

Implementation of Antimicrobial Stewardship Programs in Small Community Hospitals: Recognizing the Barriers and Meeting the Challenge

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(See the Invited Article by Stenehjem et al on pages 691–6.)

Keywords. antimicrobial stewardship program; ASP; community hospital.

In this issue of *Clinical Infectious Diseases*, Stenehjem et al make a convincing case that it is possible to design and implement a meaningful antimicrobial stewardship program (ASP) in community hospitals with <200 beds. Their review is a valuable resource for physicians and pharmacists who are interested in establishing ASPs in this setting.

The authors offer 4 potential ways to provide infectious diseases (ID) support for ASPs in small hospitals according to their system-based experiences: hiring and sharing individual ID physician and/or pharmacist support among multiple hospitals, establishing a health system-level ASP, engaging in state-based collaboratives, and purchasing commercial telehealth support. Other opportunities to support small community hospital ASPs exist outside those described in the authors' experience. In particular, the authors did not include the consultative network model in which we currently work. The Duke Antimicrobial Stewardship Outreach Network (DASON)

is a collaborative network that provides access to ID and antimicrobial stewardship expertise by on-site, face-to-face monthly visits with liaison pharmacists and physicians [1]. DASON includes 28 community hospitals in the southeastern United States with an average bed size of 210 that are not owned by the Duke Health System. Participation in DASON does not require administrative system ownership or involve a regional or corporate hierarchy. Instead, our consultative network emphasizes the development and support of local leaders of ASPs to solve hospital-specific problems with expert guidance, education, implementation tools, and a standardized data infrastructure. In addition, our model can benefit hospitals that are within a larger system structure but have only passive interactions between system and local ASPs. We agree that a hierarchical system structure can work for small community hospitals that have established administrative relationships with a larger system. The system ASP model, however, would not be applicable to independent small community hospitals or hospitals in other cost-saving contract scenarios (eg, management contracts without ownership from a larger system). Finally, the authors did not mention several other available commercial vendors that work through the pharmacy department to provide consultative services to assess and support implementation of a local ASP.

Through work with our community hospital partners in DASON, we understand that barriers to implementing an ASP in a small community hospital can be complex. These barriers undoubtedly vary between hospitals, but as a whole they are more similar than different. Simply put, small hospitals must overcome a lack of personnel to perform stewardship and a lack of understanding on where the opportunities to improve stewardship exist.

We presume that most costs for the programs described by Stenehjem and colleagues were for personnel and technology. Therein lies the key question for small community hospitals that want to implement an ASP: Who will do the work? What hospital leader will direct dollars to stewardship that are already allocated to competing priorities? Indeed, the largest barrier to implementation cited by all sizes of ASP is lack of financial support [2, 3]. Cost and manpower barriers are more difficult in small community hospitals where existing examples of the "business case" for antimicrobial stewardship do not apply [4]. Stenehjem et al suggest that a return on investment argument can be successful when consolidating key ASP resources in a system infrastructure or otherwise sharing ASP personnel. This approach may work for hospitals in existing systems and partnerships. However, focusing on return on investment may not be the best strategy for achieving initial

Received 14 April 2017; editorial decision 17 April 2017; accepted 28 April 2017; published online May 2, 2017.

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Clinical Infectious Diseases® 2017;65(4):697–8

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support for an individual small community hospital ASP. ASPs have obvious parallels with other patient safety and performance improvement programs. Such programs commonly result in improved standards of practice and enhanced benefits for patients beyond budgetary goals. Recent changes in regulatory requirements now provide compelling and even sufficient rationale for hospital leaders to support ASPs [5].

Employing existing staff to take an active role in stewardship is likely to be more palatable from a cost perspective. How exactly to train existing staff and implement a stewardship approach driven by front-line providers, pharmacists, and/or nurses in small facilities is an area in need of new innovation. We agree with Stenehjem et al that technology advances in telehealth hold great promise in facilitating individual relationships with clinicians who practice in remote geographic areas. Preliminary data, however, suggest that the degree of contact with the telehealth service impacted the effect on antibiotic use [6]. Specifically, availability of a call-in service that relied on local clinicians or pharmacists to initiate contact did not have the same effect as the telehealth service that actively initiated contact with local providers based on clinical data. Thus, emphasis should be placed on actively building relationships with local clinicians to engage them in stewardship rather than providing a passive product or service. Solutions designed to share resources for ASPs among multiple small facilities must have a strategy for providing personal engagement with front-line clinicians. This engagement may potentially occur by remote telehealth, via a non-ID physician champion, or via a clinical pharmacist who does not have formal training in stewardship but can act as proxy for a remote or centralized stewardship expert.

Provider engagement is greatly facilitated when valid, time-trended, local data on antibiotic use are available to identify areas of opportunity for the ASP. Accessibility of local data, tools for

analysis, and meaningful interpretation encompass another major barrier for small-hospital ASPs. A large part of our efforts in DASON include development of a robust data infrastructure to feed back local and network-wide benchmarked antimicrobial utilization data to hospital, pharmacy leadership, and clinicians. These data allow member hospitals to identify opportunities to improve and to monitor individual hospital or network-wide interventions that address potential misuse or overuse of antimicrobial agents. In addition, these data regularly stimulate meaningful discussion among stewardship leaders and clinicians, providing opportunities for local doctors to realize they need to change individual prescribing habits. In our experience, ongoing, longitudinal data are a key part of maintaining and motivating ASPs. As more small hospitals now have electronic medical records, the challenge becomes how to get data out of these systems, validate it, analyze and interpret it effectively, and then regularly report it back to those implementing ASPs. Our experience, like that of Stenehjem et al, has shown that extraction of antimicrobial use data from multiple types of data systems is possible through use of shared information technology resources and provides a valuable resource for small-hospital ASPs to use data for action.

Despite the barriers discussed above, small community hospitals without a functioning ASP should change their status quo by starting a program even if it is limited in scope and modest in its goals. Hospitals that delay starting an ASP until all components and resources are available will fail to meet the needs of their patients in the short and long term. We suggest that initial ASP initiatives be simple, small projects focused on obvious problems that are likely to lead to early and measurable successes. These initiatives should be designed to improve patient care and to promote positive relationships with influential clinicians. Programs that begin with limited monetary support can grow and improve

if early successes are achieved and then leveraged to secure more financial support. Once started, a better stewardship program can evolve with the addition of more intensive components. In this incremental way, hospitals can sequentially build the program that suits their organization.

A large portion of patients in the United States currently receive medical care in small community hospitals. Stenehjem and colleagues have provided much useful advice on how to design and implement stewardship programs in these institutions. Although there are many barriers to overcome, this is an exciting time and a rich opportunity for ID specialists and pharmacists who dare to become pioneers in this currently underserved and largely ignored practice setting.

Notes

Financial support. R. W. M. has previously received grant support from the Centers for Disease Control and Prevention (CDC), the CDC Foundation, and the Agency for Healthcare Research and Quality, and has received royalties from UpToDate, Inc. D. J. S. has previously received grant support from the CDC and the CDC Foundation and has received royalties from UpToDate, Inc.

Potential conflicts of interest. Both authors: No reported conflicts of interest. Both authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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