

## Commentary

# Dedicated time for antimicrobial stewardship—How much and why? Lessons learned from South Korea

Payal K. Patel MD<sup>1</sup> and Arjun Srinivasan MD<sup>2</sup>

<sup>1</sup>Division of Infectious Diseases, Veterans' Affairs Ann Arbor Healthcare System and University of Michigan Medical School, Ann Arbor, Michigan and <sup>2</sup>Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia

### Abstract

Antimicrobial resistance is a global and pressing problem that requires large-scale, federal coordination of efforts and tailored local interventions and surveillance. Given the urgency of the threat, many countries now have national policies to reduce inappropriate antimicrobial use. However, few countries have followed this with resources at the institutional level to support the implementation of practices to achieve this goal. In the United States, accreditation bodies such as Centers for Medicare and Medicaid Services and The Joint Commission have added antimicrobial stewardship standards to encourage uptake of antimicrobial stewardship programs (ASPs).

(Received 23 September 2020; accepted 23 September 2020)

In the United States, hospitals are required by accreditation and regulatory bodies to have dedicated, multidisciplinary programs to focus on improving antimicrobial use. The CDC devised the Core Elements of Antimicrobial Stewardship to help optimize the effectiveness of ASPs.<sup>1</sup> Follow-up work on the core elements has shown that leadership support, most often in the form of dedicated time and salary for team members, is a key ingredient of robust ASPs.<sup>2</sup> However, in many countries, ASP efforts are carried out by the already clinically busy infectious disease consultation team without separate staff time carved out purely for ASP efforts. Little is known about how best to structure and support stewardship efforts without a formal ASP. For this reason, we welcome the article in this issue of *Infection Control and Hospital Epidemiology* by Park et al<sup>3</sup> describing the South Korean experience with antimicrobial stewardship and calculating full-time equivalents (FTEs) to optimize ASP activities.

Notably, the South Korean model is not uncommon. In our experience working with ASP teams in India, Korea, Japan, and Italy, ASP work is usually done by the inpatient clinical infectious diseases team without clear-cut dedicated FTEs and a separate ASP team. Park et al performed a careful study to evaluate the time required to review information and make recommendations to improve antimicrobial use in a sample of >200 patients in 8 hospitals. An average of 10–16 minutes per patient was required to conduct stewardship activities. Extrapolated to the nation, they estimate that optimizing hospital stewardship in South Korea would require ~2.4–2.8 FTEs per 1,000 beds.<sup>3</sup>

This finding clearly leads to this question: Is such an investment in dedicated time for leadership and stewardship work worth it?

**Author for correspondence:** Arjun Srinivasan, National Center for Emerging and Zoonotic Infectious Diseases, 1600 Clifton Road, Atlanta, GA 30329-4027, USA. E-mail: [asrinivasan@cdc.gov](mailto:asrinivasan@cdc.gov)

**Cite this article:** Patel PK and Srinivasan A. (2020). Dedicated time for antimicrobial stewardship—How much and why? Lessons learned from South Korea. *Infection Control & Hospital Epidemiology*, 41: 1436–1437. <https://doi.org/10.1017/ice.2020.1235>

We strongly believe it is. In the United States, the largest integrated healthcare system is the Veterans' Health Administration (VA), which has provided leadership support by mandating ASP throughout its facilities and supporting many hospitals with dedicated FTEs. The VA system has achieved decreases in overall antimicrobial use and CDI rates, and it is a leader in ASP research.<sup>4,5</sup> Contrast these outcomes with an experience at the University of Maryland in which the institution shifted dedicated resources away from the ASP and toward a model where the inpatient ID team was responsible for stewardship in addition to its regular clinical work (similar to the current model in countries like South Korea). After the ASP was eliminated, they reported a dramatic increase in antimicrobial use, measured by costs, especially among broad-spectrum agents, which led to the reinstatement of a dedicated ASP.<sup>6</sup>

We believe that separating out infectious diseases consultations from the ASP team is a model that should be replicated globally, particularly in countries that are not resource limited, to move the ASP needle forward. Clearly, this is easier said than done. Each country and each hospital have unique barriers, including the availability of and training for an ASP workforce. Developing and dedicating ASP staff in hospitals will require an investment, but failing to do so has costs as well. As described by Park et al, less labor and staffing directed toward ASP activities leads to less stewardship, which could have downstream effects for patient safety, cost, and antimicrobial resistance.<sup>3</sup> Collecting evidence to strengthen an institutional request staffing or a business case for stewardship is a first step to establishing the leadership support and funding to make ASPs a reality in more hospitals around the world. We look forward to contributing to this effort.

### Acknowledgments.

**Financial support.** No financial support was provided relevant to this article.

**Conflicts of interest.** All authors report no conflicts of interest relevant to this article.

## References

1. Pollack LA, Srinivasan A. Core elements of hospital antibiotic stewardship programs from the Centers for Disease Control and Prevention. *Clin Infect Dis* 2014;59 suppl 3:S97–S100.
2. Pollack LA, van Santen KL, Weiner LM, Dudeck MA, Edwards JR, Srinivasan A. Antibiotic stewardship programs in US acute-care hospitals: findings from the 2014 National Healthcare Safety Network Annual Hospital Survey. *Clin Infect Dis* 2016;63:443–449.
3. Park SY, Chang HH, Kim B, *et al.* Human resources required for antimicrobial stewardship activities for hospitalized patients in Korea. *Infect Control Hosp Epidemiol* 2020; 41:1429–1435.
4. Kelly AA, Jones MM, Echevarria KL, *et al.* A report of the efforts of the Veterans' Health Administration National Antimicrobial Stewardship Initiative. *Infect Control Hosp Epidemiol* 2017;38:513–520.
5. Ramakrishnan A, Patel P. How far we have to go: a review of advances in antimicrobial stewardship in the Veterans' Health Administration. *Curr Treat Options Infect Dis* 2020;12:275–284.
6. Standiford HC, Chan S, Tripoli M, Weekes E, Forrest GN. Antimicrobial stewardship at a large tertiary care academic medical center: cost analysis before, during, and after a 7-year program. *Infect Control Hosp Epidemiol* 2012;33:338–345.