



ANTIMICROBIAL STEWARDSHIP IN RHODE ISLAND:

WE'VE COME A LONG WAY

RISHP CE Presentation
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OBJECTIVES

- Identify goals for a state or regional antimicrobial stewardship (AS) coalition or group
- Describe at least two initiatives that members of a regional AS effort in RI have benefited from
- Describe how a regional AS effort could measure progress

WHAT IS THE PROBLEM WITH ANTIBIOTICS?

- Antibiotic prescribing practices vary widely and errors are common
- Recent study by the CDC in 2014 found that:
 - ▣ 1 / 2 hospitalized patients receive an antibiotic (ABX) during the course of an average hospital stay
 - 30% received at least 1 dose of broad-spectrum ABX
 - ▣ Most common types of infections ABX were ordered for:
 - Community acquired pneumonia (CAP – 22%)
 - Suspected resistant *Staphylococcus* infection (eg. adding “coverage” for MRSA – 17%)
 - Urinary tract infections (UTI – 14%)

WHAT IS THE PROBLEM WITH ANTIBIOTICS?

- Recent study by the CDC in 2014 found that:
 - 1 out of 3 times, prescribing practices for UTI and vancomycin included a potential for error
 - Given without proper testing and evaluation
 - Given for too long
 - Providers in some hospitals prescribed up to 3x as many ABX as doctors in similar areas of other hospitals
 - This difference suggests the need to improve prescribing practices
 - Patients exposed to broad-spectrum ABX are 3x more likely to develop *C. difficile* infection (CDI) within 180 days versus those not exposed
 - Decreasing the use of these ABX by 30% (5% of overall ABX use) can lead to 26% fewer cases of CDI

WHAT IS THE PROBLEM WITH ANTIBIOTICS?

- Patients receiving broad-spectrum ABX are up to 3 times more likely overall to get another infection from an even more resistant organism
 - ▣ More specifically, for example:
 - Patients exposed to meropenem have a 15-fold increased risk of growing a carbapenem-resistant Gram negative (CRE) during a subsequent infection
 - CRE's are associated with 40-50% mortality due to lack of effective treatment



THE NEED FOR ANTIMICROBIAL STEWARDSHIP

- Antimicrobial Stewardship Programs (ASPs) are hospital-based programs dedicated to improving antibiotic use
 - Growing body of evidence demonstrates that ASPs can:
 - Optimize treatment of infections and reduce adverse events associated with antibiotic use
 - Help clinicians improve the quality of patient care and safety through:
 - Increased infection cure rates
 - Reduced treatment failures
 - Increased frequency of correct prescribing for therapy and prophylaxis
 - Significantly reduce rates of hospital CDI and ABX resistance
 - Often achieve patient care benefits while saving hospitals money
- In March 2014, the CDC released documents recommending that all acute care hospitals implement ASPs

ARE WE DOING ANYTHING ABOUT THIS IN RI?

The answer is.... **YES!**

RIASTF

**Rhode Island Antimicrobial
Stewardship Task Force**

RIASTF

- Formed in May 2011
 - ▣ Consists of a group of pharmacist representatives from each of the 12 acute care facilities
 - Kent Hospital
 - Landmark Medical Center
 - Memorial Hospital
 - Miriam Hospital
 - Newport Hospital
 - Our Lady of Fatima Hospital
 - Rhode Island Hospital
 - Roger Williams Medical Center
 - South County Hospital
 - The Westerly Hospital
 - Women & Infants' Hospital
 - Veterans Affairs Medical Center



HOW THE IDEA STARTED

- CDC grant (May 2011) request State HEALTH department to submit and evaluate Antibiotic use (AU) data...
- ▣ Rhode Island applied – well received by CDC
 - FUNDED = IL, CA, MI
 - NOT FUNDED = RI and a few others...

IMPROVING HOSPITAL-BASED ANTIMICROBIAL PRESCRIBING TOWARDS REDUCING ANTIMICROBIAL- RESISTANT HOSPITAL-ASSOCIATED INFECTIONS

- **The Rhode Island Infectious Diseases Task Force**
- **Long Term Plan for improving the Public Health of Rhode Islanders through Prudent Antimicrobial Use**
- **Description of the Problem.** Antimicrobial resistance is recognized as one of the greatest threats to human health worldwide. The need for a targeted intervention is also imperative for the State of Rhode Island.



The problems exist because of three main reasons:

1. Antibiotics are prescribed inappropriately (overused, under-dosed, and administered for an inappropriate duration)
2. The robustness of infection control and prevention programs vary widely between facilities, and
3. The antimicrobial drug development pipeline is sparse.

VISION OF RIID TASK FORCE



The State of Rhode Island will lead the
national efforts to reduce
antimicrobial-resistant hospital-
associated infections

MISSION OF RIID TASK FORCE



The mission is to reduce antimicrobial resistance throughout the state of Rhode Island for the citizens of Rhode Island. This can only be accomplished through collaboration with private, not-for-profit, and government partners.

HOW RIASTF STARTED

- RISHP President and University of RI faculty member developed a “state-wide antimicrobial stewardship collaboration” concept led by pharmacists at each hospital
- Secured the support of Directors of Pharmacy of RI hospitals who agreed the **goals** of the group would be:
 - ▣ Work collaboratively to advance antimicrobial stewardship in the state through meetings, development of tools, sharing of ideas and individual hospital project results, listserves and other networking opportunities
 - ▣ Develop stewardship practitioners by offering formal educational sessions, including workshops, lectures and review sessions to improve the quality of stewardship efforts in our hospitals
 - ▣ Review and monitor progress on various state-wide antimicrobial stewardship grants and provide feedback to the investigators or project managers as needed

RIASTF: PURPOSE AND MISSION

□ Purpose:

- ▣ Members work together to advance and improve the quality of antimicrobial stewardship in the state
- ▣ Develop stewardship practitioners in hospitals without an infectious disease (ID) –trained pharmacist

□ Mission:

- ▣ To lead national efforts in reducing antimicrobial-resistant hospital-associated infections through collaboration among all acute care institutions and improve the quality of patient care through antimicrobial stewardship

RIASTF MEETINGS

- Once the group was formed, monthly leader-facilitated meetings began to be held at area hospitals
 - ▣ Formal attendance and minutes create an archive
 - ▣ Meetings have an educational component and a “business” component



- ▣ Members share policies, procedures, protocols, data collection forms and metrics
- ▣ Over time, meetings have evolved to allow for conference call-in format

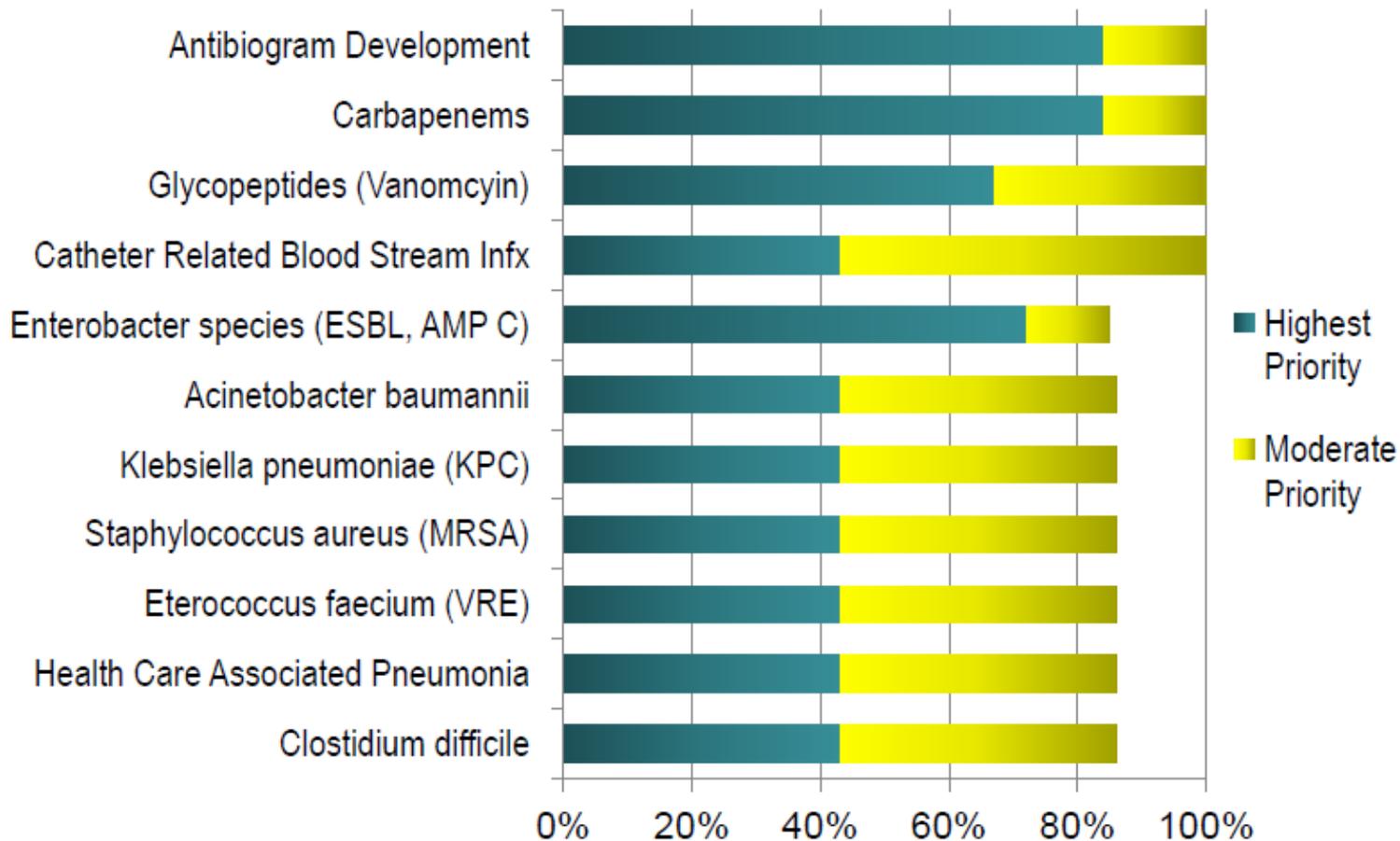
RIASTF MEETINGS

- During the first few meetings in 2011, a “needs assessment” was completed to determine group strengths and limitations of AS knowledge and skills
 - ▣ Representatives from 7/12 acute care hospitals responded to the surveys (*although in some cases, the health-system responded as a unit*)
 - Hospitals are comprised of 45.5% community and 54.4% teaching



NEEDS ASSESSMENT: RESULTS

Figure 1. Educational Topics of Greatest Interest



Provided a foundation for the program's educational offerings

Members participate in the development and delivery of educational programs

NEEDS ASSESSMENT: RESULTS

Figure 2. Rank Your Goals in Establishing an Antimicrobial Stewardship Program

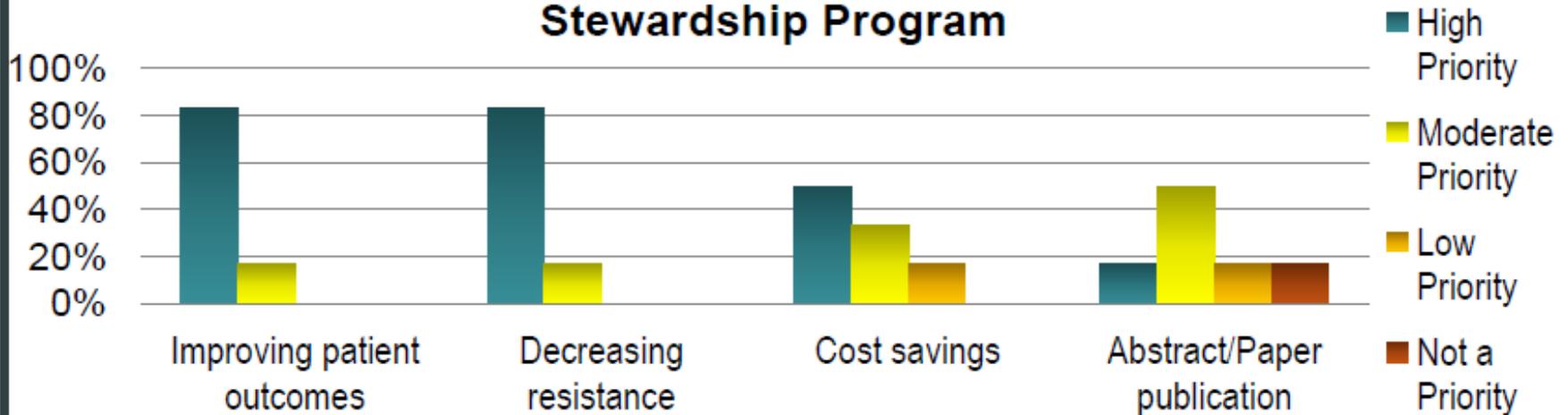
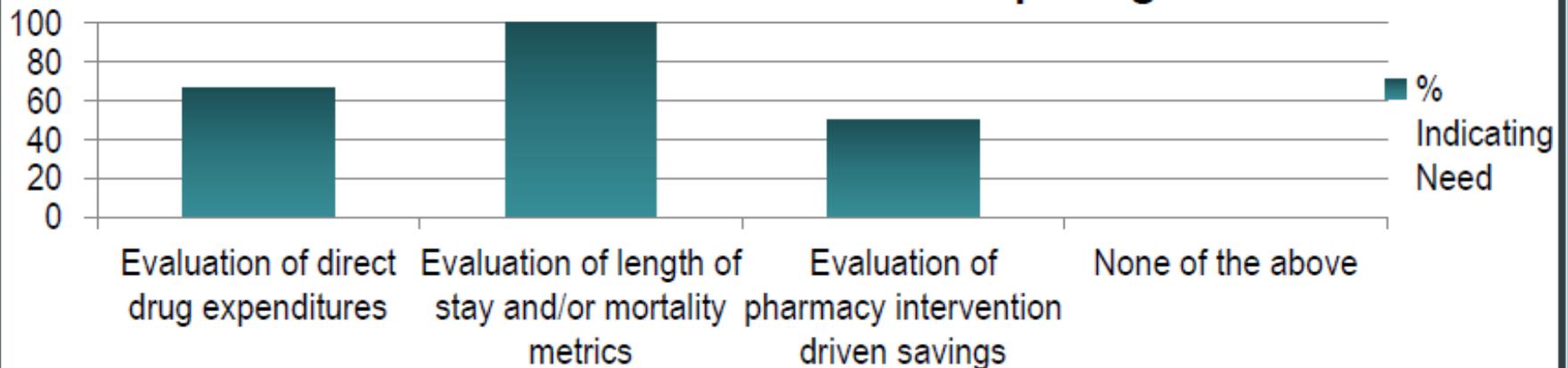


Figure 3. Financial Metrics Needed For Economic Justification of Stewardship Program



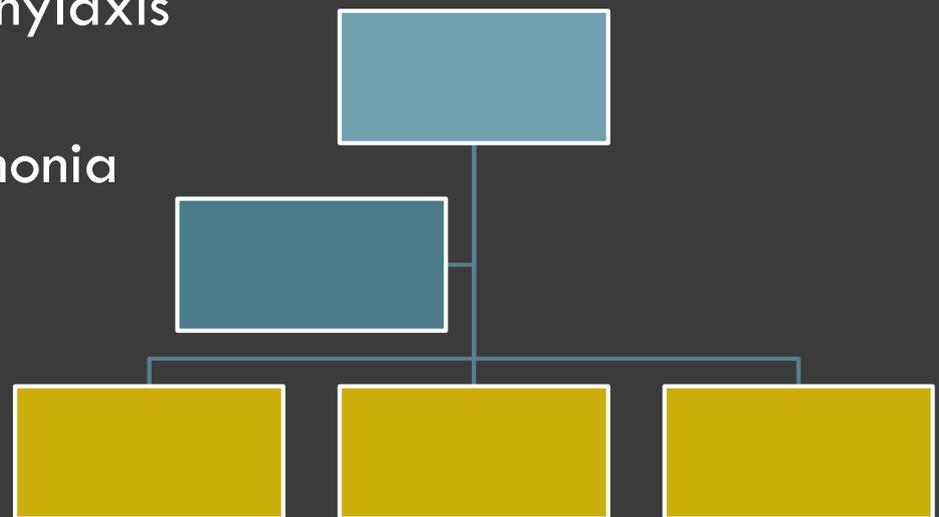
CURRICULUM OFFERED

- Educational topics that have been covered:
 - Review of IDSA Clinical Practice Guidelines for:
 - Asymptomatic Bacteriuria, UTIs & Pyelonephritis, and Catheter-associated UTI
 - The Treatment of MRSA Infections in Adults and Children
 - Developing Institutional Programs to Enhance AS
 - Meningitis
 - Update on the Surviving Sepsis Guidelines 2012
 - Common measures and metrics used in AS
 - Review of the evidence: Vancomycin nephrotoxicity
 - Rapid PCR Diagnostics
 - MIC Reporting: Choosing the Best Antibiotic and Dose
 - Effective Educational AS Practices
 - Antimicrobial Therapy staff development pearls
 - What's New from the ID meetings: 2012 and 2013
 - Pulse check: Updates from all ASPs in the State
 - Polymyxin (Colistin)
 - Antibigram Review



GROUP DISCUSSIONS

- Analysis of the available pharmacist credentialing options for AS and their value to the practitioner
- AS in Rhode Island and Miriam Hospitals 2012 and 2013
- Hospital Clinical Pathway Review and Discussion:
 - ▣ Antimicrobial Surgical Prophylaxis
 - ▣ Sepsis Guidelines
 - ▣ Community Acquired Pneumonia
 - ▣ Meningitis
 - ▣ Pneumococcal Vaccine



INFORMATION / EDUCATION SHARING

- Developed a clinical pathway for the diagnosis and management of catheter-associated UTI
- Developed a list-serve for participant
- Organized community cloud-based storage for documents
- Shared IV to PO protocols
- Created a staff development tool
 - ▣ Antimicrobial Stewardship “Tip of the Week”

INFORMATION / EDUCATION SHARING

Rhode Island ANTIMICROBIAL STEWARDSHIP Task Force

TIP OF THE WEEK

TOPIC: PrEP

Pre-exposure prophylaxis, or **PrEP**, is an HIV prevention method in which people who do not have HIV infection take medication to reduce their risk of becoming infected. When used consistently, **PrEP** has been shown to reduce the risk of HIV infection among adults at very high risk for HIV infection through sex, including men who have sex with men, heterosexually-active men and women, and individuals exposed to HIV through IV drug use. Most **PrEP** efficacy trials have tested a combination of the antiretroviral drugs tenofovir (also called TDF) and emtricitabine (also called FTC), taken daily for HIV prevention. Truvada® (tenofovir/emtricitabine) was approved by the U.S. Food and Drug Administration (FDA) for use as an HIV treatment in 2004, and was approved as **PrEP** in July 2012. **PrEP** should be used as an element of comprehensive prevention services and requires ongoing monitoring of HIV status, pregnancy status, adverse effects, medication adherence, and risk behaviors.

The criteria for patient evaluation, initiation, follow-up and discontinuation of **PrEP** can be found on the CDC website.

<http://www.cdc.gov/hiv/prevention/research/prep/>

1. CDC. *Interim guidance: preexposure prophylaxis for the prevention of HIV infection in men who have sex with men.* MMWR 2011;60:65–8.
2. CDC. *Interim guidance for clinicians considering the use of preexposure prophylaxis for the prevention of HIV infection in heterosexually active adults.* MMWR 2012;61:586–9.
3. CDC. *Update to Interim Guidance for Preexposure Prophylaxis (PrEP) for the Prevention of HIV Infection: PrEP for Injecting Drug Users.* MMWR 2013; 62:463-465.

PRESENTATIONS

- Presented two lectures to the local quality improvement organization/ Department of Health collaborative on hospital-acquired infections (HAI)
 - ▣ The status of AS efforts in the state
- Journal club presentations
- Presented posters at IDWeek and ASHP Midyear Clinical Meeting 2013

The Rhode Island Antimicrobial Stewardship Task Force (RIASTF): advancing antimicrobial stewardship efforts through statewide collaboration

Linda Nelson¹, Monica Dorobisz², Haley Morrill^{3,4}, Kerry LaPlante^{3,4}

Background: In 2011, the president of the Rhode Island Society of Health System Pharmacists issued a call to action to advance the state's antimicrobial stewardship (AMS) efforts. One pharmacist from each of the state's 12 major hospitals was identified to collaborate and assist in developing local multidisciplinary antimicrobial stewardship programs (ASP). The mission of this group, entitled the Rhode Island Antimicrobial Stewardship Task Force (RIASTF), was to lead national efforts in reducing antimicrobial-resistant hospital-associated infections and improve patient care through collaboration among all acute care institutions in the state. This abstract describes the development and activities of the RIASTF.

Methods: RIASTF members participate in monthly leader-facilitated meetings that have both an educational and collaborative component. Formal minutes are kept for each meeting. In September 2011, a member needs assessment survey was given to identify real and perceived gaps in the groups' infectious diseases (ID)/AMS knowledge and skills. This information was used to tailor the educational curriculum of meetings. Members regularly lend their expertise as instructors to support this curriculum. In addition, the RIASTF Tip of the Week, a short, timely item describing basic AMS or ID practice, is published by the group to the hospital pharmacy staffs and other interested parties. A listserv and cloud-based information portal have been established. Policies, protocols, data collection forms and metrics are shared by members. Reports on RI AMS initiatives and advancements have been given at the state Quality Improvement Organization meetings. The progress of AMS efforts in the state since the inception of the RIASTF is being assessed.

Results: Infectious diseases/AMS experience of members range from formal training (i.e. ID PGY-2 residency or fellowship) to no training. Attendance at monthly meetings averages 68.5% (range: 50-100%). Many facets of AMS were of interest. Improving patient outcomes and decreasing bacterial resistance rates were identified as highest priority goals in establishing AMS by more than 80% of respondents. When asked about institutional needs, more than 80% of respondents felt that local clinical guidelines and educational tools were a high priority and 100% indicated that knowledge of clinical practice guidelines was of moderate or high importance. Similarly, more than 80% felt that an examination of antimicrobial resistance and carbapenem use was a priority. Tracking resistance patterns and antimicrobial use were desired outcomes measures for more than 80% of respondents. All respondents felt that length of stay/mortality data were needed to justify their AMS service. Based on this survey, curriculum offerings have included discussions on clinical practice guidelines, Gram-negative resistance, measures and metrics, credentialing, briefings on various ID society meetings, topical literature reviews, journal club discussions and best practice descriptions. Small community and/or resource limited hospitals have described benefit from collaboration with ID pharmacy specialist members from other institutions.

Conclusion: The RIASTF, a formal state-wide pharmacy collaborative, was established to advance AMS in the state. By developing model procedures and policies, providing educational materials, and facilitating open communication between members, the RIASTF has increased member awareness and knowledge of AMS and has promoted the expansion of AMS in the state of RI. The RIASTF may be a model for successful antimicrobial stewardship advancement that could be adopted by other states or regions.



ASHP MIDYEAR CLINICAL MEETING 2013, ORLANDO FL



The Rhode Island Antimicrobial Stewardship Task Force (RIASTF): Advancing Antimicrobial Stewardship Efforts Through State-Wide Collaboration

Linda Nelson¹, Monica Dorobisz², Haley Morrill^{3,4} and Kerry LaPlante^{3,4} On behalf of RIASTF

¹Department of Pharmacy, Women and Infants Hospital of Rhode Island, Providence, RI; ²Department of Pharmacy, Kent Hospital, Warwick, RI; ³Infectious Diseases Research Program, Providence Veterans Affairs Medical Center, Providence, RI; ⁴College of Pharmacy, University of Rhode Island, Kingston, RI



BACKGROUND

- The Rhode Island Antimicrobial Stewardship Task Force (RIASTF) was formed in May 2011
- Consists of a statewide group of pharmacist representatives from each of the 12 acute care facilities (3 health systems encompassing 9 hospitals) in RI
- Purpose of the RIASTF:
 - Members work together to advance and improve the quality of antimicrobial stewardship in the state
 - Develop stewardship practitioners in hospitals without an infectious diseases (ID) pharmacist
- RIASTF Mission: to lead national efforts in reducing antimicrobial-resistant, hospital-associated infections through collaboration among all acute care institutions and improve the quality of patient care through antimicrobial stewardship

OBJECTIVE

To describe the development, activities, and achievements of the RIASTF

METHODS

- RISHP President and University of RI faculty member developed a "state-wide antimicrobial stewardship collaboration" concept led by pharmacists at each hospital
- Secured the support of the Directors of Pharmacy of RI hospitals who agreed the goals of the group would be:
 - Work collaboratively to advance antimicrobial stewardship in the state through meetings, development of tools, sharing of ideas and individual hospital project results, listserv and other networking opportunities
 - Develop stewardship practitioners by offering formal educational sessions, including workshops, lectures, and review sessions to improve the quality of stewardship efforts in our hospitals
 - Review and monitor progress on the various state wide antimicrobial stewardship grants and provide feedback to the investigators or project managers as needed
- Monthly leader-facilitated meetings held at area hospitals
 - Formal attendance and minutes would create an archive
 - Meetings would have an educational component and a "business" component
- Developed a member "needs assessment" to determine group strengths and limitations of antimicrobial stewardship knowledge and skills
 - Provided the foundation of the program's educational offerings
 - Members participate in the development and delivery of educational programs
- Members share policies, procedures, protocols, data collection forms and metrics
- Surveys of the activity of the antimicrobial stewardship programs (ASP) at participating institutions before and after the inception of the RIASTF were conducted to assess state-wide progress

RESULTS

Educational Needs Assessment:

- Representatives from 7/12 acute care hospitals responded to the surveys, although in some cases, the health system responded as a unit
- Hospitals are comprised of 45.5% community and 54.5% teaching hospitals

Figure 1. Educational Topics of Greatest Interest

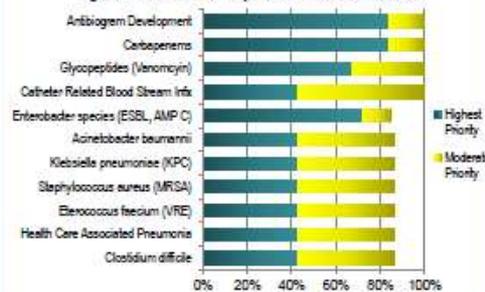


Figure 2. Rank Your Goals in Establishing an Antimicrobial Stewardship Program

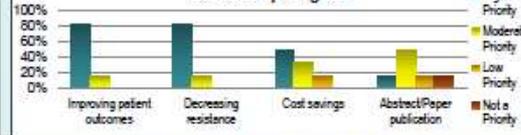
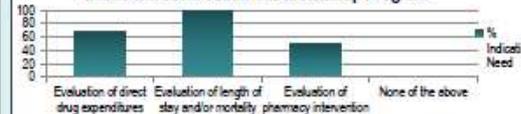


Figure 3. Financial Metrics Needed For Economic Justification of Stewardship Program



Achievements and Progress:

Category	Details
Curriculum Offered	<ul style="list-style-type: none"> Review of IDGA guidelines for the diagnosis and management of asymptomatic bacteria, urinary tract infections and pyelonephritis, and catheter associated urinary tract infections (CA-UTI) Review of the Clinical Practice Guidelines by the IDGA for the Treatment of Methicillin-Resistant Staphylococcus Aureus Infections in Adults and Children Update on the Surviving Sepsis Guidelines 2013 Review of the IDGA and the SHEA Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship ESBL producing organisms and the therapeutic challenges that these organisms pose to clinicians Common measures and metrics used in antimicrobial stewardship Review of the evidence: vancomycin nephrotoxicity Rapid PCR Diagnostics MIC Reporting: Choosing the Best Antibiotic and Dose Effective Educational Antimicrobial Stewardship Practices Antimicrobial Therapy Staff Development Pearls What's New from the ID Meetings* (2012 and 2013)
Information / Education Sharing	<ul style="list-style-type: none"> Developed a clinical pathway for the diagnosis and management of catheter associated urinary tract infections (CA-UTI) Developed a list serve for the participants Organized community cloud based storage for documents Shared IV to PO protocols Developed a staff development tool - Antimicrobial Stewardship "Tip of the Week"
Surveys	<ul style="list-style-type: none"> Conducted an education needs assessment Conducted pre and post RIASTF surveys
Presentations	<ul style="list-style-type: none"> Presented posters at IDWeek and ASHP MCM Presented two lectures to the local QIO/Department of Health (HA) Collaborative on the status of antimicrobial stewardship efforts in the state Journal club presentations
Grant Submissions	<ul style="list-style-type: none"> Submitted a Joint Commission and Pfizer proposal for a statewide antimicrobial stewardship model and demonstration project
Discussions	<ul style="list-style-type: none"> Antimicrobial Stewardship the Rhode Island and Miriam Hospitals 2012 Antimicrobial Stewardship the Rhode Island and Miriam Hospitals 2013 Analysis of the available pharmacist credentialing options for antimicrobial stewardship and their value to the practitioner

Other Achievements

Information / Education Sharing	<ul style="list-style-type: none"> Developed a clinical pathway for the diagnosis and management of catheter associated urinary tract infections (CA-UTI) Developed a list serve for the participants Organized community cloud based storage for documents Shared IV to PO protocols Developed a staff development tool - Antimicrobial Stewardship "Tip of the Week"
Surveys	<ul style="list-style-type: none"> Conducted an education needs assessment Conducted pre and post RIASTF surveys
Presentations	<ul style="list-style-type: none"> Presented posters at IDWeek and ASHP MCM Presented two lectures to the local QIO/Department of Health (HA) Collaborative on the status of antimicrobial stewardship efforts in the state Journal club presentations
Grant Submissions	<ul style="list-style-type: none"> Submitted a Joint Commission and Pfizer proposal for a statewide antimicrobial stewardship model and demonstration project

Figure 4. ASPs in RI Hospitals

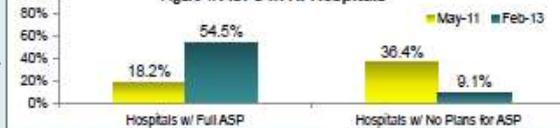


Figure 4: The number of hospitals that were in planning, had some components of AS or had a full ASP increased from 63.7% in May 2011 to 90.8% in February 2013

SUMMARY

- The RIASTF has identified gaps in knowledge and skills for ASP practitioners in RI
- Collaborative effort to share knowledge, protocols, best practices and educational materials has promoted the expansion of antimicrobial stewardship in this state
- Open communication and sharing is especially helpful for small and resource limited institutions
- Since the implementation of a statewide pharmacist collaborative (RIASTF), there has been significant ASP advancement in the state of Rhode Island
- In addition to recent increased ASP awareness through other avenues (e.g. CDC campaigns, Quality Improvement Organizations, etc), RIASTF may have played a role in this progress in RI
- The success of RIASTF may support the adoption of similar programs in other states

ACKNOWLEDGEMENTS

The authors have submitted this abstract on behalf of the members of RIASTF, which consist of pharmacist representatives from all of the following hospitals:
 Monica Dorobisz, PharmD of Kent Hospital (Warwick, RI); Britt Harrington, PharmD of Landmark Medical Center (Woonsocket, RI); Ewa Dzwierzynski, PharmD, BCPS, BCNSP of Memorial Hospital of Rhode Island (Pawtucket, RI); Jill Makowski, RPh of Newport Hospital (Newport, RI); Peter LaPrade, RPh & Martha Roberts, BS, PharmD of Our Lady of Fatima Hospital (North Providence, RI); James Beaulieu, PharmD & Rachel Fortin, PharmD, BCPS of Rhode Island Hospital and The Miriam Hospital (Providence, RI); Brian Leung, PharmD of Roger Williams Medical Center (Providence, RI); Joshua Guerin, PharmD of South County Hospital (Wakefield, RI); Kerry LaPlante, PharmD & Haley Morrill, PharmD of Veterans Affairs Medical Center (Providence, RI); Mark Rogers, PharmD, CDOE, CVDOE of Westerly Hospital (Westerly, RI); Linda Nelson, BS, PharmD of Women & Infants' Hospital (Providence, RI)

DISCLOSURES

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:
 Linda Nelson: Nothing to disclose
 Monica Dorobisz: Nothing to disclose
 Haley Morrill: Nothing to disclose
 Kerry LaPlante: Nothing to disclose



Antimicrobial Stewardship Program (ASP) Advancement in Rhode Island (RI) Since Implementation of a Statewide Antimicrobial Stewardship Task Force (RIASTF)

Haley Morrill^{1,2}, Monica Dorobisz³, Linda Nelson⁴, and Kerry LaPlante^{1,2} On behalf of RIASTF

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ABSTRACT

Background: RI is one of only a few states with a statewide pharmacy ASP task force (RIASTF). Through collaboration between all acute care institutions in the state, its mission is to lead national efforts in reducing antimicrobial-resistant hospital-associated infections.

Methods: Two 25-question self assessment surveys were developed in order to describe changes in ASP prevalence/characteristics in all acute care hospitals which may have been augmented by RIASTF's establishment in May 2011. A "Pre-Survey" assessed each hospital's ASP involvement as of May 2011 and a "Post-Survey" assessed this as of February 2013. Hospital representatives who attended the RIASTF meetings completed the surveys on paper; for those not present, the survey was conducted by an investigator via telephone who then entered all answers into web-based versions of the survey.

Results: Representatives from 100% (11/11) of RI's acute care hospitals responded to the surveys; 45.5% represented community hospitals and 54.5% represented teaching hospitals. Hospitals that reported having a full ASP program increased from 18.2% in 2011 to 54.5% in 2013; those without ASP plans decreased from 36.4% to 9.1%. The same top 2 barriers to ASPs were identified in 2011 and 2013 (lack of financial resources and lack of infectious disease personnel); however, their incidence decreased from 63.6% to 45.5% and 54.5% to 36.4%, respectively. Of hospitals that reported "not a priority" (27.2%) and "not consistent with institutional philosophy" (18.2%) as barriers in 2011, 0% reported these obstacles in 2013; those reporting "no barriers" increased from 0% to 36.4% from 2011 to 2013. Hospitals with no full time equivalents (FTEs) allotted to ASP pharmacists or physicians in 2011 decreased from 72.7% to 36.4% and 90.9% to 54.5%, respectively in 2013; those allotting ≥ 0.5 FTEs increased from 18.2% to 45.5% and 0% to 27.3%, respectively.

Conclusions: Many studies describe the success of single hospital ASPs, but assessment of stewardship strategies across a larger statewide scale is limited. Since the implementation of a statewide collaborative, there has been significant ASP advancement in RI; RIASTF may have played a role in this progress, thus supporting the adoption of similar programs in other states.

BACKGROUND

- The Rhode Island Antimicrobial Stewardship Task Force (RIASTF) formed in May 2011 and consists of a statewide group of pharmacist representatives from each of the 12 acute care hospitals in RI
- RIASTF Mission: to lead national efforts in reducing antimicrobial-resistant hospital-associated infections through collaboration among all acute care institutions and improve the quality of patient care through antimicrobial stewardship
- RIASTF members meet monthly and work together to advance and improve the quality of antimicrobial stewardship in the state through development of tools, sharing of ideas and individual hospital project results, list-serves and other networking opportunities
- A goal of RIASTF is to develop stewardship practitioners in hospitals without an infectious diseases (ID) pharmacist by offering educational lectures and review sessions. All members participate and help develop educational presentations
 - Examples of past activities: discussions on topics like stewardship measures and metrics, bacterial resistance mechanisms and various ID treatment guidelines, ID journal clubs, and summary presentations of findings from major national ID meetings
- The purpose of this survey is to determine if the existence of RIASTF could have contributed to ASP advancements in RI's acute care hospitals.

METHODS

- Two 25-question self-assessment surveys were developed by three RIASTF members to assess each hospital's involvement in stewardship based on skills and activities recommended in the 2007 IDSA/SHEA guidelines for ASPs
 - "Pre-survey" assessed ASP involvement as of May 2011
 - "Post-survey" assessed ASP involvement as of February 2013
- The "Pre-survey" was administered during an RIASTF meeting so respondents could be reminded to answer questions as of May 2011 and the "Post-survey" was administered during the subsequent monthly meeting
 - For both surveys, hospital representatives who attended the RIASTF meetings completed the surveys on paper
 - For members that were not present, the same survey was conducted by an investigator via telephone
 - An Investigator entered all answers into web-based versions of the survey (SurveyMonkey®) for analysis

*Child et al. Clin Infect Dis. 2007;44:159-77

RESULTS

- Representatives from 100% (11/11) acute care hospitals responded to the surveys
 - Rhode Island Hospital and Miriam Hospital replied together as a single entity
 - Hospitals are comprised of 45.5% community and 54.5% teaching hospitals
 - The number of hospitals that were in planning, had some components of AS or had a full ASP increased from 63.7% in May 2011 to 90.8% in February 2013

Table 1. ASPs in RI Hospitals

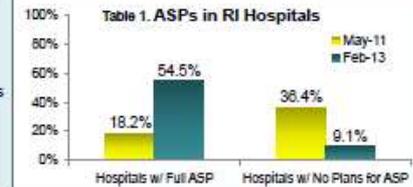
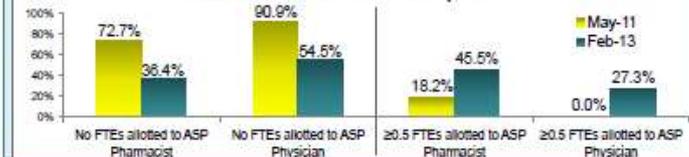


Table 2. Obstacles to Fully Implementing Antimicrobial Stewardship Program in Rhode Island Hospitals



Table 3. Full Time Equivalents (FTEs) for Antimicrobial Stewardship Practitioners in Rhode Island Hospitals



RESULTS (CONTINUED)

Table 4. Antimicrobial Stewardship Team Membership in RI Hospitals



Table 5. Stewardship Activities being Performed in RI Hospitals (includes those at least partially performing these activities)

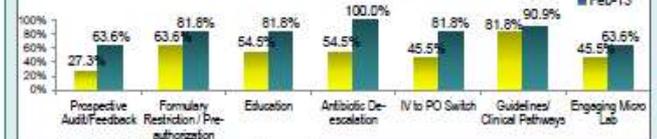
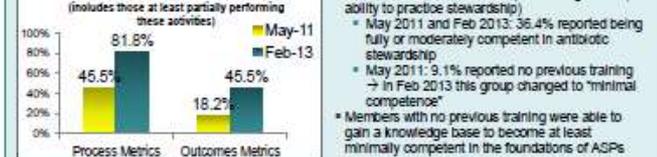


Table 6. RI Hospitals Reporting ASP Process/Outcome Measures (includes those at least partially performing these activities)



- Pharmacists were also surveyed on their feelings towards their own stewardship knowledge base (ie. ability to practice stewardship)
 - May 2011 and Feb 2013: 36.4% reported being fully or moderately competent in antibiotic stewardship
 - May 2011: 9.1% reported no previous training → In Feb 2013 this group changed to "minimal competence"
 - Members with no previous training were able to gain a knowledge base to become at least minimally competent in the foundations of ASPs

CONCLUSIONS

- Since the implementation of a statewide pharmacist collaborative (RIASTF), there has been significant ASP advancement in the state of Rhode Island
 - In addition to recent increased ASP awareness through other avenues (eg. CDC campaigns, Quality Improvement Organizations, etc), RIASTF may have played a role in this progress in RI
- Many studies describe the success of single hospital ASPs; however the assessment of stewardship strategies across a larger statewide scale is limited → RIASTF's success may support the adoption of similar programs in other states
- Next steps: RIASTF will work on collecting data from participating hospitals (eg. antimicrobial usage and antibiogram data) in hopes of producing statewide stewardship outcomes

ACKNOWLEDGMENTS

The authors have submitted the following as members of the RIASTF, which consists of representatives from each of the following hospitals:
Monica Dorobisz, Pharm.D. Kent Hospital (Warwick, RI); Jeff Harrington, Pharm.D. of Lartrah Medical Center (Providence, RI); Dawn D'Amico, Pharm.D. (SCS); BCSP of Memorial Hospital of Rhode Island (Providence, RI); Jill Melonick, PhD of Newport Hospital (Newport, RI); Peter LaPlante, PhD of Miriam Hospital; SS, Pharm.D. of Our Lady of Fatima Hospital (North Providence, RI); James Scudiero, Pharm.D. of Rhode Falls Hospital; BCSP of Rhode Island Hospital and the Miriam Hospital (Providence, RI); Brian Leung, Pharm.D. of Roger Williams Medical Center (Providence, RI); Joshua Guert, Pharm.D. of South County Hospital (Woonsocket, RI); Kerry LaPlante, Pharm.D. & Haley Morrill, Pharm.D. of Veterans Affairs Medical Center (Providence, RI); Mark Rogers, Pharm.D., CDEE, CMOE of Westerly Hospital (Westerly, RI); Linda Nelson, SS, Pharm.D. of Women & Infants Hospital (Providence, RI)

HOW DO WE MEASURE PROGRESS?

□ Survey of Members

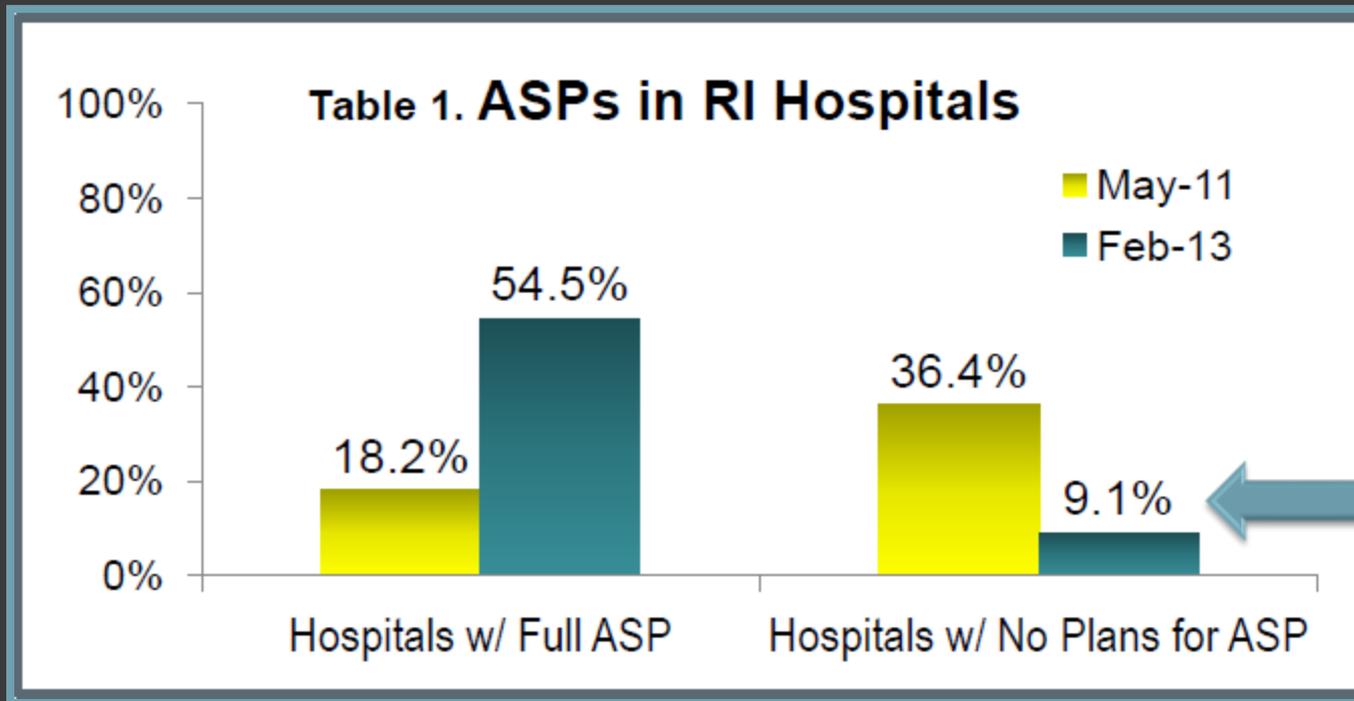
- ▣ Purpose: to determine if the existence of RIASFT could have contributed to ASP advancements in RI's acute care hospitals
- ▣ Two 25-question self-assessment surveys were developed by three RIASTF members to assess each hospital's involvement in stewardship based on skills and activities recommended in the 2007 IDSA/SHEA guidelines for ASP's
 - "Pre-survey" assessed ASP involvement as of May 2011
 - "Post-survey" assessed ASP involvement as of February 2013

MEMBER SURVEY METHODS

- The “Pre-survey” was administered during an RIASTF meeting so respondents could be reminded to answer questions as of May 2011 and the “Post-survey” was administered during the subsequent monthly meeting
 - ▣ For both surveys, hospital representatives who attended the RIASTF meetings completed the surveys on paper
 - ▣ For members that were not present, the same survey was conducted by an investigator via telephone
 - ▣ An investigator entered all answers into web-based versions of the survey (SurveyMonkey®) for analysis

MEMBER SURVEY RESULTS

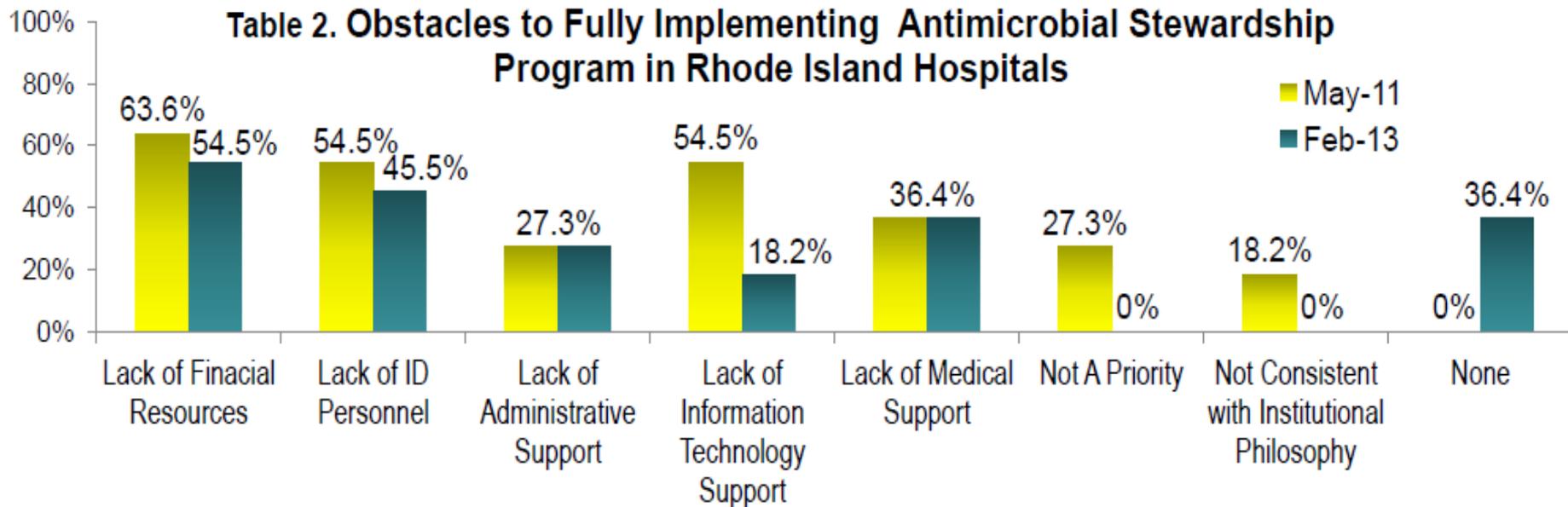
- Representatives from 100% (11/11) acute care hospitals responded
 - ▣ Rhode Island Hospital and Miriam Hospital replied together as a single entity



**This is
0% now
in 2014!**

The number of hospitals that were in planning, had some components of AS or had a full ASP increased from 63.7% in May 2011 to **100% now in 2014!**

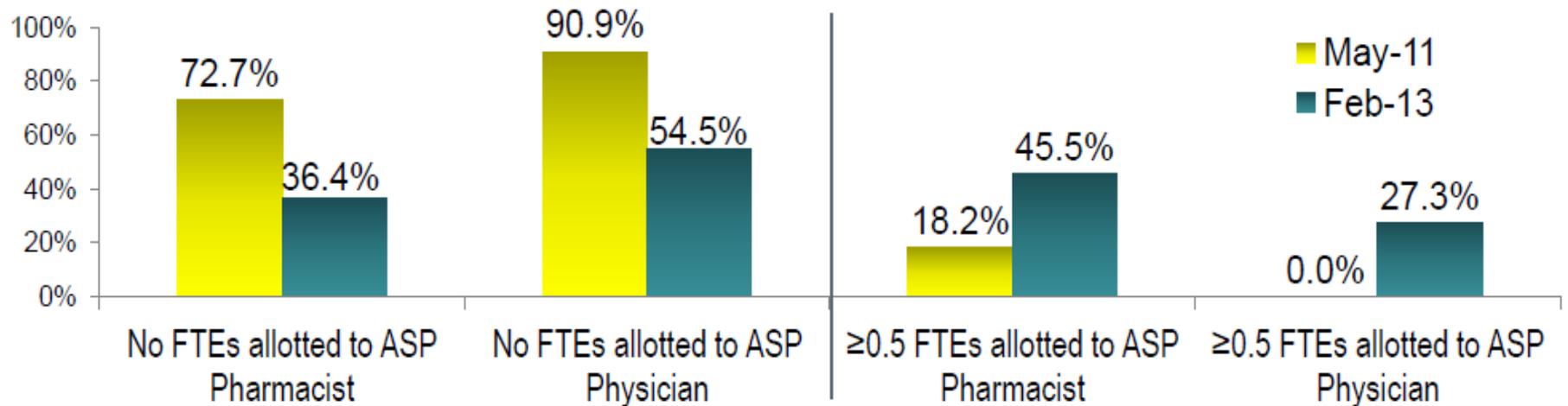
SURVEY RESULTS: OBSTACLES



- The same top 2 barriers to ASPs were identified in 2011 and 2013
 - ▣ However, their incidence decreased in 2013
- Of the hospitals that reported “not a priority” and “not consistent with institutional philosophy” as barriers in 2011, 0% reported these obstacles in 2013
 - ▣ Those reporting “no barriers” increased in 2013

SURVEY RESULTS: DEDICATED TIME

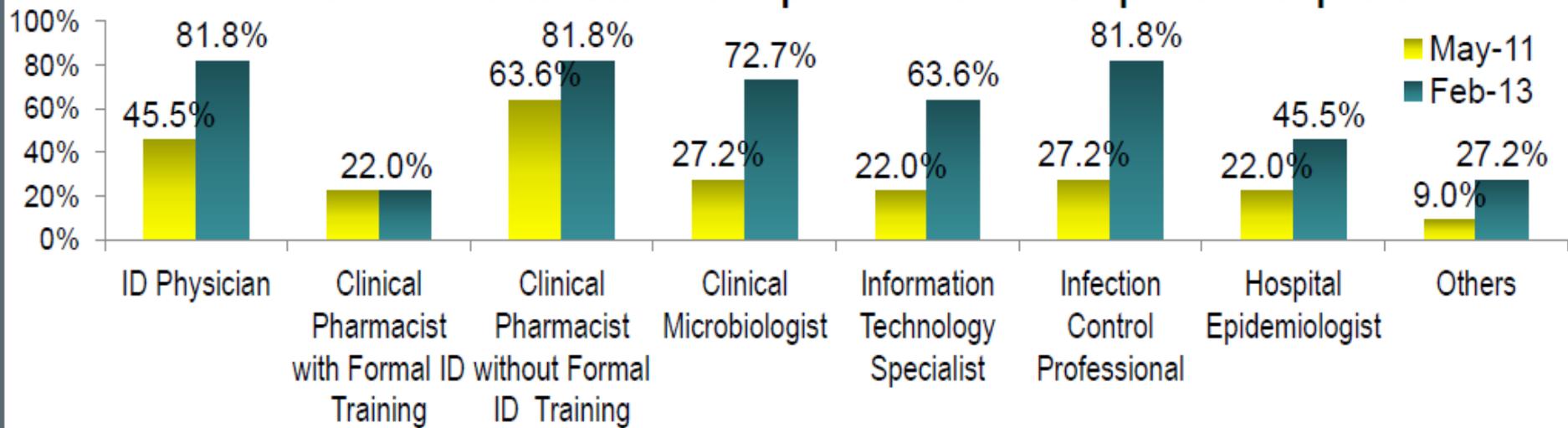
Table 3. Full Time Equivalents (FTEs) for Antimicrobial Stewardship Practitioners in Rhode Island Hospitals



- The number of hospitals with no FTEs allotted to ASP pharmacists or physicians decreased in 2013
- The number of hospitals allotting >0.5 FTEs increased in 2013

SURVEY RESULTS: WHO PARTICIPATES

Table 4. Antimicrobial Stewardship Team Membership in RI Hospitals

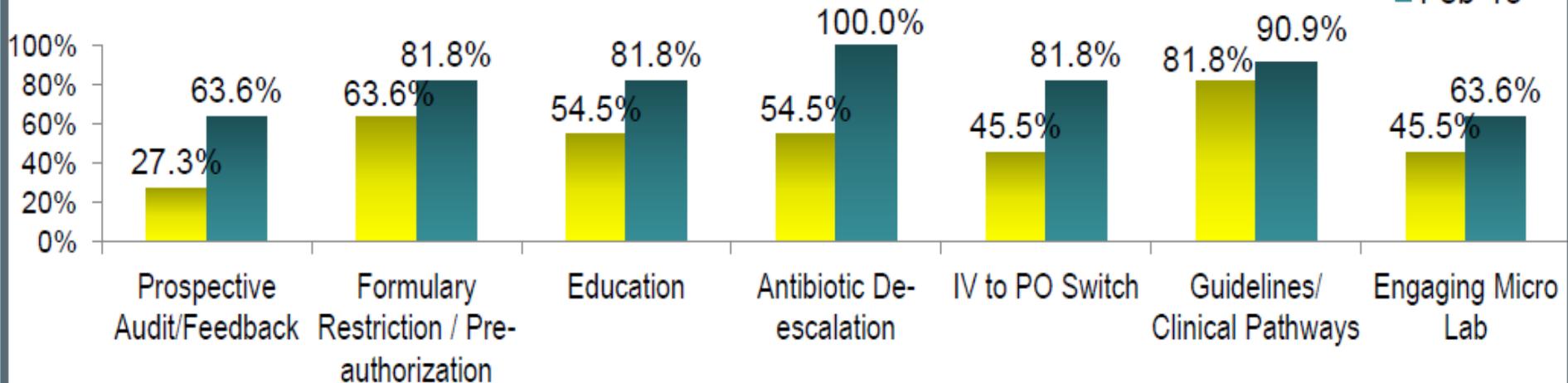


- Between 2011 and 2013, stewardship teams grew to involve more disciplines, including microbiologists, information technology and infection preventionists

SURVEY RESULTS: TYPES OF ACTIVITIES

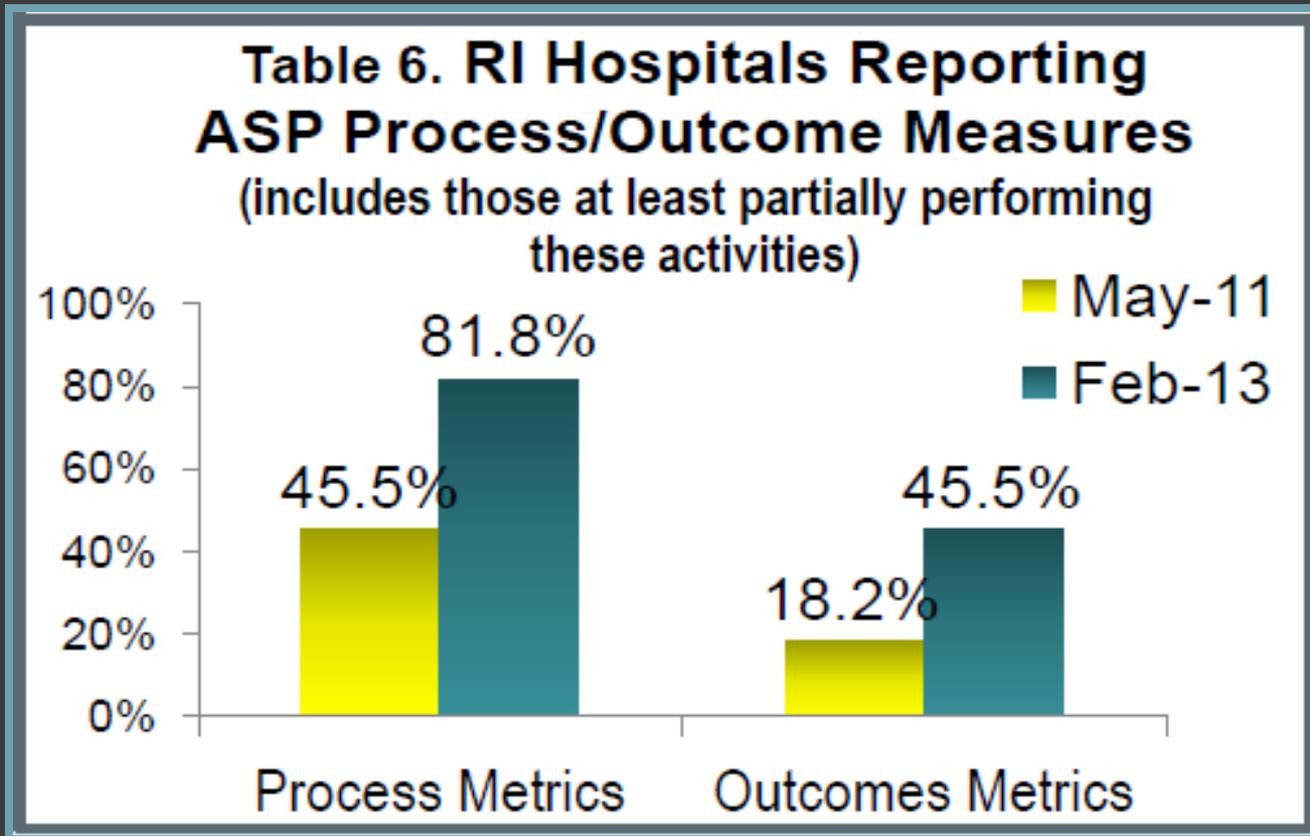
Table 5. Stewardship Activities being Performed in RI Hospitals
(includes those at least partially performing these activities)

■ May-11
■ Feb-13



- There was an overall increase across all types of activities being performed in 2013

SURVEY RESULTS: STEWARDSHIP METRICS



- Examples of Process Metrics: # of interventions, intervention acceptance rate, etc.
- Examples of Outcomes Metrics: Antibiotic usage, *C. difficile* rates, resistance rates, antibiotic costs, etc.

SURVEY RESULTS: KNOWLEDGE BASE

- Pharmacists were also surveyed on their feelings towards their own stewardship knowledge base (ie. ability to practice stewardship)
 - ▣ May 2011 and Feb 2013: 36.4% reported being fully or moderately competent in antibiotic stewardship
 - May 2011: 9.1% reported no previous training → in Feb 2013 this group changed to “minimal competence”
 - ▣ Members with no previous training were able to gain a knowledge base to become at least minimally competent in the foundations of ASPs



SURVEY CONCLUSIONS

- Since the implementation of RIASTF, there has been significant ASP advancement in the state of Rhode Island
 - ▣ In addition to recent increased ASP awareness through other avenues (eg. CDC campaigns, Quality Improvement Organizations. etc), RIASTF may have played a role in this progress in RI
- Many studies describe the success of single hospital ASPs; however the assessment of stewardship strategies across a larger statewide scale is limited
 - ▣ RIASTF 's success may support the adoption of similar programs in other states

RECENT “PULSE CHECK” ON ASPs

- Elements of Antimicrobial Stewardship are now present at all acute care hospitals in RI
 - ▣ Examples of ASP accomplishments in RI hospitals
 - Performing daily **audit and feedback** to antibiotic prescribers
 - **Procalcitonin testing** to help decrease unnecessary initial antibiotic starts and shorten durations of therapy
 - **Vancomycin monitoring** service run by pharmacists to increase the number of troughs in the correct therapeutic range
 - **“Time-outs” during ICU rounds** to specifically discuss antibiotic issues and de-escalation
 - Collecting **antibiotic utilization data** to monitor decreases or increases in antibiotic use resulting from ASP efforts
 - Development of **institution-specific clinical pathways** and/or guidelines for a variety of ID disease states

RECENT “PULSE CHECK” ON ASPs

- Obstacles ASPs continue to face in RI hospitals
 - Changing the philosophies of some physicians (including ID physicians)
 - Changes in pharmacy staffing and personnel
 - Educating the entire hospital staff about the ASP
 - Lack of integrated information systems support
 - Obtaining meaningful data on antibiotic use
 - Getting practitioners to follow clinical pathways



RECENT “PULSE CHECK” ON ASPs



- How RIASTF could support ongoing ASP efforts in RI hospitals
 - ▣ Compare outcomes with other hospitals in the state to better gauge how the ASP is doing
 - ▣ Discuss antibiotic use issues to see if other hospitals are experiencing the same thing
 - ▣ Discuss ideas on how to roll out initiatives to all staff throughout the hospital
 - ▣ Work through outcomes data together to ensure it is being compiled correctly
 - ▣ Provide a 1-day mentorship visit to a site with an established ASP

WHAT'S NEXT FOR RIASTF

- RIASTF has submitted proposals for statewide ASP grants...
- The **vision** for the future...

