

# Medication Use in Healthcare Settings: Antibiotic use in the community

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Get Smart: Know When Antibiotics Work

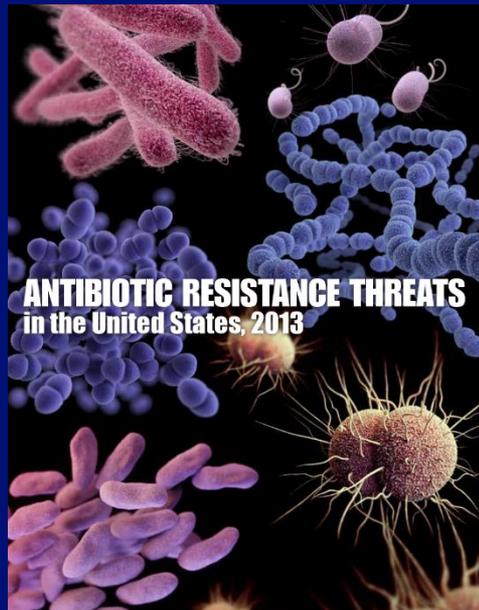
National Conference on Health Statistics

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## **Today's discussion**

- **Overview of antimicrobial resistance and antibiotic use in the community setting**
- **Using medication data to better understand antibiotic use in the community (outpatient) setting**
- **Get Smart: Know When Antibiotics Work program goals and activities**
- **National policy and strategy related to antibiotic stewardship in the United States**

# The burden of antimicrobial resistance in the United States



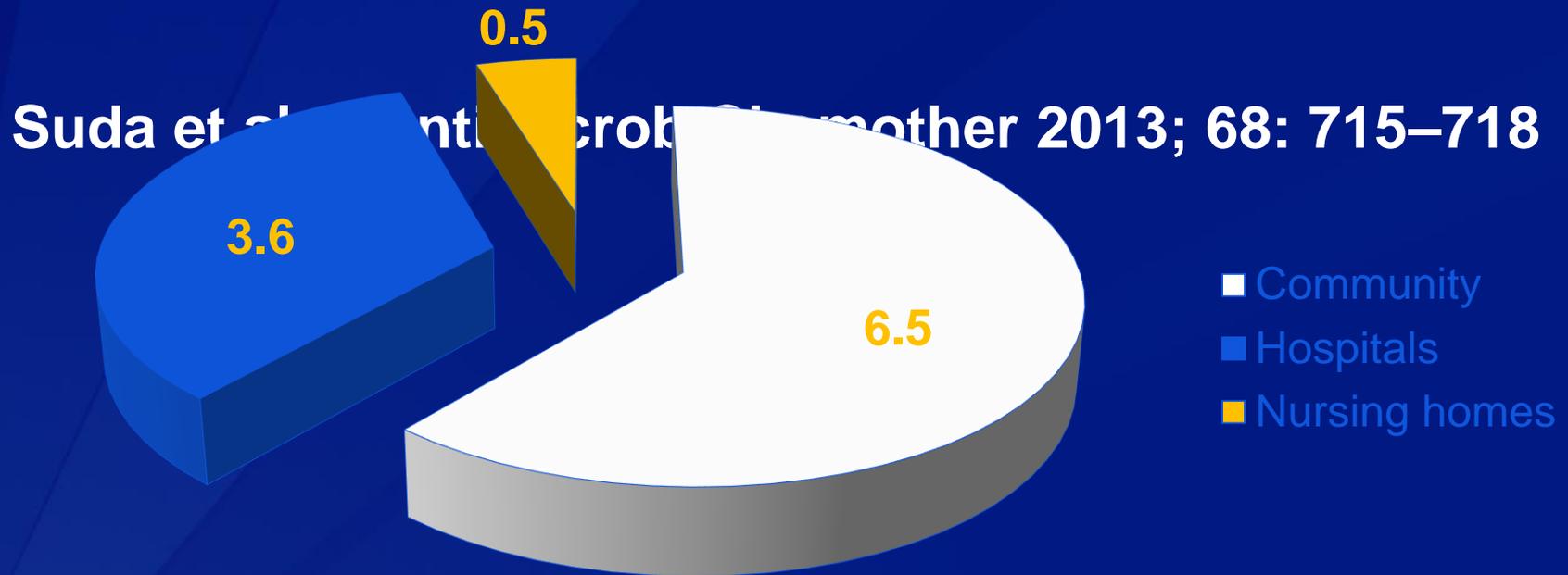
Estimated minimum number of illnesses and deaths caused annually by antibiotic resistance\*:

At least  **2,049,442** illnesses,  
 **23,000** deaths

*\*bacteria and fungus included in this report*

# Antibiotic prescription costs in billions (\$US), by treatment setting, United States

For 2009, total costs \$10.7 billion



## Healthy People 2020

### **IID-5 Reduce the percent of outpatient visits for ear infections where antibiotics were prescribed for ear infections for young children**

- ❑ **Numerator: Number of physician visits with an antibiotic course ordered, supplied, administered, or continued among children under age 5 years diagnosed with an ear infection (ICD-9-CM codes 381.0, 381.4, 382.0, 382.4, or 382.9)**
- ❑ **Denominator: Number of children under age 5 years diagnosed with an ear infection (ICD-9-CM codes 381.0, 381.4, 382.0, 382.4, or 382.9)**
- ❑ **National Data Source National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS)**

## Healthy People 2020

### **IID-6 Reduce the percent of outpatient visits where antibiotics were prescribed for the sole diagnosis of the common cold**

- ❑ **Numerator:** Number of physician visits with antibiotic courses ordered, supplied, administered, or continued among persons diagnosed with the common cold (ICD-9- CM codes 460.0, 465.0)
- ❑ **Denominator:** Number of persons diagnosed with the common cold (ICD-9-CM codes 460.0, 465.0)
- ❑ **Data source:** National Hospital Ambulatory Medical Care Survey (NHAMCS) and National Ambulatory Medical Care Survey (NAMCS)

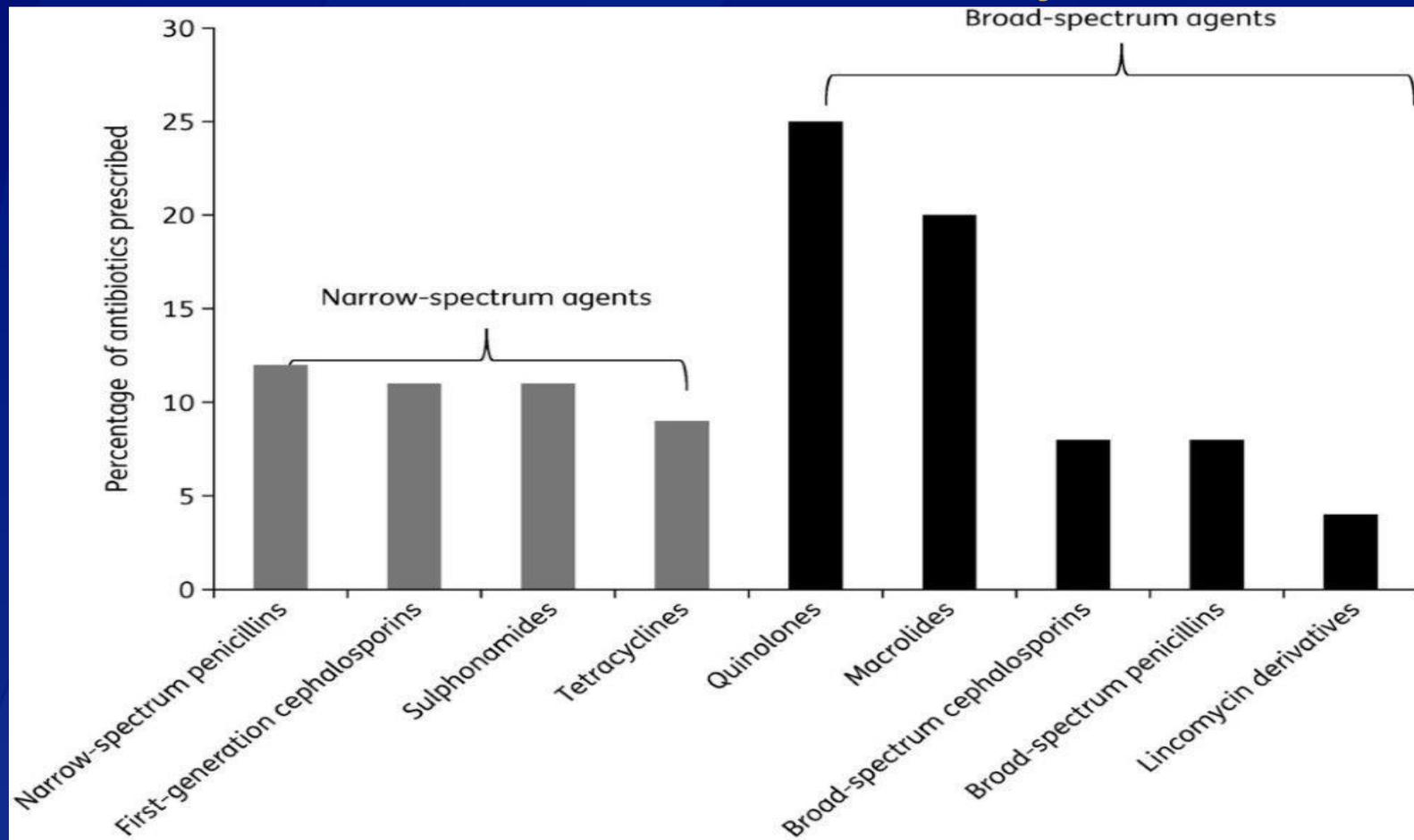
## Healthy People 2020 measures related to appropriate antibiotic use

Measure	2006-07 (%)	2008-09 (%)	Target (%)
IID-5: Reduce outpatient visits for ear infections where antibiotics were prescribed to young children	77.0	81.5	70.0
IID-6: Reduce outpatient visits where antibiotics were prescribed for the sole diagnosis of the common cold	28.6	28.5	21.0

## **Antibiotic prescribing for adults in ambulatory care in the USA, 2007-09**

- ❑ Antibiotics were prescribed during 101 million ambulatory visits annually, representing 10% of all visits**
- ❑ Broad-spectrum agents were prescribed during 61% of visits in which antibiotics were prescribed**
- ❑ Antibiotics were most commonly prescribed for respiratory conditions (41% of antibiotics), skin/mucosal conditions (18%) and urinary tract infections (9%)**

# Percentage of antibiotics prescribed according to antibiotic classes for adult ambulatory visits, 2007–09



Note: Totals exceed 100% because in some visits multiple antibiotics were prescribed.

Source: Antibiotic prescribing for adults in ambulatory care in the USA, 2007–09: *J. Antimicrob. Chemother.*

First published online July 25, 2013

# Good News / Bad News

## Antibiotics prescribed for acute respiratory infections in kids younger than 15 years of age



\*Comparing 1993–94 to 2007–08

Still account for **58%**  
of all antibiotics prescribed



Most of these acute respiratory infections do not require antibiotic treatment; patients may benefit from symptomatic therapy

Source: MMWR, 2011;60:1153-6

# **Strengths and limitations of NAMCS/NHAMCS for assessing antibiotic use in the community**

## **Limitations**

- ❑ Lack direct links between the prescriptions and diagnoses**
- ❑ Time delays in data release, limiting our ability to use more recent data to assess prescribing**
- ❑ Data only capture physician office, hospital outpatient departments, and emergency department visits (no urgent care, telephone or internet, limited PA/NP visits)**

## **Strengths**

- ❑ The use of certain outpatient antibiotics can be uniquely assessed in the NAMCS/NHAMCS, as these data are nationally-representative and contain both diagnoses and therapy**

# Additional data used to understand antibiotic use in the U.S.

- ❑ **Quality measures**
  - Healthcare Effectiveness Data and Information Set (HEDIS) measures
- ❑ **IMS Health©**
  - Proprietary data; “census” of prescriptions in the retail setting in U.S.
- ❑ **Focus groups – qualitative research**
  - Adverse drug events
  - Drug selection

## Get Smart: Know When Antibiotics Work

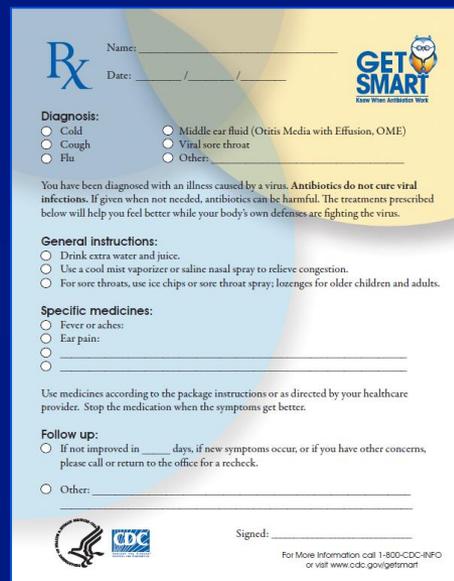
- ❑ Launched the *National Campaign for Appropriate Antibiotic Use in the Community* in 1995, which was renamed *Get Smart: Know When Antibiotics Work* in 2003
- ❑ Work closely with a variety of partners to reduce inappropriate antibiotic use in the community
- ❑ Focus on increasing awareness about antibiotic resistance with an aim to improve antibiotic prescribing and use



- [www.cdc.gov/getsmart](http://www.cdc.gov/getsmart)

# Get Smart Activities to Improve Antibiotic Use

- ❑ Educate general public and providers about antibiotic resistance and appropriate antibiotic use
  - Get Smart About Antibiotics Week
  - Detailing sheets
  - Tools (viral prescribing pad)
  - Curricula and continuing education
- ❑ Measure and characterize prescribing practices
- ❑ Develop policy (e.g. guidelines)
- ❑ Evaluate interventions
- ❑ Foster partnerships



The image shows a 'Viral Prescribing Pad' form. At the top left is a large 'Rx' symbol. To its right are fields for 'Name: \_\_\_\_\_' and 'Date: \_\_\_\_/\_\_\_\_/\_\_\_\_'. In the top right corner is the 'GET SMART' logo with the tagline 'Keep them infection-free'. Below the name and date fields is the 'Diagnosis:' section with two columns of radio button options: Cold, Cough, Flu, Middle ear fluid (Otitis Media with Effusion, OME), Viral sore throat, and Other. A paragraph of text follows, stating: 'You have been diagnosed with an illness caused by a virus. Antibiotics do not cure viral infections. If given when not needed, antibiotics can be harmful. The treatments prescribed below will help you feel better while your body's own defenses are fighting the virus.' Below this is the 'General instructions:' section with three radio button options: 'Drink extra water and juice.', 'Use a cool mist vaporizer or saline nasal spray to relieve congestion.', and 'For sore throats, use ice chips or sore throat spray; lozenges for older children and adults.' The next section is 'Specific medicines:' with radio button options for 'Fever or aches:', 'Ear pain:', and a blank line. Below this is a paragraph: 'Use medicines according to the package instructions or as directed by your healthcare provider. Stop the medication when the symptoms get better.' The 'Follow up:' section has radio button options: 'If not improved in \_\_\_\_ days, if new symptoms occur, or if you have other concerns, please call or return to the office for a recheck.' and 'Other: \_\_\_\_\_'. At the bottom left are the logos for the Department of Health and Human Services and the CDC. At the bottom right is a 'Signed: \_\_\_\_\_' line and the text 'For More information call 1-800-CDC-INFO or visit www.cdc.gov/getsmart'.

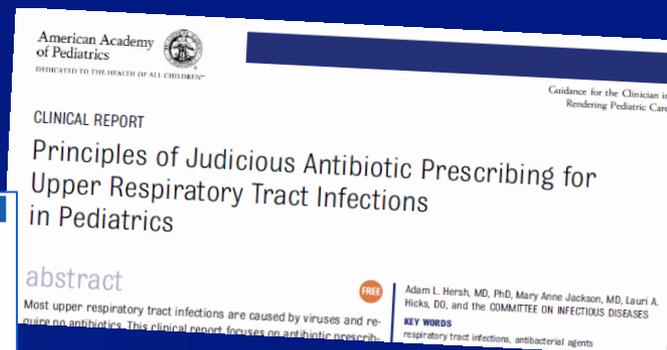
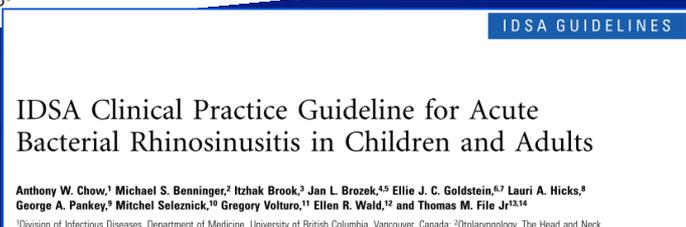
## Efforts to improve antibiotic use: Get Smart About Antibiotics Week

- ❑ This year: November 16-22,2015
- ❑ Increase awareness of antibiotic resistance and the importance of appropriate use of antibiotics in all healthcare settings
- ❑ Partner with a variety of organizations, including health agencies in more than 40 countries
- ❑ Engage the media to disseminate messages on the radio, in print, on television and in social media



# Efforts to improve antibiotic use: policies and clinical practice guidelines

- ❑ Guidelines establish standards of care, focus quality improvement projects, and improve patient outcomes
- ❑ Get Smart has helped develop clinical practice guidelines
  - Collaboration with professional medical associations
  - Emphasis on respiratory infections
  - Guidelines for both adult and pediatric patients



## **Interventions to improve outpatient prescribing**

- ❑ Print materials alone have little impact on prescribing**
- ❑ Audit and feedback of current practice has been successful**
- ❑ Academic detailing, opinion leader education effective**
- ❑ Clinical decision support promising**
- ❑ Other options:**
  - Delayed prescribing practices**
  - Poster interventions involving public commitment to prescribe judiciously**

- Arnold et al. Cochrane Database Syst Rev. 2005 Oct 19;(4):CD003539.
- Forrest et al. Pediatrics 2013 Apr;131(4):e1071 81.
- Little et al. Lancet 2013 Oct 5;382(9899):1175 82.
- Meeker et al. JAMA Intern Med. 2014;174(3):425 31.

# White House Forum on Antibiotic Stewardship

- ❑ June 2, 2015 in Washington, DC
- ❑ Over 150 organizations across human and animal health:
  - ~roughly 2/3 human health representing inpatient settings (hospitals, long-term care), outpatient settings, patient advocates, diagnostic & pharmaceutical manufacturers
  - ~roughly 1/3 animal health partners representing food producers, retailers, veterinary societies and organizations, animal pharmaceuticals
  - Government-wide collaboration (CDC, AHRQ, CMS, FDA, USDA, DOD, VA) to support implementation and acceleration of CARB Action Plan



## **The path forward for Get Smart**

- ❑ Study interventions to improve antibiotic prescribing and introduce “stewardship” in ambulatory care**
- ❑ Develop a toolkit for stewardship in outpatient settings**
- ❑ Enhance communication (Get Smart About Antibiotics Week and new provider and patient tools)**
- ❑ Engage new partners, such as health plans and states where antibiotics are prescribed the most**
- ❑ Explore regulatory processes to scale up interventions and improve antibiotic prescribing in the outpatient setting**

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Visit: [www.cdc.gov](http://www.cdc.gov) | Contact CDC at: 1 800 CDC INFO or [www.cdc.gov/info](http://www.cdc.gov/info)

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