Antimicrobial Stewardship (AS) **Payer Summit Post-Conference Summary Report**

NC DEPARTMENT OF
HEALTH AND
HUMAN SERVICES
Division of Public Health

June 2025

KEY INSIGHTS

An Antimicrobial Stewardship (AS) Summit was held on November 19, 2024, for North Carolina (NC) Medical Payers; Medical & Public Health Experts; and AS Leaders from the Centers for Disease Control and Prevention (CDC) and Pew Charitable Trusts. Insights from the Summit about AS in NC outpatient settings include:

- Successful AS promotion includes strategies that occur at points of care to influence providers' prescribing in real time, and strategies that incorporate feedback to providers about their prescribing habits.
- Ideal feedback would be given to providers on a regular basis; would include AS-related prescribing data synthesized from all payers into one "scorecard" or "report card;" and would allow providers to review their own prescribing practices and compare their practices with other NC providers.
- Providers may be encouraged to overcome anticipated challenges and to support outpatient AS activities if reimbursements are tied to meeting specific AS goals.
- Uniquely tailored education and engagement aimed at changing patient expectations for prescriptions and promoting a "culture" of AS acceptance within communities are needed.
- Payers may be motivated to adopt AS activities with state emphasis on AS as an area of Quality Improvement.
- To incorporate AS with other Quality Improvement (QI) priorities, payers will need to focus on a few AS-related metrics, including Healthcare Effectiveness Data and Information Set (HEDIS) measures, for ongoing tracking.
- State agencies can support AS by championing AS activities to encourage collective buy-in; aggregating and distributing AS-related data to providers for feedback; and facilitating AS-centered research and scholarly collaborations.

"This public health work is not easy. It is not simple. Typically, we find… ourselves pulling together people across disciplines to work through complex solutions … We can be proactive; we can be upstream… It's so critical to actually improving health, safety and well-being in North Carolina… I just appreciate you being here and partnership with us because we can't do public health without partnership"

— Dr. Kelly Kimple, State Health Officer and Director of the NCDHHS, Division of Public Health

INTRODUCTION

Antibiotic resistance is an urgent global public health threat, causing significant morbidity and mortality. In the U.S., more than 2.8 million infections and over 35,000 deaths are attributable to antimicrobial-resistant organisms.[1] In 2019, antimicrobial resistance caused approximately 1.3 million deaths globally.[2]

Antimicrobial Stewardship (AS) is "a coherent set of actions which promote using antimicrobials responsibly... This definition can be applied from individual level actions to global level actions, and across human health, animal health and the environment."[3] The goals of AS are "to optimize clinical outcomes while minimizing unintended outcomes of antimicrobial use."[4] Currently, 85-95% of antibiotic prescribing occurs in outpatient settings,[5] underscoring an urgent need to promote antimicrobial stewardship in these settings in order to minimize antibiotic resistance.

In 2023 in North Carolina, there were 797 outpatient antibiotic prescriptions dispensed per 1,000 people, as compared with 756 per 1,000 people nationally.[6] Diverse, multifaceted, and directed approaches are needed to curtail inappropriate antibiotic prescribing statewide. Health care payers can play a significant role in promoting AS activities among providers. There is a clear imperative to engage all payers within the state, including private insurers, who may have unique opportunities to promote AS-forward practices among providers medically treating beneficiaries.

On November 19, 2024, the North Carolina Department of Health and Human Services (NCDHHS), Division of Public Health (DPH) convened a summit with NC payers and Antimicrobial Stewardship experts to gather key insights regarding AS in North Carolina. Organizers employed rapid-fire presentations from experts in AS, along with facilitated discussions about best practices for and strategies to encourage support for AS and responsible antibiotic prescribing within NC outpatient clinical settings. Key themes from Summit presentations and discussions are summarized and reported here.

"It is very important to ground ourselves in the 'Why' stewardship is really important. We're combating antibiotic resistance, and antibiotic resistance has become a global public health crisis. It affects more than two million people annually and contributes to adverse patient outcomes. More than 23,000 deaths annually are attributed to antimicrobial resistance, [and] from an economic standpoint, about $20 billion in indirect health care costs. And so, when we think about the core impact [on] people and the poor economic impact, it's really important for us to think, 'How do we work on this together?"

— Dr. Betsey Tilson, former State Health Director and CMO, NCDHHS

PARTICIPATING ORGANIZATIONS

- Advocate Health
- Aetna
- Alliant Health Solutions
- AmeriHealth Caritas North Carolina
- Carolina Complete Health
- CDC
- Cigna Healthcare
- Duke Antimicrobial Stewardship Outreach Network (DASON)
- Duke Health
- Johnston County Public Health Dept.
- NCDHHS, Division of Health Benefits
- NCDHHS, Division of Public Health
- Novant Health
- Pew Charitable Trusts
- UNC Health
- UNC School of Medicine
- UNC Children's Hospital
- United Healthcare

PRESENTERS:

- Dr. Sarah Kabbani, Director, CDC Office of Antimicrobial Stewardship
- Dr. Michael Smith, Professor of Pediatrics, Duke University School of Medicine
- Dr. Kelly Flett, Ambulatory Antibiotic Stewardship Program, Novant Health

RAPID-FIRE PRESENTATIONS

Importance of Payer-Led Antibiotic Stewardship Engagement in Outpatient Healthcare Settings

Dr. Sarah Kabbani gave rationale for the recommendation to focus on outpatient settings and adult patients, targeting:

1. Unnecessary use of antibiotics & overuse of antibiotics in conditions not requiring antibiotics
2. Improper antibiotic selection
3. Errors in antibiotic dosing
4. Errors in antibiotic duration

Leveraging Claims Data for Antimicrobial Stewardship

Dr. Michael Smith presented studies that validate Medicaid medical claims against electronic medical records (EMR) and proposed leveraging different types of claims data – individually or together – to provide insights into antibiotic prescribing practices.

CLAIM TYPE	INFORMATION	APPLICATIONS
Pharmacy Claims	By beneficiary: type, dose, and duration of antibiotics prescribed	Understanding patterns of prescribing and geographic distributions of prescribing practices
Medical Claims	By billed visit or diagnosis	Review appropriateness of antibiotic prescriptions and/or concordance with clinical guidelines based on International Classification of Diseases (ICD)-10 code

Antimicrobial Stewardship in the Ambulatory Setting

Dr. Kelly Flett shared findings from outpatient AS programming implemented at Novant Health, which uses quality improvement projects to shape prescribing practices. They offer provider feedback on prescribing for common infections and use EMR-based resources tailored to prescribers. Ongoing feedback, which is presented as a dashboard emailed directly to providers, allows for easy, individual-level comparisons with similar providers. Employing interactive provider feedback, coupled with the other AS strategies, has led to changes in provider prescribing and improvements in patient outcomes.

"The main focus and the main way we communicate with health care professionals in general is patient safety, and antibiotic use – both necessary and unnecessary – can cause adverse events. Making sure antibiotics are used appropriately is critical for improved treatment."

— Dr. Sarah Kabbani, Director, CDC Office of Antimicrobial Stewardship

"...It's not just about doing the right thing for public health, as if that weren't a good enough reason. You can actually save money by doing this the right way."

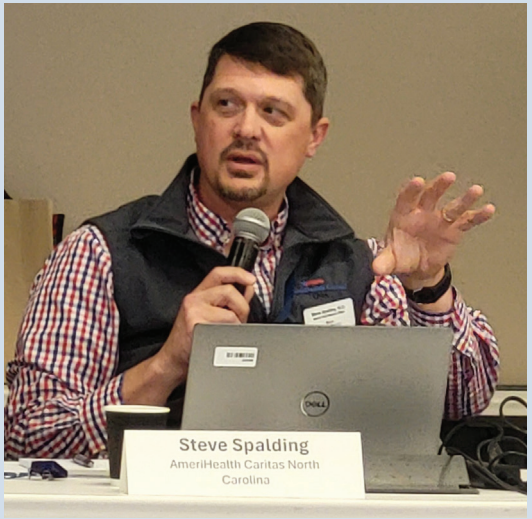
— Dr. Michael Smith, Professor of Pediatrics, Duke University School of Medicine

"This beautiful partnership with Pew [Charitable Trusts], ... is leveraging our public health and our payers' infrastructure, encouraging us to think about: What's the data? What's the data public health has? That payers have? How do we merge that data together to really help us refine where we need to focus? What are the right interventions? What are the patient-facing interventions? Where are the provider-facing interventions? And then, how do we leverage the financial mechanisms of our payers and our quality improvement strategy? And then the financing pieces: what do we pay for? What do we reward?"

— Dr. Betsey Tilson, former State Health Director and CMO, NCDHHS

FACILITATED DISCUSSIONS

A series of roundtable conversations were facilitated by Dr. David Hyun and Ms. Rachel Zetts, antimicrobial stewardship experts from The Pew Charitable Trusts to better understand payer-specific priorities for AS in North Carolina outpatient settings. Discussions focused on how to prioritize AS in outpatient settings, strategies to support antimicrobial stewardship activities, and approaches to operationalize recommended initiatives. The three main discussions focused on:



1. **Approaches for Payer-led Outpatient Antibiotic Stewardship Efforts –** Questions guiding this conversation focused on identifying objectives for payer-led outpatient AS work within North Carolina, as well as any past or current initiatives that might be adapted to fit the state's needs. Participants also discussed the current landscape around AS practice, potential priorities, and future goals for the state of North Carolina.

2. **Leveraging Claims Data for Antibiotic Prescribing Feedback –** This discussion expanded upon and allowed for follow up questions about the information presented by Drs. Michael Smith, David Hyun, and Kelly Flett, regarding the use of AS-specific data, including data on prescribing practices, for generating provider-level feedback to guide AS activities. Additionally, some themes from the earlier roundtable reemerged and were further clarified in this discussion.

3. **Key Partnerships to Expand Medicaid Activities on Outpatient Antibiotic Stewardship –** In this final discussion, participants expanded upon and made additional recommendations for utilizing key partnerships to further statewide outpatient AS goals. Discussion points also served to identify ideal partnerships necessary to operationalize the programmatic suggestions made in prior discussions.

KEY THEMES

CHALLENGES TO PRIORITIZING AS ACTIVITIES

Financial Challenges

Competing Financial Priorities for Payers – In resource-constrained environments, payers reiterated that there are often competing demands for where to focus efforts, with decisions often dependent on cost savings and/or revenue-earning potentials. AS activities need to be weighed against the "costs of doing nothing," which could result in increasing cost over generations.

Competing Financial Priorities for Providers – Many providers may already be struggling with how best to maximize payments from Medicaid and other insurers, and they likely won't prioritize AS activities without financial incentives.

> **OPPORTUNITIES: Although the direct cost savings associated with AS are small relative to other medical expense targets, exploring indirect costs of inappropriate antibiotic use could reveal reasons to prioritize outpatient AS activities.**

Challenges within the Medical Encounter

Conflicting Patient Expectations – Providers must navigate patient "expectations," which often include receiving antibiotic prescriptions even when they present with symptoms of self-resolving illnesses. Following recommended antibiotic prescribing may require additional time to address these expectations during the encounter. Providers also are concerned about professional repercussions from poor patient satisfaction scores after the encounter.

Competing Perceived Risks – In a hierarchy of competing medical concerns to address in outpatient appointments, providers must frequently prioritize hierarchy of medical need. With less obvious long-term effects, AS initiatives may be de-prioritized in favor of addressing more immediate medical concerns.

> **"As a clinician, obviously [AS] is important, and there are long-term public health ramifications.... I always think of, when I am wearing my clinical hat, 'What's going to kill the patient in front of me first? Is it not wearing a seatbelt? Is it smoking?' I mean, so if we're in a hierarchy of needs in a resource-constrained environment, where do you apply the resources? I think intuitively, ethically, absolutely [prioritize AS]. I don't think anybody would disagree with that. But when I am lined up with the 15 [medical problems to address], how do I prioritize this?"**
>
> — Physician and Insurance Medical Executive

Lack of Capacity and/or Time

Structural level capacity constraints – There are differences in capacity for implementing AS initiatives, particularly when comparing rural versus urban areas or large health systems versus smaller, private providers. For example, larger medical systems are likely to have more resources to hire medical coders to ensure accuracy, as compared to smaller centers with fewer resources, such as federally qualified health centers that self-enter billing codes.

Individual level capacity constraints – In addition to the challenges individual providers navigate regarding patient prescribing expectations, managing these expectations and potentially answering additional questions or providing patient education will likely contribute to significant constraints on time, further de-prioritizing AS activities. Many providers in outpatient settings are already trying to address multiple problems during a single brief visit, with little time available to add patient education about AS to their duties.

PAYER CONSIDERATIONS FOR IMPLEMENTING AS PROGRAMMING

Prioritizing AS Initiatives

Value Determination – As described previously, payers struggle with finding a financial imperative to justify large resource allocations for AS activities. The state may need to create value by linking reimbursement to meeting AS goals and by aligning statewide AS priorities to encourage implementation of AS initiatives. Payers reiterated that they could find capacity to address any priority if defined and galvanized by NCDHHS.

OPPORTUNITIES: Value can be created by linking medical reimbursements to meeting AS goals and/or by NC state agencies championing AS practices.

> **"If it's a priority for the department, then we have capacity... In state fiscal year '24, outpatient antibiotic prescriptions were about 0.1-0.3% of our overall total medicine expense. Not much. So when you are talking from an incentive perspective, those are relatively small dollars for us to say, 'Oh. We're going to spend a bunch of resources on this.' However, if [state agencies] say, 'Guess what? This is going in your contract,' all of a sudden, we're going to have capacity, and it's going to be a priority."**
>
> — Physician and Insurance Chief Medical Officer

Determining Intervention Priorities

Where to Intervene – There are questions about whether prescriber-level initiatives should focus on the point of clinical decision-making, by implementing algorithms for a particular International Classification of Diseases (ICD)-10 code, or "on the back-end," in the form of provider feedback with or without an education component. One initiative might be linked to an EMR that initiates a real-time series of steps or flags if a particular ICD-10 code has been attributed to the patient encounter, as compared to another initiative that would provide feedback once an encounter is over. Successful initiatives in other states suggest that proposed AS activities should include both.

> "The messaging that you focus on in planning overall population standards has to be done with [targeted] priorities in mind. We need a coordinated [plan whereby you] tell us what you need, and we can provide you with information. But that interaction at the member/provider/care management level is where you can choose what's the right opportunity here, versus what's the right opportunity there."
>
> — Physician and Insurance Chief Medical Officer

Intervention Tailoring – Different strategies for and levels of provider engagement will likely be needed depending on the type of provider receiving feedback and how health care is being delivered. There may be greater need for AS engagement and education among Advanced Practice Providers (APPs), providers further removed from their medical training, and those who frequently practice outpatient telemedicine. Similarly, in terms of patient engagement, AS approaches may need specific tailoring to patient groups, including rural, white, and/or privately insured individuals who receive antibiotic prescriptions more frequently than their counterparts.

OPPORTUNITIES: Implementing successful AS programming will require multi-level interventions. For physicians, these include targeting clinical decision-making at the point of patient care and developing provider feedback systems.

> "As payers, it will be helpful if you provide some information to the beneficiaries. Because the expectation is that they get a prescription. And it's difficult when [patients] are in the office, and you are explaining to people that certain medications are not necessary. But [the patients] expect something... So I think getting some education to beneficiaries will be helpful..."
>
> — Physician and County Health Director

PROVIDER CONSIDERATIONS FOR IMPLEMENTING AS PROGRAMMING

Targeting Engagement and Educational Approaches

Need for Patient Education – There were suggestions to provide beneficiaries with targeted information, both formally through prepared materials and informally by providers during clinical encounters. These patient-centered communications would ideally serve to educate patients about antibiotic stewardship and help minimize expectations for antibiotics at all clinical encounters.

Need for Community Engagement – Overall, participants emphasized the necessity of changing the "culture" or expected norms of antibiotic prescribing – from the perspectives of both providers and patients collectively – so that AS activities will be best received as they are introduced. Tailored efforts will be needed to ensure communities are aware of the importance of appropriate antibiotic prescribing and how outpatient experiences with their providers may change to reflect AS initiatives.

OPPORTUNITIES: For AS initiatives to succeed within the state, it will be important to change the culture of outpatient prescribing practices using directed and sustained efforts. Providers, patients, and the community must be engaged and educated about AS to facilitate greater acceptance and adoption of activities. Education will need to be well-tailored for the intended recipients, with particular focus on patients and providers with less exposure to AS practices and/or providers practicing telehealth.

Role of Provider Incentivization – Payers suggested that providers may be best encouraged to participate in AS initiatives by tying activities and/or patient outcomes to financial payouts to meet AS targets. This would include incorporating financial incentives and disincentives through payer adoption of value-based contracts.

OPPORTUNITIES: In adopting AS-forward practices, providers are often challenged by limited time, competing medical priorities, and concerns about how encounters may negatively affect patient satisfaction scores. Employing financial incentives that are tied to performance may encourage providers to overcome these identified challenges.

> **"When physicians and practices have some downside risk, absolutely they focus on whatever is going to pay them. Or if you have to write a check back to the payer or to the government, it's amazing how the aligned incentives really [become motivating]. So, we would need to move toward more value-based contracts, where antibiotic stewardship is part of that, where it is incentivized. And that gets physicians' attention very quickly. When your paycheck is at risk, it is amazing how quickly we as physicians can realign behaviors... The number is probably between 15 and 20% of compensation at risk"**
>
> — Physician and Insurance Chief Clinical Officer

AS Prescribing Feedback

Importance of Feedback – Summit participants who currently practice clinical medicine expressed a desire to receive regular information on their prescribing practices, patient outcomes, and other relevant clinical information, both individually and as compared to their colleagues in the same specialty or practicing in the same geographical areas.

Feedback Details – Feedback should:

- Be provided at regular intervals, such as monthly, to establish expectations for ongoing feedback and normalize metric tracking as a part of clinical practice and evaluation.
- Include a reasonable number of metrics that can be tracked over time, including insights into why a provider has been scored in a particular way on metrics presented.
- Summarize data from all payers and sources into one interactive, online "report card" or "scorecard" that enables comparisons to the average of other, similar prescribers.

OPPORTUNITIES: Providers appreciate and want regular antibiotic prescribing feedback ("report card" or "scorecard") that is easy to access, tracks a reasonable number of metrics, allows them to review their own individual performance and compare that performance to their professional peers.

DATA FOR PRESCRIBER FEEDBACK

Including Metrics

How to Prioritize Metrics – Ideal metrics would provide robust insights while requiring relatively low effort to track. Many metrics are already being tracked for other performance targets, such as chronic disease management. Participants expressed concern that adding many more will impede a provider or system's ability to track any metric consistently or well. Commercial payers are moved by the state's priorities for metric tracking. Goal prioritization must weigh national guidelines, state-based measures, current incentives, costs and availability of funding to track, leadership preferences, and other considerations.

> "At the highest level, we look at state priorities [and] where we are from a HEDIS perspective rating, especially those metrics that are going to impact our health plan accreditation rating. We look at things from a cost perspective: 'What do we think are metrics that are associated with drivers of controllable expense?' We put things like…where we want to focus from a population perspective. We kind of mush all of those things together and we try to have a metric portfolio of around eight to 10 measures. I've worked with payers that had 30 measures. That just tells me you don't know how to prioritize."
>
> — Physician and Insurance Chief Medical Officer

EXAMPLE METRICS FOR AS TRACKING

- **Established HEDIS measures**
- **Encounter Details:**
  - Diagnosis
  - Patient Age
  - Service Type
- **Prescription Information:**
  - Type of Medication/Antibiotic
  - Dose and Duration
- **Appropriateness of Antibiotic Prescribed**
- **Prescriber Characteristics:**
  - Geographic Region of Practice
  - Area of Clinical Specialty
  - Credentialing Type
- **Patient Satisfaction**

Potential Challenges to Feedback

Painting an Incomplete Picture – While using administrative claims data can be very informative, getting – and as a result, extrapolating information from – this data can lag, potentially upwards of a year, given the time it may take to reconcile claims. It may be challenging to compare providers to one another, especially if patient panels have different levels of acuity. There will need to be a risk adjustment to account for these differences. There also may be significant challenges with expanding the capacity of EMR systems to accommodate AS activities.

Too Frequent Provider Contact – Participants suggested a need for a centralized way to provide feedback, so that providers wouldn't be inundated with multiple feedback reports from each payer, which could contribute to information fatigue.

Variations in Implementation Capacity – It will likely be more challenging for smaller, rural practices to aggregate feedback and disseminate it to providers.

> OPPORTUNITIES: To best understand progress toward meeting AS goals, payers should prioritize and select eight to 10 informative metrics to track over time. Using established measures, including HEDIS, would allow for standardization and comparability, both statewide and nationwide. Ideal measures would be timely and easy to collect.

PARTNERSHIPS

The Role of Partnerships

Importance of Partnerships – Developing and maintaining partnerships are integral to the success of proposed AS activities throughout the state. For example, the ongoing relationships CDC has maintained with health departments around the country through cooperative agreements has been instrumental in pushing AS activities forward.

Potential Partnerships to Pursue – Participants recommended partnerships with professional medical societies, including those for family practice and pediatric providers, pharmacists, and nurses; schools and school boards, with particular focus on school nurses and telehealth providers; and community-based organizations such as churches, other faith-based entities, and community participation organizations (CPOs). Participants shared how important these types of collaborations were for building trust and implementing successful prevention activities at the beginning of the COVID-19 pandemic. Others reiterated the importance of engaging others and simply "keeping them at the table."

OPPORTUNITIES: State agency partners, including the NC Department of Health and Human Services, can play a large role in multiple ways: by helping to encourage stakeholder buy-in for AS activities; by creating a centralized repository of payer data on AS-related metrics and distributing summarized feedback reports to providers throughout the state; and by facilitating research and scholarly collaborations by synthesizing, granting access to, and distributing the data.

Roles for the State

Managing Data – Since there is concern that providers might be inundated with multiple reports each reporting period if they are sent directly by payers, it would be preferable to have one report made available to providers that includes summative information from all claims for that reporting period. This type of feedback can only occur with coordination from the state. Multiple payers suggested that payers could funnel their claims data to the state – potentially in exchange for a participation or value-based incentive – and the state could compile data for reports. This initiative being facilitated through the state may also encourage provider participation.

Facilitating Research with Other Partners – Having a statewide database would allow for research and other scholarly activity regarding antimicrobial stewardship-related trends and outcomes statewide. The state, including the Division of Public Health, could play a role in negotiating and overseeing data use agreements (DUAs) with academic partners for these activities.

OPPORTUNITIES: Maintaining strong partnerships among diverse stakeholders is integral to successfully strategizing for and implementing AS initiatives throughout North Carolina.

> **"Relationships with payers and exploring how we can make systematic changes that will have more impact (even if it's a very small change) because it's going to really happen across a population basis. It can have much more impact than individual efforts here and there that are very intense and committed and sincere. So, this conversation has given us very good information. I think it has helped set our thinking in some practical ways."**
>
> — Dr. Megan Davies, Medical Director of Surveillance for Healthcare Associated and Resistant Pathogens Patient Safety (SHARPPS) Program, NCDHHS DPH

NEXT STEPS

1. This summit surfaced possible next steps for the Division of Public Health to consider supporting AS activities within NC. Devise public-facing media campaigns to influence antibiotic prescribing expectations.
2. Collaborate with interested payer organizations to share claims data to understand prescribing practices in NC.
3. Develop templates and other tools for health care systems and/or payers to use as needed when collecting and presenting feedback to prescribers.
4. Explore the economic impact of inappropriate prescribing practices using available data.
5. Continue to work with AS experts in NC to engage payers, health care systems, and medical prescribers to improve responsible antibiotic prescribing in NC.

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