Implementation of the Core Elements of Outpatient Antibiotic Stewardship in Urgent Care Centers and Federally Qualified Health Centers in New York City, 2016—2017

Mary Foote, MD, MPH; Gloria Airall-Simon, PhD., MPHE, MSN, BSN; Christian Oriuwa, MBBS, MSc.; Pamela Kellner, RN, MPH

[1]Bureau of Healthcare System Readiness, Office of Emergency Preparedness and Response, New York City Department of Health and Mental Hygiene, New York City, New York

BACKGROUND

- 80% of antibiotics in the U.S. are prescribed in the outpatient setting[1] and of these
  - At least 30% are prescribed unnecessarily
  - An estimated 40% occur in non-traditional outpatient settings (e.g. urgent care, retail clinics)[2]
- Definitions
  - Federally qualified health centers (FQHCs) are community-based organizations that provide outpatient primary care and acute care services to underserved populations
  - Urgent care centers (UCCs) provide outpatient walk-in services with extended hours for the care of acute injuries or illnesses not serious enough to require an emergency department (ED) visit
- Utilization of UCCs for mild-acuity illnesses, such as upper respiratory infections, has expanded rapidly in recent years[2,3]
- In 2016, the CDC released the Core Elements of Outpatient Antibiotic Stewardship to provide a framework for outpatient facilities to reduce unnecessary antibiotic prescribing[4]
  - Little is known regarding their implementation across various outpatient settings

Objective: To assess and compare implementation of the Core Elements in FQHCs and UCCs in New York City (NYC)

Figure 1

Facility Checklist for Core Elements of Outpatient Antibiotic Stewardship

CDC recommends that outpatient care facilities take steps to implement antibiotic stewardship activities. Use this checklist as a baseline assessment of policies and practices that are in place. Then use the checklist to review progress in expanding stewardship activities on a regular basis (e.g., annually).

COMMITMENT

1. **Can your facility demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics?** ❑ Yes ❑ No

If yes, indicate which of the following are in place. (Select all that apply.)
- ❑ Identify a single leader to direct antibiotic stewardship activities within a facility.
- ❑ Include antibiotic stewardship-related duties in position descriptions or job evaluation criteria.
- ❑ Communicate with all clinic sta members to set patient expectations.

ACTION

2. **Has your facility implemented at least one policy or practice to improve antibiotic prescribing?** ❑ Yes ❑ No

If yes, indicate which interventions are in place. (Select all that apply.)
- ❑ Provide communications skills training for clinicians.
- ❑ Require explicit written justication in the medical record for nonrecommended antibiotic prescribing.
- ❑ Provide support for clinical decisions.
- ❑ Use call centers, nurse hotlines, or pharmacist consultations as triage systems to prevent unnecessary visits.

TRACKING AND REPORTING

3. **Does your facility monitor at least one aspect of antibiotic prescribing?** ❑ Yes ❑ No

If yes, indicate which of the following are being tracked. (Select all that apply.)
- ❑ Track and report antibiotic prescribing for one or more high-priority conditions.
- ❑ Track and report the percentage of all visits leading to antibiotic prescriptions.
- ❑ (If already tracking and reporting one of the above) Track and report, at the level of a health care system, complications of antibiotic use and antibiotic resistance trends among common outpatient bacterial pathogens.
- ❑ Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing from health care plans and payers.

EDUCATION AND EXPERTISE

4. **Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing?** ❑ Yes ❑ No

If yes, indicate how your facility provides antibiotic stewardship education. (Select all that apply.)
- ❑ Provide face-to-face educational training (academic detailing).
- ❑ Provide continuing education activities for clinicians.
- ❑ Ensure timely access to persons with expertise.

References

1. Fleming-Dutra et al, JAMA. 2016;315(17):1864-1873.
2. Palms DL et al. JAMA Intern Med. 2018;178:1267-1269.
3. Poon SJ et al, JAMA Intern Med. 2018;178:1342-1349.
4. CDC Core Elements of Outpatient Antibiotic Stewardship: https://www.cdc.gov/antibiotic-use/community/improving-prescribing/core-elements/core-outpatient-stewardship.html

METHODS

- The NYC Department of Health and Mental Hygiene (DOHMH) conducted on-site infection control (IC) assessments at 31 outpatient clinics in New York City as part of the CDC's Infection Control Assessment and Response (ICAR) Program
  - Visits were conducted between May 2016 and November 2017
- Recruitment
  - We invited FQHCs who were members of the DOHMH's Primary Care Emergency Preparedness Network to participate via email
  - We identified 196 NYC UCCs; attempts were made to contact facilities by telephone to invite them to participate
- Participants completed an 18-item questionnaire based on the "Facility Checklist for the Core Elements of Outpatient Antibiotic Stewardship" (**Figure 1**) to assess implementation of the 4 core elements (CE) including:
  1. Commitment
  2. Action
  3. Tracking and reporting
  4. Education and expertise
- **A CE was considered implemented if one or more of the recommended sub-elements (SE) were in place**

RESULTS

Table 1: Facility Characteristics

Characteristic	FQHC n=19 (%)	UCC n=12 (%)	Total N=31 (%)
Median # physicians (range)	3	3	3 (1-350)
Median # patients seen/week (range)	320	123	150 (20-9600)
Median # patients seen weekly/provider	27	45	42
Part of a network (>2 centers)	17 (90)	7 (58)	25 (81)
Have written infection control policies and procedures	19 (100)	9 (75)	28 (90)
Have competency-based infection control training program	17 (90)	4 (33)	21 (68)

Figure 2

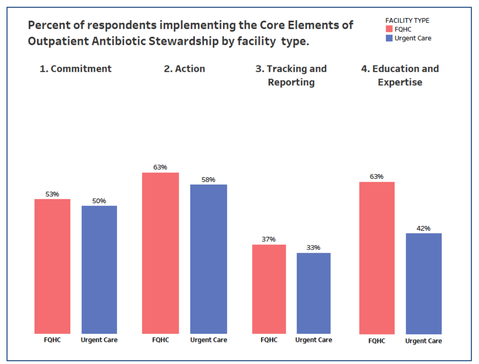

Table 2: Number of outpatient facilities reporting implementation of stewardship practices

Core Element	FQHC n=19 (%)	UCC n=12 (%)	Total N=31 (%)
1. Commitment Demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety related to antibiotics	10 (53)	6 (50)	16 (52)
Identify a single leader to direct antibiotic stewardship activities	7 (37)	5 (42)	12 (39)
Include antibiotic stewardship-related duties in position descriptions or job	6 (32)	4 (33)	10 (32)
Communicate with all clinic staff members to set patient expectations	10 (53)	6 (50)	16 (52)
2. Action Implemented at least one policy or practice to improve antibiotic prescribing?	12 (63)	7 (58)	19 (61)
Provide communications skills training for clinicians	7 (37)	5 (42)	12 (39)
Require explicit written justification in the medical record for non-recommended antibiotic prescribing	3 (16)	3 (25)	6 (19)
Provide support for clinical decisions.	11 (58)	4 (33)	15 (48)
Use call centers, nurse hotlines, or pharmacist consultations as triage systems	9 (47)	3 (25)	12 (39)
3. Tracking and Reporting Does your facility monitor at least one aspect of antibiotic prescribing	7 (37)	4 (33)	11 (35)
Track and report antibiotic prescribing for one or more high-priority conditions	6 (32)	3 (25)	9 (29)
Track and report the percentage of all visits leading to antibiotic prescriptions	3 (16)	2 (17)	5 (16)
Track and report, at the level of a health care system, complications of antibiotic use and antibiotic resistance trends among common outpatient bacterial pathogens.	5 (26)	2 (17)	7 (23)
Assess and share performance on quality measures and established reduction goals addressing appropriate antibiotic prescribing from health care plans and payers	3 (16)	3 (25)	6 (19)
4. Education and Expertise Does your facility provide resources to clinicians and patients on evidence-based antibiotic prescribing	12 (63)	5 (42)	17 (55)
Provide face-to-face educational training	4 (21)	4 (33)	8 (26)
Provide continuing education activities for clinicians	5 (26)	3 (25)	8 (26)
Ensure timely access to persons with expertise	12 (63)	3 (25)	15 (48)
Implemented all four core elements	5 (26)	3 (25)	8 (26)
No core element has been implemented	4 (21)	5 (42)	9 (29)

Contact: Mary Foote, MD, MPH
Email: mfootemd@health.nyc.gov

KEY RESULTS

- Nineteen FQHCs and twelve UCCs completed the questionnaire
- All FQHCs had infection control (IC) policies and procedures vs. 75% of UCCs
- Implementation of CE was similar between FQHCs and UCCs with the exception of 'education and expertise'
  - A higher proportion of FQHCs provide resources to clinicians on evidence based antibiotic prescribing (63% vs. 42%), particularly "timely access to antibiotic prescribing expertise" (63% vs. 25%)
- More UCCs reported not having implemented any of the core elements compared to FQHCs (42% vs. 21%)
- Facilities with a competency-based infection control training program were more likely to have all 4 CEs in place vs. those that did not (87% vs. 13%)
- Of the 9 facilities that had not implemented any of the core elements, none (0%) had a designated stewardship leader
  - Of the 8 facilities that had implemented all four core elements, a majority (63%) had a designated stewardship leader

LIMITATIONS

- Surveys answers were based on self-report
  - Responses were not validated
- Interpretation of recommended actions may vary between facilities
- One FQHC network had multiple sites (n=5) participate which may have biased results
- Small sample size not representative of all FQHCs and UCCs in NYC

CONCLUSIONS

- To our knowledge, this is the first report describing CE implementation in these outpatient settings
- UCCs had less robust infection control infrastructure compared to FQHCs; with fewer having IC policies and procedures and competency-based IC training programs
  - They were also less likely to have any CE in place
- Tracking and reporting of antibiotic use appears be the most challenging CE to implement
  - Further guidance and tools should be developed to support implementation in these settings
- Further studies are needed to
  - Further describe and validate how the core elements are implemented in these settings
  - Identify facilitators and barriers to implementation of the core elements, particularly in urgent care centers