



**Indiana**  
**Department**  
**of**  
**Health**

# ANTIMICROBIAL STEWARDSHIP PROGRAM

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ANTIMICROBIAL STEWARDSHIP  
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## OUR MISSION:

To promote, protect, and improve the health and safety of all Hoosiers.

## OUR VISION:

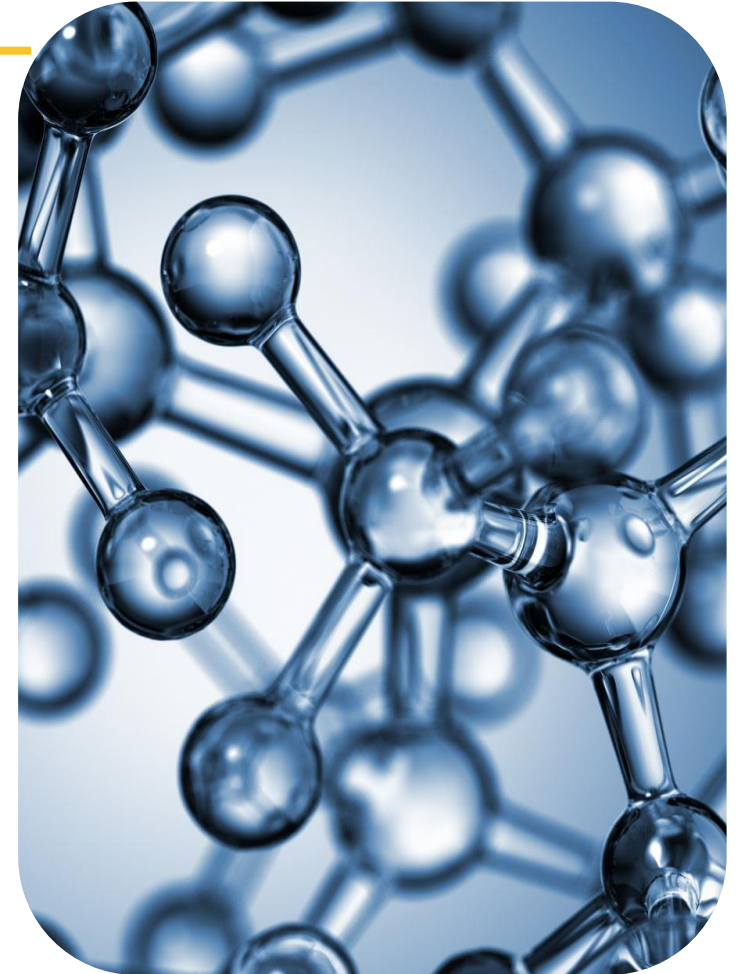
Every Hoosier reaches optimal health regardless of where they live, learn, work, or play.



# Antibiotics: A Life Saver

While antibiotics have transformed the practice of medicine and saved countless lives, according to the Centers for Disease Control and Prevention (CDC), 20 to 50 percent of all antibiotics prescribed in U.S. hospitals are either unnecessary or inappropriate.

Their side effects, including adverse drug reactions, antibiotic resistance, and *Clostridium difficile* infections (CDI), that can cause unnecessary harm.



# Antibiotics: A Life Saver

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It is crucial for healthcare providers to be responsible stewards of powerful antibiotics. Many hospitals have launched Antibiotic Stewardship Programs (ASPs), that the CDC states can:

- Optimize the treatment of infections and reduce adverse effects associated with antibiotic use.
- Improve the quality of care.
- Improve patient safety through increased infection cure rates.
- Reduce hospital rates of CDI and antibiotic resistance.
- Decrease costs for hospitals.

# Antibiotic Stewardship in Hospitals.

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Stewardship promotes appropriate antibiotic use, meaning using antibiotics when needed and when required, using the right antibiotic at the right time, at the correct dose, and for a suitable duration.

Antibiotic stewardship has several proven benefits, including protecting patients from unintended consequences, improving the treatment of infections, and helping combat antibiotic resistance.



# The Seven Core Elements

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1. **Leadership commitment:** Demonstrate safe and appropriate antibiotic use.
2. **Accountability:** Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship.
3. **Drug expertise:** Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship.
4. **Action:** Implement at least one policy or practice to improve antibiotic use.
5. **Tracking:** Monitor at least one process measure and one outcome of antibiotic use.
6. **Reporting:** Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and others.
7. **Education:** Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities to improve antibiotic use.

# Hospitals' Antibiotic Stewardship Rates: Indiana vs Nation

- Hospitals across the nation are surveyed to assess their implementation of CDC's seven core elements of stewardship
- In 2021, 98% of hospitals in Indiana implemented all seven core elements in their antibiotic stewardship program, which was 3% more than the national rate.

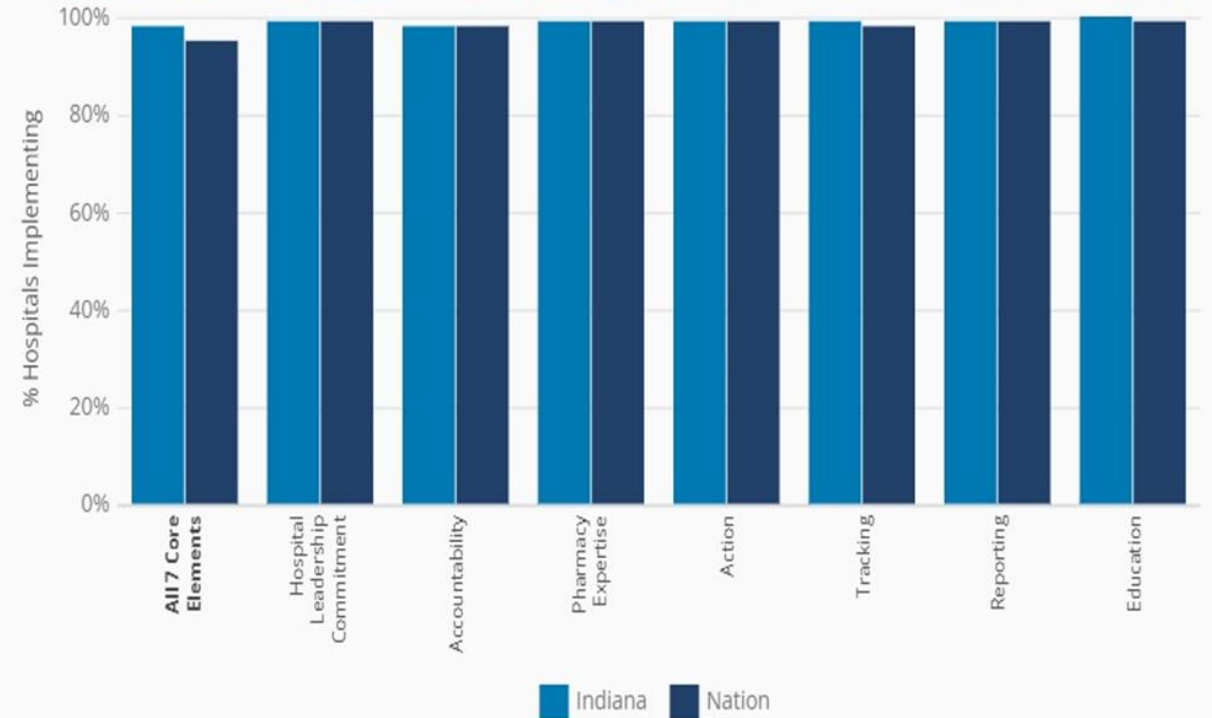
## HOSPITAL ANTIBIOTIC STEWARDSHIP (AS) IMPLEMENTATION BY CORE ELEMENT

YEAR 2021

This graphic shows the percent of Indiana and national hospitals that meet each of the seven core elements in 2021.

Visit the [Stewardship Profile](#) to learn more about Antibiotic Stewardship reporting.

HOSPITAL STEWARDSHIP CORE ELEMENT REPORTING IN INDIANA IN 2021





# Recommendations for Implementing an Antibiotic Stewardship Program

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Some of the key recommendation by **Infectious Disease Society of America**:

1. **Preauthorization and/or prospective audit** and feedback, over no such interventions (strong recommendation, moderate-quality evidence).,
2. **Facility-specific clinical practice guidelines and algorithms** can be an effective way to standardize prescribing practices based on local epidemiology.
3. **ASP interventions** for patients with specific infectious diseases syndromes can be an effective way to improve prescribing because the message can be focused, clinical guidelines and algorithms reinforced, and sustainability improved.
4. ASPs should **regularly evaluate** areas for which targeted interventions are needed and adapt their activities accordingly.
5. The goal of **reducing *Clostridium difficile* infections** is a high priority for all ASPs and should be taken into consideration when crafting stewardship interventions.
6. **Use of strategies** (example, antibiotic time-outs, stop orders) to encourage prescribers to perform routine review of antibiotic regimens to improve antibiotic prescribing (weak recommendation, low-quality evidence).



# Recommendations for Implementing an Antibiotic Stewardship Program

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1. There is no single template for a program to optimize antibiotic prescribing in hospitals.
2. Implementation of antibiotic stewardship programs requires flexibility due to the complexity of medical decision-making surrounding antibiotic use and the variability in the size and types of care among U.S. hospitals.
3. The Core Elements are intended to be an adaptable framework that hospitals can use to guide efforts to improve antibiotic prescribing.

# Antibiotic stewardship

Indiana Department of Health supports antibiotic stewardship by providing effective interventions, treatment guidelines, resources, and support for reporting antibiotic use to the National Healthcare Safety Network (NHSN).



# Antibiotic Stewardship in Indiana

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- Collaborating with our external partners and providing education on AU/AR
- Indiana Alliance Working for Antibiotic Resistance Education (AWARE)
- Monitoring and surveillance through NHSN
- Annual participation in Antimicrobial Awareness Week



# Conclusion

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All hospitals can implement practices to improve antimicrobial prescribing, regardless of size, financial support, and resource allocation. Identifying opportunities for clinical improvement of patients will allow ASPs to incrementally improve patient care.

Keys to success include:

- Setting attainable goals
- Focusing on evidence-based fundamental antimicrobial stewardship interventions
- Fostering positive and productive relationships
- Adapting expanded practice antimicrobial stewardship interventions to the local environment and resources

# Antibiotics Awareness Week Webinar Series



The Indiana Department of Health's Healthcare Associated Infections and Antimicrobial Resistance Team is hosting a free webinar series on Nov. 13, 15 and 17, during World Antimicrobial Resistance Awareness Week.

Topics will include antimicrobial stewardship programs, antibiograms, susceptibility results and multidrug resistant organisms, and will be presented by field experts.

***Scan the QR code at right*** to register for the webinar series. Registration for the Microsoft Teams virtual event will be open until Nov. 13.



## Questions?

Contact **Dhivya Selvaraj** at 812-287-3595  
or [DSelvaraj@health.in.gov](mailto:DSelvaraj@health.in.gov)



## ***Schedule of Events***

### **Nov. 13**

- Core Elements of Antimicrobial Stewardship Programs in both Long Term and Acute Care Settings

### **Nov. 15**

- Antibiogram overview
- Reading Understanding and Using Antimicrobial Susceptibility Results
- Data dashboards
- Indiana AWARE

### **Nov. 17**

- Health and Antimicrobial Stewardship
- Carbapenem-resistant Enterobacterales
- Candida auris

Note: Topics are subject to change up until the date of listed event.

# Questions?

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