



Evaluating Interventions for Improving Antibiotic Stewardship in Urgent Care

Take Home Point: An antibiotic stewardship intervention was associated with reduced rates of antibiotic prescribing for patients with bronchitis, but not viral upper respiratory infections (URI).

Citation: Park D, Roberts A, Hamdy R, et al. Evaluating an urgent care antibiotic stewardship intervention: a multi-network collaborative effort. *Infect Control Hosp Epidemiol.* 2025; Jan 8:1-6. doi: 10.1017/ice.2024.213

Relevance: Antibiotic prescribing for conditions not caused by bacterial infection remains one of the core challenges for quality of care in urgent care (UC) centers. Many studies on antibiotic stewardship interventions and outcomes have been previously published, with mixed results. This study was unique in design as it focused entirely on UC sites of care across many states in partnership with the Urgent Care Association (UCA).

Study Summary: This was a quality improvement study involving UC centers from across the U.S. The UCA and Urgent Care Foundation partnered to recruit participating centers. The antibiotic stewardship intervention consisted of 3 plan-do-study-act (PDSA) cycles over a one-year time period. The first cycle involved participating clinicians signing the UCA/College of Urgent Care Medicine Antibiotic Stewardship Commitment Statement and choosing among intervention(s) available. The second and third PDSA cycles allowed clinicians to review their individual progress and select new intervention(s) to implement if desired. Clinicians committed to active participation in data collection, implementing stewardship efforts, attending webinars, and regular monthly feedback for the entire study period. Clinicians included both physicians and advanced practice clinicians.

Forty-nine UC centers from 18 different states were enrolled with 138 individual clinicians participating. The clinicians randomly selected 30 cases monthly where the patient

was diagnosed with either bronchitis or viral URIs. The charts were then anonymously reviewed by other clinicians to determine appropriateness of antibiotic prescribing. During the study period, “actively engaged clinicians” were able to choose from multiple continuing medical education accredited options surrounding antibiotic stewardship. “Non-actively engaged clinicians” who worked in the same UC centers served as the control groups.

In all, 15,385 patient visits were included, and 49.2% of visits reviewed were performed by “actively engaged clinicians.” The authors found overall antibiotic prescribing rates decreased from 16.0% during baseline to 13.6% by the final 2 months of the intervention (4.4% absolute reduction, 24.4% relative reduction, $P < 0.001$). There was a significant decrease in antibiotic prescribing among clinicians actively engaged in the study for bronchitis (40% vs. 28.7%), viral URI (12.9% vs. 7.7%), and both diagnoses (15.9% vs. 9.6%) compared to baseline. There was a significant reduction in inappropriate prescribing globally for all clinicians for bronchitis. Engaged clinicians, importantly, also had significantly lower baseline prescribing rates of antibiotics in cases of bronchitis (40% vs. 61%, $P = 0.012$).

Editor’s Comments: This was a UC-specific study—one of the few available—which should be recognized and commended. The study design was robust and there are many interesting findings. The specifics of the educational interventions were left vague, but this is likely inconsequential. The most noteworthy findings are that even among engaged clinicians at the end of the study period, almost 8% of patients with what amounts to a common cold received antibiotics, and patients with bronchitis received antibiotics nearly 30% of the time. The combination of an educational intervention with clinician involvement did make a difference, but antibiotics were still prescribed inappropriately very frequently. This is clearly emblematic of larger issues than what can be solved by clinician education. Patients very commonly present to UC requesting antibiotics for viral illnesses. Without changes in the public’s demands for inappropriate antibiotics and support/protection for clinicians practicing evidence-based medicine, we can expect antibiotic prescribing rates to decrease only so much.

It would be compelling, as a follow-up study, to see how much regression of these prescribing behaviors among the “engaged clinicians” occurs after 3-12 months post-study. We suspect it would be considerable, as fighting this battle on a daily basis is largely unsustainable for any individual clinician. For those assessing quality in UC,



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these figures also serve as excellent benchmarks. Based on these data, it is clear that it would be unreasonable to expect antibiotic prescribing for viral diagnoses for any clinician to be lower than 5-10%. Centers and clinicians alike could be measured against the numbers from the engaged clinicians to determine how they stack up. Clinics and clinicians approaching this studies' post-intervention rates of antibiotic prescribing for engaged clinicians should receive praise rather than scorn. The numbers will certainly be higher than what would be ideal, however, attempting to move the needle further than these post-intervention figures by focusing on changing provider, rather than patient, behaviors will not only be ineffective, but more concerning, demoralizing for clinicians. ■

When Does Telehealth Compromise Patient Safety?

Take Home Point: Although extremely rare, serious incidents and deaths can occur with remote triage and management (ie, telehealth). This qualitative study identified themes among cases of primary care patients managed without in-person visits who suffered untoward outcomes.

Citation: Payne R, Clarke A, Swann N, et. al. Patient safety in remote primary care encounters: multimethod qualitative study combining Safety I and Safety II analysis. *BMJ Qual Saf.* 2024 Aug 16; 33(9):573-586. doi: 10.1136/bmjqs-2023-016674.

Relevance: Telehealth implementation and utilization have dramatically increased since the COVID-19 era began. While remote interactions offer expanded access and triage capabilities, best practices for remote evaluation and management of acute issues remain poorly defined.

Study Summary: This was a multimodal qualitative study in the United Kingdom which included analysis, longitudinal ethnography, and national stakeholder interviews. The authors identified and analyzed a sample of safety incidences involving remote primary care encounters from 12 general practices across England, Scotland and Wales. The practices were selected to achieve maximal diversity in locations, populations served, and maturity of digital integration. The authors analyzed 95 incident reports from reports to the National Health Services of patient harms. Data was collected from interviews and ethnographic notes to identify themes.

The authors identified several main themes among the safety incidents. Themes included: poor communication

related to telephonic modalities, limited clinical information, patient and caregiver burden, and inadequate training. They found examples of deaths or serious harms associated with remote encounters in primary care were extremely rare (n=95) despite an extensive search covering 2 years' worth of remote consultations. The total number of telehealth consultations reviewed (ie, denominator) was not reported. They noted that remote encounters depend on history taking and dialogue, where high quality verbal communication is crucial. They also raised concerns for inequities being exacerbated by telehealth as patients' various vulnerabilities (eg, extremes of age, poverty, language and literacy barriers, comorbidities) may differentially affect access to and effectiveness of telephonic evaluation.

"The underlying themes identified by the authors do highlight the critical principle that underpins all telehealth evaluations: Without in-person assessment, less data is inherent."

Editor's Comments: Remote consultations included a more comprehensive definition than what is commonly conceived of as telehealth in the U.S. For example, several cases of patient harms were related to patients speaking to non-clinicians (eg, receptionist, nurse aides) who relayed patient concerns to clinicians and the clinicians' recommendations to the patients in turn. Most instances of harm analyzed involved only telephonic/audio evaluation and there were examples of how the use of video platforms averted disasters.

Many of the cases of harm occurred before 2020 as well. We have collectively learned much and refined telehealth processes over the past 5 years and many of the themes discussed may not be representative of current issues in telehealth. However, telehealth use is likely to continue and even to expand as patient acceptance and technological solutions continue to expand. The underlying themes identified by the authors do highlight the critical principle that underpins all telehealth evaluations: Without in-person assessment, less data is inherent. Telehealth care can range in modalities from text-only to audio-only to video, with progressive increases in data. Clinicians should be mindful of the degree of limitations associated with the modality utilized, while also ensuring patients are aware that the trade-off for the convenience of remote consultation is greater uncertainty that the assessment they receive is accurate. ■

How Effective is Suicide Screening in a General Clinic Population?

Take Home Point: Implementation of suicide-care (SC) screening significantly increased safety planning and reduced suicide attempts in the 90-days after a primary care visit.

Citation: Richards J, Cruz M, Stewart C, et. al. Effectiveness of Integrating Suicide Care in Primary Care: Secondary Analysis of a Stepped-Wedge, Cluster Randomized Implementation. *Trial Ann Intern Med.* 2024 Nov; 177(11):1471-1481. doi: 10.7326/M24-0024

Relevance: In the developed world, suicide is among the leading causes of death in young adults. Emergency department (ED) based studies, such as ED-SAFE, have shown reductions in suicide attempts and deaths when implemented. The effectiveness of suicide screening in UC has not been reported in the literature.

Study Summary: This was a secondary analysis of a stepped wedge, cluster randomized implementation trial of adult patients conducted in 19 primary care (PC) clinics of Kaiser Permanente Washington (KPWA). The original study was designed to evaluate the integration of substance use disorder (SUD) assessment in primary care. KPWA leadership suggested including population-based SC in the initiative and this was incorporated simultaneously as part of a comprehensive behavioral care initiative. SC was assigned randomly in set periods in combination with the substance use care to certain PC clinics. SC and SUD screening involved administration of a 7-item screening tool—which included the 2-item Patient Health Questionnaire for depression, the 3-item Alcohol Use Disorders Identification Test, a cannabis use frequency question, and a question about illegal drug or nonmedical use of prescription medications frequency. Intervention implementation was supported by 3 key strategies: practice facilitation, electronic medical record clinical decision support, and performance monitoring (audit and feedback provision).

The authors included 255,789 patients in the usual care group and 228,255 patients in the SC intervention group. They found the implementation of population-based SC implemented concurrently with SUD care increased safety planning 38.3 vs 32.8 per 10,000 patients; rate difference, 5.5 (95% confidence interval [CI], 2.3-8.7) and decreased the rate of suicide attempts by 25% (4.5 vs 6.0 per 10,000

patients; rate difference, -1.5 CI, -2.6 to -0.4) in the 90 days after primary care visits. The initiation of new psychotherapy decreased slightly in the SC period, suggesting that the intervention, including short-term counseling provided by clinical social workers may obviate demand for mental health specialty care.

Editor's Comments: There was no difference in rates of death by suicide reported, which is ultimately the most important outcome. With most urgent care (UC) centers closely tracking patient throughput efficiency metrics, such as door-to-door time, it is uncertain if this study's results will be seen as compelling enough to justify adding time to a patient's visit by UC center owners and administrators. While there was a 25% relative reduction in the rate of suicide attempts, which was statistically significant, the absolute reduction in suicide attempts with the intervention was only 1.5 per 10,000 patients. This results in a number needed to treat of 6,667 patients to prevent one suicide attempt. A 2019 *Annals of Internal Medicine* study found that the overall suicide attempt fatality rate was 8.5%. While not an UC based study, if these results are extrapolated to this data, approximately 70,000 patients would need to be screened for suicide to prevent one excessive death by suicide. For most UC centers, this would mean that screening all patients would prevent less than one death annually. It's impossible to ascribe a value to a life saved, however, there are likely screening interventions which would yield greater impacts in preventing morbidity and mortality (eg, diabetes, hypertension etc.).

However, as UC increasingly becomes the preferred location for young adults to access care, it is important that suicide prevention be studied in this setting specifically; the results of such interventions may be different in an UC population compared to ED or PC settings. Simultaneously, implementation of such a screening program would require appropriate resources to address patients who screen positive. This study was conducted within the Kaiser Permanente system, which allows for easy behavioral health specialty referrals, which is not the case for many UC centers. ■

How Commonly Does Acne Relapse After Isotretinoin?

Take Home Point: Almost a quarter of patients in this study experienced acne relapse after completing oral isotretinoin therapy. Patients who had a higher cumulative dose were less likely to experience acne relapse.

Citation: Lai J, Barbieri J Acne Relapse and Isotretinoin Re-

trial in Patients with Acne. *JAMA Dermatol.* 2025 Jan 15. doi: 10.1001/jamadermatol.2024.5416. Published online January 15, 2025.

Relevance: Isotretinoin is the only acne treatment that has been shown to induce acne remission. While this offers hope for many suffering from severe acne, recurrent acne is a relatively common phenomenon. Given the associated toxicities of the medication, it would be useful to better understand how to best achieve reliable remission so as to avoid multiple courses of treatment.

Study Summary: This was a cohort study of retrospective data collected by MarketScan, a commercial claims database in the United States. The authors reviewed de-identified data of patients with encounters where the patient was diagnosed with acne and received a prescription for isotretinoin associated with that encounter. Additionally, patients included required the isotretinoin course duration for at least 4 months or more and had at least 1 year of continuous enrollment after completion of isotretinoin.

The authors included 19,907 patients for analysis, 87% of which had an acne consultation with a dermatologist. Initial isotretinoin courses had a mean duration of 5.6 months and daily dose of 0.93 mg/kg/d, with a mean cumulative dose of 132.4 mg/kg. They found that 22.5% of patients analyzed had an acne relapse. Female gender was associated with increased risk of relapse. For patients with relapse, the most common systemic acne treatment prescribed after isotretinoin completion was an oral antibiotic—most frequently doxycycline or minocycline—followed by isotretinoin retreatment and spironolactone. Higher isotretinoin cumulative dosage was associated with reduced rates of relapse. While statistically significant, the hazard ratio (HR) was only 0.996 (95% CI; 0.995-0.997).

Editor’s Comments: This was an observational study and therefore many potential confounders exist. The claims data and diagnoses were relied upon to confirm diagnoses and treatments. The most salient finding was the frequency with which patients fail to achieve sustained acne remission with isotretinoin. While this is not a medication started from UC, it is worthwhile to understand prognosis of patients who have used this therapy. ■

PRN Medications for Asymptomatic Hypertension

Take Home Point: The use of as-needed (PRN) antihypertensives in hospitalized patients was associated with a

higher risk of acute kidney injury (AKI) in this Veteran’s Administration (VA) study.

“The most salient finding was the frequency with which patients fail to achieve sustained acne remission with isotretinoin.”

Citation: Canales M, Yang S, Westanmo A, et. al. As-Needed Blood Pressure Medication and Adverse Outcomes in VA Hospitals. *JAMA Intern Med.* 2025 Jan 1;185(1):52-60. doi: 10.1001/jamainternmed.2024.6213.

Relevance: In daily UC practice, it is common to find patients with asymptotically elevated blood pressures. Historically, very high blood pressures (BP) have been treated under the auspices of the outdated term “hypertensive urgency.” Many patients still fret over elevated BP readings, however, it is important for patient safety to understand the consequences of treating numbers, especially those that may be situational.

Study Summary: This was a retrospective cohort study of veterans hospitalized in VA hospitals from 2015-2020. Veterans were assigned to the PRN medication group if they were hospitalized on a non-intensive care medical ward, had at least one systolic BP reading ≥ 140 mmHg, and received at least one administration of an antihypertensive during their hospital stay. Those who received scheduled antihypertensives served as the control group. Primary outcome was the time to first AKI event during hospitalization and secondary outcome was a composite endpoint of myocardial infarction (MI), stroke, or death during hospitalization.

The authors included 133,760 veterans who met criteria for analysis; 28,526 patients (21%) received as-needed antihypertensive medication administration while hospitalized. The most commonly used medication classes were vasodilators and beta-blockers. Patients in the PRN group were 23% more likely experience the primary outcome (AKI during hospitalization) compared to the control group (hazard ratio [HR], 1.23 [95% CI, 1.18-1.29]). The PRN group also had higher rates of MI (relative risk [RR], 2.92 [95% CI, 2.09-4.07]), stroke (RR, 1.99 [95% CI, 1.30-3.03]), and death (RR, 1.52 [95% CI, 1.32-1.75]).

Editor’s Comments: As this was a VA based study, subjects were overwhelmingly male (96%) and older (mean age=71 years). Given these variables and other facets of veteran populations which differ from the general population,

these findings are not fully generalizable outside of this group of patients. The cohort and control group, however, were well selected and given the sample size, it is likely the effects reported are reflective of true iatrogenesis associated with PRN antihypertensives. This also corroborates prior studies on tightly controlling BP in both inpatient¹ and outpatient² settings. Asymptomatically elevated BP continues to cause much worry among clinicians and patients alike. It is important for UC clinicians to internalize the harms associated with acutely lowering BP in the absence of clear end-organ damage and educate patients about these dangers as well. ■

References

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2. Wright JT Jr, Williamson JD, Whelton PK, et al. Final Report of a Trial of Intensive versus Standard Blood-Pressure Control. *N Engl J Med.* 2021;384(20):1921-1930. doi:10.1056/NEJMoa1901281.

Does This Child With Blunt Torso Trauma Need an Abdominal CT?

Take Home Point: Children with blunt torso trauma and 1 or 2 positive intraabdominal injury rule criteria have a very low risk of intraabdominal injuries which require intervention.

Citation: Arnold C, Ishimine P, McCarten- Gibbs K, et. al. Performance of individual criteria of the Pediatric Emergency Care Applied Research Network (PECARN) intraabdominal injury prediction rule. *Acad Emerg Med.* 2025 Jan 13. doi: 10.1111/acem.15084

Relevance: Blunt abdominal trauma is a common presentation to both emergency department (ED) and UC centers. Validated clinical decision rules (CDR) developed by the PECARN group have been aimed at identification of children at very low risk of serious injuries in an effort to reduce diagnostic radiation associated with unnecessary computed tomography (CT). The PECARN Head Injury CDR has been used for many years in acute care settings. More recently, the intra-abdominal injury (IAI) prediction rule has been validated. While some patients do have a score of zero, it is also common for children to “fail” the IAI rule because of 1 or 2 positive criteria. This study aimed to explore the risk of such patients to determine their risk of IAI.

Study Summary: This was a planned secondary analysis of a prospective, multicenter observational study of children

with blunt thoracoabdominal (torso) trauma evaluated in the ED by the PECARN group. The PECARN IAI rule is a step-wise CDR that sequentially asks about the presence of seat-belt sign/abdominal bruising, decreased Glasgow Coma Scale (GCS) score, abdominal tenderness, and any of the following: evidence of chest injury, complaints of subjective abdominal pain, vomiting, or decreased breath sounds. The primary objective of this study was to derive a clinical prediction rule to identify children with blunt torso trauma who are at very low risk for intra-abdominal injuries undergoing acute intervention (IAIAI). Acute interventions included laparotomy, angioembolization procedures, blood transfusion, and hospitalization. Children <18 years with blunt torso trauma were eligible for the study and the authors included patients if they only had 1 or 2 positive criteria from the previously published IAI prediction rule. Those with 0 or >2 positive criteria were excluded.

Of the initial 7,542 patients were enrolled in the original study, 2,986 (39.6%, 95% CI 38.5%–40.7%) had only 1 or 2 positive variables and were analyzed in this study. Two hundred twenty-seven (7.6%, 95% CI 6.7%–8.6%) were diagnosed with IAIAI. In the 1,639 patients with only 1 rule variable positive, IAI were identified in 21 (1.3%). In the 1,347 patients with 2 rule variables positive, IAIAI were identified in 27 (2.0%). The authors identified that a GCS score of <14 and decreased breath sounds were the strongest predictors for IAIAI.

Editor’s Comments: This data was collected in large pediatric trauma centers, so there is certainly a spectrum bias for more seriously injured children than would be seen in a community ED or UC center. The rates of IAIAI were low in patients with 1 or 2 variables present, but not low enough to rely on the CDR for safe discharge without imaging. If all criteria are negative, the risk of IAIAI is approximately 0.1%. With 1 or 2 positive criteria, the risk of serious abdominal injury was 10-20-fold higher. However, this may not be true for UC patients given the relatively lower acuity of trauma presentations when compared to those in trauma referral centers. Performing a similar study among pediatric UC patients with blunt torso injuries would be highly useful. While this cohort of patients were not low enough risk for IAIAI, it is possible UC patients would be. Until that time, these data can inform shared decision-making for patients with isolated vomiting or abdominal pain, for example, but who are otherwise well to defer immediate ED referral with reliable caregivers. Conversely, understanding that low GCS and decreased breath sounds are the most suggestive criteria for serious injury is also noteworthy—but these are patients who would likely be referred to an ED for further assessment regardless. ■