

Prevalence of Antimicrobial Stewardship Programs in Pediatrics

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ABSTRACT

Background: Antimicrobial stewardship programs (ASPs) promote optimal antimicrobial prescribing to improve patient safety/outcomes and to prevent development of antimicrobial resistance. In 2007, a guideline for developing ASPs was endorsed by the AAP and the Pediatric Infectious Disease Society. Little is known about the extent to which ASPs are currently utilized or compliance with guidelines in pediatrics.

Objective: To describe the use of ASPs in pediatrics and barriers to their implementation and improvement.

Methods: In December 2008 we surveyed the pediatric members of the Emerging Infections Network, a network of 247 pediatric infectious disease consultants throughout North America. Participants responded regarding whether their hospital had or planned to develop an ASP, its characteristics, barriers to improvement or implementation and perceptions about antimicrobial resistance.

Results: 147 participants responded (60%) with 45% from freestanding children's hospitals, 38% from children's hospitals within a hospital and 15% from a pediatric ward. Only 33% reported currently having an ASP and 18% were planning a program. Of those with ASPs, only 33% reported using the guideline recommended strategy of prospective audit and feedback. The most common ASP interventions were stopping antimicrobials, narrowing coverage and converting antimicrobials from IV to oral form. 27% of respondents from freestanding children's hospitals were planning ASPs compared to 11% from other hospital settings (p<0.02). The most commonly reported barriers to implementing an ASP were lack of resources including funding, time and personnel, noted by over 50% of respondents. Among those planning an ASP, 40% cited lack of awareness of the program's value by hospital leadership and 55% cited concerns about taking away prescribing autonomy as important barriers. Across all groups, most respondents perceived antibiotic resistance as a significant problem; however, it was viewed as a more significant problem nationally (80%) than at their local hospital (50%) (p<0.001).

Conclusion: Few ASP programs exist for pediatric patients, although many programs are in planning stages, especially at freestanding children's hospitals. Promoting the benefits of ASPs to hospital leadership in terms of cost savings and patient safety may aid in securing necessary resources for their development. In the context of growing antimicrobial resistance and limited development of new antimicrobials, increased implementation and improvement of pediatric ASPs is critical to maximizing the current antimicrobial armamentarium.

INTRODUCTION

•30-50% of antibiotic prescribing is inappropriate.

•Antimicrobial stewardship programs (ASPs) promote optimal antimicrobial prescribing to improve patient safety and outcomes and to prevent antimicrobial resistance.

•In 2007, IDSA published guidelines for developing institutional ASPs including recommendations about key features and to increase awareness.

•Many academic centers have ASPs although overall implementation nationwide is limited.

•No data exist about prevalence of ASPs in pediatric settings.

OBJECTIVE

To describe the use of ASPs in pediatrics and barriers to their implementation and improvement.

METHODS

• 246 pediatric infectious disease consultants surveyed in Dec. 2008 via the Emerging Infections Network about ASPs at their hospital.

•Pediatric EIN members include members of IDSA and PIDS throughout North America.

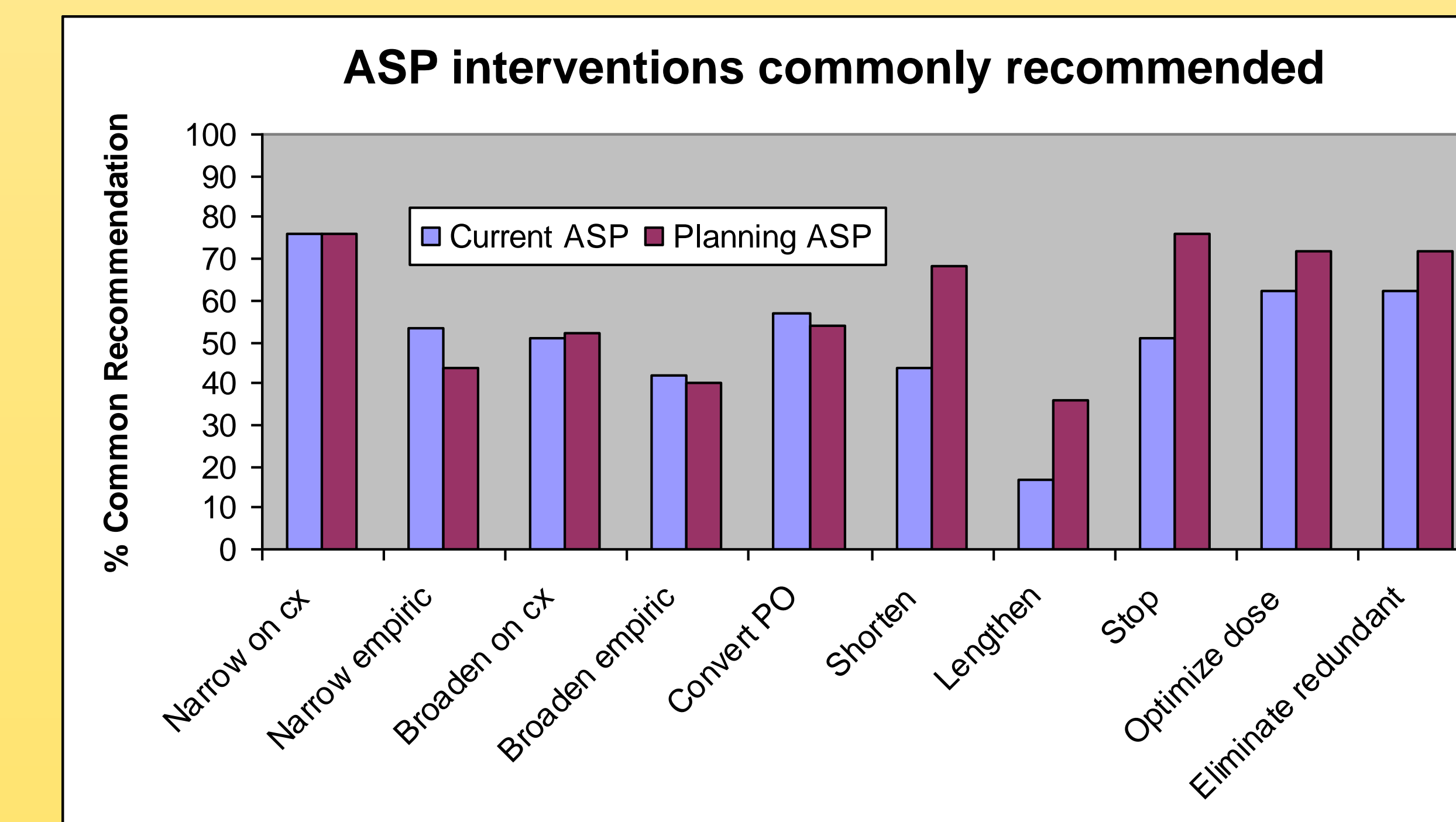
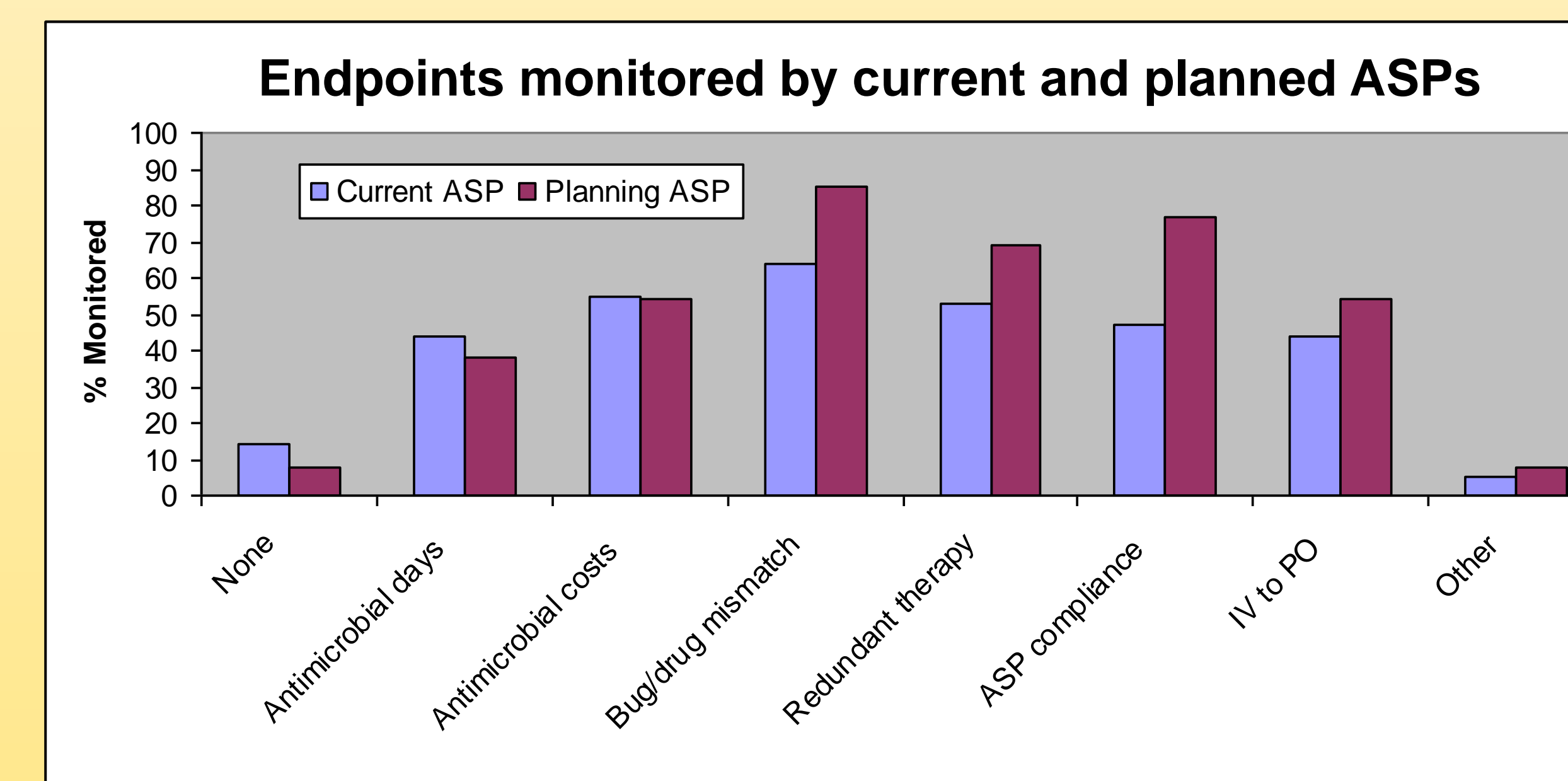
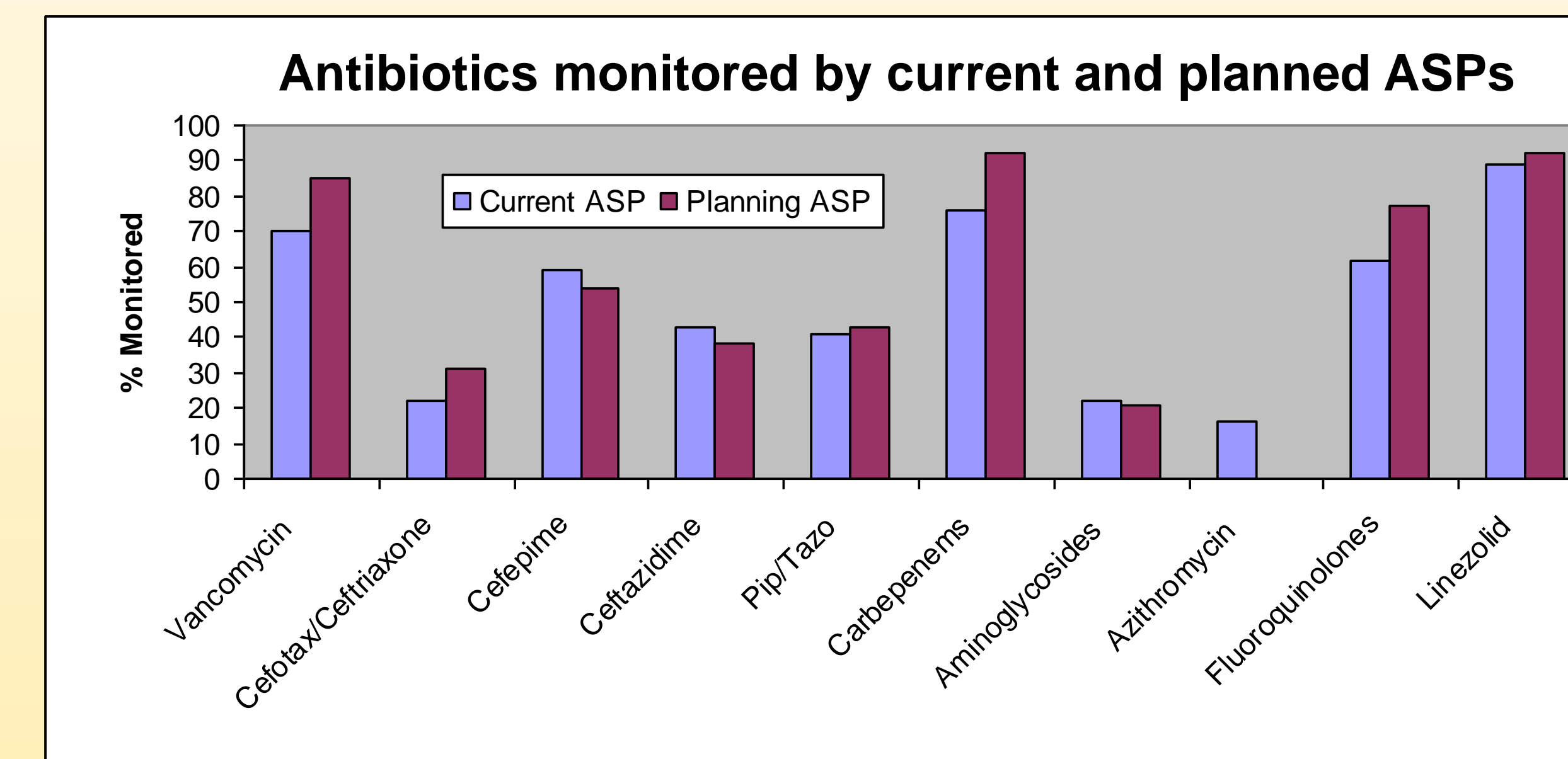
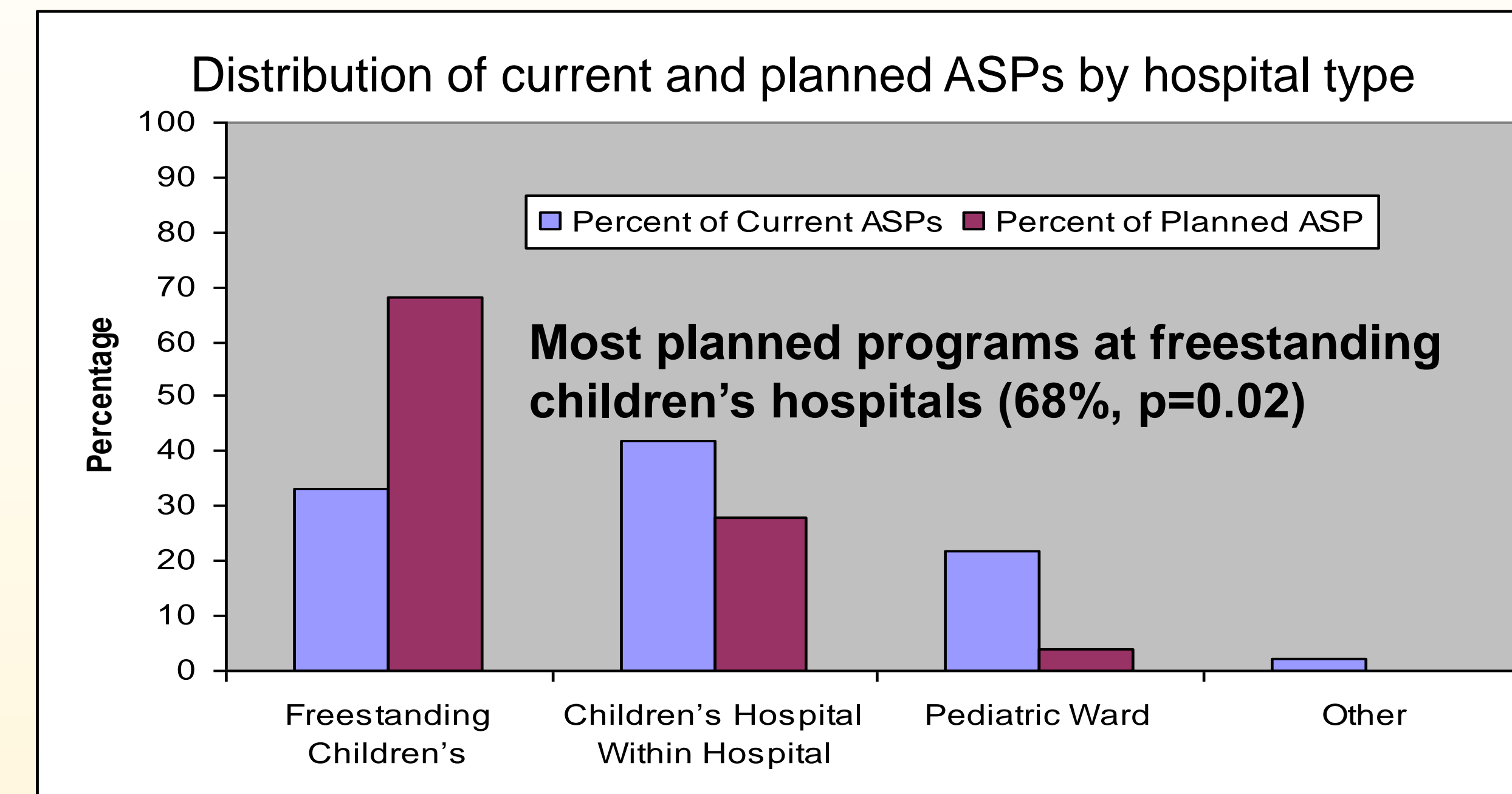
•Participants were asked whether their hospital had or were planning an ASP, its characteristics, barriers to implementing and improving the program and perceptions about antimicrobial resistance.

•60% (147/246) responded. 9 excluded because did not work in hospital. No differences between respondents and non-respondents in terms of age or geographic region. Responses were more likely from those in university settings (65% vs. 55%).

RESULTS

Overall survey	Respondents, N=138
Do you have an ASP?	
Yes (%)	45 (33)
Using audit and feedback?	15 (33)
Using pre-authorization?	35 (78)
ASP in planning	25 (18)
No ASP	68 (49)
Type of Hospital (% with ASP)	
% Freestanding children's hospital	45 (24)
% Children's hospital within hospital	38 (36)
% Pediatric ward	15 (48)
% Other	2 (50)
ASP Characteristics	Respondents, N=45
ASP personnel (%)	
ID physician	88
% programs with 0 FTEs	37
Pharmacist	71
% programs with 0 FTEs	40
Infection control practitioner	34
Microbiologist	26

RESULTS



RESULTS

Barriers to implementing or improving ASPs

	Current ASP	Planned ASP	No ASP
Have barriers (%)*	80	100	87
Lack of funding (%)*	31	72	51
Lack of time (%)*	36	58	63
Lose autonomy (%)	31	56	54
Administration not aware of value (%)	22	40	25

*Greater among those planning ASPs (p<0.05)

PERCEPTIONS OF ANTIMICROBIAL RESISTANCE

•80% believe highly important nationwide
•Only 50% believe highly important at their institution (p<0.01)
•No differences based on presence of ASP or type of hospital

CONCLUSIONS

- Few ASPs exist in pediatric settings.
- Many in planning stages since 2007 IDSA guidelines, especially at freestanding children's hospitals.
- Opportunities for improvement exist for current programs including:
 - Increasing FTEs and funding.
 - May benefit from promoting awareness to hospital leadership.
 - Monitoring more endpoints.
 - Greater use of audit and feedback.
- ID physicians perceptions about resistance not influenced by ASP programs.