

Antibiotic-Resistant Gonorrhea Among Adolescents and Young Adults: Need for Early Education



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DRUG-RESISTANT *NEISSERIA GONORRHOEAE*

THREAT LEVEL **URGENT**



550,000

Estimated
drug-resistant
infections each
year



1.14M

Total new
infections
each year



\$133.4M

Annual discounted
lifetime direct
medical costs

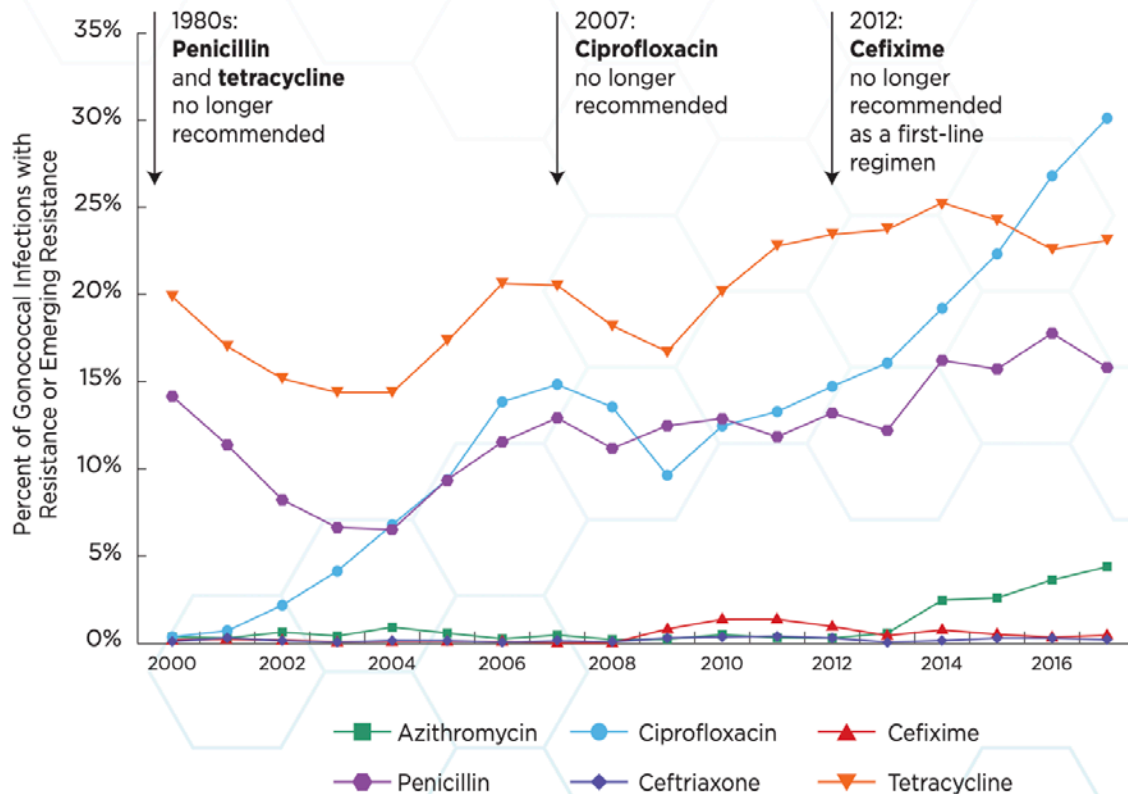
Neisseria gonorrhoeae causes gonorrhea, a sexually transmitted disease (STD) that can result in life-threatening ectopic pregnancy and infertility, and can increase the risk of getting and giving HIV.

Highest prevalence: Females ages 15-19 and 20-24 and Males ages 20-24 and 25-29

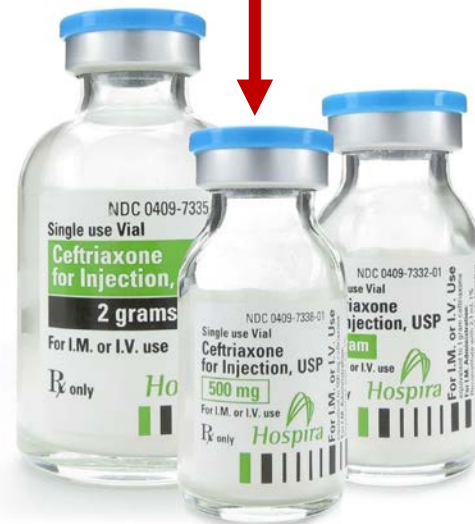
<https://www.cdc.gov/drugresistance/pdf/threats-report/gonorrhea-508.pdf>

EMERGING ANTIBIOTIC RESISTANCE

Gonorrhea rapidly develops resistance to antibiotics—ceftriaxone is the last recommended treatment.



Last Resort!



Assessment of College Students' Knowledge, Attitudes, and Practices Regarding Antibiotics Stewardship

- We surveyed 211 adolescent individuals transitioning from pediatric healthcare to relatively independent adult healthcare using the World Health Organization's "*Antibiotic Resistance: Multi-Country Public Awareness Survey*" between September and October 2020.
- Results were analyzed with a combination of statistical methods, including Chi-square and unadjusted regression analyses.

Knowledge gaps in antibiotic stewardship

OLS Regression model results for knowledge outcome					
Predictors	Unadjusted			Adjusted	
	Estimates	CI (95%)		Estimates	CI (95%)
Gender (female as reference)					
Gender [Male]	-0.0007	(-1.63, 1.63)		0.02	(-1.61, 1.64)
Year (freshman as reference)					
Junior	1.93*	(0.23, 3.62)		1.93*	(0.23, 3.63)
Senior	1.23	(-0.46, 2.92)		1.23	(-0.46, 2.93)
Sophomore	0.48	(-1.23, 2.19)		0.48	(-1.23, 2.20)

* p < 0.05, ** p < 0.01, *** p < 0.001

Gender context of attitudes regarding antibiotics

Table 5: OLS Regression model results for attitude outcome

Predictors	Unadjusted			Adjusted	
	Estimates	CI (95%)		Estimates	CI (95%)
Gender (female as reference)					
Gender [Male]	-0.17*	(-0.32, -0.02)		-0.17*	(-0.32, -0.02)
Year (freshman as reference)					
Junior	0.10	(-0.06, 0.25)		0.10	(-0.06, 0.25)
Senior	0.13	(-0.02, 0.29)		0.12	(-0.03, 0.27)
Sophomore	0.01	(-0.14, 0.17)		0.002	(-0.15, 0.16)

* p < 0.05, ** p < 0.01, *** p < 0.001

Use of “Storyline” Game to Promote Knowledge of Antibiotics and Improve Stewardship Among Youth

**Antibiotic Stewardship:
It's Your Responsibility!**

Start

**Antibiotic Stewardship:
It's Your Responsibility!**

Your name :

Type in your name:

type here and press Enter



Need for Early Education on Antibiotic Stewardship

- Current Project
 - Integrate antibiotics education into the K-12 curriculum with a focus on gonorrhea prevention and antibiotic stewardship in the Socioeconomic school districts in California
 - Fresno Unified School District
 - Konocti Unified School District
 - Merced City School District
 - Tulare City School District
 - (California State Council on Developmental Disabilities, 2019).

Thank You

Questions, Discussion, Reflection

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