Antimicrobial stewardship in European countries

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The antimicrobial use per capita varies greatly between countries and within countries in Europe. During the last decade, several European countries have achieved great progress in antibiotic stewardship and improving the quality of antibiotic prescribing, by implementing different interventions at the local and national level. These include the following components:

- Education and information campaigns targeting antimicrobial use
- Monitoring antibiotic consumption to gather data necessary to inform national strategies for rational antibiotic use
- Monitoring antibiotic resistance to provide updated information based on microbiology data on the local types and magnitude of antibiotic resistance
- Enforcing regulatory measures for antimicrobial use
- Antibiotic stewardship interventions to ensure rational use at the inpatient and outpatient level
- Enhancing diagnostic support for infectious diseases

Overall, during my presentation I will describe several experiences from European countries that are encouraging. They show that it is possible to turn the tide of antimicrobial resistance through prudent use of antibiotics, better infection control practices and use of vaccines. The challenge is now to get all European countries take similar action.

Get Smart About Antibiotics: U.S. Efforts To Address Inappropriate Antibiotic Use

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Background

In 2003, The Institute of Medicine (IOM) identified antibiotic resistance as one of the top microbial threats to health in the United States and listed decreasing the inappropriate use of antibiotics as a solution. Antibiotic use is an important factor contributing to the development of resistance on both the individual and country levels. Judicious use of antibiotics is a key step in reducing the spread of antibiotic resistance. In 2003, the Centers for Disease Control and Prevention (CDC) launched the Get Smart: Know When Antibiotics Work campaign to educate the public, parents and primary healthcare providers about appropriate antibiotic use.

Methods

Campaign activities

The Get Smart: Know When Antibiotics Work Campaign distributes clinical guidelines, healthcare provider and patient educational materials, and advertising in collaboration with state health departments, non-profit, and for-profit organizations. In 2008, CDC initiated an annual health observance, “Get Smart About Antibiotics Week”, to increase partner involvement and expand messaging during the cold and flu season. Media impressions were measured by identifying traditional and digital media promotion during Get Smart About Antibiotics Week. Message exposures were tracked based upon requests for Get Smart print materials, website visits, and Get Smart video views.

Antibiotic prescribing trends

To describe trends in antibiotic prescribing, we analyzed data from the National Ambulatory Medical Care Survey (NAMCS), a national probability sample survey of visits to non-federal...
office-based physicians and since 2006, to community health centers. We defined the visit-based antibiotic prescription rate as the average annual number of antibiotics recorded for children <15 years of age during the 2-year period divided by the average annual number of physician office visits by children during the same period. We defined the acute respiratory infection (ARI) visit-based rate as the average annual number of antibiotic prescriptions recorded for children with a diagnosis of ARI during the 2-year period divided by the average annual number of physician office visits for ARI by children during the same period. Significance of trends was based on a weighted least-squared regression analysis ($p<0.05$ level of significance).

Results

Campaign activities

Get Smart has generated over 100 million audience impressions from a wide range of broadcast, print, and online placements since 2003. Partner participation in Get Smart About Antibiotics week continues to grow. In 2010, 37 organizations participated in Get Smart’s annual observance. In 2010, 500,000 healthcare providers (e.g. physicians, pharmacists, nurse practitioners and physician assistants) were exposed to Get Smart tools and messages, while the business sector, media, and state and local public health organizations educated 7,000,000 members of the general public, specifically parents of young children, with regional and national media support.

Antibiotic prescribing trends

Antibiotic prescribing rates for children under 15 years of age seen in physician offices—a major focus of the Get Smart program—declined 24% from 301 antibiotic courses per 1,000 physician office visits in 1993-94 to 230 antibiotic courses per 1,000 physician office visits in 2007-08 ($p<0.05$). The antibiotic prescription rate for ARI-related office visits decreased 11% from 686 (95% CI, 653-719) in 1993-94 to 610 (95% CI, 570-651) in 2007-08 ($p$ for trend $<0.05$). This was driven by decreases in prescribing for both common cold (19% decrease, $p$ for trend $<0.05$) and pharyngitis (26% decrease, $p$ for trend $<0.05$). While these results are somewhat encouraging, ARIs still accounted for more than one-half of all antibiotic prescriptions for children <15 years seen in physician offices in 2007-08.

Conclusions

The Get Smart campaign’s multifaceted approach to education has been effective in reaching the target audiences. We observed a decrease in visit-based antibiotic prescribing rates for children less than 15 years in the U.S. from 1993-2008. The 24% decrease in antibiotic prescription rates indicates that physician prescribing behavior has changed. These changes in physician behavior are encouraging, as pediatric prescribers and parents of young children are target audiences for the Get Smart program. Several areas that require further intervention remain, however. Prescribing for otitis media appears to be essentially unchanged despite the American Academy of Pediatrics’ and American Academy of Family Practitioners’ 2004 release of guidelines recommending watchful waiting for otherwise healthy children ≥2 years of age without severe symptoms or an uncertain diagnosis at presentation. The results for otitis media contrast with those for pharyngitis, where a significant decrease was seen in antibiotic prescribing from 1993-94 to 2007-08, perhaps due to the ability to rely upon rapid diagnostic testing for group A streptococcus for decision-making. In the face of expanding resistance profiles among common pathogens, treatment options are dwindling and decreasing inappropriate antibiotic use is increasingly important. Ongoing efforts to change healthcare provider and patient behavior and expectations in both community and healthcare settings are needed.
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