



**Quality Improvement
Organizations**

Sharing Knowledge. Improving Health Care.
CENTERS FOR MEDICARE & MEDICAID SERVICES

Great Plains



Quality Innovation Network

QAPI & Infection Prevention: Putting the Pieces Together

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Objectives

- Identify how QAPI intersects with infection prevention and antibiotic stewardship in the nursing home final requirements of participation
- Translate infection prevention activities into a Quality Assurance/Performance Improvement (QAPI) Program
- Apply measures of process improvement in HAI prevention



Ultimate Goal

The strategy is to concurrently pursue three aims:

Better Care

Improve overall quality by making health care more patient-centered, reliable, accessible, and safe

**Healthy People /
Healthy Communities**

Improve population health by supporting proven interventions to address behavioral, social and environmental determinants of health, in addition to delivering higher-quality care

Affordable Care

Reduce the cost of quality healthcare for individuals, families, employers and government

Background



Requires an infection prevention and control program, including an infection prevention and control officer and an antibiotic stewardship program including antibiotic use protocols and a system to monitor antibiotic use

<https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2016-Press-releases-items/2016-09-28.html>

§483.80 Infection Control

- §483.80 The facility must establish and maintain an infection prevention control program designed to provide a safe, sanitary and comfortable environment and to help prevent the development and transmission of communicable diseases and infections
 - (a) Infection prevention and control program. The facility must establish an IPCP that must include, at a minimum, the following elements:
 - (1) A system for preventing, identifying, investigating and controlling infections and communicable disease for all residents, staff, volunteers, visitors and other individuals providing services under a contractual arrangement based upon the facility assessment conducted according to 483.70(e) and following accepted national standards
- §483.80 (c) Infection Preventionist participation on QAPI committee (Phase III)

- <http://greatplainsqin.org/initiatives/hac-nh/>

§483.75 QAPI

- Phase I – Implemented by November 28, 2016
 - Team requirements; except Infection Preventionist
- Phase II – Implemented by November 28, 2017
 - Present QAPI Plan to SSA
- Phase III – Implemented by November 28, 2019
 - All requirements of QAPI Section implemented
 - Infection Preventionist on QAPI team
 - <https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities>

§483.80 Infection Control

- Questions:
 - How will your home identify and prevent infections and communicable diseases?
 - What data sources will be utilized?
 - How will you solicit feedback and input from staff? Residents? Volunteers? Stakeholders?
 - How will you know process and systems are implemented? Sustained?
 - How will you provide the information to leadership

HAI in LTC

- Over 4 million persons admitted to or reside in NHs and SNFs each year
- Infections most frequent cause of transfers and hospital readmission
- Infections result in estimated 380,000 deaths every year
- 2.8 million infections occur NHs/SNFs every year
- Most frequent HAI
 - UTI
 - Lower respiratory infections
 - Skin and soft tissue infections
 - Gastroenteritis

Source: www.cdc.gov/longtermcare/index.html

Why is this so important?

- Residents admitted with higher medical acuity
- Co-morbidities of frail and elderly
- Nature of close living increases risks
- Protection of residents and staff
- No longer just a hospital or nursing home issue, but a “community” issue

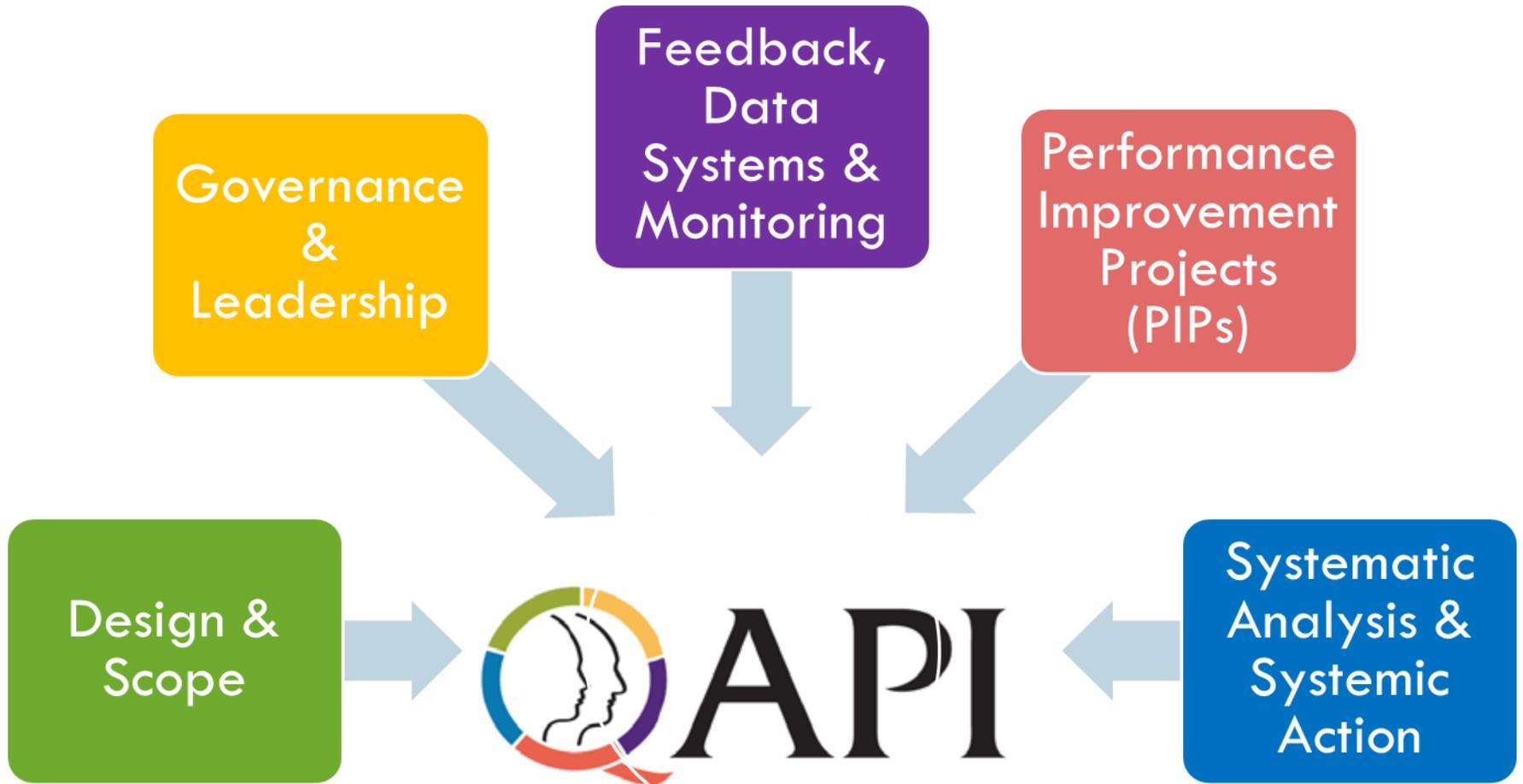


What Does a Nursing Home QAPI Program Look Like?

- Data-driven
- Pro-active
- Continuous identification of improvement opportunities
- Addressing gaps in systems
- Comprehensive
- Interventions that are systematic
Designed to improve the quality of care



QAPI Elements





Design &
Scope

- **Quality Assurance**
 - Process of meeting quality standards and assuring care is acceptable

- **Performance Improvement**
 - Proactive and continuous study of processes with the intent to prevent or decrease the likelihood of problems



Quality Assurance & Performance Improvement

Governance & Leadership

§483.75(g)(2) The quality assessment and assurance committee reports to the facility's governing body, or designated person(s) functioning as a governing body regarding its activities, including implementation of the QAPI program required under paragraphs (a) through (e) of this section...

Governance & Leadership is responsible and accountable for the QAPI program §483.75(f)QAPI Phase III

- An ongoing QAPI program is defined, implemented and maintained and addresses identified priorities
- The QAPI program is sustained during transition in leadership and staffing
- The QAPI program is adequately resourced, including ensuring staff time, equipment and technical training as needed
- The QAPI program identifies and prioritizes problems and opportunities that reflect organizational process, functions and services provided to resident based on performance indicator data and resident/staff input
- Corrective actions address gaps in systems and are evaluated for effectiveness and
- Clear expectations are set around safety, quality, rights, choice and respect



Quality Assurance & Performance Improvement

Feedback,
Data
Systems &
Monitoring

- **Monitoring processes and outcomes**
 - Infection surveillance
 - Adherence to IP practices
- **Data from multiple sources**
 - Lab data on antibiotic resistance
 - Pharmacy data on antibiotic use
 - Resident medical records for signs and symptoms
- **Establishing benchmarks or facility targets**
- **Implementing feedback**
 - Reporting to an infection control or QAPI committee
 - Sharing data with front-line staff/providers



Quality Assurance & Performance Improvement

Performance
Improvement
Projects
(PIPs)

- Concentrated effort on problem
- Utilize organized & structured approach to understand issue (PDSA)
 - Gathering information
 - Examine the current process and evaluate results
 - Improve care processes
 - Monitor impact of changes
- Infection prevention examples:
 - Increase adherence to hand hygiene
 - Improve antibiotic use for suspected UTI
 - Detection/control of outbreak



Quality Assurance & Performance Improvement

Systematic Analysis & Systemic Action

- The facility uses a systematic approach to determine when in-depth analysis is needed to fully understand the problem, its causes, and implications of a change
- Organized / structured approach to determine whether and how identified problems may be caused or exacerbated by the way care is delivered
- Develop policies and procedures
- Demonstrate proficiency in use of RCA
- Systemic Actions look comprehensively across all involved systems to prevent future events and promote sustained improvement.
- This element includes a focus on continual learning and continuous improvement.

Measures of Process Improvement

▪ Outcome Measures

- These measures tell you whether changes are actually leading to improvement — that is, helping to achieve the overall aim of preventing HAIs. Examples include rate of occurrence of methicillin-resistant *Staphylococcus aureus* (MRSA) per 1,000 patient days and percent of patients with *Clostridium difficile* associated disease (CAD).

▪ Process Measures

- To affect the outcome measure of preventing HAIs, you will make changes to improve processes intended to prevent transmission of bacteria and other organisms — including the processes for prevention of transmission from patient to patient, staff to patient, and environment to patient. Measuring the results of these process changes will tell you if the changes are leading to an improved, safer system. Examples include percent of patient encounters in compliance with hand hygiene procedure and percent of environmental cleanings completed appropriately.

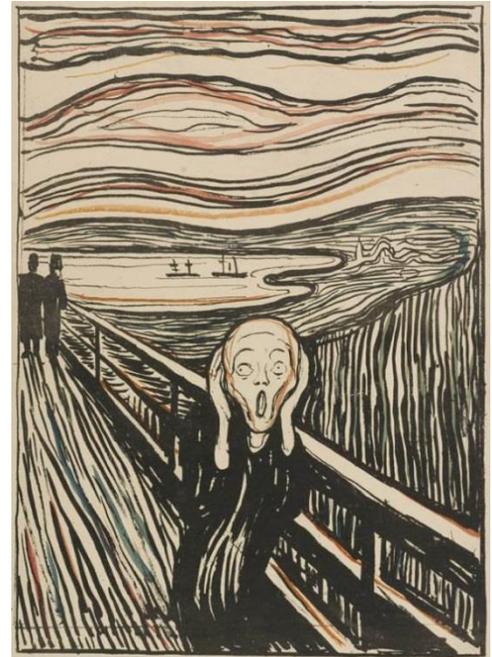
▪ Balancing Measures

- Use these measures to make sure that changes to improve one part of the system aren't causing new problems in other parts of the system. For example, the change of using a checklist for room cleaning might initially increase the amount of time spent cleaning a room.

Challenges

- Infection prevention in the nursing home
 - New role
 - Little or no specific training
 - Few internal resources
 - Limited time/resources for professional development
 - Wear MANY hats!
 - High turnover

Image: Edvard Munch, Scottish National Gallery of Modern Art



Additional Challenges

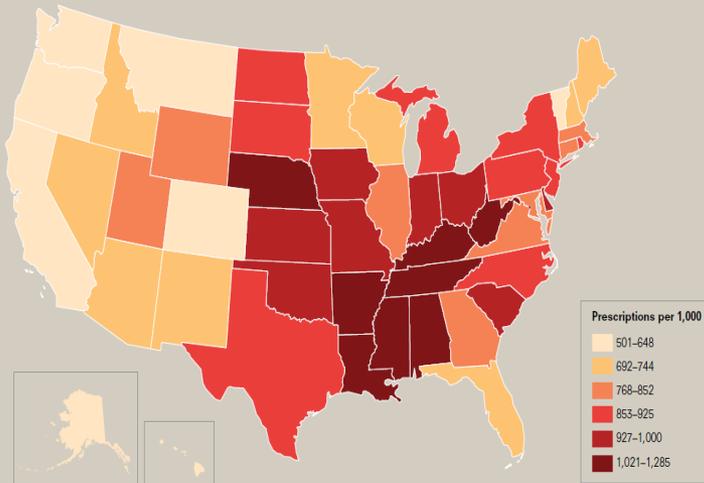
- Changes in residents
 - Older population
 - Higher acuity
 - More care time
 - More complex care
 - Shorter stays
 - Penalties in payment FY 2019 on what you are doing now (FY 2017)
 - Changes, changes, changes

A State Look

Antibiotic Prescribed (2014)

Community Antibiotic Prescriptions per 1,000 Population by State — 2014

At least 30% of antibiotics prescribed in doctors' offices, emergency departments and hospital clinics are unnecessary.*



Data source: IMS Health Xponent 2014.

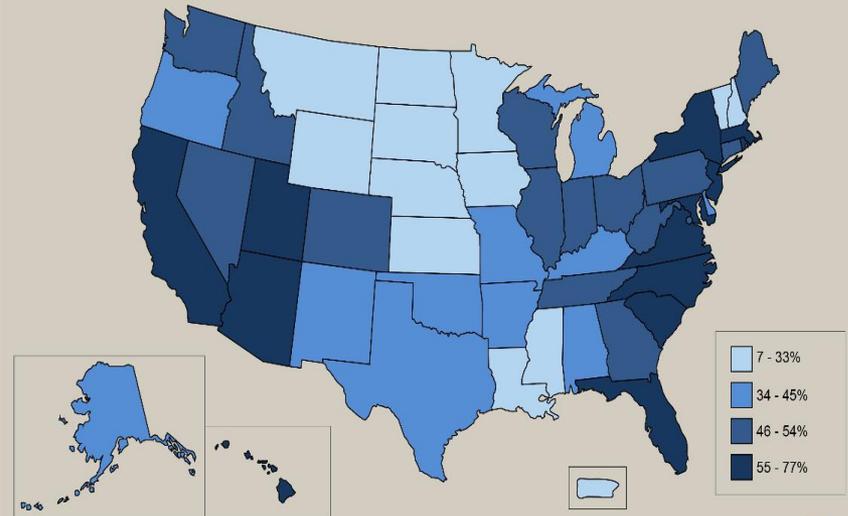
*Fleming-Dutra, K., et al. (2016). "Prevalence of Inappropriate Antibiotic Prescriptions Among US Ambulatory Care Visits, 2010-2011." JAMA: the Journal of the American Medical Association 315(17): 1864-1873.



Antibiotic Stewardship Programs (2015)

Percent of Hospitals with Antibiotic Stewardship Programs by State, 2015*

Nationally, 48.1% of all hospitals have stewardship programs (2,199 of 4,549); the national goal is 100% of hospitals by 2020.



*A hospital stewardship program is defined as a program following all 7 of CDC's Core Elements of Hospital Antibiotic Stewardship Programs.

Source: CDC's National Healthcare Safety Network (NHSN) Survey



<https://www.cdc.gov/drugresistance/index.html>

Developing Resistance

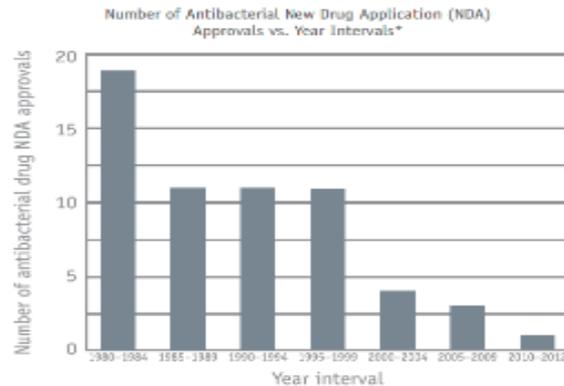
Timeline of Key Antibiotic Resistance Events

Dates are based upon early reports of resistance in the literature. In the case of pan drug-resistant (PDR)-*Acinetobacter* and *Pseudomonas*, the date is based upon reports of healthcare transmission or outbreaks. Note: penicillin was in limited use prior to widespread population usage in 1943.

| ANTIBIOTIC RESISTANCE IDENTIFIED | | ANTIBIOTIC INTRODUCED |
|--|--------|-------------------------------|
| penicillin-R <i>Staphylococcus</i> | 1940 | 1943 penicillin |
| | | 1950 tetracycline |
| | | 1953 erythromycin |
| tetracycline-R <i>Shigella</i> | 1959 | 1960 methicillin |
| methicillin-R <i>Staphylococcus</i> | 1962 | |
| penicillin-R pneumococcus | 1965 | 1967 gentamicin |
| erythromycin-R <i>Streptococcus</i> | 1968 | 1972 vancomycin |
| gentamicin-R <i>Enterococcus</i> | 1979 | |
| ceftazidime-R Enterobacteriaceae | 1987 | 1985 imipenem and ceftazidime |
| vancomycin-R <i>Enterococcus</i> | 1988 | |
| levofloxacin-R pneumococcus | 1996 | 1996 levofloxacin |
| imipenem-R Enterobacteriaceae | 1998 | |
| XDR tuberculosis | 2000 | 2000 linezolid |
| linezolid-R <i>Staphylococcus</i> | 2001 | |
| vancomycin-R <i>Staphylococcus</i> | 2002 | 2003 daptomycin |
| PDR- <i>Acinetobacter</i> and <i>Pseudomonas</i> | 2004/5 | |
| ceftriaxone-R <i>Neisseria gonorrhoeae</i> | 2009 | 2010 ceftaroline |
| PDR-Enterobacteriaceae | | |
| ceftaroline-R <i>Staphylococcus</i> | 2011 | |

New Development

The number of new antibiotics developed and approved has steadily decreased in the past three decades, leaving fewer options to treat resistant bacteria.



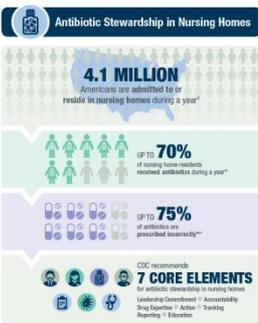
*Intervals from 1980-2009 are 5-year intervals, 2010-2012 is a 3-year interval. Drugs are limited to systemic agents. Data courtesy of FDA's Center for Drug Evaluation and Research (2/11/16).

Urgent healthcare threats include:

- *C. difficile* and
- Carbapenen-resistant *Enterobacteriaceae* (CRE).

Serious healthcare threats include:

- methicillin-resistant *Staphylococcus aureus*,
- vancomycin-resistant *Enterococcus*,
- extended spectrum B-lactamase producing *Enterobacteriaceae*, and
- multidrug-resistant *Pseudomonas* and *Acinetobacter*.



Barriers to Improving Antibiotic Use

- Tracking software
- Incomplete documentation or no indication of infection
- Excessive use of cultures
- Insistence of family members
- Antibigram - lack of use, understanding, facility specificity
- Lack of input from consultant pharmacist
- Provider fear of litigation

WAIT. Do not fill your prescription just yet. Your healthcare professional believes your illness may resolve on its own.

First, follow your healthcare professional's recommendations to help you feel better without antibiotics and continue to monitor your own symptoms over the next few days.

- Rest
- Drink extra water and fluids
- Use cool mist vaporizer or saline nasal spray to relieve congestion
- For sore throats in older adults and children, try ice chips, sore throat spray, or lozenges

If you do not feel better in ___ days/hours, or get worse, go ahead and fill your prescription.

If you feel better, you do not need the antibiotic, and do not have to risk the side effects.

Waiting to see if you really need an antibiotic can help you take antibiotics only when it is actually necessary. Antibiotics can cause side effects like a skin rash, diarrhea, a yeast infection, or worse.

Antibiotics can also make future bacterial infections stronger and harder to treat. You can protect yourself and others by learning when antibiotics are and aren't needed.

Good news! Your healthcare professional believes your illness will likely resolve on its own.

You should watch and wait for ___ days/hours before deciding whether to take an antibiotic.

In the meantime, follow your healthcare professional's recommendations to help you feel better and continue to monitor your own symptoms over the next few days.

- Rest
- Drink extra water and fluids
- Use cool mist vaporizer or saline nasal spray to relieve congestion
- For sore throats in older adults and children, try ice chips, sore throat spray, or lozenges
- Use honey to relieve cough. Do not give honey to an infant less than 1 year of age.

If you feel better, no further action is necessary — you don't need antibiotics.

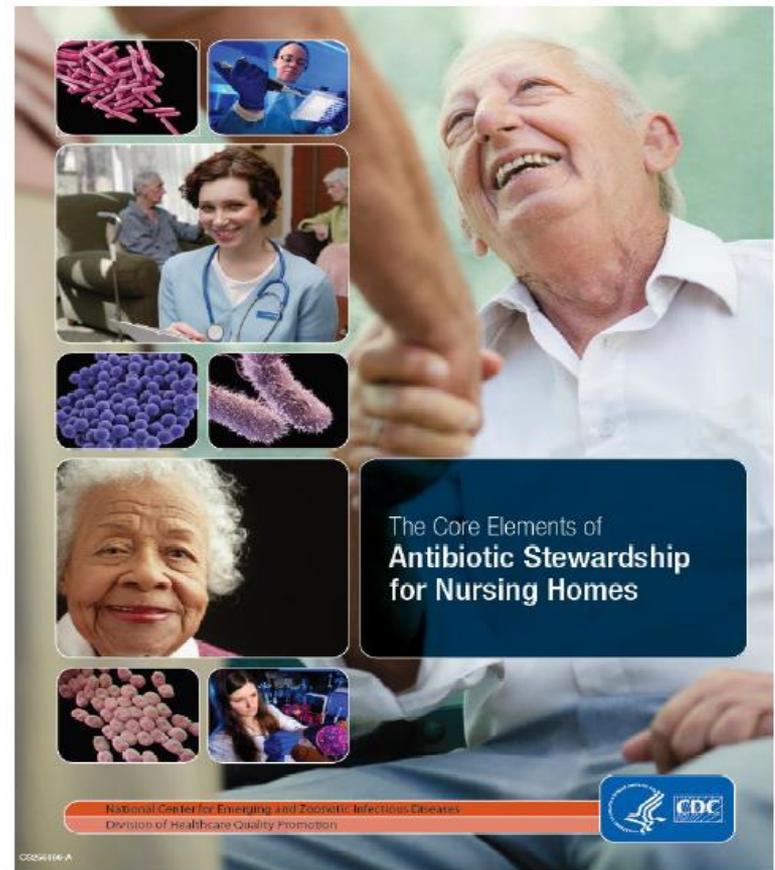
If you do not feel better, experience new symptoms, or you have other concerns, call your healthcare professional _____ to discuss if you need a recheck or if you need antibiotics, which may be prescribed over the phone.

It may not be convenient to visit your healthcare professional multiple times, but it is critical to make the right choice. Antibiotics can cause side effects like a skin rash, diarrhea, a yeast infection, or worse.

Antibiotics can also make future bacterial infections stronger and harder to treat. You can protect yourself and others by learning when antibiotics are and aren't needed.

CDC 7 Core Elements AS for NH

- Leadership commitment
- Accountability
- Drug expertise
- Action
- Tracking
- Reporting
- Education



Putting It All Together

- [What happens when antibiotics don't work anymore?](#)
- Infection prevention programs incorporate elements of a strong QAPI program
- Explore using National Healthcare Safety Network for tracking and data collection
- Don't wait work on this now, implement, and be ready!



Sharing and Questions

Thank you!!

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