ASSESSING INFECTION PREVENTION PRACTICES IN LOS ANGELES COUNTY AMBULATORY SURGERY CENTERS

OVERVIEW

In Los Angeles County (LAC), outpatient healthcare settings such as ambulatory surgery centers (ASCs) are almost always unlicensed, have limited oversight from the LAC Department of Public Health (DPH), and have been the site of several outbreak investigations in recent years [1]. Furthermore, ASCs do not report any patient encounter or healthcare-associated infection data to LAC DPH. As a result, LAC DPH has a limited understanding of their infection control practices and the extent of their healthcare-associated infections. Meanwhile, the number of patient visits and procedures in outpatient settings has grown steadily as has the number of unlicensed ASCs [2,3].

In response to the West Africa Ebola epidemic in 2014, LAC DPH secured funds to support the development of robust infection prevention (IP) programs across the continuum of care. Using these funds, LAC DPH Acute Communicable Disease Control Program (ACDC) conducted comprehensive on-site assessments in a sample of the approximately 500 ASCs in the county with the goal of obtaining insight into demographic characteristics, IP policies, and healthcare workers' IP practices.

METHODS

ACDC staff performed assessments of IP policies and practices in ASCs utilizing tools developed by the Centers for Disease Control and Prevention (CDC). Assessed domains included infection control program and infrastructure, infection control training and competency, healthcare personnel safety, disease surveillance and reporting, and direct observation of facility infection control practices. Each ASC completed the tool for the first four domains; the tool was then reviewed by ACDC staff and direct observations were made during a one-day on-site visit to the ASC. Teams of four ACDC staff members conducted the assessments. Observations of staff infection control practices were made throughout the ASC, including pre- and post-operative areas, post-anesthesia care units, operating/procedure rooms, and sterile processing departments. Auditing was defined as a formal process that included both monitoring and documentation. An ASC could provide feedback but not have a formal auditing process.

Assessments by ACDC were voluntary for ASCs. Recruitment communications were sent in Fall 2015 through Spring 2016 using contact lists from previous DPH surveys and via communication sent to members of the California Ambulatory Surgery Association and the Los Angeles County Medical Association. Following the assessment, each setting received a detailed summary and completed assessment tool via email, which included resources specific to identified gaps.

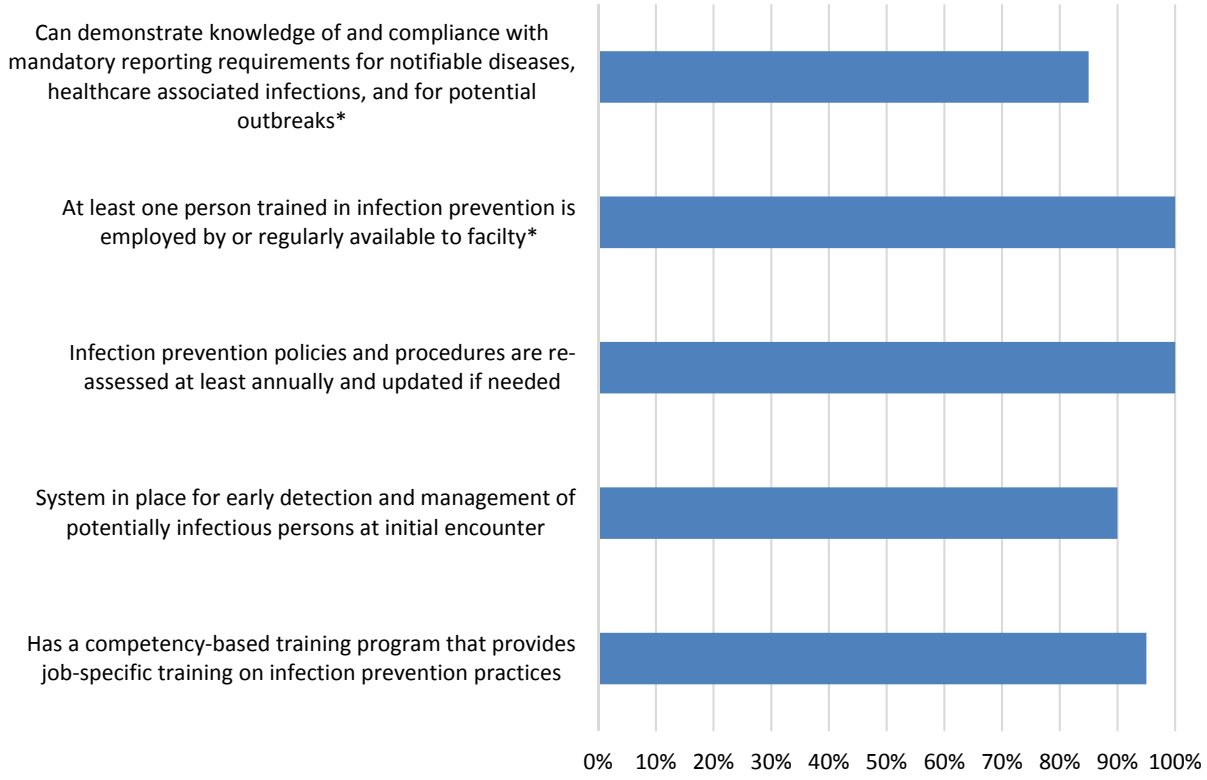
RESULTS

All ASCs that volunteered, a total of 20, were assessed by ACDC from January 2016 through June 2017. Results of the assessments are shown in the below tables and figures.

Table 1. Demographic characteristics of assessed ASCs

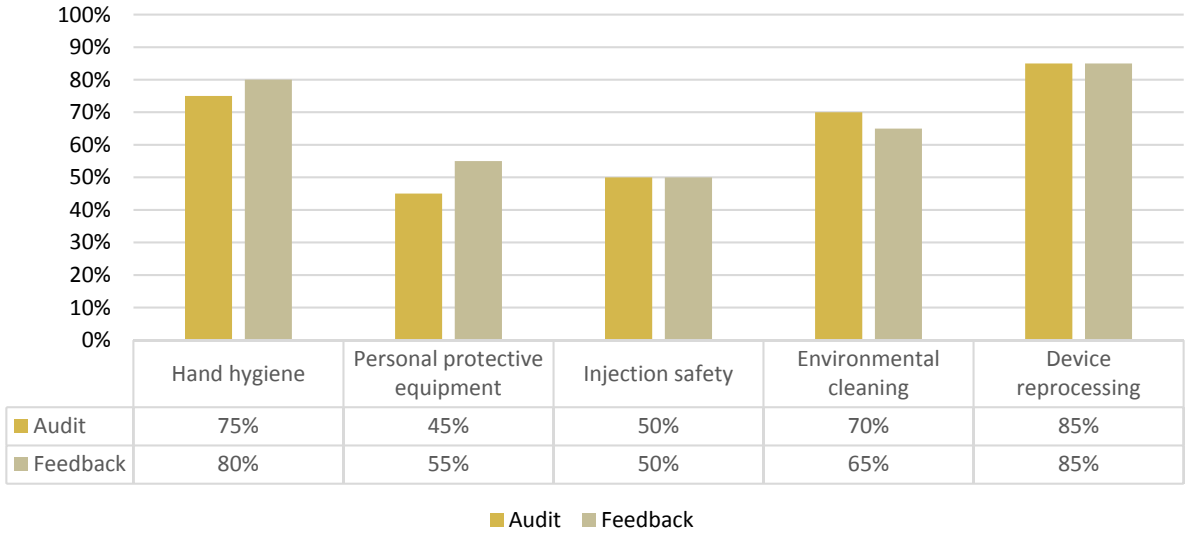
Characteristic	Number of ASCs (%) (N=20)
Certified by Center for Medicare and Medicaid Services (CMS)	18 (90%)
Accredited	16 (80%)
Median number of physicians who work at facility (range)	16 (1-100)
Median number of patients seen per week (range)	53.5 (12-200)
Average number of operating and/or procedure rooms (range)	2.6 (1-5)

Figure 1. Features of infection control programs at assessed ASCs



* Mandated by Centers for Medicare and Medicaid Services Conditions for Coverage - infection control § 416.51 for certified ASCs

Figure 2. Audit and feedback practices for assessed ASCs, by domain



	Hand hygiene	Personal protective equipment	Injection safety	Environmental cleaning	Device reprocessing
Audit	75%	45%	50%	70%	85%
Feedback	80%	55%	50%	65%	85%

Table 2. Number of assessed ASCs with at least one identified gap, by infection control domain

Domain	Number of settings with at least one gap in domain (%) (N=20)
Hand hygiene	17 (85%)
Personal protective equipment	16 (80%)
Point-of-care testing	9 (50%)
Injection safety	19 (95%)
Respiratory hygiene/cough etiquette	10 (50%)
Environmental cleaning	14 (70%)
Device reprocessing	8 (40%)
Sterilization of reusable devices	5 (28%)
High-level disinfection of reusable devices	6 (46%)

The two most common deficiencies noted from direct observations both pertained to injection safety. Amongst the 19 ASCs where observation was applicable, 58% failed to disinfect the rubber septum on a medication vial prior to piercing with needle during medication preparation. A total of 79% allowed multi-dose vials to be used on more than one patient to enter immediate treatment areas rather than be kept in a centralized medication area. Hand hygiene moments most commonly missed occurred after contact with objects in the immediate vicinity of the patient (53% of ASCs deficient) and after removing gloves (63% deficient). Other common gaps included instruments that undergo immediate-use steam sterilization used immediately and not stored (38% deficient) and reusable devices stored in a manner to protect from damage or contamination after high-level disinfection (38% deficient).

The on-site assessment also allowed for the opportunity to obtain feedback on DPH outreach. Several infection preventionists felt that LAC DPH and other public health agencies have few resources specific to the ASC and outpatient audience.

DISCUSSION

Overall, it appears that the ASCs assessed during this project had the necessary IP program elements in place, though only some are mandated per Centers for Medicare and Medicaid Services Conditions for Coverage. Nearly all ASCs had a designated, trained infection preventionist, updated IP policies, appropriate infection surveillance, and a robust staff training program. Some inadequacies were noted related to communicable disease reporting. Most commonly, ASC infection preventionists were not aware that outbreaks were to be reported to DPH. A, the results of the direct observation of staff practices often did not reflect written policies and procedures. The domains with the most frequently observed gaps included injection safety, hand hygiene, and personal protective equipment (PPE) use. These findings are very similar to common lapses identified during inspections conducted by the CDC in several states, which included the same domains [4]. Identified gaps related to audit of IP practices and feedback of those results to staff. Audit and feedback are well-recognized methods of improving practice, and higher intensity is associated with improved compliance [5]. Of note, two of the domains with the most gaps (injection safety and PPE use) were also the two domains with the least amount of audit and feedback. Auditing tools for all IP domains were provided to assessed ASCs.

In 2015, ACDC conducted a multi-modal, cross-sectional study of facility characteristics and the IP program in all LAC ASCs. A total of 130 ASC representatives were interviewed for that survey. Compared to self-reported survey results from 2015, it appears that the presence and quality of written policies were comparable to those ASCs visited in-person [6]. This project allowed ACDC to conduct a more accurate assessment, albeit amongst a smaller sample, and illuminated gaps in staff practices.

There are some limitations to this analysis. As this was a voluntary assessment, selection bias, volunteer bias, and non-respondent bias may be present. Non-respondents may vary considerably from respondents in adherence to recommended IP practices. We hypothesize that the volunteer ASCs may have fewer IP gaps than a random sample of the general population. The groups from which we recruited ASCs to participate may represent those with more resources and generally more interest in IP. The proportion of assessed ASCs that were certified for CMS participation (90%) is higher than the total LAC ASC population of approximately 60%. Data were available for only a small portion of ASCs in LAC.

ACDC is currently following up with assessed ASCs to determine the perceived value of the assessment results and how DPH can support their IP efforts. In response to the perceived limited number of public health resources specific to ASCs, LAC DPH created a quarterly publication that will be sent electronically to outpatient infection preventionists. Further gap mitigation efforts are planned, specifically pertaining to injection safety. As outpatient IP practices are further studied and characterized, more relevant resources and outreach efforts will be designed.

REFERENCES

1. OYong K, Coelho L, Bancroft E, Terashita D. (2015). Health Care–Associated Infection Outbreak Investigations in Outpatient Settings, Los Angeles County, California, USA, 2000−2012. Emerging Infectious Diseases, 21(8), 1317-1321.

2. Cullen KA, Hall MJ, Golosinskiy A. (2009). Ambulatory surgery in the United States, 2006. National Health Statistics Reports 11:1-28.
3. California HealthCare Foundation. (2013). Ambulatory surgery centers: big business, little data. Oakland, CA: California HealthCare Foundation.
4. Schaefer MK, Jhung M, Dahl M, Schillie S, Simpson C, Llata E, et al. (2010). Infection control assessment of ambulatory surgical centers. JAMA 303(22):2273–2279.
5. Jamtvedt G, Young JM, Kristoffersen DT, O'Brien MA, Oxman AD. (2006). Audit and feedback: effects on professional practice and health care outcomes. Cochrane Database of Systematic Reviews 2006, Issue 2. Art. No.: CD000259. DOI:10.1002/14651858.CD000259.pub2.
6. OYong, K. (2016). The State of Infection Prevention in Los Angeles Ambulatory Surgery Centers. Association for Professionals in Infection Control and Epidemiology Annual Conference, Charlotte, NC, June 21, 2016.