



Current State of Antimicrobial Stewardship in Philadelphia

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Philadelphia Department of Public Health

Philadelphia Antimicrobial Stewardship Collaborative Meeting

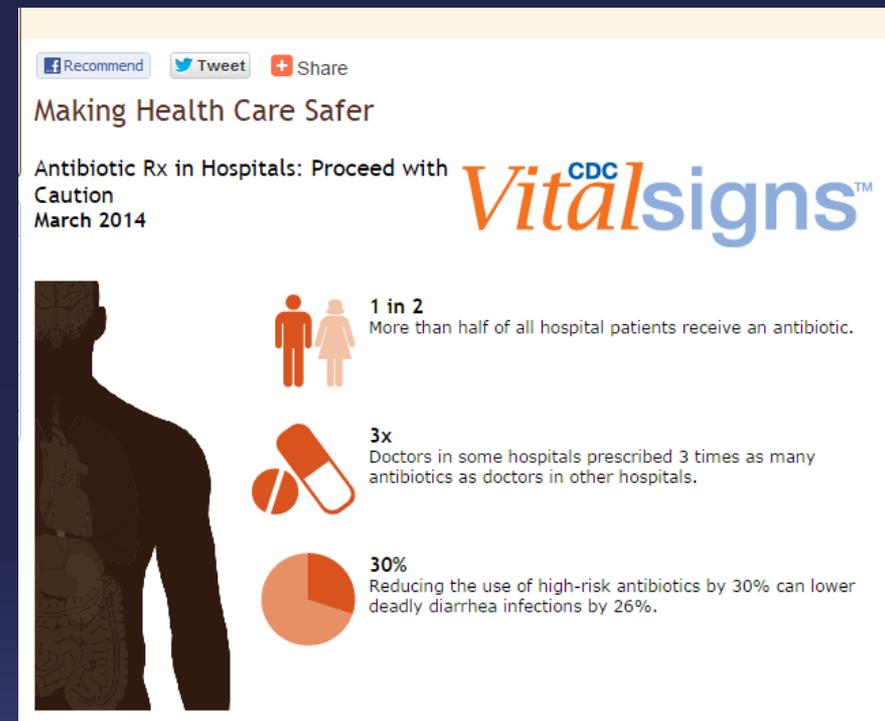
September 30, 2014

Objective

- Describe current capacity for stewardship among local acute care hospitals

Background

- In 2014, CDC recommended that all acute care hospitals implement Antibiotic Stewardship Programs
- Philadelphia multi-drug resistant organism (MDRO) advisory group determined need to assess baseline of antimicrobial stewardship activities among local acute care hospitals
 - Capacity appeared to vary widely between facilities



Methods

- Philadelphia Department of Public Health (PDPH) created antimicrobial stewardship survey
 - Utilized previous State surveys and CDC Core Elements of Hospital Stewardship Programs as guides
 - Survey reviewed by local and CDC experts
- Survey was administered via hard copy and Survey Monkey in July 2014
 - Distributed through email to PDPH hospital contact lists and through the Association for Professionals in Infection Control and Epidemiology (APIC)





Philadelphia Antimicrobial Stewardship Survey

Dear Healthcare Professional,

The Philadelphia Department of Public Health has identified antibiotic resistance to be a priority issue within the City. In order to better assist our healthcare community, we have developed the following survey to determine current antimicrobial stewardship activities in Philadelphia. Your responses will enable us to target resources, education, and messaging.

Your participation is greatly appreciated. All responses will be kept confidential and only presented in aggregate. A summary of findings will be shared with participants during the antimicrobial stewardship collaborative on September 30th, 2014, and these results could potentially aid your institution. Please contact Jennifer Sears at 215-685-6742 should you have any questions or concerns. Completed paper surveys should be emailed to jennifer.sears@phila.gov or faxed to 215-238-6947.

Thank you,

Jennifer Sears, MPH
Surveillance Coordinator, Acute Communicable Disease Program
Philadelphia Department of Public Health

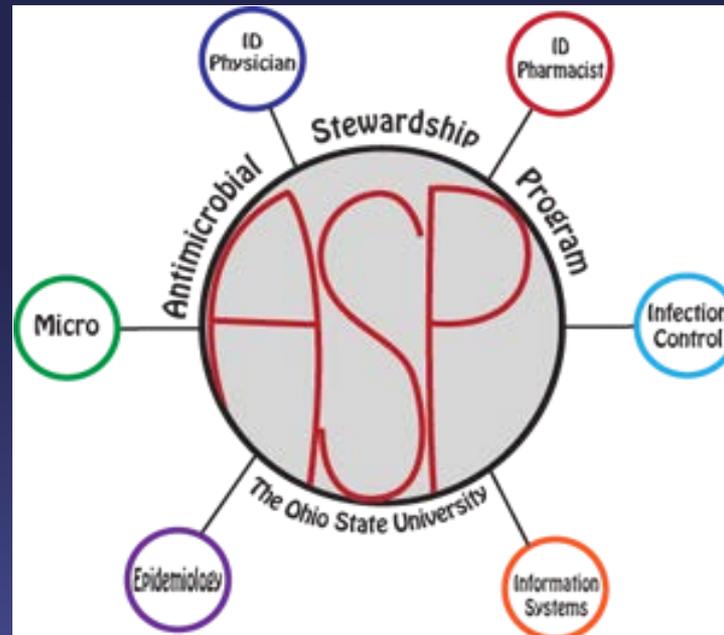
Survey Participant:

Facility Name: _____

Person(s) completing survey:

Antimicrobial Stewardship Team

- Formal survey definition: Two or more staff members involved in clinical decisions that insure appropriate antimicrobial use



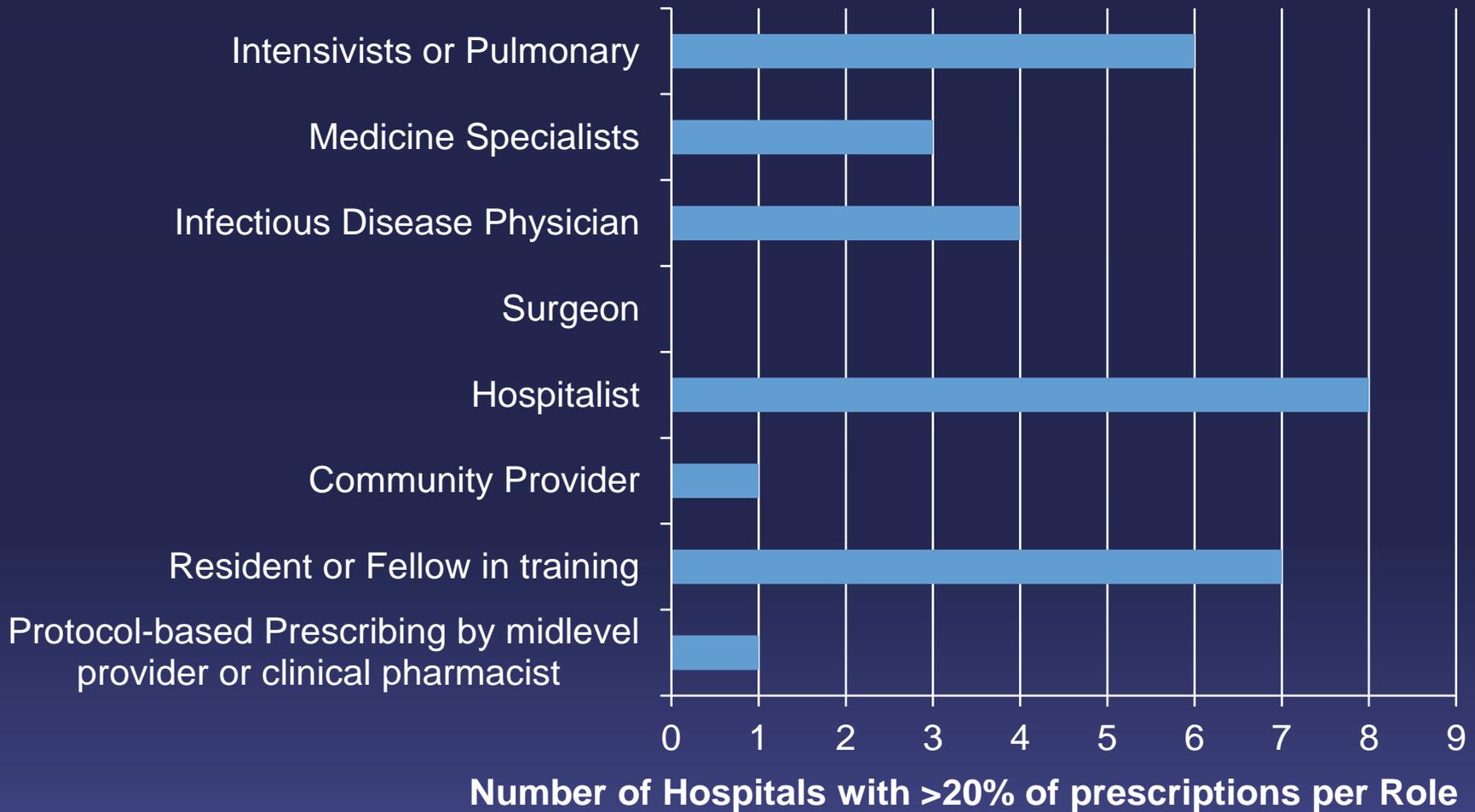
Results

- 20 completed surveys received from acute care hospitals
 - 12 (63%) Philadelphia Hospitals
 - 8 Hospitals outside of the City of Philadelphia, including one long-term acute care hospital
- Results in presentation focus on acute care hospitals, N=19

Facility Characteristics, N=19

Characteristic		n (%)
Size		
	<200 beds	8 (42%)
	200 – 500 beds	6 (32%)
	> 500 beds	5 (26%)
Graduate Education Programs		14 (74%)
Automated Systems		
	eMAR (electronic medication administration record)	13 (68%)
	EMR (electronic medical record)	11 (58%)
	Surveillance system (TheraDoc, etc.)	16 (84%)
24-hour In-house Pharmacy		15 (79%)
Staff Structure		
	Clinically Integrated Network	12 (63%)
	Employed Physician Program	4 (21%)
	Independent Physician Program	1 (5%)

Antibiotic prescribing by role, N=15



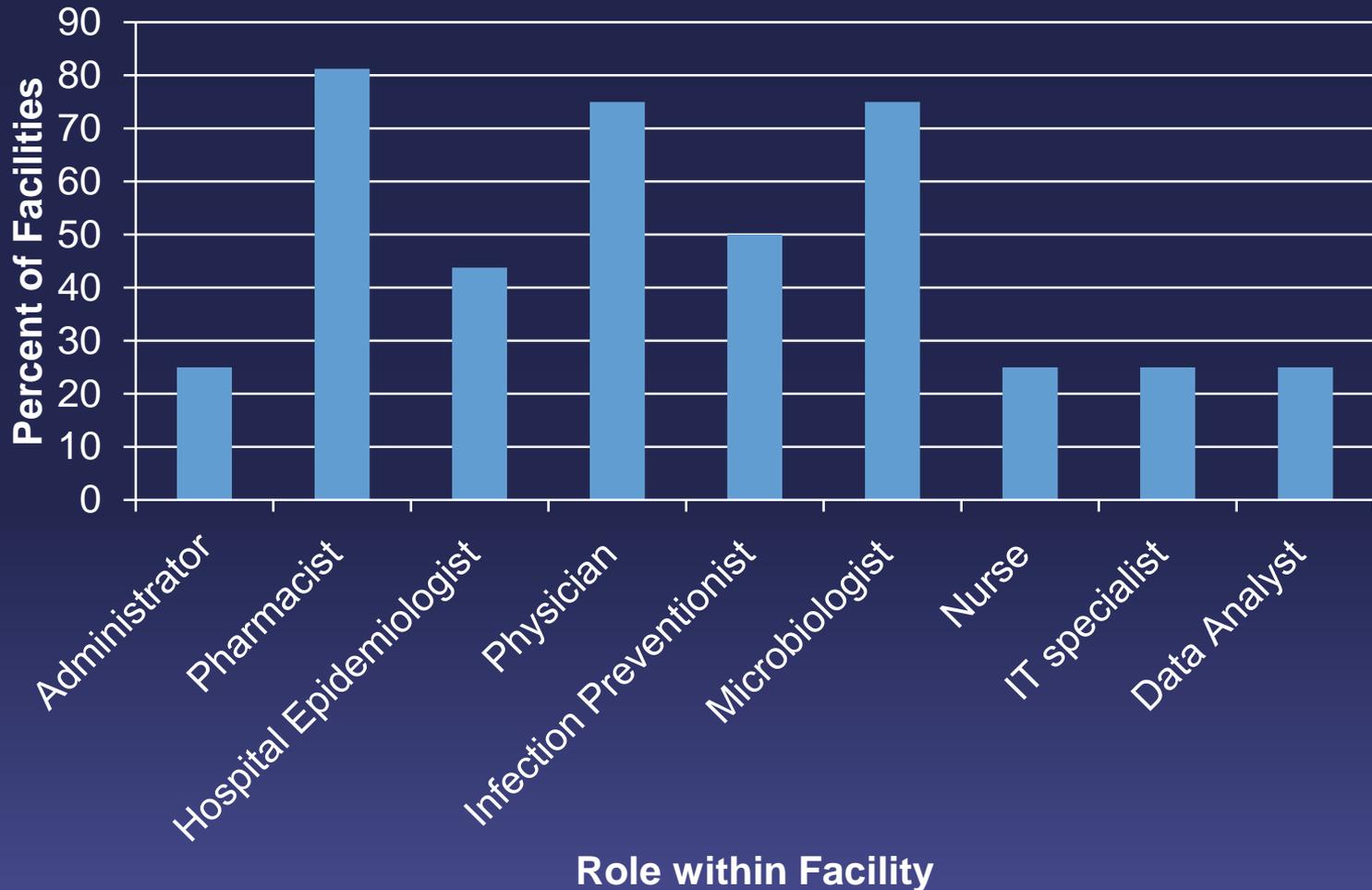


Antimicrobial Stewardship Structure

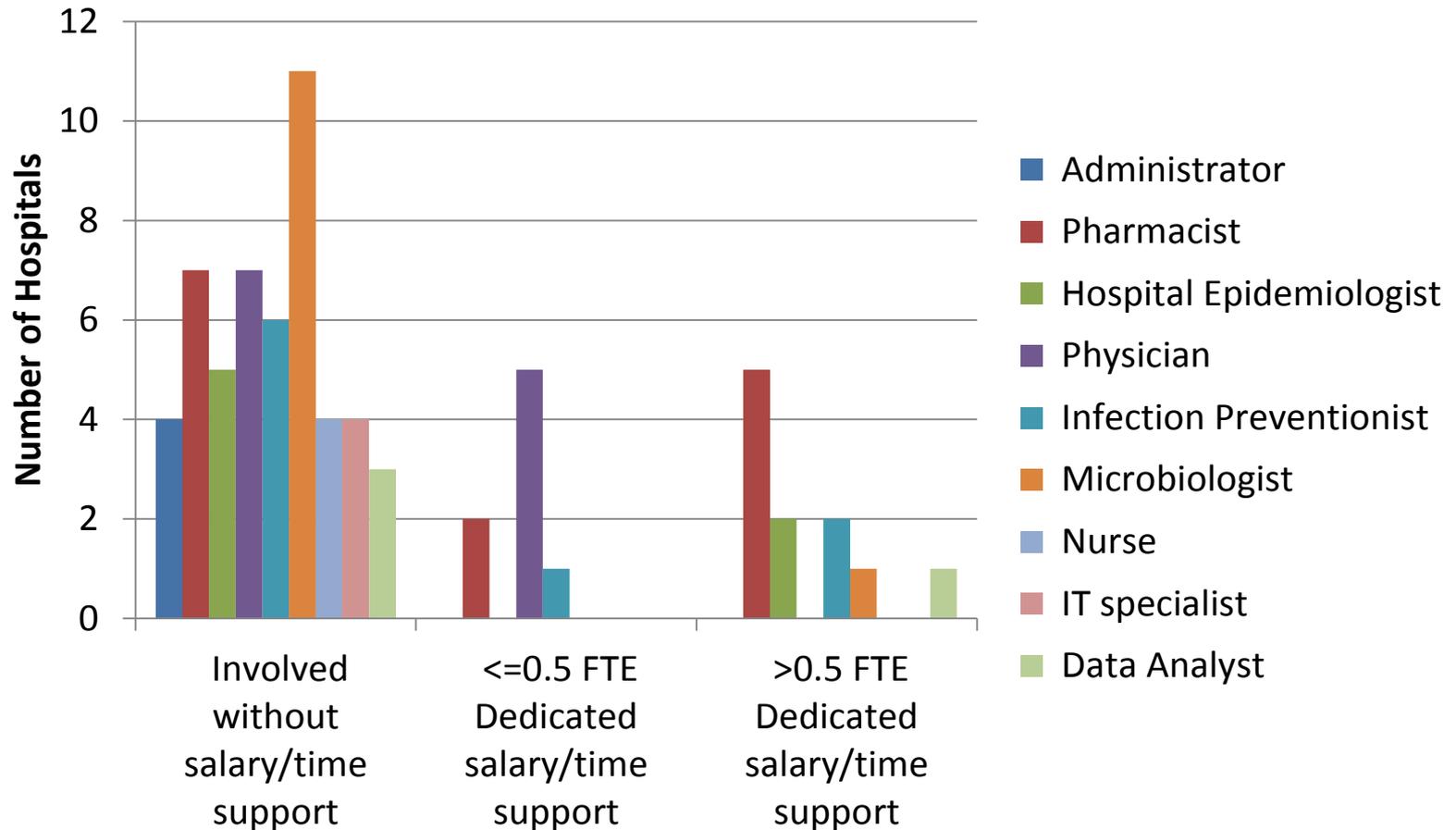
Antimicrobial Stewardship Teams

- 16/19 (84%) of responding acute care facilities report having a formal antimicrobial stewardship team
 - 1 facility reports conducting stewardship activities without a formal team
- The 16 facilities with established stewardship teams reported:
 - Mean of 5 staff members involved, with or without salary support
 - Mean of 1 staff member with dedicated salary support
- Facilities without formal stewardship teams (n=3) are interested in creating a program

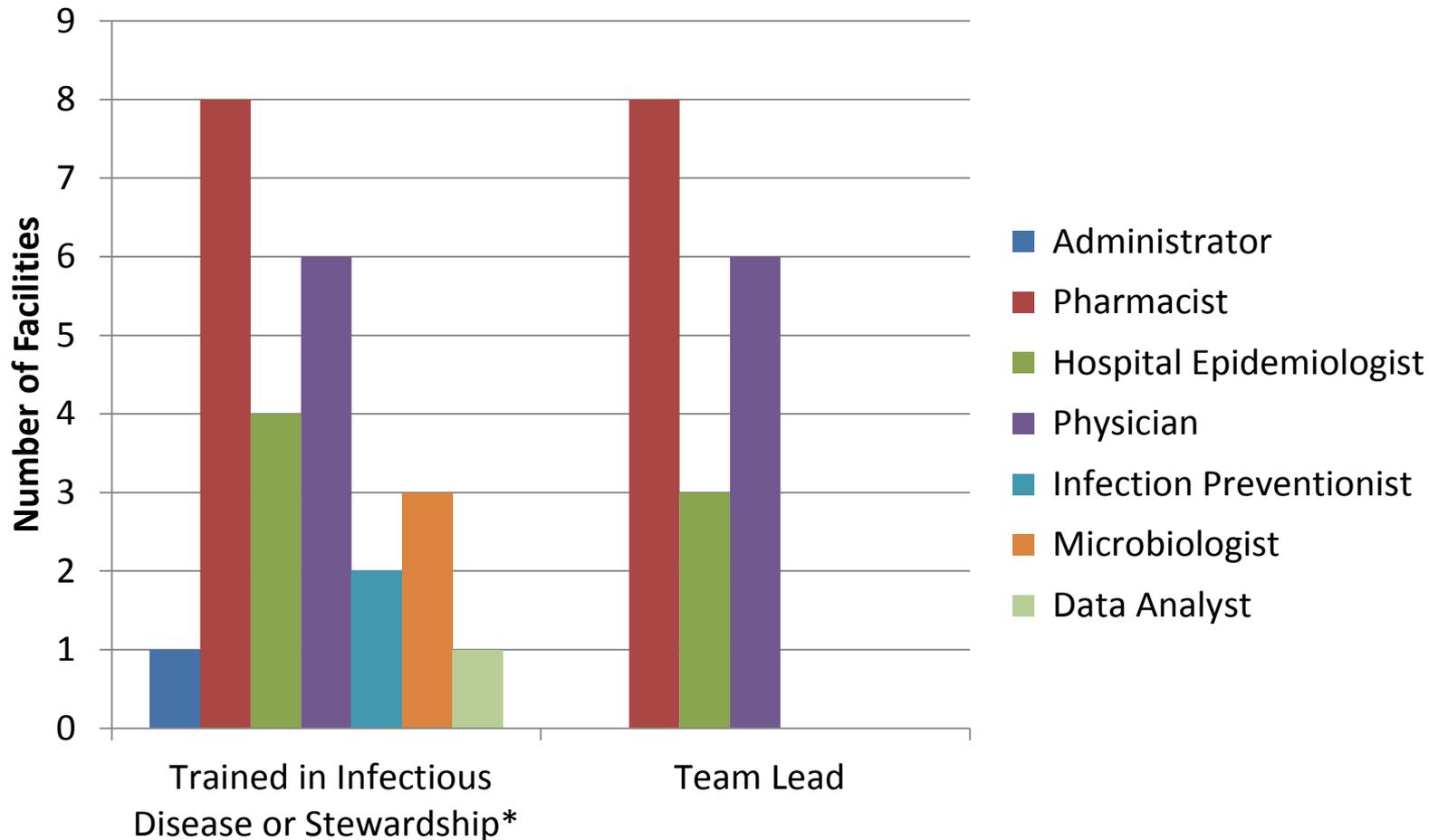
Facility Roles within Established Stewardship Teams, N=16



Support for Formal Stewardship Teams, by Role, N=16

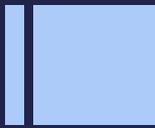


Training and Leadership of Formal Stewardship Teams, N=16



Antimicrobial Stewardship Meetings

- Of the 16 facilities with formal antimicrobial stewardship teams:
 - Meetings are held monthly (n=8), quarterly (n=3), or at other intervals (n=5)
 - The majority of meetings are dedicated to stewardship, with only 34% of stewardship meetings combined with other focus areas, such as infection prevention



Policies and Interventions to Improve Antibiotic Use

Facility Policies

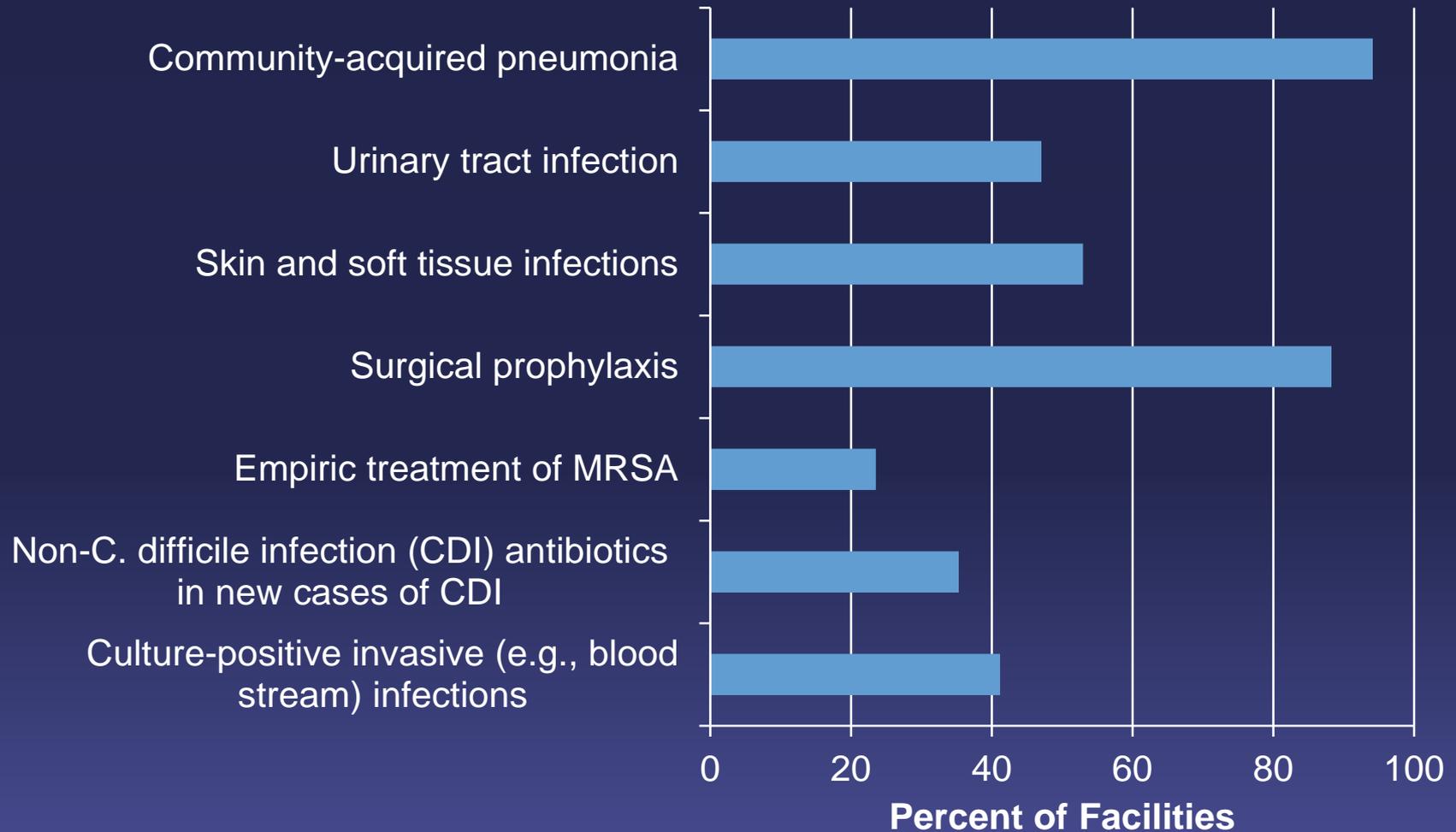
- Only 4/19 (21%) of facilities require prescribers to document in the medical record or during order entry a dose, duration, and indication for all antibiotic prescriptions
- 15/19 (79%) facilities have facility-specific treatment recommendations
 - Based on national guidelines and local susceptibility, to assist with antibiotic selection for common clinical conditions

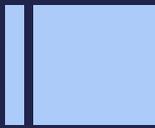
Specific Interventions to Improve Antimicrobial Use, N=17

Broad Interventions – Core Elements	n (%)
Antibiotic time-out after 48 hours	2 (12%)
Pre-authorization for specific antibiotics	12 (71%)
Prospective audit with feedback	13 (76%)

Pharmacy-driven Interventions	n (%)
Automatic changes from IV to oral antibiotic therapy in appropriate situations	13 (76%)
Dose adjustments in cases of organ dysfunction	16 (94%)
Dose optimization for treatment with organisms with reduced susceptibility	14 (82%)
Automatic alerts when therapy may be duplicative	9 (53%)
Time-sensitive automatic stop orders	12 (71%)

Use of Treatment Algorithms for Common Infections, N=17





Tracking: Monitoring Antibiotic Prescribing, Use, and Resistance

Antibiotic Use Metrics, N=16

Metric	n (%)
Antibiotics administered to patients per day (days of therapy)	5 (31%)
Number of grams of antibiotics used (defined daily dose)	4 (25%)
Direct expenditure for antibiotics (purchasing costs)	10 (63%)

Antibiograms

- 17/17 facilities distribute an antibiogram at least yearly and track *C. Difficile* rates

100-2A ANTIBIOGRAM: January 2009 – December 2010 (2 years)

GRAM-POSITIVE AEROBES (% susceptibility)

Organism	# isolates tested	Penicillins/Cephalosporins					Fluoroquinolones/Aminoglycosides (synergy)/Other Antibiotics											
		Ampicillin	Ampicillin-sulbactam	Oxacillin	Penicillin	Cefazolin	Levofloxacin	Moxifloxacin	Gent-500 (b)	Strep-2000 (b)	Chloramphenicol	Clindamycin	Erythromycin	Linezolid	Nitrofurantoin (a)	Rifampin (d)	Trimethoprim-sulfa	Vancomycin
E faecium	10	0*			0*		0*		70*	50*			10*	100*	0*			10*
Enterococcus sp	14	100*			100*		29*		43*	57*			0*	100*	86*			86*
S aureus	55			52	0		38	40				57	29	100		98	98	100
S epidemidis	42			10	0							36	24	100	100	93	45	100
S hominis	10				0*		70*	70*				60*	10*	100*	90*	100*		100*

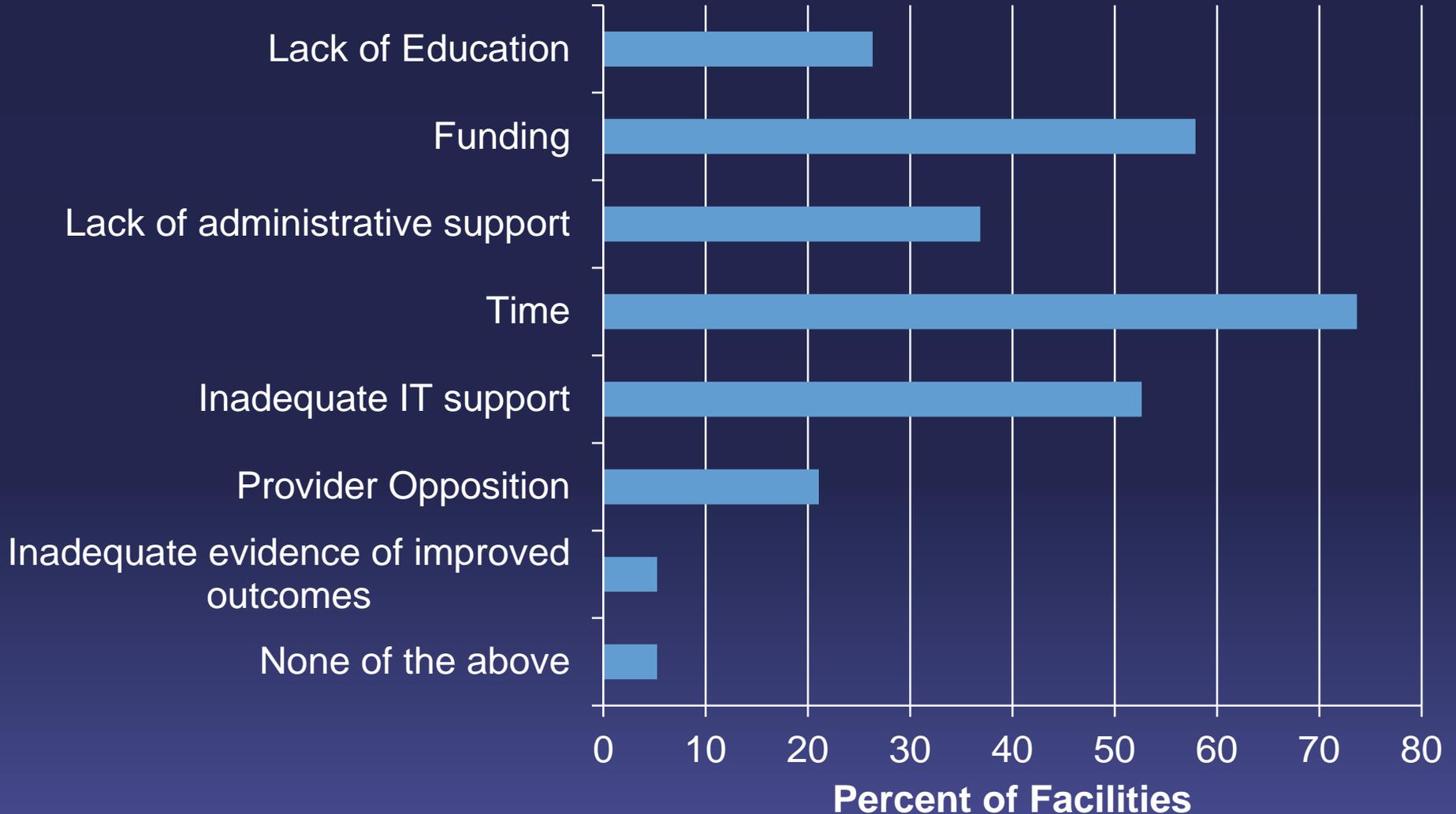
GRAM-NEGATIVE AEROBES (% susceptibility)

Organism	# isolates tested	Penicillins/Cephalosporins							Aminoglycosides			Fluoroquinolones/Other Antibiotics							
		Ampicillin	Ampicillin-sulb	Piperacillin-tazo	Cefazolin	Cefepime	Ceftazidime	Ceftriaxone	Amikacin	Gentamicin	Tobramycin	Ciprofloxacin	Levofloxacin	Aztreonam	Nitrofurantoin (a)	Ertapenem	Imipenem	Meropenem (e)	Trimethoprim-sulfa
E cloacae	11			55*	0*	73*	55*	55*	100*	73*	73*	73*	64*	60*	18*		91*		55*
E coli (c)	34	32	47	88	68	88	85	85	100	82	79	59	59	85	88	100	100	100*	62

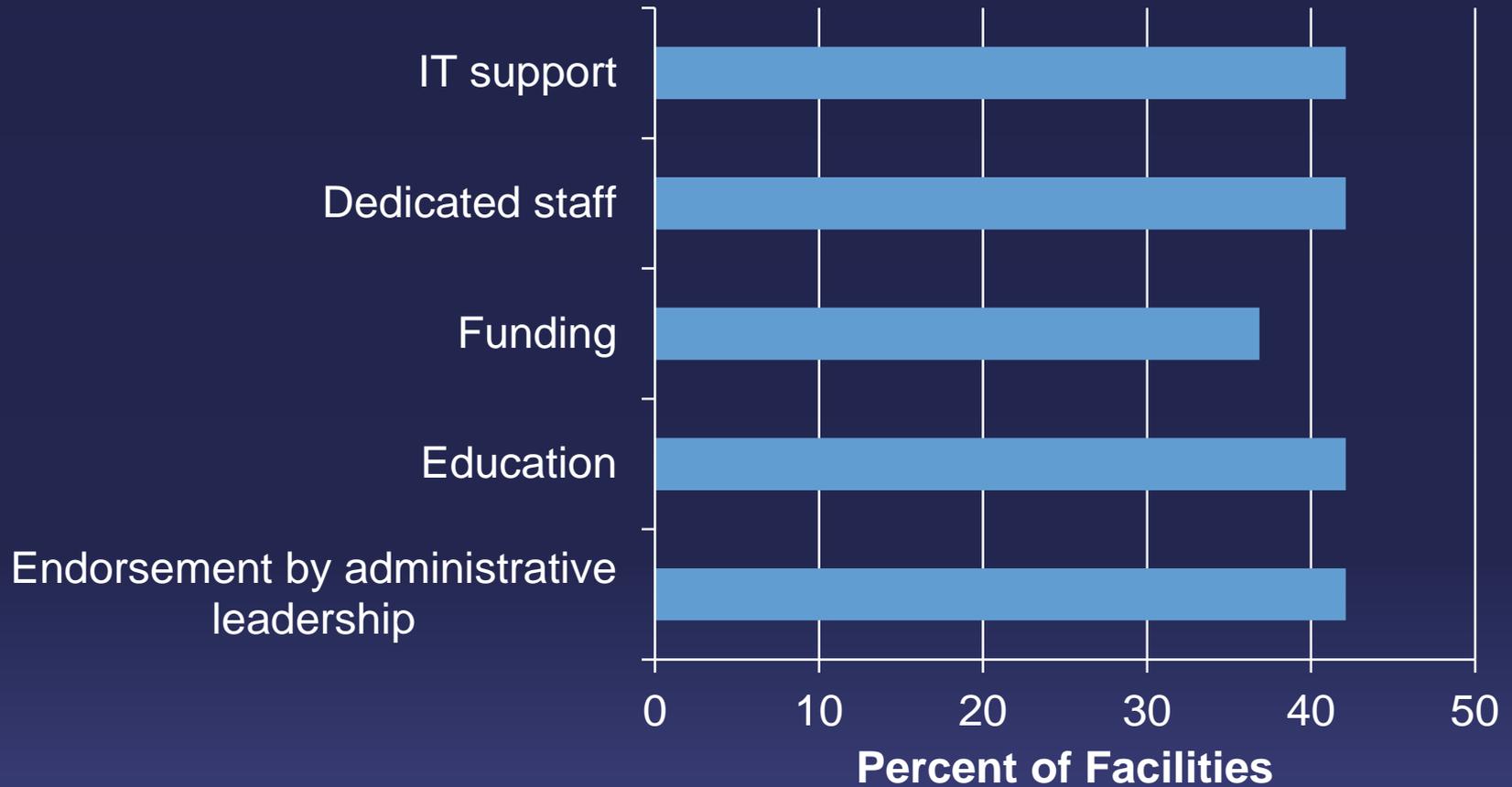
What is standing in the way of antimicrobial stewardship?

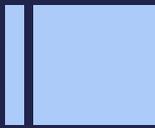


Stewardship Barriers, N=19



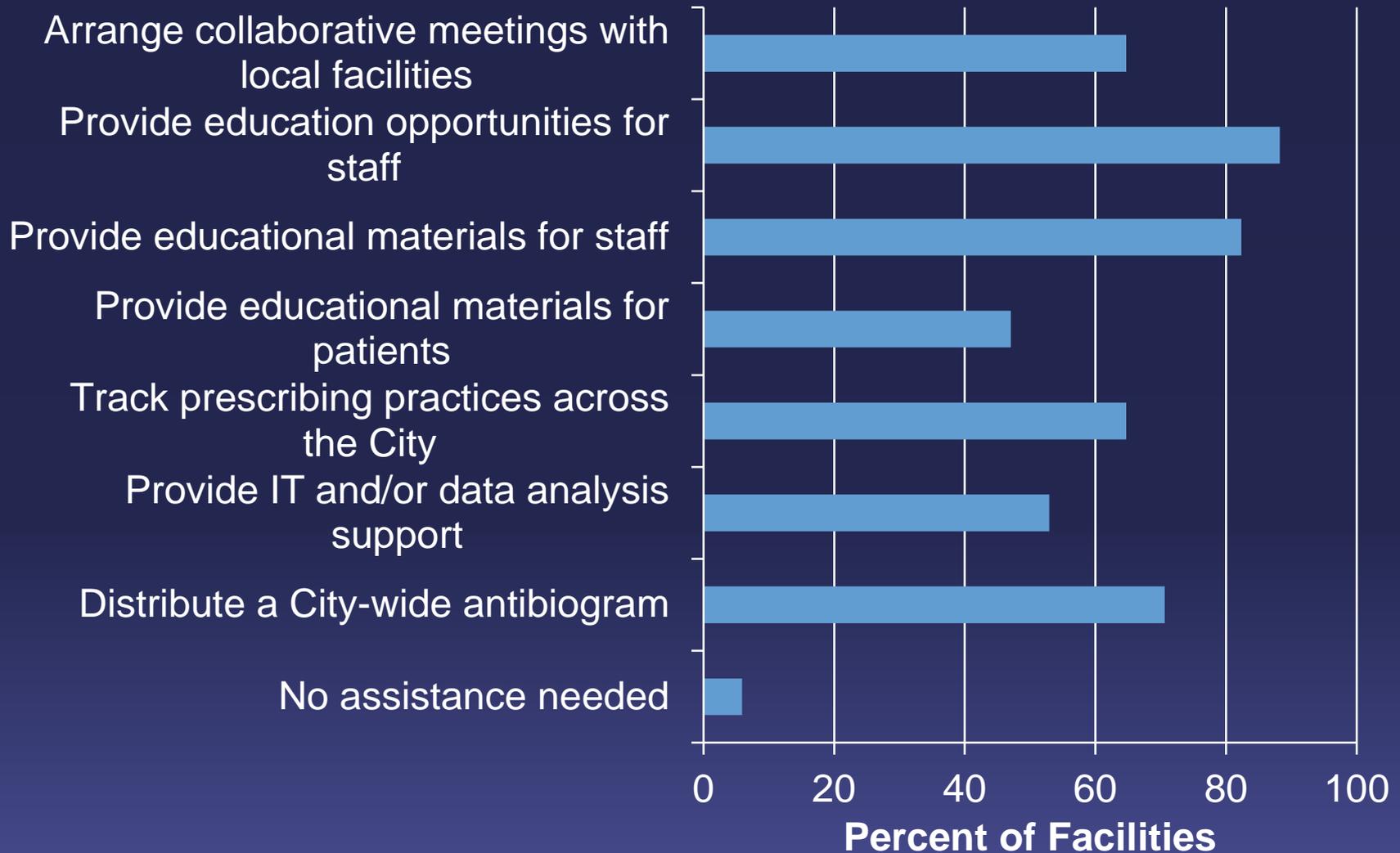
Stewardship Needs, N=19





Where does the
Health Department fit in?

How can PDPH Help? N=17



Future of the Antimicrobial Stewardship Collaborative

- 16/17 responding facilities are interested in an antimicrobial stewardship collaborative
- Please complete an evaluation of today's meeting, including interest in future collaborative involvement
 - Are you interested in the being part of the advisory committee?
 - If yes, what level of involvement?
 - What type of meetings would you be interested in?
- Help us, help you!

Thank you!

- A huge thank you to all who completed a survey!
- It's never too late if you haven't had the opportunity yet!

Contact information

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