported as the HAIs most lacking in necessary resources
  - **Note:** Some facilities may not have ventilators which may contribute to reporting VAE resource lack

	Buffer	Unsure	None	Some	Most	All
VAEs				10% 22%	33%	22%
SSIs				27%	38%	22%
CLABSI			3%	20%	42%	28%
MDROs			4%	22%	41%	28%
CDI				17%	39%	35%
CAUTI				20%	44%	29%

n=267
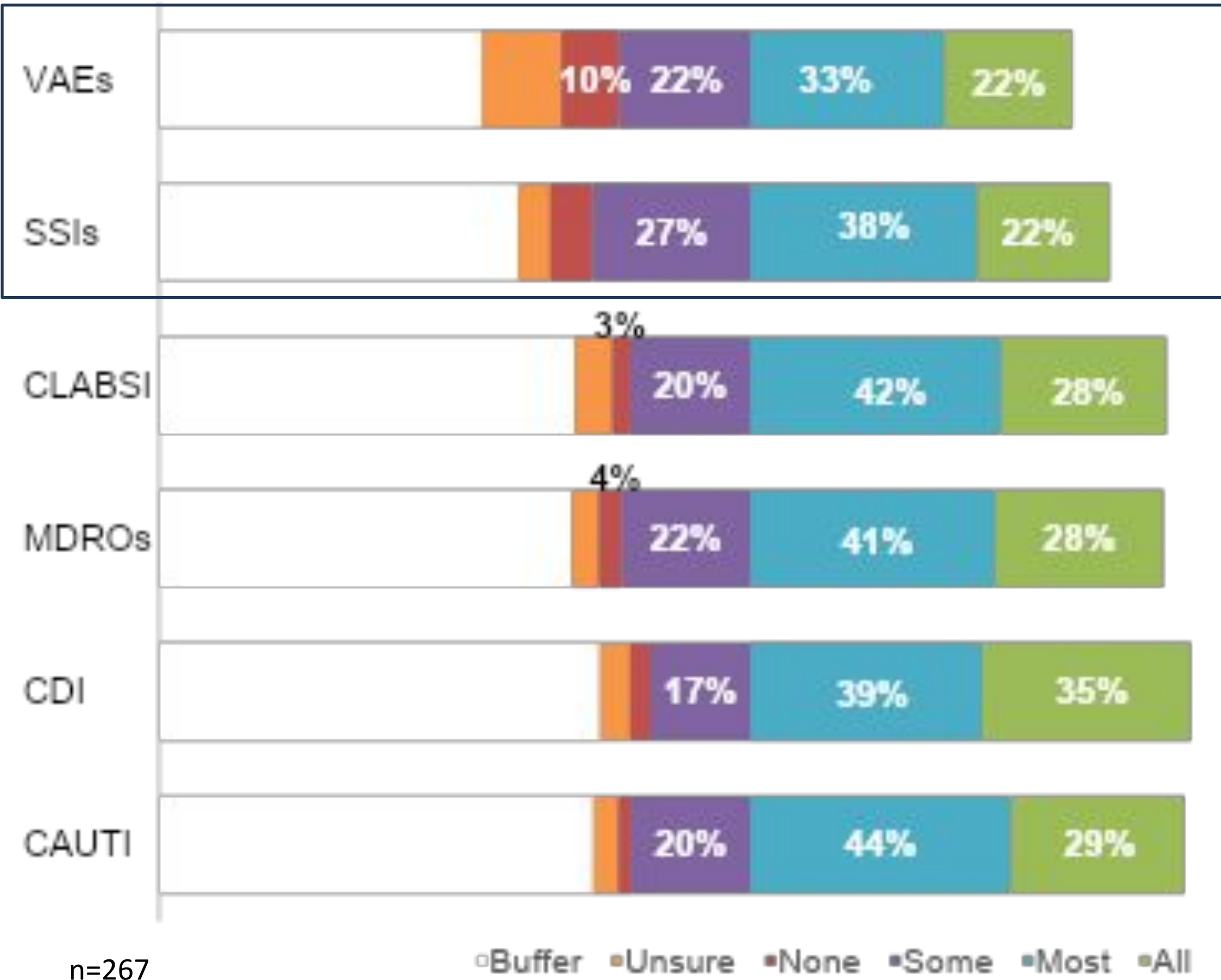
Top 5 Resources that are lacking for IPC program process implementation:

HAI/AR Directors reported:

- Selection/Purchasing

- Water Management

- Construction Risk Mitigation

- Environmental Rounding

- Non-Critical Device Reprocessing

IPs reported:

- Selection/Purchasing

- Non-Critical Device Reprocessing

- Construction Mitigation

- Sterilization

- Water Management

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY

Top 5 Technology Resources that are lacking for IPC program process implementation:

HAI/AR Directors reported:

- Construction Air Quality Monitoring
- HVAC System Monitoring & Verification
- Antimicrobial Stewardship
- Competency-Based Training Programs
- Vendor Vaccination Tracking & Documentation

IPs reported:

- Vendor Vaccination Tracking & Documentation
- Construction Air Quality Monitoring
- HVAC System Monitoring & Verification
- Employee Health
- Staff Vaccination Tracking & Documentation

Key Takeaways & Conclusions

- IPs desire more comprehensive onboarding and training

- Time constraints and training affordability are top concerns for IPC development.

- HAI/AR Directors and IPs differ in their concerns about facility HAI issues.

- Positive relationships with facility leadership impacts job satisfaction

Next Steps & Future Directions

- Enhanced Communication & Collaboration:
  - Goal: **Strengthen network among IPs, healthcare administrators, public health officials, and professional organizations**

- **Data Monitoring & Evaluation:**
  - **Goal: Ensure the effectiveness of IPC interventions and address evolving needs of IPs**

- **Research and Innovation in IPC:**
  - **Goal: Drive advancement in IPC field through innovative research and solutions.**

UNMC | NEBRASKA MEDICINE
GLOBAL CENTER FOR HEALTH SECURITY

- **90-Day Survival Guide (under development)**
  - Support and resources for IPs new to the field

- **Infection Prevention & Control Webinars**
  - Topics driven by needs assessment data and IP requests
  - CEUs available
  - Office hours available to answer questions

- **SLICE: Self-Led Infection Control Evaluation Tool**
  - 17 topic-specific infection prevention domains

- **XR Education**
  - Sterile Processing Department

For additional information please visit our website at Innovate IPC:

Thank you!

Amy Encinger, PhD
Evaluation Specialist
University of Nebraska Medical
Center-Global Center for Health Security
Amy.Encinger@unmc.edu

UNMC | NEBRASKA MEDICINE
**GLOBAL CENTER
FOR HEALTH SECURITY**

Leveraging Data to Support Infection Preventionists Session Feedback

IP Reported: Do you have the _technology_ to implement programs for the following processes in your facility?

Process	Unsure	None	Some	Most	All
Vendor Vaccination Tracking & Documentation	14%	23%	24%	24%	15%
Contruction Air Quality Monitoring	11%	18%	29%		
HVAC System Monitoring & Verification	10%	18%	30%	27%	16%
Employee Health	9%	16%	24%	31%	21%
Staff Vaccination Tracking & Documentation	6%	15%	25%	30%	
Patient Vaccination Tracking & Documentation	8%	10%	27%	30%	
Instrument Reprocessing	13%	12%	14%	35%	26%
Anti-Microbial Stewardship	8%		24%	36%	27%
Outbreak Investigations	2%	4%	20%		
MDRO Flagging			13%	36%	42%
Surveillance			12%	41%	43%
HAI Reporting			11%	36%	48%

□Buffer ▪Unsure ▪None ▪Some ▪Most ▪All Buffer2

n=233

HAI/AR Director Reported: Do the IPs in your state/territory have the _technology_ to implement programs for the following processes in their facility?

Process	Buffer	Unsure	None	Some	Most	All
Contruction Air Quality Monitoring			33%	26%	11%	
HVAC System Monitoring & Verification		22%	33%	22%	22%	
Anti-Microbial Stewardship		7%	15%	52%	22%	4%
Competency-Based Training Programs		15%	4%	56%	19%	7%
Vendor Vaccination Tracking & Documentation		33%	4%	33%	26%	
Audit & Feedback		15%	11%	44%	19%	11%
MDRO Flagging		15%	4%	52%	19%	11%
Outbreak Investigations		11%	4%	48%	19%	19%
Patient Vaccination Tracking & Documentation		15%	4%	41%	33%	7%
Staff Vaccination Tracking & Documentation		15%	4%	41%	26%	15%
Instrument Reprocessing		15%	4%	41%	30%	11%
Employee Health		11%	7%	37%	37%	7%
Surveillance		11%		44%	26%	19%
HAI Reporting				33%	41%	19%

n=27

Legend: ☐Buffer ■Unsure ■None ■Some ■Most ■All