

Antibiotic Stewardship Advisory Group Meeting Summary

Purpose

The purpose of the October 11, 2013 meeting was to assemble public health and healthcare thought leaders from PHF's Antibiotic Stewardship Program pilot sites and interested agencies to discuss advancing the [Antibiotic Stewardship Program](#), and identify additional health challenges that may benefit from collaborative efforts between public health and healthcare.

Objectives

At its spring 2012 meeting, the Antibiotic Stewardship Advisory Group refined a draft [Public Health Antibiotic Stewardship Driver Diagram](#) previously developed by PHF. This entailed identifying additional primary and secondary drivers of optimal antibiotic use that warranted inclusion in the driver diagram and exploration of ways the driver diagram could be used in the field. Since then, PHF has facilitated pilot activities involving three health departments and their healthcare partners, using the driver diagram as part of PHF's Antibiotic Stewardship Program. During the October 2013 meeting, the group shared and discussed progress at the three pilot sites in the interest of the following objectives:

- Expand the current Antibiotic Stewardship Program to additional sites and identify next steps for scaling up the current pilot programs.
- Refine the current Public Health Antibiotic Driver Diagram and inform development of a subsequent intervention guide.
- Explore the applicability of the driver diagram approach to additional challenges at the crossroads of public health and healthcare.
- Identify possible funding streams and partnerships to broaden this initiative to foster collaboration between public health and healthcare.

Invitees

In addition to reconvening the group that met for the group's initial meeting in 2012, PHF extended invitations to thought partners with an interest in exploring the idea of public health and healthcare collaborations to address community health issues. The diverse group of invitees included colleagues from federal agencies, national partner organizations, foundations, corporate funders, and other subject matter experts with an interest in expanding this initiative.

Background and Roadmap

PHF's Antibiotic Stewardship Program grew out of PHF's partnership with the Centers for Disease Control and Prevention (CDC) and the [Institute for Healthcare Improvement](#) (IHI) to develop a framework of key drivers for reducing inappropriate antibiotic utilization in hospitals.

- The [IHI Antibiotic Stewardship Driver Diagram](#) focuses on hospital-based drivers (e.g., consider local antibiotic susceptibility patterns in selecting therapy, monitor for toxicity and adjust dose promptly); it focuses on decreasing adverse drug events, pathogen prevalence, infection incidence, and pharmacy costs within acute care environments.
- PHF recognized that hospital-based efforts to prevent infections from becoming antibiotic resistant are more effective when paired with community-based change efforts to address drivers of optimal antibiotic use beyond hospital walls. This led to a partnership with CDC to explore public health's role, and the creation of PHF's Antibiotic Stewardship Program.
- In 2012, PHF led development of a Public Health Antibiotic Stewardship Driver Diagram that illustrates public health's role in promoting optimal antibiotic use.
 - An interdisciplinary team of experts in quality improvement (QI), infection control, epidemiology, and public health leadership identified primary and secondary drivers of optimal antibiotic use to reduce the spread of antibiotic resistant infections.
 - The driver diagram states the primary and secondary drivers of optimal antibiotic use
 - The Public Health Antibiotic Stewardship Driver Diagram is intended for use alongside the IHI Antibiotic Stewardship Driver Diagram or separately with the healthcare community to address population health strategies that can help achieve optimal antibiotic use.
- PHF facilitated three pilot efforts with a focus on collaborative efforts between public health and healthcare to advance antibiotic stewardship.

Piloting the Public Health Antibiotic Stewardship Driver Diagram

During the Antibiotic Stewardship Advisory Group Meeting, representatives from each pilot site presented their program, highlighting goals, strategies and interventions used; the role of healthcare and public health collaboration; accomplishments; lessons learned; and next steps.

[Independence Health Department \(Independence, Missouri\):](#)

The Independence Health Department partnered with childcare centers, physicians, and pharmacists in an interdisciplinary approach to improving antibiotic use in their community. Read their full case story [here](#).

This pilot site used extremely limited resources to develop and enhance numerous initiatives:

- Used [QI technical assistance from PHF](#) to identify the drivers that they would approach and to implement the interventions.

- Built upon an existing relationship with a local healthcare system, [Centerpoint Medical Center](#), which provided a natural opportunity for collaboration to educate healthcare providers and promote new practices in prescribing antibiotics.
 - Developed and distributed numerous resources to educate providers, including quick-reference guidelines, and a reporting system for alerts and advisories about cases of resistant infections.
 - Distributed resources for prescribers to offer patients about optimal antibiotic use.
 - Provided Continuing Medical Education programs for professionals in both healthcare and public health.
- Built upon existing relationships with childcare centers to create clear standards that childcare providers can implement when working with families in the community.
 - Distributed a guide produced by the [Missouri Department of Health and Senior Services](#) that, in addition to other valuable information, included protocols for antibiotic use for children attending childcare facilities.
 - Implemented an incentive program called the Start Right Rating System to publicly recognize childcare centers implementing new standards for antibiotic use, as well as those taking extra steps to ensure that safe antibiotic use practices and policies are followed.
- The Independence Health Department expressed interest in continuing this work with the following steps:
 - Expand collaboration between the public health and healthcare systems to track incidence and outbreaks of antibiotic resistant infections.
 - Survey physicians and childcare centers to measure the impact of these initiatives, and work with pharmacies to assess whether there has been a decrease in prescriptions for antibiotics.
 - Expand efforts to distribute guidelines about safe antibiotic use to physicians and continue reaching out to childcare facilities.
 - Create “wellness kits” that detail protocols for patients on antibiotic regimens, and helpful over-the-counter remedies as an alternative to antibiotics for patients with common ailments.
 - Establish collaboration with area dentists to encourage optimal antibiotic prescribing standards in dentistry.

[Connecticut Department of Public Health \(CDPH\):](#)

CDPH recognized that the spread of *Clostridium difficile* infection (CDI) was an issue around the country and throughout the state. In response to the prevalence of CDI in long-term care facilities (LTCs), CDPH used QI tools, such as a cause and effect diagram, to create the interdisciplinary CDI Prevention Collaborative. Read their full case story [here](#).

This Collaborative developed initiatives to reduce Healthcare-associated Infections (HAIs) in nursing homes and LTCs by implementing evidence-based standards of care in these facilities, including the following elements:

- A partnership between public health and healthcare was key to the development of the CDI Prevention Collaborative. The two sectors collaborated to recruit LTCs to participate in the initiative willingly, leading to better adoption of the new protocols.
- QI methods to plan and implement their initiative, specifically the cause and effect diagram.
 - [PHF's Senior Quality Advisor, Jack Moran](#), provided onsite QI technical assistance about using of this approach.
 - The Connecticut team categorized the root cases for increased CDI in LTCs in order to address them specifically and comprehensively.
- A best practices checklist for LTCs that encouraged interdisciplinary collaboration on implementing the protocols.
- Trainings for the LTC staffs about these practices and new tracking protocols for CDI, with follow-up calls to assist with implementing new protocols and tracking cases of CDI.
 - Implemented the use of precaution signage for patients with CDI to encourage caution when interacting with these patients.
 - Ensured that CDI education was provided to patients and families affected by the infection.
 - Educated prescribers in talking to patients about antibiotic use, and tracked the consistency with which these practices were used.

Connecticut expressed a desire to continue this work with the following steps:

- Expand the Collaborative to additional LTC facilities around the state.
- Expand the National Healthcare Safety Network (NHSN) tracking so that more facilities are providing CDI surveillance data.
- Increase outreach to prescribers about antibiotic use to prevent infections from becoming resistant.
- Compile outcome data from these efforts.

Maine Center for Disease Control and Prevention (Maine CDC):

Maine CDC sought to reduce transmission and acquisition of CDI through collaborative efforts with healthcare partners. Maine CDC first identified the facilities with highest incidence of CDI and started working with those facilities. Using the cause and effect diagram as a QI tool, Maine CDC worked with healthcare facilities to develop educational interventions and educational materials to implement new protocols for Maine LTCs and hospitals. Read an overview of their work [here](#).

The collaboration between Maine CDC and the healthcare facilities contributed to the following accomplishments:

- Educated facility leadership about initiatives.
- Created trusting relationships with hospitals and nursing homes that helped them to implement new protocols.
- Enabled the health department to become an even more important resource and partner to the healthcare facilities.
- Implemented interventions to reduce transmission of CDI including standardized protocols for approaching CDI in LTCs – particularly those with the highest levels of CDI.

- Used the NHSN to track CDI data and persuaded all LTCs in Augusta (area of focus due to higher rates of CDI) to report CDI incidents on NHSN.
- Created public database of hospital-specific CDI data.
- Educated physicians about protocols for prescribing antibiotics and developed a pocket manual for physicians to use to promote optimal antibiotic use.

Maine CDC expressed a desire to continue this work with the following steps:

- Expand educational initiative to reach more providers and improve prescribing practices.
- Replicate these efforts in additional service areas in the state of Maine, specifically, the city of Bangor.
- Develop a statewide train-the-trainer program for LTC facilities to encourage further collaboration and resource sharing.
- Compile outcome data from these efforts.

Common Themes

While each pilot site addressed different drivers, together they addressed all of the primary drivers connected to optimal antibiotic use on the Public Health Antibiotic Stewardship Driver Diagram. Several factors emerged as critical to the success of the pilot efforts:

- The Public Health Antibiotic Stewardship Driver Diagram was a framework for each site, whether it was used as a reference point or to identify drivers to address.
- Each site used QI tools and methods to ensure that interventions, new protocols, surveillance efforts, and resources were adopted effectively.
- Collaboration between public health and healthcare was imperative; each site leveraged established relationships and connections with healthcare partners to adopt new interventions and protocols.
 - Health departments served as conveners for LTCs to help them meet fiscal needs and regulatory requirements.
 - Each pilot built and maintained a strong infrastructure to support the initiative, including relationship building and communication channels.

Expanding the Antibiotic Stewardship Program

In addition to the next steps outlined by each of the pilot sites, PHF intends to seek funding to expand the Antibiotic Stewardship Program's reach and to develop additional driver diagrams to address other community health challenges. With these goals in mind, next steps are as follows:

- Expand current pilot activities to other facilities and geographic areas within the three pilot site jurisdictions.
- Expand the Antibiotic Stewardship Program to include other pilot sites around the county.
- Develop intervention guidance based on pilot sites' experiences.
- Develop and pilot additional driver diagrams to build collaborations between public health and healthcare that address other community health challenges.

- Use social media, publications, and conference presentations to increase awareness and interest in fostering use of public health driver diagrams and healthcare and public health collaboration to address community health challenges.
 - PHF is presenting this material at the upcoming meeting of the [Association for Community Health Improvement](#) (ACHI).
- Identify funders to support these efforts.
 - PHF is informing potential funders about these activities.
 - PHF is scheduling meetings and calls with funders to explore mutual interests and funding opportunities.