A 20/20 Vision: Successful Integration of a Prescribing Dashboard for Outpatient Antimicrobial Stewardship to Target 20% Reduction by Year 2020

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Background: At least 30% of antibiotics prescribed in the ambulatory setting are unnecessary, including high rates of overuse for acute respiratory infections (ARI). We designed and evaluated whether a multifaceted outpatient stewardship program leveraging multidisciplinary stakeholder engagement, education tools, and an innovative prescribing dashboard decreased antibiotic prescribing in ARI.

Methods: In November 2017, the Carolinas HealthCare Outpatient Antimicrobial Stewardship Empowerment Network (CHOSEN) launched an antibiotic awareness campaign in over 150 ambulatory practices in the Charlotte metropolitan area, reaching over one million patients. The campaign included online and in-person tools for patients and providers, targeted education at meetings, and social and mass media exposure. In March 2018, a provider level prescribing dashboard was introduced to target inappropriate antibiotic prescribing in ARI (acute sinusitis, nonsuppurative otitis media, nonbacterial pharyngitis, URI, cough, allergy, and influenza). Data was collected for Family Medicine (FM), Internal Medicine (IM), Urgent Care (UC) and Pediatric Medicine (PM); 10% and 20% relative reduction targets (years 2019 and 2020, respectively) were set for each service line. We compared pre (April 2016-March 2018) vs post (April 2018-March 2019) intervention prescribing rates (calculated as number of encounters with antibiotics vs total) as rate ratios and used segmented regression models to assess change over time.

Results: There were 1,001,335 pre and 448,390 post intervention encounters. Post intervention prescribing rates (antibiotics per 100 encounters) decreased for all service lines, FM (49.4 to 39.3), IM (49.7 to 41.2), UC (49.8 to 44.4), and PM (40.6 to 36.1) vs pre-intervention (all rate ratios, p≤0.01). All service lines met the target 2019 10% reduction goals. Post implementation, FM and IM showed immediate decreases in prescribing (Figure). After an initial increase, UC showed a significant month-to-month decrease (Figure).

Conclusions: Integration of a prescribing dashboard within a multifaceted antibiotic awareness campaign reduced inappropriate outpatient antibiotic prescribing for ARI and achieved interim targets consistent with 2020 reduction goals.